START 9613474.2483

W0002-ITC-0007

0000001

RECORD COPY

0045239

Analytical Data Package Prepared for

WESTINGHOUSE HANFORD

JUN 1994
RECEIVED
SDLA

Chemical Analysis By

IT Analytical Services
Middlebrook Laboratory

Sample Delivery Group Number: W0002

WHC IDENTIFICATION NUMBER ITAS RICHLAND ID NUMBER

* See attached Table I

SEP 1996
RECEIVED
EDMC

9613474.2484

HANFORD ANALYTICAL SERVICES MANAGEMENT

RECORD OF DISPOSITION

ROD-94-0066
Record of Disposition No.

DATE: March 28, 1994	LABORATORY: IT
PROJECT TITLE/NO.: 200-UP-2/SAF 94-065	NCR NO.: n/a

SAMPLE IDENTIFICATION NUMBERS: All samples to be analyzed for Kerosene and/or Titanium.

DESCRIPTION OF EVENT:

Clarification is being provided to the laboratory for samples being analyzed for Kerosene and Titanium (Ti).

DISPOSITION OF SAMPLES:

IT will analyze for Kerosene by performing a modification to method 8015 (TPH) in which the peak search is started earlier to pick up the kerosene. As an additional element to the metals TAL, Ti will be analyzed for using ICP methodology.

APPROVAL SIGNATURES:

J. A. Lerch — 3/28/94
CAS Project Coordinator (Print/Sign Name) — Date

M. A. Wasemiller — 3/28/94
Technical Representative (Print/Sign Name) — Date

N/A
Quality Assurance (Print/Sign Name) — Date

IT/WHC ISSUE RESOLUTION FORM

SAF No. 94-065 Project 200-UP-2 LFI-3 Date 3/23/94

Sample No.(s) Any requesting Kerosene / Ti

Submitted By: Jim Harvey

Submitted To: Jeff Lerch

Phone No. 615-690-3211 x5611

Phone No. 509-372-2596

Fax No. 615-693-2348

Fax No. 509-372-2106

ISSUE	PROPOSED RESOLUTION
SAF indicates request for TPH Diesel Range COC's requesting Kerosene	Lab will run TPH Diesel Range modified to begin search early to pick up Kerosene.
Ti is requested as additional Metal	Lab will run Ti by ICP as additional metal.

IT/WHC0001

9613474.2486

HANFORD ANALYTICAL SERVICES MANAGEMENT

RECORD OF DISPOSITION

ROD-94-0067
Record of Disposition No.

DATE: March 28, 1994	LABORATORY: IT
PROJECT TITLE/NO.: 200-UP-2/SAF 94-065	NCR NO.: 051953

SAMPLE IDENTIFICATION NUMBERS: B09WG2

DESCRIPTION OF EVENT:

a) Due to oversight by the sampler, identification #B09WG2 was used twice. The identification # was used on samples received by IT on 3/4/94 and 3/10/94.

b) Due to oversight by the sampler, the collection dates recorded on the sample analysis request and Chain of Custody (COC) forms are inconsistent for sample B09WG2 received on 3/10/94. A collection date of 3/10/94 is specified on the sample analysis request form and a collection date of 3/4/94 is documented on the COC. Field logbook EFL-1115 documents on one sample with an identification number of B09WG2, collected on 3/4/94.

DISPOSITION OF SAMPLES:

a) IT is directed to proceed with the requested analysis and use identification number B09WG2 for the sample received on 3/4/94.

b) IT is directed to cancel analysis of the sample identified as B09WG2 which was received on 3/10/94.

The issues identified above are to be noted in the Case Narrative for the associated delivery group.

APPROVAL SIGNATURES:

J. A. Lerch — 3/28/94
CAS Project Coordinator (Print/Sign Name) — Date

M. A. Wasemiller — 3/30/94
Technical Representative (Print/Sign Name) — Date

N/A
Quality Assurance (Print/Sign Name) — Date

IT/WHC ISSUE RESOLUTION FORM

SAF No. 94 065 Project 200 UP-2 LPI-3 Date 3/25/94

Sample No.(s) B09W62

Submitted By: Jim Harvey

Submitted To: Jeff Lerch

Phone No. 615-690-3211 x5611

Phone No. 509-372-2596

Fax No. 615-693-2348

Fax No. 509-372-2106

ISSUE	PROPOSED RESOLUTION
Sample numbers have been duplicated. Receipt dates are: 3/4/94 [COC date 3/4/94, SAR date 3/4/94] and 3/10/94 [SAR date 3/10/94, COC date 3/4/94]	WHC to advise how to handle. LERogers Log EFL-1115

IT/WHC9081

9613474.2488

Westinghouse Hanford Company

NONCONFORMANCE REPORT

1. Page 1 of 21 MLF 4/27/94

2. Preprinted No. 051953

QA Log No. EQA-94-030

3. P. O., W. O., or Job Control No.	4. System/End Use	5. Item/Material	6. Dwg./Spec./Other No.	7. Rev.
N/A	Site Characterization	Samples	N/A	N/A

8. Program/Project/Other	9. Safety Class	10. ASME Code Items
200-UP-2 LFI	N/A	☐ Yes ☒ No (If yes, notify authorized inspector)

11. Supplier Name/Address	12. Notification of Potential Occurence Required
Environmental Field Services	☐ Yes ☒ No

13. Code: Lot/Heat/Serial	14. Lot Size	15. Sample	16. Qty. Acc.	17. Inspection Criteria
N/A	1	B09WG2	0	☐ Dwg. ☐ Spec. ☐ Insp. Plan ☒ Other EII 5.11 Rev 3

18. Item	19. Description of Nonconformance (list serial no. where applicable)	22. Disposition, Justification, and Instructions
1	Sample ID B09WG2 was used twice. The ID# was used on samples received by IT on 3/4/94 and 3/10/94. (see ROD-94-0067)	Reject - Cancel analysis of sample received on 3/10/94 labeled B09WG2.

20. Originator's Signature JA Lerch Jeff Lerch Date 3/28/94

23. Design Document Change Required? ☐ Yes, Doc. No. _____ ☒ No

21. Cognizant QA Manager's Signature D.D. Volkman Date 4/27/94

24. Corrective Action Required? ☐ Yes, No. _____ ☒ No

Disp. App.

25. Cognizant Engineer	Date	26. Technical Rep.	Date	Signature/Org.	Date
Mark A. Mousalle	3/30/94	N/A		N/A	

QA Engineer	Date	Signature/Org.	Date	Signature/Org.	Date
Gary Conizzo	5-9-94				

Close

27. Accept 1 Reject 0 Follow on NCR N/A

Gary L. Conizzo 5-9-96
QA/C Personnel Date

9613474.2489
W0002

Westinghouse Hanford Company	NONCONFORMANCE REPORT	1. Page 1 of 1	2. Preprinted No. 052855 QA Log No. EQA-94-018

3. P. O., W. O., or Job Control No.	4. System/End Use	5. Item/Material	6. Dwg../Spec./Other No.	7. Rev.
NA	Remedial Investigation	Soil Samples	NA	NA

8. Program/Project/Other	9. Safety Class	10. ASME Code Items ☐ Yes ☒ No (If yes, notify authorized inspector)
200-UP-2, SAF #94-065	NA	

11. Supplier Name/Address	12. Notification of Potential Occurence Required
NA	☐ Yes ☒ No

13. Code: Lot/Heat/Serial	14. Lot Size	15. Sample	16. Qty. Acc.	17. Inspection Criteria
NA	1	4	0	☐ Dwg. ☐ Spec. ☐ Insp. Plan ☒ Other WHC-CM-7-7, EII 5.10, R. 0

18. Item	19. Description of Nonconformence (list serial no. where applicable)	22. Disposition, Justification, and Instructions
1.	Required Condition: WHC-CM-7-7, EII 5.10, Rev. 0, Section 3.0, "HEIS Sample Number" identifies the format that HEIS sample numbers shall follow when assigned. This format specifically indicates that no vowels shall be used in the HEIS sample number format. Actual Condition: Contrary to the above requirement, the following four sample numbers, each containing a vowel, were assign to HEIS samples: B09WI0, B09WI1, B09WI8 and B09WI9.	Accept-As-Is The PNL Code Custodian shall enter these sample numbers into the HEIS Sample Number Library. These sample numbers do not create words with the imbedded vowel and therefore do not violate the intent of the above referenced EII. Note: The HEIS software and documentation will be modified by HCR and ICA, respectively, to allow HEIS Sample Number Library Custodians to manually enter Customer sample numbers with vowel subject to review for a "no-word" rule.

20. Originator's Signature	Date	23. Design Document Change Required?
G.S. Corrigan Gary S. Corrigan	4-7-94	☐ Yes, Doc. No. _____ ☒ No
21. Cognizant QA Manager's Signature	**Date**	**24. Corrective Action Required?**
T.L. Bennington TL Bennington	4/7/94	☐ Yes, No. _____ ☒ No

Disp. App.	25. Cognizant Engineer	Date	26. Technical Rep.	Date	Signature/Org.	Date
	M.R. Schwab MR Schwab	4/20/94	NA		NA	
	QA Engineer	**Date**	**Signature/Org.**	**Date**	**Signature/Org.**	**Date**
	G.S. Corrigan Gary S. Corrigan	4-20-94	NA		NA	

Close	27.
	Accept 4 Reject 0 Follow on NCR NA Gary S. Corrigan (QA/C Personnel) 4-20-94 (Date)

A-7310-104 (11 92)

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
2800 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 3/4 @ 1230 Client Name WHC

Project/Client # 94-065 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) NA

1. Condition of shipping container? OK
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: NA Wet ☐ Dry ☐
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 8
8. Samples have: ____ tape ____ hazard labels
   X custody seals X appropriate sample labels
9. Samples are: ✓ in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 40

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) NA
    Request for analysis #(s) NA
    Airbill # 17897 Carrier Gov veh
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature Heidelberg Date/Time 3/4 @ 1245

FORM NO. LS-042, Rev.0, 2/94

9613474.2491

0000028

WO#212

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
2800 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 3/14/94 14:30 Client Name WHC

Project/Client # 94-065 Batch or Case # n/a

Cooler ID (if noted on the outside of cooler) GW5028

1. Condition of shipping container? OK
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☐ No ☒ (outside)
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 27
8. Samples have: ___ tape ___ hazard labels
   X custody seals X appropriate sample labels
9. Samples are: X in good condition ___ leaking
   ___ broken ___ have air bubbles
   ___ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 2°

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) N/A
    Request for analysis #(s) N/A
    Airbill # N/A Carrier N/A
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature R. Boyd R. Boyd Date/Time 3/14/94 1430

FORM NO. LS-042, Rev.0, 2/94

WO #212

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
2800 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST
SAMPLE NUMBER MATRIX

WHC ID NUMBER	SAMPLE LABEL NUMBER	LABORATORY ID NUMBER	AGREEMENT OF INFORMATION
B09WI9	Same	40326601A-H 40326701 KB 3-15-94	Chem Rad yes
B09WJ0	Same	40326602 A-H 40326702	Chem Rad yes
B09WG7	Same	40326603 A-G 40326703	Chem Rad yes
B09WJ2	Same	40326604	Chem yes

FORM NO. LS-043, Rev. 0, 2/94

9613474.2493

0000030

WO#230

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
2300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 3/17 13:30 Client Name WHC

Project/Client # 94-005 Batch or Case # na

Cooler ID (if noted on the outside of cooler) SML-448

1. Condition of shipping container? OK
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 37
8. Samples have: ____ tape ____ hazard labels
   ✓ custody seals ____ appropriate sample labels
9. Samples are: ____ in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 40

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) na
    Request for analysis #(s) na
    Airbill # na Carrier na
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature [illegible] Date/Time 3/17 1400

FORM NO. LS-042, Rev.0, 2/94

9613474.2494

0000031

WO#230

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
2300 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 3/17 13:30 Client Name WHC

Project/Client # 94-065 Batch or Case # na

Cooler ID (if noted on the outside of cooler) GW5 127

1. Condition of shipping container? OK
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 17
8. Samples have: ____ tape ____ hazard labels
   ✓ custody seals ____ appropriate sample labels
9. Samples are: ✓ in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 4°

11. The following paperwork should be accounted for (N/A if not applicable):
    Chain of Custody #'(s) na
    Request for analysis #(s) na
    Airbill # na Carrier na
12. Have any anomalies been identified above? Yes ☐ No ☒
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature Heidelberg Date/Time 3/17 1355

FORM NO. LS-042, Rev.0, 2/94

9613474.2495

0000032

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-4-94

Ice Chest No.: SML #17B — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: N/A — Offsite Property No.: W94-1-0369 #13

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1)
40320801 A 1,250ml P:CLP;TAL Metals,Hg,Ti B09WG0
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~ SR 3-9-94
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40320901

40320802 B09WG2
2) 1,250ml aGs : CLP: VOA

2)
1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

SR 3-9-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	Heidelberg	3/10/94 @ 1450
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2496

0000033

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS — S.A.F. # 94-065 — Date

Company Contact L E ROGERS — Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09W60	S	3-4-94	0837	1,250ml P:CLP;TAL Metals,Hg,Ti ~~1,250ml Gs:VOA CLP~~ 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) ~~1,250ml aGs:PCB/Pest (8080)~~ 3-9-94 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)
B09W62	S	3-10-94	7000	1,250ml aGs: CLP: VOA
			3-9-94	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

*Type of Sample: A = Air; DL = Drum Liquids; DS = Drum Solids; L = Liquid; O = Oil; S = Soil; SE = Sediment; SL = Sludge; SO = Solid; T = Tissue; W = Water; WI = Wipe; X = Other

Field Information IT, Richland

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards NONE NOTED

A-6000-406 (06/91) WEF060

9613474.2497

0000034

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-4-94

Ice Chest No.: SML-178 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: N/A — Offsite Property No.: W94-U-0369 #13

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09WG0

- 1,250ml P:CLP;TAL Metals,Hg,Ti
- 1,250ml Gs:VOA CLP
- 1,250ml aG:Semi-VOA CLP
- 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
- 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
- ~~1,250ml aGs:PCB/Pest (8080)~~ SER 3-9-94
- 1,125ml G:Cyanide CLP
- 1,125ml Gw:Kerosene (8015M)
- 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

B09WG2
2) 1,250ml aGs : CIP: VOA

2)

- 1,250ml P:CLP;TAL Metals,Hg,Ti
- 1,250ml Gs:~~VOA CLP~~
- 1,250ml aG:Semi-VOA CLP
- 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
- 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
- 1,250ml aGs:PCB/Pest (8080) SER 3-9-94
- 1,125ml G:Cyanide CLP
- 1,125ml Gw:Kerosene (8015M)
- 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	Heidelberg	3/10/94 @ 1450
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2498

0000035

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS — S.A.F. # 94-065 — Date

Company Contact L E ROGERS — Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09W60	S	3-4-94	0837	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) ~~1,250ml aGs:PCB/Pest (8080)~~ LER 3-9-94 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)
No screen B09WG2	S	3-10-94	7000	1,250mL aGs: CLP: VOA
			LER 3-9-94	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

*Type of Sample: A = Air; L = Liquid; SE = Sediment; T = Tissue; X = Other; DL = Drum Liquids; O = Oil; SL = Sludge; W = Water; DS = Drum Solids; S = Soil; SO = Solid; WI = Wipe

Field Information IT, Richland

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards NONE NOTED

A-6000-406 (06/91) WEF060

9613474.2499

0000036

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS

Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2

Collection Date:

Ice Chest No.:

Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.:

Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 RADIOACTIVE

Sample Identification

1)

1,250ml P:CLP;TAL Metals,Hg,Ti ✓ B09WF9
1,250ml ✓Gs:VOA CLP
1,250ml ✓aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0) ✓
1,125ml P/G:Anions NO2,NO3 (EPA 353.2) ✓
~~1,250ml aGs:PCB/Pest (8080)~~ LER 3-3-94
1,125ml ✓G:Cyanide CLP
1,125ml Gw:Kerosene (8015M) ✓
1,1000ml ✓P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2)

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

LER 3-3-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Loren E Rogers 3-4-94 1033	Michelle Kerg	3/4 @ 12:30
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2500

0000037

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS — S.A.F. # 94-065 — Date 3-3-94

Company Contact L E ROGERS — Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09WF9	S	3-3-94	1225	40309801 A 1,250ml P:CLP;TAL Metals,Hg,Ti 6010 B 1,250ml Gs:VOA CLP 8240 C 1,250ml aG:Semi-VOA CLP 8270 ✓ D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) ✓ ~~1,250ml aGs:PCB/Pest (8080)~~ JER 3-3-94 F 1,125ml G:Cyanide CLP 9010 G 1,125ml GW:Kerosene (8015M) ✓ 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253) 40309901
			JER 3-3-94	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml GW:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

*Type of Sample					
	A = Air	L = Liquid	SE = Sediment	T = Tissue	X = Other
	DL = Drum Liquids	O = Oil	SL = Sludge	W = Water	
	DS = Drum Solids	S = Soil	SO = Solid	WI = Wipe	

Field Information IT, Richland

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards RADIOACTIVE

A-6000-406 (06/91) WEF060

9613474.2501

0000038

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS

Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2

Collection Date: 3-4-94

Ice Chest No.:

Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.:

Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1)

~~1,250ml P:CLP;TAL Metals,Hg,Tl~~ B09WG2

1,250ml Gs:VOA CLP

~~1,250ml aG:Semi-VOA CLP~~

~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~

~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~

~~1,250ml aGs:PCB/Pest (8080)~~

~~1,125ml G:Cyanide CLP~~ KER 3-4-94

~~1,125ml Gw:Kerosene (8015M)~~

~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322)~~, Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), ~~Total Uranium (ITAS-RD-4200,~~ ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 ~~(ITAS-RD~~-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2)

~~1,250ml~~ P:CLP;TAL Metals,Hg,Tl

1,250ml ~~Gs:VOA CLP~~

1,250ml aG:Semi-VOA CLP

1,125ml G:Anions F,Cl,SO4 (EPA 300.0)

1,125ml P/G:Anions NO2,NO3 (EPA 353.2)

1,250ml aGs:PCB/Pest (8080)

1,125ml G:Cyanide CLP KER 3-4-94

1,125ml Gw:Kerosene (8015M)

1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Laurie E. Rogers 3-4-94 1033	Heidelberg	3/4 @ 1230
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS S.A.F. # 94-065 Date

Company Contact L E ROGERS Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B090G2	S	3-4-94	0700	~~1,250ml P:CLP;TAL Metals,Hg,Ti~~ $240 1,250ml Gs:VOA CLP - 403098024 ~~1,250ml aG:Semi-VOA CLP~~ 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253) 3-4-94
				1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253) 3-4-94

*Type of Sample A = Air L = Liquid SE = Sediment T = Tissue X = Other
DL = Drum Liquids O = Oil SL = Sludge W = Water
DS = Drum Solids S = Soil SO = Solid WI = Wipe

Field Information IT, Richland

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards NONE NOTED

A-6000-406 (06/91) WEF060

9613474.2503

0000040

49 CFR 173.427 (a)(4) 49 CFR 173.422

OFFSITE RADIOACTIVE SHIPMENT RECORD

EXTERIOR INSPECTION PERMITTED

SHIPPING INFO

Company: T. Laboratory
Address: 2800 George Washington Way
City, State, Zip: Richland WA 99352
Attention: Tammy Heidelberg

Contractor: ☐ PNL ☐ BEH ☒ WHC
Site Carrier: Loren Rogers
PR No. 84682 Veh. No. 16-1582

Ship: ☒ Prepaid ☐ Collect
☒ Motor Carrier
☐ Excl. Use
☒ DOE Veh.
☐ UPS Sur.

Proper Shipping Name: Radioactive Material, EXCEPTED PACKAGE
1. Empty Packages ☐ UN 2908
2. Low-Specific Activity, n.o.s. ☐ UN 2912
3. Limited quantity, n.o.s. ☒ UN 2910
4. N.O.S. ☐ UN 2982
5. Fissile n.o.s. ☐ UN 2918
6. Special Form, n.o.s. ☐ UN 2974
7. Instruments & Articles ☐ UN 2911
8. LIMITED QUANTITY OF MATERIAL ☒ UN 2910

Material Form: ☐ Special (A1) ☒ Normal (A2)

Labels Applied: ☐ Empty ☐ Radioactive LSA ☐ White I ☐ Yellow II ☐ Yellow III ☒ None ☐ Danger (Air Cargo) ☐ Secondary

Material Category: ☐ Empty ☐ Low Specific Act. (LSA) ☒ Limited Quantity ☐ Type A Quantity ☐ Type B Quantity ☐ Highway Route Controlled Quantity

For Normal Form Identify:
Physical Form: ☒ Solid ☐
Chemical Form: ☐ Metal ☒ Elemental ☐ Other

SHIPMENT DESCRIPTION AND CERTIFICATION

TYPE PACKAGE: ☒ Strong Tight ☐ Type A ☐ Type B ☐ Type B (U) ☐ Type B (M)

CONSTRUCTION: ☐ Box, FB ☐ Wood ☐ Steel ☐ Drum ☐ Cask ☒ Other Poly Cooler

FISSILE CLASS: ☒ Non Fissile ☐ Fissile Exempt ☐ Fissile I ☐ Fissile II ☐ Fissile III
Grams Fissile

SNM: ☒ No ☐ Yes ☐ <1 gr ☐ Category I ☐ Category II ☐ Category III

ACCOUNTABILITY/SECURITY: ☐ Classified ☒
Consignee authorized to receive
Sig. Security Svc. Req.
Pu, SU > 1 g
Security Escorts Req.
External Cask Temperature (Max. 122°F LTL, 180°F Ex. Use)

Packaging conforms to appropriate packaging procedure ☐ N/A ☒ Yes
Complies with D.O.T. packaging marking and labeling requirements ☐ N/A ☒ Yes
Container acceptability documented (incl. 7A cert.) ☒ N/A ☐ Yes

Container examined: No evidence of deterioration ☒ Yes
QA Inspection Current ☐ Yes ☒ N/A Seals required
Shipping Doc. N/A ARSER Authorization

No. Pkgs.	Model Package	COC/Spec. No.	Serial No.	Seal No.	Isotopes	Curies/Pkg
1	Strong Tight	N/A	N/A	N/A	Sr90, Cs-137	182 nCi
			169			
Soil samples in glass bottles. Bottles are double bagged and packed in wet ice surrounded by vermiculite or Overpack. W/ Sample # B09KF9, B09KF2						
(Shipper may describe package in detail on one of unused lines above)					TOTAL	182 nCi

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled; and are in proper condition for transportation, according to the applicable federal, state, local and international regulations for the transportation of hazardous materials.

Certifier's Signature: [signature] Date: 3-4-94 Organization: Envi Field Services Complete Cost Code: PT2BA

AREA MONITOR

Surface Dose Rate of Package: ☒ ≤0.5 or ___ mrem/hr (N+γ)
Dose Rate at 1 Meter from Surface of Package: ☒ ≤0.5 or ___ mrem/hr (N+βγ)
Smears of Outer Container: ☒ ≤22 dpm βγ/cm² ☒ ≤2.2 dpm α/cm²
TRUCK LOAD OPEN: Surface: ☒ ≤200 mrem/hr @6 feet: ☒ ≤10 mrem/hr @Cab or Sleeper ☒ ≤2.0 mrem/hr

Additional Data and Instructions (inc. Readings on Internal Packaging)

Signature - Radiation Monitoring: [signature] Bldg. N/A Survey No. 157423 Date 3-4-94

AUTHORIZATION FOR SHIPMENT

APPROVAL

AIR TRANSPORT CERTIFICATION: Cargo Only: ☐ Danger Labels Applied
Passenger: ☐ 1. Ltd. Qty. ☐ 2. ≤3 T.I ☐ 3. Research or Medical Diagnosis ☐ 4. Human Medical Research
Pkg. Dimensions: N/A

Traffic has inspected and verified preshipment compliance to DOT regulations

Authorized Signature: [signature] Printed Name: M.A. SAMS Date: 3-4-94

APPROVED FOR OFFSITE SHIPMENT

TRAFFIC

B.L. No. RMW-8511 Date Shipped 3-4-94 E.S.A. 3-4-94 Routing WHC VEHICLE ☐ N/A Placards ☐ Yes ☒ No
Surveyed By Date Approved for Shipment Westinghouse Hanford Company [signature] Date 3-4-94 Route Plan ☐ Yes ☒ No

Recd 3/4 @ 1730 Heidelberg

BEST AVAILABLE COPY

9613474.2504

0000041

SDG W0002 W0212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-10-94

Ice Chest No.: GW 5028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.: WP4-0-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

B09W19 CAT I

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
I 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

~~2)~~
~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

3-10-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	R. Boyd IT CWO	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2505

0000042

WO #212

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS S.A.F. # 94-065 Date 3-10-94
Company Contact L E ROGERS Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09WI9	S	3-10-94	1300	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)
			SA 3-10-94	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

*Type of Sample A = Air L = Liquid SE = Sediment T = Tissue X = Other
DL = Drum Liquids O = Oil SL = Sludge W = Water
DS = Drum Solids S = Soil SO = Solid WI = Wipe

Field Information **IT, Richland**

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards NONE NOTED

A-6000-406 (06/91) WEF060

9613474.2506

0000043

WO #212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.W. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-11-93

Ice Chest No.: GW 5028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.: W940-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09W50

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
I 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

~~2)~~

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

HQR 3-11-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.W. Setzer	R. Boyd IT	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2507

0000044

WO #212

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS S:A.F. # 94-065 Date 3-11-94

Company Contact L E ROGERS Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09WJ50	S	3-11-94	0830	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)
			3-11-94	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

*Type of Sample A = Air L = Liquid SE = Sediment T = Tissue X = Other
DL = Drum Liquids O = Oil SL = Sludge W = Water
DS = Drum Solids S = Soil SO = Solid WI = Wipe

Field Information IT, Richland

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards NONE NOTED

A-6000-406 (06/91) WEF060

9613474.2508

0000045

WO #212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-14-94

Ice Chest No.: GW S028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: NA — Offsite Property No.: WHO-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065

Sample Identification

1) B09WG9

403224 03

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)

403226 109 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

~~2) B09WJ2 1,250ml aGs: CLP; VOA~~ WJS 3-14-92

2)
1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080) WJS
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	R. Boyd IT CIBD	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2509

0000046

WO #212

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS / W.U. SETZER S.A.F. # 94-065 Date 3-10-94
Company Contact L E ROGERS Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09WG7	S	3-10-94	1059	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) ~~1,250ml aGs:PCB/Pest (8080)~~ WUS 3-10-94 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)
				1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253) WUS 3-10-94

*Type of Sample A = Air L = Liquid SE = Sediment T = Tissue X = Other
DL = Drum Liquids O = Oil SL = Sludge W = Water
DS = Drum Solids S = Soil SO = Solid WI = Wipe

Field Information **IT, Richland**

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards NONE OBSERVED

A-6000-406 (06/91) WEF060

9613474.2510

0000047

WO#212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.V. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-10-94

Ice Chest No.: GW 5028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.: W94-0

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065

Sample Identification

1) B0W0J2

03266
04

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
1,250ml Gs:VOA CLP
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

SR 3-10-94

2)

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
1,250ml ~~Gs:VOA CLP~~
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

SR 3-14-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.V. Setzer	R Boyd IT <100	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2511

0000048

WO # 212

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS S.A.F. # 94-065 Date 3-10-94

Company Contact L E ROGERS Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B0W052	S	3-10-94	0700	~~1,250ml P:CLP;TAL Metals,Hg,Ti~~ 1,250ml Gs:VOA CLP ~~1,250ml aG:Semi-VOA CLP~~ ~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~ ~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~ ~~1,250ml aGs:PCB/Pest (8080)~~ ~~1,125ml G:Cyanide CLP~~ ~~1,125ml Gw:Kerosene (8015M)~~ ~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~ SER 3-10-94
				1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253) SER 3-14-94

*Type of Sample	A = Air	L = Liquid	SE = Sediment	T = Tissue	X = Other
	DL = Drum Liquids	O = Oil	SL = Sludge	W = Water	
	DS = Drum Solids	S = Soil	SO = Solid	WI = Wipe	

Field Information IT, Richland

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards NONE NOTED

A-6000-406 (06/91) WEF060

9613474.2512

0000049

WO #230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-16-94

Ice Chest No.: GWS-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 500ml ~~LER~~ 3-17-94 B09W40

A 1,~~250ml~~ P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~ LER 3-16-94
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4C334501

2) ~~LER~~ 3-17-94 B09W41

A 1, 500ml ~~1,250ml~~ P:CLP;TAL Metals,Hg,Ti
B 1, 500ml ~~1,250ml~~ Gs:VOA CLP
C 1, 500ml ~~1,250ml~~ aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~ LER 3-16-94
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4C334502

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Loren E Rogers / Loren E Rogers	S.D. Fowler / S.D. Fowler	3/17/94 1018
Relinquished by: S.D. Fowler / S.D. Fowler	Received by: [illegible]	Date/Time: 3/17 @ 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2513

0000050

W0230

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS — S.A.F. # 94-065 — Date 3-16-94

Company Contact L E ROGERS — Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
BD4WH0	S	3-14-94	1120	500ml SER 3-17-94 1,~~250ml~~ P:CLP;TAL Metals,Hg,Ti 1,~~250ml~~ Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) ~~1,250ml aGs:PCB/Pest (8080)~~ SER 3-16-94 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)
BD4WH1	S	3-15-94	1440	SER 3-17-94 1,500ml ~~1,250ml~~ P:CLP;TAL Metals,Hg,Ti 1,500ml ~~1,250ml~~ Gs:VOA CLP 1,500ml ~~1,250ml~~ aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) ~~1,250ml aGs:PCB/Pest (8080)~~ SER 3-16-94 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

***Type of Sample** A = Air; DL = Drum Liquids; DS = Drum Solids; L = Liquid; O = Oil; S = Soil; SE = Sediment; SL = Sludge; SO = Solid; T = Tissue; W = Water; WI = Wipe; X = Other

Field Information IT, Richland

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards NONE NOTED

A-6000-406 (06/91) WEF060

9613474.2514

0000051

WOF230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-16-94

Ice Chest No.: GWS-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 809WJ8

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
1,250ml Gs:VOA CLP
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml ads:PCB/Pest (8080)~~
~~1,125ml G:Cyanide Cl.P~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152,Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

4L6534463

~~2)~~
~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152,Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Lorenzo E. Rogers	J.D. Fowler	3/17/94 1018
J.D. Fowler	[illegible]	3/17 1330

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2515

0000052

WO# 230

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS — S.A.F. # 94-065 — Date 3-16-94

Company Contact L E ROGERS — Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
BOW IG	S	3-16-94	CTC	~~1,250ml P:CLP;TAL Metals,Hg,Ti~~ 1,250ml Gs:VOA CLP ~~1,250ml aG:Semi-VOA CLP~~ ~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~ ~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~ ~~1,250ml aGs:PCB/Pest (8080)~~ ~~1,125ml G:Cyanide CLP~~ ~~1,125ml Gw:Kerosene (8015M)~~ JLR 3-16-94 ~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~
			3-16-94 JLR	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

*Type of Sample					
	A = Air	L = Liquid	SE = Sediment	T = Tissue	X = Other
	DL = Drum Liquids	O = Oil	SL = Sludge	W = Water	
	DS = Drum Solids	S = Soil	SO = Solid	WI = Wipe	

Field Information IT, Richland

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards NONE NOTED

A-6000-406 (06/91) WEF060

9613474.2516

0000053

WO#230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS

Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2

Collection Date: 3-14-94

Ice Chest No.: SML-448

Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.:

Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09W53

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4033444 4033450 4

2) B09W54

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4033445 4033450 5

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Loren E. Rogers	Received by: J.D. Fowler	Date/Time: 3/17/94 1018
Relinquished by: J.D. Fowler	Received by: [illegible]	Date/Time: 3/17 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2517

0000054

WO#230

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS S.A.F. # 94-065 Date ~~3-15-94~~ 3-14-94 SER

Company Contact L E ROGERS Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09WJ3	S	3-14-94	1310	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)
B09WJ4	S	3-15-94	1038	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

***Type of Sample** A = Air; L = Liquid; SE = Sediment; T = Tissue; X = Other; DL = Drum Liquids; O = Oil; SL = Sludge; W = Water; DS = Drum Solids; S = Soil; SO = Solid; WI = Wipe

Field Information IT, Richland

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards NONE NOTED

A-6000-406 (06/91) WEF060

9613474.2518

0000055

WO#230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-15-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1)

B09W55

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

1165344CC

4C334SCC

~~2)~~

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

KR 3-15-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Loren E. Rogers	J.D. Fanher	3/17/94 1015
J.D. Fanher	Heidelberg	3/17 1330

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2519

0000056

WO#230

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS S.A.F. # 94-065 Date 3-15-94
Company Contact L E ROGERS Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09WJ5	S	3-15-94	1330	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)
			SER 3-15-94	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1.125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

*Type of Sample A = Air L = Liquid SE = Sediment T = Tissue X = Other
DL = Drum Liquids O = Oil SL = Sludge W = Water
DS = Drum Solids S = Soil SO = Solid WI = Wipe

Field Information IT, Richland

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards NONE NOTED

A-6000-406 (06/91) WEF060

9613474.2520

0000057

WO# 230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-16-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1)

BC9WJ6

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~

40334407

1,250ml Gs:VOA CLP

~~1,250ml aG:Semi-VOA CLP~~

~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~

~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~

~~1,250ml aGs:PCB/Pest (8080)~~

SCK 3-16-94

~~1,125ml G:Cyanide CLP~~

~~1,125ml Gw:Kerosene (8015M)~~

~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

2)

BC9WJ7

A 1,250ml P:CLP;TAL Metals,Hg,Ti

B 1,250ml Gs:VOA CLP

C 1,250ml aG:Semi-VOA CLP

40334408

D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)

E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)

F 1,250ml aGs:PCB/Pest (8080)

G 1,125ml G:Cyanide CLP

H 1,125ml Gw:Kerosene (8015M)

1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40334507

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Loren E. Rogers	Received by: J.D. Fowler	Date/Time: 3/17/94 1018
Relinquished by: J.D. Fowler	Received by: [illegible]	Date/Time: 3/17 1332
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2521

0000058

WO#230

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS S.A.F. # 94-065 Date 3-16-94

Company Contact L E ROGERS Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09WJ6	S	3-16-94	0700	~~1,250ml P:CLP;TAL Metals,Hg,Ti~~ 1,250ml Gs:VOA CLP ~~1,250ml aGs:Semi-VOA CLP~~ ~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~ ~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~ ~~1,250ml aGs:PCB/Pest (8080)~~ ~~1,125ml G:Cyanide CLP~~ SR 3-16-94 ~~1,125ml Gw:Kerosene (8015M)~~ ~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~
B09WJ7	S	3-16-94	1005	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

*Type of Sample	A = Air	L = Liquid	SE = Sediment	T = Tissue	X = Other
	DL = Drum Liquids	O = Oil	SL = Sludge	W = Water	
	DS = Drum Solids	S = Soil	SO = Solid	WI = Wipe	

Field Information IT, Richland

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards NONE NOTED

A-6000-406 (06/91) WEF060

INTERNATIONAL TECHNOLOGY CORPORATION

COC NO. *0001260*

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

WO# 161 RL # 2016

Reference Document No. 340318
Page 1 of ___

Project Name/No. [1] 94-065
Sample Team Members [2]
Profit Center No. [3] 4632
Project Manager [4] VAN PETTEY
Purchase Order No. [6]
Required Report Date [11]

Samples Shipment Date [7] 3-4-94
Lab Destination [8] Middlebrook
Lab Contact [9]
Project Contact/Phone [12]
Carrier/Waybill No. [13]

Bill to: [5] IT Richland
Report to: [10] IT Richland

ONE CONTAINER PER LINE

Sample Number [14]	Sample Description/Type [15]	Date/Time Collected [16]	Container Type [17]	Sample Volume [18]	Pre-servative [19]	Requested Testing Program [20]	Condition on Receipt [21]	Disposal Record No. [22]
B09WF9 4-03-098-01A	Soil	3/3 1225	glass bottles	250ml	NA	ICP ✓	2° C BPB 3/05/94	
B						VOA ✓		
C						ABN ✓		
D				125ml		Anions (EPA 300.0) ✓		
E						Anions (EPA 353.2) ✓		
F						Cyanide ✓		
G						Kerosene		
B09W62 4-03-098-02A		3/4 0700		250ml		VOA ✓		

FOR LAB USE ONLY

Special Instructions: [23] Analysis as per WHC Contract.

Possible Hazard Identification: [24] Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☒

Sample Disposal: [25] Return to Client ☒ Disposal by Lab ☐ Archive ____ (mos.)

Turnaround Time Required: [26] Normal ☒ Rush ☐

QC Level: [27] I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by [28] (Signature/Affiliation)	Date: 3-4-94 Time:	1. Received by [28] (Signature/Affiliation) Bryan Blomquist ITASKN	Date: 3/05/94 Time: 10:00
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments: [29]
SDG W0002 Please sign and Return to Richland.

MCA 3/15/91

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

9613474.2522

00000059

INTERNATIONAL TECHNOLOGY CORPORATION

0001287

Receipt Lot 2444

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

WO# 193

Reference Document No. 340320
Page 1 of ___

Project Name/No. 1 WHC
Sample Team Members 2 SDG W0302
Profit Center No. 3
Project Manager 4
Purchase Order No. 6
Required Report Date 11

Samples Shipment Date 7 3/10/94
Lab Destination 8
Lab Contact 9 509 3753131
Project Contact/Phone 12 Van Pettey
Carrier/Waybill No. 13 8875576010 FedX

Bill to: 5
Report to: 10

ONE CONTAINER PER LINE

Sample Number 14	Sample Description/Type 15	Date/Time Collected 16	Container Type 17	Sample Volume 18	Preservative 19	Requested Testing Program 20	Condition on Receipt 21	Disposal Record No. 22
W403208 01A	Soil	3/4/94 0837		250ml	4°C	CLP TAL Metals Hg Ti	2°C KAK 3/11/94	
B						VOA CLP	FOR LAB USE ONLY	
C						Semi VOA CLP		
D				125ml		Anions F, Cl, SO4		
E						Anions NO2, NO3		
F						CN CLP	FOR LAB USE ONLY	
G						kerosene (8015M)		
W403208 02A		3/10/94 0700		250ml				

Special Instructions: 23

Possible Hazard Identification: 24
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal: 25
Return to Client ☐ Disposal by Lab ☐ Archive _____ (mos.)

Turnaround Time Required: 26
Normal ☐ Rush ☐

QC Level: 27
I. ☐ II. ☐ III. ☐ Project Specific (specify): _____

1. Relinquished by 28 (Signature/Affiliation)	Date: 2/10/94 Time: 1600	1. Received by 28 (Signature/Affiliation) Kenny A. Klemm	Date: 3-11-94 Time: 09:00
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments: 29

WO# 193

MCA 3/15/91

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

9613474.2523

0000060

INTERNATIONAL TECHNOLOGY CORPORATION

COC NO. *0001307*

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

WO# 212 RL# 283

Reference Document No. 340327
Page 1 of 2

Project Name/No. [1] SAF #94-065
Sample Team Members [2]
Profit Center No. [3] 4632
Project Manager [4] Van Petty
Purchase Order No. [6]
Required Report Date [11] 4-28-94

Samples Shipment Date [7] 3-15-94
Lab Destination [8] Middle Brook
Lab Contact [9]
Project Contact/Phone [12]
Carrier/Waybill No. [13] 3769218546

Bill to: [5] IT Richland
Report to: [10] IT Richland

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

ONE CONTAINER PER LINE

Sample Number [14]	Sample Description/Type [15]	Date/Time Collected [16]	Container Type [17]	Sample Volume [18]	Pre-servative [19]	Requested Testing Program [20]	Condition on Receipt [21]	Disposal Record No. [22]
40326601 A	BO9WI9 / Soil	3-10-94 13:00	AG	250ml	COOL 4°	ICP Metals, Hg, Ti	2°C KAK 3/16/94	
B						Voa	FOR LAB USE ONLY	
C						Semi Voa		
D				125ml		EPA 300.0		
E						EPA 353.2		
F				250ml		PCB / Pest	FOR LAB USE ONLY	
G				125ml		cyanide		
H						Kerosene		

Special Instructions: [23]

Possible Hazard Identification: [24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☒

Sample Disposal: [25]
Return to Client ☒ Disposal by Lab ☐ Archive _____ (mos.)

Turnaround Time Required: [26]
Normal ☐ Rush ☐

QC Level: [27]
I. ☐ II. ☐ III. ☐ Project Specific (specify): SDG W0002

1. Relinquished by [28] (Signature/Affiliation) R. Boyd IT	Date: 3-15-94 Time: 16:00	1. Received by [28] (Signature/Affiliation) Kerry A. Klemm ITAS-KN	Date: 3-16-94 Time: 09:20
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments: [29]

MCA 3/15/91

9613474.2524

0000061

INTERNATIONAL TECHNOLOGY CORPORATION

CoC # 1307

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

WO# 212
RL# 283

Reference Document No.[30] 340327

Page 2 of 2

Project Name SAF # 94-065

Project No. _____

Samples Shipment Date 3-15-94

ONE CONTAINER PER LINE

Sample[14] Number	Sample[15] Description/Type	Date/Time[16] Collected	Container[17] Type	Sample[18] Volume	Pre-[19] servative	Requested Testing[20] Program	Condition on[21] Receipt	Disposal[22] Record No.
40326602 A	BO9WJ0 /soil	3-11-94 08:30	AG	250ml	Cool 4°	ICP Metal, Hg, Ti	KAK 3-16-94 2°c	
B						Voa	FOR LAB USE ONLY	
C						Semi Voa		
D				125ml		EPA 300.0		
E						EPA 353.2	FOR LAB USE ONLY	
F				250ml		PCB /Pest		
G				125ml		Cyanide	FOR LAB USE ONLY	
H						Kerosene		
40326603 A	BO9WG7 /soil	3-10-94 10:59	AG	250ml	Cool 4°	ICP Metal, Hg, Ti	FOR LAB USE ONLY	
B						Voa		
C						Semi Voa		
D				125ml		EPA 300.0	FOR LAB USE ONLY	
E						EPA 353.2		
F						Cyanide	FOR LAB USE ONLY	
G						Kerosene		
40326604	BO9WJ2 /soil	3-10-94 07:00	AG	250ml	cool 4°	Voa		
40326605 A	Trip Blank	3-15-94	AG	40ml	cool 4°	Voa	FOR LAB USE ONLY	
B								

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

MCA 3/15/91

9613474.2525

0000062

INTERNATIONAL TECHNOLOGY CORPORATION

COC NO. *0001323*

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

WO#230 RL#301

Reference Document No. 340333
Page 1 of 4

Project Name/No. [1] SAF 94-065
Sample Team Members [2]
Profit Center No. [3] 4632
Project Manager [4] VAN PETTEY
Purchase Order No. [6]
Required Report Date [11] 4-21-94

Samples Shipment Date [7] 3-17-94
Lab Destination [8] Middlebrook
Lab Contact [9]
Project Contact/Phone [12]
Carrier/Waybill No. [13] Fed Ex 3770029029

Bill to: [5] IT Richland
Report to: [10] IT Richland

ONE CONTAINER PER LINE

Sample Number [14]	Sample Description/Type [15]	Date/Time Collected [16]	Container Type [17]	Sample Volume [18]	Pre-servative [19]	Requested Testing Program [20]	Condition on Receipt [21]	Disposal Record No. [22]
4-03-344-01A	BOMWHO / Soil	3/14 1120	glass	AG 500ml	Cool 4°	TAL Metals, Hg, Ti	Rec'd at 2°, 4°, 2° KAK 3/18/94	
B				AG 250ml		VOA		
C				AG		Semi Voa		
D				CG 125ml		EPA 300.0		
E				CG		EPA 353.2		
F				CG		Cyanide		
G				AG		Kerosene		
4-03-344-02A	BOMWH1 / Soil	3/15 1440		AG 500ml		TAL Metals, Hg, Ti		

FOR LAB USE ONLY

FOR LAB USE ONLY

Special Instructions: [23] as per WHC Contract

Possible Hazard Identification: [24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☒

Sample Disposal: [25]
Return to Client ☒ Disposal by Lab ☐ Archive _____ (mos.)

Turnaround Time Required: [26]
Normal ☒ Rush ☐

QC Level: [27]
I. ☐ II. ☐ III. ☐ Project Specific (specify): SDG W0002

1. Relinquished by [28] (Signature/Affiliation) Heidelberg IT	Date: 3-17-94 Time: 16:00	1. Received by [28] (Signature/Affiliation) Kerry A Klemm ITAS-KN	Date: 3-18-94 Time: 09:35
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments: [29]

MCA 3/15/91

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

9613474.2526

0000063

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

WI #230
RL #361

Reference Document No.[30] 340333

Page 2 of 4

Project Name SAF 94-065

Project No. SDL-W0002

Samples Shipment Date _____

ONE CONTAINER PER LINE

Sample[14] Number	Sample[15] Description/Type	Date/Time[16] Collected	Container[17] Type	Sample[18] Volume	Pre-[19] servative	Requested Testing[20] Program	Condition on[21] Receipt	Disposal[22] Record No.
4-03-344-02B	B09WH1 / Soil	3/15 1440	glass	AG 500ml	Cool 4°	VOA	Rec'd at 24, 4°, 2°C KAK 3-18-94	
C				AG		Semi VOA		
D				AG 125ml		EPA 300.0		
E				AG		EPA 353.2		
F				CG		Cyanide		
G				CG		Kerosene		
4-03-344-03A	B09WJ8 / Soil	3/16 0700	glass	AG 250ml		VOA		
4-03-344-04A	B09WJ3 / Soil	3/14 1310		AG		TAL Metals Hg Ti		
B				AG		VOA		
C				AG		Semi voa		
D				AG 125ml		EPA 300.0		
E				AG		EPA 353.2		
F				AG 250ml		PCB / PEST		
G				AG 125ml		Cyanide		
H				AG		Kerosene		
4-03-344-05A	B09WJ4 / Soil	3/15 1038		AG 250ml		TAL Metals Hg Ti		
B				AG		VOA		
C				AG		Semi voa		
D				AG 125ml		EPA 300.0		
E				AG		EPA 353.2		

FOR LAB USE ONLY

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

MCA 3/15/91

9613474.2527

0000064

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

WG #230
RL #301

Reference Document No.[30] 340333
Page 3 of 4

Project Name SAF 94-065

Project No. SDG W0002

Samples Shipment Date

ONE CONTAINER PER LINE

Sample[14] Number	Sample[15] Description/Type	Date/Time[16] Collected	Container[17] Type	Sample[18] Volume	Pre-[19] servative	Requested Testing[20] Program	Condition on[21] Receipt	Disposal[22] Record No.
4-03-344-05F	B09WJ4/Soil	3/15 1038	glass	AG 250ml	Cool 4°C	PCB/PEST	Rec'd at 2°C, 4°C, 2°C KAK 3-18-94	
G				AG 125ml		Cyanide	FOR LAB USE ONLY	
H				AG		Kerosene		
4-03-344-06A	B09WJ5/Soil	3/15 1330	glass	AG 250ml		TAL Metals	FOR LAB USE ONLY	
B				AG		VOA		
C				AG		Semi VOA		
D				CG 125ml		EPA 300.0		
E				CG		EPA 353.2		
F				AG 250ml		PCB/PEST	FOR LAB USE ONLY	
G				CG 125ml		Cyanide		
H				AG		Kerosene		
4-03-344-07A	B09WJ6/Soil	3/16 0700		AG 250ml		VOA	FOR LAB USE ONLY	
4-03-344-08A	B09WJ7/Soil	3/16 1005		AG 250ml		TAL Metals Hg Ti		
B				AG		VOA	FOR LAB USE ONLY	
C				AG		Semi VOA		
D				CG 125ml		EPA 300.0		
E				AG		EPA 353.2	FOR LAB USE ONLY	
F				AG 250ml		PCB/PEST		
G				AG CG 125ml		Cyanide		
H				AG		Kerosene		

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

9613474.2528

0000065

WO #230

TENNELEC #1

SCREENING CALCULATION SPREADSHEET

all Category I
JRn 17 Mar 94

Cust Code	Recieved Date	Time	Screening Prep Date	Screening Prep Time	Count Date	Mnts. Cntd	BACKGROUND Alpha	BACKGROUND Beta	BACKGROUND Mnts
WHC			31794		317	10	11	226	240

Customer ID	pH <2 Rcvd/Reiq	Pincht Wght (mGrms)	Vol. Anal. mG mL	Sample Size Gm L	SMPLE CNT DATA Hldr Num.	Total Alpha	Counts Beta	Net Sample Counts/Minute Alpha	Net Sample Counts/Minute Beta	DPM / Aliqout Alpha	DPM / Aliqout Beta	uCi per Sample Alpha	uCi per Sample Beta	2 Sigma Error uCi per Sample Alpha	2 Sigma Error uCi per Sample Beta	pCi/(Gm or L) Alpha	pCi/(Gm or L) Beta	Catagory 1 Yes/No	Aliquot to Cat 1 Gm or Ltr Alpha	Aliquot to Cat 1 Gm or Ltr Beta
WHC/SOIL																				
B09WJ7		84.3	84	1100.0	36	2	44	0.15	3.46	1.3E+00	8.4E+00	7.7E-03	5.0E-02	1.5E-05	1.9E-05	7.0E+00	4.5E+01	Yes	1.4E+03	2.2E+03
B09WJ5		91.7	92	1150.0	37	1	24	0.05	1.46	4.7E-01	3.6E+00	2.6E-03	2.0E-02	8.7E-06	8.3E-05	2.3E+00	1.8E+01	Yes	4.3E+03	5.7E+03
B09WJ3		99.1	99	1250.0	38	0	65	-0.05	5.56	-8E-01	1.4E+01	-5E-03	8.0E-02	-9E-06	3.8E-04	-4E+00	8.4E+01	Yes	-3E+03	1.6E+03
B09WJ4		97.1	97	1150.0	39	2	27	0.15	1.76	1.5E+00	4.3E+00	8.2E-03	2.3E-02	1.5E-05	3.3E-05	7.1E+00	2.0E+01	Yes	1.4E+03	5.0E+03
B09WH1		80.3	80	950.0	40	2	19	0.15	0.96	1.4E+00	2.2E+00	7.5E-03	1.2E-02	1.3E-05	1.3E-05	7.9E+00	1.2E+01	Yes	1.3E+03	8.1E+03
B09WH0		88.5	89	1150.0	41	2	30	0.15	2.06	1.4E+00	5.0E+00	8.3E-03	2.9E-02	1.5E-05	4.7E-05	7.2E+00	2.5E+01	Yes	1.4E+03	4.0E+03
TOTAL	uCi							-0.05	-0.94	-1E-01	-2E+00	3.0E-02	2.1E-01	ERR	ERR	ERR	ERR	No	ERR	ERR

9613474.2529

0000067

WO#230

SAMPLE STATUS REPORT FOR E 5054. E-BLANK B09WH0 TIME: 3/15/94 7:47
DISPATCHED: 2/11/94 14:23 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/15/94 7:31

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

WO# 230

SAMPLE STATUS REPORT FOR E 5055. E-BLANK B09WH1 TIME: 3/17/94 8: 0
DISPATCHED: 2/11/94 14:25 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/17/94 7:37

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

WO#230

SAMPLE STATUS REPORT FOR E 5054. E-BLANK ~~BQ9WHO~~ BD9WJ8 TIME: 3/15/94 7:47
DISPATCHED: 2/11/94 14:23 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/15/94 7:31

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

WO#230

SAMPLE STATUS REPORT FOR E 5077. E-BLANK B09WJ3 TIME: 3/15/94 7:47
DISPATCHED: 2/11/94 15: 7 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/15/94 7:31

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

WO# 230

SAMPLE STATUS REPORT FOR E 5078. E-BLANK B09WJ4 TIME: 3/17/94 8: 3
DISPATCHED: 2/11/94 15: 8 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/16/94 7:54

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

WO#230

SAMPLE STATUS REPORT FOR E 5079. E-BLANK B09WJ5 TIME: 3/17/94 8: 3
DISPATCHED: 2/11/94 15: 9 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/16/94 7:54

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

WO#230

SAMPLE STATUS REPORT FOR E 5055. E-BLANK ~~B09WH1~~ B09WJ6 TIME: 3/17/94 8: 0
DISPATCHED: 2/11/94 14:25 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/17/94 7:37

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

WO#230

SAMPLE STATUS REPORT FOR E 5081. E-BLANK B09WJ7 TIME: 3/17/94 8: 0
DISPATCHED: 2/11/94 15:10 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/17/94 7:37

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

TENNELEC #1

SCREENING CALCULATION SPREADSHEET

WHC			31494		314		10	17	221	240										
WHC/SOIL																				
* B09WG7		81.4	81	1200.0	60	2	34	0.13	2.46	1.1E+00	6.0E+00	7.3E-03	4.0E-02	1.5E-05	1.7E-05	6.1E+00	3.3E+01	Yes	1.6E+03	3.0E+03
* B09W18		81.4	81	850.0	61	20	533	1.93	52.36	1.5E+01	1.3E+02	7.3E-02	6.0E-01	4.6E-05	4.5E-04	8.6E+01	7.1E+02	No	1.2E+02	1.4E+02
* B09W19		89.4	89	1200.0	62	1	57	0.03	4.76	2.8E-02	1.2E+01	1.7E-04	7.2E-02	6.6E-06	9.0E-03	1.4E-01	6.0E+01	Yes	7.1E+04	1.7E+03
* B09WJ0		98.1	98	1150.0	63	2	26	0.13	1.68	1.3E+00	4.1E+00	6.8E-03	2.2E-02	1.3E-05	3.6E-05	5.9E+00	1.9E+01	Yes	1.7E+03	5.3E+03
** B09WG4		89.8	90	1300.0	64	40	319	3.93	30.98	3.6E+01	7.3E+01	2.5E-01	4.8E-01	1.0E-04	1.2E-04	1.9E+02	3.7E+02	No	5.3E+01	2.7E+02
TOTAL	uCi							-0.07	-0.92	-2E-01	-2E+00	3.3E-01	1.2E+00	ERR	ERR	ERR	ERR	No	ERR	ERR

* Below Cat I
rim f 3-15-94
** ~~above~~ Cat II

Mac Lordy

3-15-94

9613474.2538

0000076

WO #212

9613474.2539

0000077

WO #212

Contractor WESTINGHOUSE HANFORD COMPANY	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT) W94-0-0369-16

PART I – TO BE COMPLETED BY ORIGINATOR

Department ENVIRONMENTAL	Section ENV. FIELD SERVICES	Unit ENV. CHARAC. & SAMPLING

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing GOVERNMENT VEHICLE ☒ Contractor ☐ Vendor

Shipped to	Off-site Custodian
IT 2440 GEORGE WASHINGTON WAY RICHLAND, WA 99352	TAMMY HIEDELBERG
	Full Title: PROJECT COORDINATOR

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1	BW5028 poly cooler. Soil samples in glass jars double-bagged packed in wet ice and vermiculite. Samples are non hazardous. Sample #'s: B0WG7, B0WJ9, B0WJ0, B0WJ2	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

To support drilling and sampling @ 200 up 1 & 2

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No.	Date
Michael E. Gomez	157 441	3-14-94

Location of ~~Property (Area & Bldg.)~~	Contact	Phone
200 W	A.E. Rogers	376-7690

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
3-14-94	PT2BA	

Originated By (RELINQUISHED By:)	Date	Authorized By	Date
[signature]		[signature]	3-14-94
Signature and Name of Property Control	Custodian Date	Property Management Approval [signature]	Date 3/14/94

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[signature] IVAS				
Date 3/14/94 1430				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Yellow – Retain Green – Property Control Custodian (Issuing Office) Pink – Originator

SA 2000 470 (03 90)

9613474.2540

0000078

03/11/94 08:25 ☎373 3176 222S 3B ---> ENV FIELD SVC 002

WO #212

B09WJ2 ER 3-14-94

SAMPLE STATUS REPORT FOR E 5072. E-BLANK ~~B09WI0~~ TIME: 3/11/94 8: 0
DISPATCHED: 2/11/94 15: 4 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/11/94 7:46

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

9613474.2541

0000079

WO#212

SAMPLE STATUS REPORT FOR E 5074. E-BLANK B09WJ0 TIME: 3/14/94 8: 4
DISPATCHED: 2/11/94 15: 5 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/11/94 13:32

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

WO #250

TENNELEC #1

SCREENING CALCULATION SPREADSHEET

Cust Code	Recieved Date	Time	Screening Prep Date	Screening Prep Time	Count Date	Mnts. Cntd	BACKGROUND Alpha	BACKGROUND Beta	BACKGROUND Mnts
WHC			31794		317	10	11	226	240

all Category I
JRn 17 Mar 94

Customer ID	pH <2 Rcvd/Reiq	Pincht Wght (mGrms)	Vol. Anal. mG mL	Sample Size Gm L	SMPLE CNT DATA Hldr Num.	Total Alpha	Counts Beta	Net Sample Counts/Minute Alpha	Net Sample Counts/Minute Beta	DPM / Aliqout Alpha	DPM / Aliqout Beta	uCi per Sample Alpha	uCi per Sample Beta	2 Sigma Error uCi per Sample Alpha	2 Sigma Error uCi per Sample Beta	pCi/(Gm or L) Alpha	pCi/(Gm or L) Beta	Catagory 1 Yes/No	Aliquot to Cat 1 Gm or Ltr Alpha	Aliquot to Cat 1 Gm or Ltr Beta
WHC/SOIL																				
B09WJ7		84.3	84	1100.0	36	2	44	0.15	3.46	1.3E+00	8.4E+00	7.7E-03	5.0E-02	1.5E-05	1.9E-05	7.0E+00	4.5E+01	Yes	1.4E+03	2.2E+03
B09WJ5		91.7	92	1150.0	37	1	24	0.05	1.46	4.7E-01	3.6E+00	2.6E-03	2.0E-02	8.7E-06	6.3E-05	2.3E+00	1.8E+01	Yes	4.3E+03	5.7E+03
B09WJ3		99.1	99	1250.0	38	0	65	-0.05	5.56	-8E-01	1.4E+01	-5E-03	8.0E-02	-9E-06	3.6E-04	-4E+00	6.4E+01	Yes	-3E+03	1.6E+03
B09WJ4		97.1	97	1150.0	39	2	27	0.15	1.76	1.5E+00	4.3E+00	8.2E-03	2.3E-02	1.5E-05	3.3E-05	7.1E+00	2.0E+01	Yes	1.4E+03	5.0E+03
B09WH1		80.3	80	950.0	40	2	19	0.15	0.96	1.4E+00	2.2E+00	7.5E-03	1.2E-02	1.3E-05	1.3E-05	7.9E+00	1.2E+01	Yes	1.3E+03	8.1E+03
B09WH0		88.5	89	1150.0	41	2	30	0.15	2.06	1.4E+00	5.0E+00	8.3E-03	2.9E-02	1.5E-05	4.7E-05	7.2E+00	2.5E+01	Yes	1.4E+03	4.0E+03
TOTAL	uCi							-0.05	-0.94	-1E-01	-2E+00	3.0E-02	2.1E-01	ERR	ERR	ERR	ERR	No	ERR	ERR

9613474.2542

0000080

WO#230

SAMPLE STATUS REPORT FOR E 5054. E-BLANK B09WH0 TIME: 3/15/94 7:47
DISPATCHED: 2/11/94 14:23 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/15/94 7:31

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

WO# 230

SAMPLE STATUS REPORT FOR E 5055. E-BLANK B09WH1 TIME: 3/17/94 8: 0
DISPATCHED: 2/11/94 14:25 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/17/94 7:37

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

WO#230

SAMPLE STATUS REPORT FOR E 5054. E-BLANK ~~BOSWHO~~ BOSWELL TIME: 3/15/94 7:47
DISPATCHED: 2/11/94 14:23 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/15/94 7:31

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

WO#230

SAMPLE STATUS REPORT FOR E 5077. E-BLANK B09WJ3 TIME: 3/15/94 7:47
DISPATCHED: 2/11/94 15: 7 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/15/94 7:31

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

WO#230

SAMPLE STATUS REPORT FOR E 5078. E-BLANK B09WJ4 TIME: 3/17/94 8: 3
DISPATCHED: 2/11/94 15: 8 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/16/94 7:54

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

WO#230

SAMPLE STATUS REPORT FOR E 5079. E-BLANK B09WJ5 TIME: 3/17/94 8: 3
DISPATCHED: 2/11/94 15: 9 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/16/94 7:54

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

WO#230

SAMPLE STATUS REPORT FOR E 5055. E-BLANK ~~B09WH1~~ B09WJ6 TIME: 3/17/94 8: 0
DISPATCHED: 2/11/94 14:25 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/17/94 7:37

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

WO #230

SAMPLE STATUS REPORT FOR E 5081. E-BLANK B09WJ7 TIME: 3/17/94 8: 0
DISPATCHED: 2/11/94 15:10 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 3/17/94 7:37

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	VOGEL

END OF REPORT

9613474.2551

0000001

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

4 JUN 1994 RECEIVED SOLA

Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352
Attn: J.A. Lerch

June 3, 1994

Job Number: 167; 193; 212; 230 (Corrected Certificate)

P.O. Number: N/A

This is the Certificate of Analysis for the following samples:

SDG:	W0002
Client Project ID:	Westinghouse Hanford
Date Received by Lab:	03/05/94; 03/11/94; 03/16/94; 03/18/94
Number of Samples:	Eighteen (18)
Sample Type:	Soil - fifteen (15), Trip Blank - three (3)

I. Introduction

On March 5, March 11, March 16 and March 18, 1994, fifteen (15) soil samples and three (3) trip blank samples arrived at the ITAS-Richland, Washington and were transferred to ITAS-Knoxville for chemical analysis. The list of analytical tests performed, as well as date of receipt and analysis, can be found in the attached report.

II. Analytical Results/Methodology

The analytical results for this report are presented by analytical test. Each set of data will include sample identification information and the analytical results. Please note that the data are not blank corrected.

The samples were analyzed for Target Compound List (TCL) volatiles by gas chromatography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

Reviewed and Approved:

Sheree' A. Schneider

Sheree' A. Schneider
Project Manager

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

II. Analytical Results/Methodology (Continued)

The samples were analyzed for Target Compound List (TCL) semivolatiles by gas chromatography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

The samples were analyzed for Target Compound List (TCL) pesticides and PCBs by gas chromatography/electron capture detection (GC/ECD) in accordance with the EPA CLP 3/90 Statement of Work.

The samples were analyzed for Target Analyte List (TAL) metals by cold vapor atomic absorption spectroscopy (CVAA), graphite furnace atomic absorption spectroscopy (GFAA), and inductively coupled plasma spectroscopy (ICP) in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for total cyanide in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for nitrate-nitrite based on EPA method 353.2.

The samples were analyzed for anions by ion chromatography using EPA method 300.0.

The samples were analyzed for total high boiling petroleum hydrocarbons as diesel range organics (DRO) with a kerosene spike by gas chromatography/flame ionization detection (GC/FID) based on method 8015.

III. Quality Control

The volatiles analyses were performed March 8, March 13, March 21, March 22 through 24, 1994 by purge and trap with a J & W DB-624 column on Hewlett-Packard 5970 and Finnigan INCOS 500 GC/MS/DS units. Sample B09WF9 was analyzed as a matrix spike and a matrix spike duplicate set. Matrix effects were confirmed as the cause of low internal standard recoveries in sample BO9WJ0 in a reanalysis. Surrogate 1,2-dichloroethane-d4 recovery fell outside of QC limits in sample BO9WJ0 due to internal standard problems. Sample BO9WJ6 was also analyzed as a matrix spike and a matrix spike duplicate set.

The semivolatiles analyses were performed March 15-16, March 27, March 29-30 and April 5-6, 1994 by direct injection of sample extract on a Restek XTI-5 capillary column on a Finnigan INCOS XL and 4500 GC/MS/DS unit. Sample B09WF9 was analyzed as a matrix spike and a matrix spike duplicate set. Sample BO9WH0 was also analyzed as a matrix spike and a matrix spike duplicate set in which the recoveries of phenol and 4-chloro-3-methylphenol fell outside of QC limits.

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

III. Quality Control (Continued)

Data were reported with qualifiers as follows:

U - Compound analyzed for but not detected; value given is quantitation limit.
E - Compound exceeded calibration range.
D - Compound analyzed at a secondary dilution factor.
J - Compound detected but below quantitation limit; value estimated.
S - Spiked compound.
B - Compound found in method blank.
A - Suspected aldol condensation product.
Y - Indistinguishable isomer in tentatively identified compounds.
N - Presumptive evidence of compound presence.

The samples were analyzed for Pesticides/PCBs using DB-608 and DB-1701 0.53mm ID megabore capillary columns. 1.0 μl was injected for each column. Two blank spikes (LCS's) were analyzed with acceptable recoveries. A matrix spike and matrix spike duplicate were analyzed and reported for sample BO9WJ3 with acceptable results. Sample chromatograms that were manually integrated will be denoted by an M+ and an M-. The performance evaluation mixture which ran at 1752 on 5890C on March 25, 1994, PEMKD, had methoxychlor greater than 25 RPD (25.1 RPD). There were no positives for methoxychlor in the affected samples and the PEM on the confirmation column met all criteria.

Data were reported using qualifiers as follows:

U - Compound analyzed for but not detected; value given is the quantitation limit.
D - Compound analyzed at a secondary dilution; DL was appended to the sample number.
X - A flag that FORMASTER III inserts when the data were entered manually.
Z - Compound's response was such that it exceeded the established linearity range. The value is estimated.
J - Compound detected but below the quantitation limit; value estimated.
P - The percent difference for the calculated values from the two analytical columns differed by 25.0% or more.

The samples were digested on March 25 and April 1, 1994 for ICP and March 25 and March 31, 1994 for GFAA. The samples for mercury analysis were prepared just prior to analysis. The CVAA analysis for mercury was performed on March 24 and April 1, 1994; the GFAA analysis for arsenic, lead, selenium and thallium were performed from March 25 through April 2, 1994; the remaining metals were analyzed by ICP on March 29, April 2 and April 11, 1994. All run QC was acceptable. A duplicate/spike pair was prepared using sample number B09WF9. Spike recovery (accuracy) results

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

III. Quality Control (Continued)

were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for arsenic by GFAA analysis. As the titanium concentration was greater than four times (4X) the spike added spiking criteria are not applicable for this analyte. Duplicate RPD (precision) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for vanadium and titanium by ICP analysis. MSAs were performed as required by CLP protocol.

Data were reported with qualifiers as follows:

"C" Qualifiers

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
B - Value greater than instrument detection limit, but less than contract required quantitation limit.

"Q" Qualifiers

* - Duplicate analysis outside control limits.
N - Spiked sample recovery outside control limits.
W - Post-digestion spike for GFAA was out of control limits (85-115%), while sample absorbance was less than 50% of spike absorbance.
S - The reported value was determined by method of standard additions.

"M" Qualifiers

P - Analysis performed by ICP.
V - Analysis performed by CVAA.
F - Analysis performed by GFAA.
C - Cyanide analysis by manual distillation/colorimetric determination.

Miscellaneous

D - Duplicate.
S - Spike.
NR - Not required.
G - Native analyte > 4 times spike added, therefore, acceptance criteria do not apply.
X - Detection limits higher than normal due to sample matrix interferences.

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

III. Quality Control (Continued)

The samples were analyzed for total high boiling petroleum hydrocarbons as kerosene by gas chromatography/flame ionization detection using an SPB-1 column on a Hewlett Packard GC. Matrix spike/matrix spike analyses were performed using sample B09WF9 with acceptable results. Surrogates were not spiked into the matrix spike and duplicate due to operator error. This error is believed not to effect the data integrity since the matrix spikes were present in place of the surrogates. Spikes were injected with kerosene standard and reported out in terms of diesel range organics. All matrix spikes and laboratory control samples (LCS) had acceptable recoveries.

On March 29, 1994, the samples were analyzed for nitrate-nitrite by cadmium reduction followed by colorimetric determination using the LACHAT QuikChem automated flow injection analyzer (QuikChem Method No. 10-107-04-1-C). Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

The samples were analyzed for anions on March 26 and April 2, 1994. Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

III. Quality Control (Continued)

Table I is a cross reference between client IDs and abbreviated client IDs.

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA3163	BO9WF9	SOIL	METALS
AA3164	BO9WF9	SOIL	VOC
AA3165	BO9WF9	SOIL	SVOC
AA3166	BO9WF9	SOIL	ANIONS
AA3167	BO9WF9	SOIL	NO3NO2
AA3168	BO9WF9	SOIL	CN
AA3169	BO9WF9	SOIL	TPH
AA3170	BO9WG2	WATER	VOC
AA3586	BO9WG0	SOIL	METALS
AA3598	BO9WG0	SOIL	VOC
AA3599	BO9WG0	SOIL	SVOC
AA3600	BO9WG0	SOIL	ANIONS
AA3625	BO9WG0	SOIL	NO3NO2
AA3626	BO9WG0	SOIL	CN
AA3627	BO9WG0	SOIL	TPH
AA3628	BO9WG2	SOIL	VOC
AA3919	BO9WI9	SOIL	METALS
AA3920	BO9WI9	SOIL	VOC
AA3921	BO9WI9	SOIL	SVOC
AA3922	BO9WI9	SOIL	ANIONS
AA3923	BO9WI9	SOIL	NO3NO2
AA3924	BO9WI9	SOIL	PEST/PCB
AA3925	BO9WI9	SOIL	CN
AA3926	BO9WI9	SOIL	TPH
AA3928	BO9WJ0	SOIL	METALS
AA3929	BO9WJ0	SOIL	VOC
AA3930	BO9WJ0	SOIL	SVOC
AA3931	BO9WJ0	SOIL	ANIONS
AA3932	BO9WJ0	SOIL	NO3NO2
AA3933	BO9WJ0	SOIL	PEST/PCB
AA3934	BO9WJ0	SOIL	CN
AA3935	BO9WJ0	SOIL	TPH

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

III. **Quality Control** (Continued)

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA3948	BO9WG7	SOIL	METALS
AA3949	BO9WG7	SOIL	VOC
AA3950	BO9WG7	SOIL	SVOC
AA3951	BO9WG7	SOIL	ANIONS
AA3952	BO9WG7	SOIL	NO3NO2
AA3953	BO9WG7	SOIL	CN
AA3954	BO9WG7	SOIL	TPH
AA3960	BO9WJ2	SOIL	VOC
AA3961	TRIP BLANK	WATER	VOC
AA4170	BO9WH0	SOIL	METALS
AA4171	BO9WH0	SOIL	VOC
AA4172	BO9WH0	SOIL	SVOC
AA4173	BO9WH0	SOIL	ANIONS
AA4174	BO9WH0	SOIL	NO3NO2
AA4175	BO9WH0	SOIL	CN
AA4176	BO9WH0	SOIL	TPH
AA4181	BO9WH1	SOIL	METALS
AA4182	BO9WH1	SOIL	VOC
AA4183	BO9WH1	SOIL	SVOC
AA4184	BO9WH1	SOIL	ANIONS
AA4185	BO9WH1	SOIL	NO3NO2
AA4186	BO9WH1	SOIL	CN
AA4187	BO9WH1	SOIL	TPH
AA4221	BO9WJ8	SOIL	VOA
AA4188	BO9WJ3	SOIL	METALS
AA4189	BO9WJ3	SOIL	VOC
AA4190	BO9WJ3	SOIL	SVOC
AA4191	BO9WJ3	SOIL	ANIONS
AA4192	BO9WJ3	SOIL	NO3NO2
AA4193	BO9WJ3	SOIL	PEST/PCB
AA4194	BO9WJ3	SOIL	CN
AA4195	BO9WJ3	SOIL	TPH

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

III. **Quality Control** (Continued)

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA4197	BO9WJ4	SOIL	METALS
AA4198	BO9WJ4	SOIL	VOC
AA4199	BO9WJ4	SOIL	SVOC
AA4200	BO9WJ4	SOIL	ANIONS
AA4201	BO9WJ4	SOIL	NO3NO2
AA4202	BO9WJ4	SOIL	PEST/PCB
AA4203	BO9WJ4	SOIL	CN
AA4204	BO9WJ4	SOIL	TPH
AA4205	BO9WJ5	SOIL	METALS
AA4206	BO9WJ5	SOIL	VOC
AA4207	BO9WJ5	SOIL	SVOC
AA4208	BO9WJ5	SOIL	ANIONS
AA4209	BO9WJ5	SOIL	NO3NO2
AA4210	BO9WJ5	SOIL	PEST/PCB
AA4211	BO9WJ5	SOIL	CN
AA4212	BO9WJ5	SOIL	TPH
AA4222	BO9WJ6	SOIL	VOC
AA4213	BO9WJ7	SOIL	METALS
AA4214	BO9WJ7	SOIL	VOC
AA4215	BO9WJ7	SOIL	SVOC
AA4216	BO9WJ7	SOIL	ANIONS
AA4217	BO9WJ7	SOIL	NO3NO2
AA4218	BO9WJ7	SOIL	PEST/PCB
AA4219	BO9WJ7	SOIL	CN
AA4220	BO9WJ7	SOIL	TPH
AA4223	TRIP BLANK	WATER	VOC

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

IV. Certification

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature:

Reviewed and Approved:

Sheree' A. Schneider

Sheree' A. Schneider
Project Manager

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09 WHO ~~40324.1.C2~~ JDK 6/1/94

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4171

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4171

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 6 Date Analyzed: 03/23/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	4	J
67-64-1	Acetone	9	J
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylenes (total)	11	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BO9WH1
~~4023.402~~ JOK 6/1/97

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4182

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4182

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 8 Date Analyzed: 03/23/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	4	J
67-64-1	Acetone	7	J
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	1	J
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylenes (total)	3	BJ

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJT8 ~~10334403~~ JDR 6/1/97

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4221

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4221

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 0 Date Analyzed: 03/24/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	J
67-64-1	Acetone	3	J
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylenes (total)	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ3
~~4C234404~~ JDR 6/1/97

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4189

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4189

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 3 Date Analyzed: 03/23/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	J
67-64-1	Acetone	10	J
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylenes (total)	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

809WJ4
~~40334405~~ JBK 6/1/97

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4198

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4198

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 6 Date Analyzed: 03/23/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	4	J
67-64-1	Acetone	6	J
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylenes (total)	11	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJS
~~40334406~~ JOK 8/1/97

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4206

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4206

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 5 Date Analyzed: 03/24/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	4	J
67-64-1	Acetone	8	J
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylenes (total)	11	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOGWJ6
~~4033A407~~ JDR 6/1/97

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4222

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4222

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 0 Date Analyzed: 03/24/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	J
67-64-1	Acetone	7	J
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylenes (total)	1	BJ

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ7 ~~40134408~~ JDR 6/1/97

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4214

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4214

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 7 Date Analyzed: 03/24/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	4	J
67-64-1	Acetone	8	J
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylenes (total)	3	BJ

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

809 WI9 ~~40326601~~ JOR 6/1/94

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3920

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ACV03

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: not dec. 3 Date Analyzed: 03/22/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	1	BJ
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylenes (total)	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

309WJ0
~~46326602~~ JDR 6/1/97

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3929

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ACV07

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: not dec. 3 Date Analyzed: 03/22/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	8	BJ
67-64-1	Acetone	5	BJ
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylenes (total)	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ0 JOR
~~40326G02RE~~ 6/1/94

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3929

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ACV11

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: not dec. 3 Date Analyzed: 03/22/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	5	BJ
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylenes (total)	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09W67
~~40226603~~ UPA 4/1/94

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3949

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ACV08

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: not dec. 1 Date Analyzed: 03/22/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	BJ
67-64-1	Acetone	4	BJ
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	1	J
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylenes (total)	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

609W J2
~~40326604~~ JDR 6/1/97

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3960

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ACV06

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: not dec. 0 Date Analyzed: 03/22/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	4	BJ
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylenes (total)	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WF9 ~~B0GMT9~~ KAP 6/7/94

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 167 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3164

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ACH09

Level: (low/med) LOW Date Received: 03/05/94

% Moisture: not dec. 7 Date Analyzed: 03/08/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	3	J
67-64-1	Acetone	5	BJ
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylenes (total)	11	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09W62 KAP ~~B09W02~~ 6/7/94

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 167 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3170

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ACH10

Level: (low/med) LOW Date Received: 03/05/94

% Moisture: not dec. 0 Date Analyzed: 03/08/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	J
67-64-1	Acetone	4	BJ
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylenes (total)	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOGLUGO KHP
~~WH01308018~~ 6/7/8

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 193 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3598

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ACM22

Level: (low/med) LOW Date Received: 03/11/94

% Moisture: not dec. 3 Date Analyzed: 03/13/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	BJ
67-64-1	Acetone	4	BJ
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylenes (total)	10	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WF9

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 167 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3165

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA3165

Level: (low/med) LOW Date Received: 03/05/94

% Moisture: 7 decanted: (Y/N) N Date Extracted: 03/10/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/29/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-Propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)Methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	860	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	860	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	860	U
83-32-9	Acenaphthene	350	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WF9

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 167 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3165

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA3165

Level: (low/med) LOW Date Received: 03/05/94

% Moisture: 7 decanted: (Y/N) N Date Extracted: 03/10/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/29/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	860	U
100-02-7	4-Nitrophenol	860	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	860	U
534-52-1	4,6-Dinitro-2-Methylphenol	860	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	860	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-Butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)Anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)Phthalate	68	BJ
117-84-0	Di-n-Octyl Phthalate	350	U
205-99-2	Benzo(b)Fluoranthene	350	U
207-08-9	Benzo(k)Fluoranthene	350	U
50-32-8	Benzo(a)Pyrene	350	U
193-39-5	Indeno(1,2,3-cd)Pyrene	350	U
53-70-3	Dibenz(a,h)Anthracene	350	U
191-24-2	Benzo(g,h,i)Perylene	350	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WG0 KAP
~~WH0320801C~~ 6/7/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 193 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3599

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA3599

Level: (low/med) LOW Date Received: 03/11/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/29/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	820	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	820	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	820	U
83-32-9	Acenaphthene	340	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BC9W6O KAP 4/17/94
~~WH0320801C~~

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 193 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3599

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA3599

Level: (low/med) LOW Date Received: 03/11/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/29/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	820	U
100-02-7	4-Nitrophenol	820	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	820	U
534-52-1	4,6-Dinitro-2-Methylphenol	820	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	820	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WI9
~~10326601~~ JDK 6/1/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3921

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA3921

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/30/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	820	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	820	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	820	U
83-32-9	Acenaphthene	340	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WI9 ~~40326601~~ JOR 6/1/99

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3921

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA3921

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/30/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	820	U
100-02-7	4-Nitrophenol	820	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	820	U
534-52-1	4,6-Dinitro-2-Methylphenol	820	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	820	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WG7
~~40326603~~ JOK 5/1/97

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3950

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA3950

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/30/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	800	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	800	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	800	U
83-32-9	Acenaphthene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09W97 ~~4032C603~~ JOR 4/1/92

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3950

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA3950

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/30/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	800	U
100-02-7	4-Nitrophenol	800	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	800	U
534-52-1	4,6-Dinitro-2-Methylphenol	800	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	800	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09 WJO
~~40326602~~ VOK 6/1/97

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3930

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA3930

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/30/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	820	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	820	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	820	U
83-32-9	Acenaphthene	340	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

809WJ0
~~40326602~~ JOR 4/1/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3930

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA3930

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/30/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	820	U
100-02-7	4-Nitrophenol	820	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	820	U
534-52-1	4,6-Dinitro-2-Methylphenol	820	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	820	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WH0 ~~40334401~~ WDR 6/1/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4172

Sample wt/vol: 31.0 (g/mL) G Lab File ID: AA4172

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 6 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	820	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	820	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	820	U
83-32-9	Acenaphthene	340	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WH0
~~40334401~~ JOR 6/1/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4172

Sample wt/vol: 31.0 (g/mL) G Lab File ID: AA4172

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 6 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	820	U
100-02-7	4-Nitrophenol	820	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	820	U
534-52-1	4,6-Dinitro-2-Methylphenol	820	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	820	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WH1
~~40334402~~ JOR 4/1/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4183

Sample wt/vol: 30.5 (g/mL) G Lab File ID: AA4183

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 8 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-Propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)Methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	860	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	860	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	860	U
83-32-9	Acenaphthene	350	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WH1
~~40334402~~ JOR 6/1/99

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4183

Sample wt/vol: 30.5 (g/mL) G Lab File ID: AA4183

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 8 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	860	U
100-02-7	4-Nitrophenol	860	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	860	U
534-52-1	4,6-Dinitro-2-Methylphenol	860	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	860	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-Butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)Anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)Phthalate	350	U
117-84-0	Di-n-Octyl Phthalate	350	U
205-99-2	Benzo(b)Fluoranthene	350	U
207-08-9	Benzo(k)Fluoranthene	350	U
50-32-8	Benzo(a)Pyrene	350	U
193-39-5	Indeno(1,2,3-cd)Pyrene	350	U
53-70-3	Dibenz(a,h)Anthracene	350	U
191-24-2	Benzo(g,h,i)Perylene	350	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ3
~~40334404~~ JDR 4/1/97

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4190

Sample wt/vol: 30.9 (g/mL) G Lab File ID: AA4190

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	800	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	800	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	800	U
83-32-9	Acenaphthene	330	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ3
~~40334404~~ JDR 6/1/97

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4190

Sample wt/vol: 30.9 (g/mL) G Lab File ID: AA4190

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	800	U
100-02-7	4-Nitrophenol	800	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	800	U
534-52-1	4,6-Dinitro-2-Methylphenol	800	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	800	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

809WJ4
~~40334405~~ JDR 4/1/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4199

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA4199

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 6 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-Propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)Methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	840	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	840	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	840	U
83-32-9	Acenaphthene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ8 ~~40334405~~ JDR 6/1/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4199

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA4199

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 6 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	840	U
100-02-7	4-Nitrophenol	840	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	840	U
534-52-1	4,6-Dinitro-2-Methylphenol	840	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	840	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-Butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)Anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)Phthalate	350	U
117-84-0	Di-n-Octyl Phthalate	350	U
205-99-2	Benzo(b)Fluoranthene	350	U
207-08-9	Benzo(k)Fluoranthene	350	U
50-32-8	Benzo(a)Pyrene	350	U
193-39-5	Indeno(1,2,3-cd)Pyrene	350	U
53-70-3	Dibenz(a,h)Anthracene	350	U
191-24-2	Benzo(g,h,i)Perylene	350	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJS
~~40334406~~ JAK 4/1/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4207

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA4207

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 5 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	840	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	840	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	840	U
83-32-9	Acenaphthene	340	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09 WJS
~~40334406~~ JOB 4/1/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4207

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA4207

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 5 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	840	U
100-02-7	4-Nitrophenol	840	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	840	U
534-52-1	4,6-Dinitro-2-Methylphenol	840	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	840	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ7 ~~40334408~~ JDR 4/1/97

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4215

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA4215

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 7 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-Propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)Methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	850	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	850	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	850	U
83-32-9	Acenaphthene	350	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ7
~~40334408~~ JDR 4/1/97

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4215

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA4215

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 7 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	850	U
100-02-7	4-Nitrophenol	850	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	850	U
534-52-1	4,6-Dinitro-2-Methylphenol	850	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	850	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-Butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)Anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)Phthalate	350	U
117-84-0	Di-n-Octyl Phthalate	350	U
205-99-2	Benzo(b)Fluoranthene	350	U
207-08-9	Benzo(k)Fluoranthene	350	U
50-32-8	Benzo(a)Pyrene	350	U
193-39-5	Indeno(1,2,3-cd)Pyrene	350	U
53-70-3	Dibenz(a,h)Anthracene	350	U
191-24-2	Benzo(g,h,i)Perylene	350	U

(1) - Cannot be separated from Diphenylamine

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WI9 ~~40326601~~ JDK 4/1/97

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0002 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3924

Sample wt/vol: 30.1 (g/mL) G Lab File ID: _____

% Moisture: 4 decanted: (Y/N) N Date Received: 03/16/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/17/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/24/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: ~~1.0~~ CEM 3/29/94 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.4	U
72-55-9	4,4'-DDE	3.4	U
72-20-8	Endrin	3.4	U
33213-65-9	Endosulfan II	3.4	U
72-54-8	4,4'-DDD	3.6	
1031-07-8	Endosulfan sulfate	3.4	U
50-29-3	4,4'-DDT	3.4	U
72-43-5	Methoxychlor	18	U
53494-70-5	Endrin ketone	3.4	U
7421-93-4	Endrin aldehyde	3.4	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	70	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	34	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ0 ~~40326602~~ JDR 6/1/99

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0002 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3933

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 3 decanted: (Y/N) N Date Received: 03/16/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/17/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/24/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: ~~1.0~~ CEM 3/29/99 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.7	U
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
58-89-9	gamma-BHC (Lindane)	1.7	U
76-44-8	Heptachlor	1.7	U
309-00-2	Aldrin	1.7	U
1024-57-3	Heptachlor epoxide	1.7	U
959-98-8	Endosulfan I	1.7	U
60-57-1	Dieldrin	3.4	U
72-55-9	4,4'-DDE	3.4	U
72-20-8	Endrin	3.4	U
33213-65-9	Endosulfan II	3.4	U
72-54-8	4,4'-DDD	3.4	U
1031-07-8	Endosulfan sulfate	3.4	U
50-29-3	4,4'-DDT	3.4	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin ketone	3.4	U
7421-93-4	Endrin aldehyde	3.4	U
5103-71-9	alpha-Chlordane	1.7	U
5103-74-2	gamma-Chlordane	1.7	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	69	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	34	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BO9WJ3
~~40334404~~ JDR 4/1/94

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0002 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4193

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 3 decanted: (Y/N) N Date Received: 03/18/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/23/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/25/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: ~~1.0~~ CEM 3/29/94 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.4	U
72-55-9	4,4'-DDE	3.4	U
72-20-8	Endrin	3.4	U
33213-65-9	Endosulfan II	3.4	U
72-54-8	4,4'-DDD	3.4	U
1031-07-8	Endosulfan sulfate	3.4	U
50-29-3	4,4'-DDT	3.4	U
72-43-5	Methoxychlor	18	U
53494-70-5	Endrin ketone	3.4	U
7421-93-4	Endrin aldehyde	3.4	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	69	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	34	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ4 ~~40334405~~ JDR 4/1/94

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0002 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4202

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 5 decanted: (Y/N) N Date Received: 03/18/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/23/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/25/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: ~~1.0~~ CEM 3/29/94 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.4	U
72-55-9	4,4'-DDE	3.4	U
72-20-8	Endrin	3.4	U
33213-65-9	Endosulfan II	3.4	U
72-54-8	4,4'-DDD	3.4	U
1031-07-8	Endosulfan sulfate	3.4	U
50-29-3	4,4'-DDT	3.4	U
72-43-5	Methoxychlor	18	U
53494-70-5	Endrin ketone	3.4	U
7421-93-4	Endrin aldehyde	3.4	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	70	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	34	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJS ~~40334406~~ JDK 6/1/92

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0002 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4210

Sample wt/vol: 30.1 (g/mL) G Lab File ID: _____

% Moisture: 6 decanted: (Y/N) N Date Received: 03/18/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/23/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/25/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: ~~1.0~~ CEM 3/29/94 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.5	U
72-55-9	4,4'-DDE	3.5	U
72-20-8	Endrin	3.5	U
33213-65-9	Endosulfan II	3.5	U
72-54-8	4,4'-DDD	3.5	U
1031-07-8	Endosulfan sulfate	3.5	U
50-29-3	4,4'-DDT	3.5	U
72-43-5	Methoxychlor	18	U
53494-70-5	Endrin ketone	3.5	U
7421-93-4	Endrin aldehyde	3.5	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	71	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ7
~~40334408~~ JDK 4/1/97

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0002 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4218

Sample wt/vol: 30.1 (g/mL) G Lab File ID: _____

% Moisture: 6 decanted: (Y/N) N Date Received: 03/18/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/23/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/25/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: ~~1.0~~ CEM 3/29/94 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.5	U
72-55-9	4,4'-DDE	3.5	U
72-20-8	Endrin	3.5	U
33213-65-9	Endosulfan II	3.5	U
72-54-8	4,4'-DDD	3.5	U
1031-07-8	Endosulfan sulfate	3.5	U
50-29-3	4,4'-DDT	3.5	U
72-43-5	Methoxychlor	18	U
53494-70-5	Endrin ketone	3.5	U
7421-93-4	Endrin aldehyde	3.5	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	71	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WF9

Lab Name: ITAS KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002
Matrix (soil/water): SOIL Lab Sample ID: AA3168
Level (low/med): LOW Date Received: 03/05/94
% Solids: 95.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U	*	AS

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:
CYANIDE ONLY.

FORM I - IN

ILM02.1
8
4/12/94

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WF9

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA3163

Level (low/med): LOW Date Received: 03/05/94

% Solids: 95.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3790			P
7440-36-0	Antimony	10.4	U		P
7440-38-2	Arsenic	0.86	B	WN	F
7440-39-3	Barium	61.8			P
7440-41-7	Beryllium	0.43	B		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	5340			P
7440-47-3	Chromium	6.4			P
7440-48-4	Cobalt	12.0			P
7440-50-8	Copper	13.3			P
7439-89-6	Iron	20300			P
7439-92-1	Lead	2.1			F
7439-95-4	Magnesium	3430			P
7439-96-5	Manganese	261			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	7.3	B		P
7440-09-7	Potassium	457	B		P
7782-49-2	Selenium	0.41	U		F
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	152	B		P
7440-28-0	Thallium	0.41	U		F
7440-62-2	Vanadium	43.1		*	P
7440-66-6	Zinc	28.8			P
	Titanium	1460		*	P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: N/A Texture: COARSE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

ILM02.1

9/22/94

9613474.2606

0000259

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BCS1WG0 KAP ~~WH03208~~ 4/7/94

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA3586

Level (low/med): LOW Date Received: 03/11/94

% Solids: 88.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7120			P
7440-36-0	Antimony	11.3	U		P
7440-38-2	Arsenic	4.4		SN	F
7440-39-3	Barium	148			P
7440-41-7	Beryllium	0.52	B		P
7440-43-9	Cadmium	1.1	U		P
7440-70-2	Calcium	10400			P
7440-47-3	Chromium	7.9			P
7440-48-4	Cobalt	16.8			P
7440-50-8	Copper	14.9			P
7439-89-6	Iron	28700			P
7439-92-1	Lead	5.8			F
7439-95-4	Magnesium	5960			P
7439-96-5	Manganese	453			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	10.1			P
7440-09-7	Potassium	1390			P
7782-49-2	Selenium	0.45	U		F
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	142	B		P
7440-28-0	Thallium	0.45	U		F
7440-62-2	Vanadium	56.6		*	P
7440-66-6	Zinc	43.3			P
	Titanium	1780		*	P
5955-70-0	Cyanide				NR

Color Before: GRAY Clarity Before: N/A Texture: FINE

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

ILM02.1

4/12/94

9613474.2607

0000260

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOG WGO KAP
WH03208 6/7/94

Lab Name: ITAS KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002
Matrix (soil/water): SOIL Lab Sample ID: AA3626
Level (low/med): LOW Date Received: 03/11/94
% Solids: 88.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.1	U	*	AS

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:
CYANIDE_ONLY.

FORM I - IN

ILM02.1
4/4/94

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WI9
~~0326601~~ JDR 4/1/94

Lab Name: ITAS KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002
Matrix (soil/water): SOIL Lab Sample ID: AA3919
Level (low/med): LOW Date Received: 03/16/94
% Solids: 96.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5170			P
7440-36-0	Antimony	10.4	U		P
7440-38-2	Arsenic	4.8		SN	F
7440-39-3	Barium	69.3			P
7440-41-7	Beryllium	0.48	B		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	9130			P
7440-47-3	Chromium	8.1			P
7440-48-4	Cobalt	15.2			P
7440-50-8	Copper	13.1			P
7439-89-6	Iron	22800			P
7439-92-1	Lead	4.8			F
7439-95-4	Magnesium	4750			P
7439-96-5	Manganese	360			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	8.2	B		P
7440-09-7	Potassium	938	B		P
7782-49-2	Selenium	0.42	U		F
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	155	B		P
7440-28-0	Thallium	0.43	B		F
7440-62-2	Vanadium	56.0		*	P
7440-66-6	Zinc	37.3			P
	Titanium	1790		*	P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM
Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

ILM02.1
4/12/94

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

~~0326601~~ 809WI7 JDK 6/11/97

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA3925

Level (low/med): LOW Date Received: 03/16/94

% Solids: 96.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U	*	AS

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE_ONLY.

FORM I - IN

ILM02.1

4/12/94

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BCGWJD
~~0326602~~ JOR
4/1/94

Lab Name: ITAS KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002
Matrix (soil/water): SOIL Lab Sample ID: AA3928
Level (low/med): LOW Date Received: 03/16/94
% Solids: 96.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4350			P
7440-36-0	Antimony	10.4	U		P
7440-38-2	Arsenic	1.4	B	WN	F
7440-39-3	Barium	75.7			P
7440-41-7	Beryllium	0.40	B		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	3710			P
7440-47-3	Chromium	5.1			P
7440-48-4	Cobalt	11.0			P
7440-50-8	Copper	12.1			P
7439-89-6	Iron	18400			P
7439-92-1	Lead	3.0			F
7439-95-4	Magnesium	2790			P
7439-96-5	Manganese	281			P
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel	5.9	B		P
7440-09-7	Potassium	442	B		P
7782-49-2	Selenium	0.41	U		F
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	142	B		P
7440-28-0	Thallium	0.41	U		F
7440-62-2	Vanadium	39.8		*	P
7440-66-6	Zinc	26.8			P
	Titanium	1380		*	P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM
Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

ILM02.1
8
4/12/94

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WJ0
~~0326602~~ JDR 6/1/94

Lab Name: ITAS KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002
Matrix (soil/water): SOIL Lab Sample ID: AA3934
Level (low/med): LOW Date Received: 03/16/94
% Solids: 96.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U	*	AS

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:
CYANIDE_ONLY.

FORM I - IN

ILM02.1
4/12/94

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09W67
~~0326603~~ JDR 4/1/97

Lab Name: ITAS KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002
Matrix (soil/water): SOIL Lab Sample ID: AA3948
Level (low/med): LOW Date Received: 03/16/94
% Solids: 96.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4760			P
7440-36-0	Antimony	10.2	U		P
7440-38-2	Arsenic	2.6		SN	F
7440-39-3	Barium	60.2			P
7440-41-7	Beryllium	0.37	B		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	7040			P
7440-47-3	Chromium	9.4			P
7440-48-4	Cobalt	7.2	B		P
7440-50-8	Copper	8.8			P
7439-89-6	Iron	12400			P
7439-92-1	Lead	3.9			F
7439-95-4	Magnesium	4010			P
7439-96-5	Manganese	292			P
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel	7.6	B		P
7440-09-7	Potassium	900	B		P
7782-49-2	Selenium	0.40	U		F
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	93.3	B		P
7440-28-0	Thallium	0.40	U		F
7440-62-2	Vanadium	20.6		*	P
7440-66-6	Zinc	24.0			P
	Titanium	489		*	P
5955-70-0	Cyanide				NR

Color Before: TAN Clarity Before: N/A Texture: FINE
Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

ILM02.1
8
4/12/94

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09W97 ~~0326603~~ JOR 6/1/97

Lab Name: ITAS KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002
Matrix (soil/water): SOIL Lab Sample ID: AA3953
Level (low/med): LOW Date Received: 03/16/94
% Solids: 96.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U	*	AS

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:
CYANIDE ONLY.

FORM I - IN

ILM02.1
4/12/94

9613474.2614

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

~~0334401~~ 809WH0 JDR 6/1/95

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4170

Level (low/med): LOW Date Received: 04/22/94

% Solids: 94.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6230			P
7440-36-0	Antimony	10.3	U		P
7440-38-2	Arsenic	2.2		N	F
7440-39-3	Barium	53.5			P
7440-41-7	Beryllium	0.40	B		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	8310			P
7440-47-3	Chromium	11.0			P
7440-48-4	Cobalt	7.0	B		P
7440-50-8	Copper	10.7			P
7439-89-6	Iron	16500			P
7439-92-1	Lead	3.3			F
7439-95-4	Magnesium	4820			P
7439-96-5	Manganese	260			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	10.2			P
7440-09-7	Potassium	1250			P
7782-49-2	Selenium	0.43	U	W	F
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	116	B		P
7440-28-0	Thallium	0.43	U		F
7440-62-2	Vanadium	28.5		*	P
7440-66-6	Zinc	28.8			P
	Titanium	637		*	P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

ILM02.1

4/12/94

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WH0 ~~0334401~~ JDR 8/1/94

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4175

Level (low/med): LOW Date Received: 04/22/94

% Solids: 94.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.1	U	*	AS

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE_ONLY.

FORM I - IN

ILM02.1

8 4/12/94

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WH1 ~~0334402~~ JOR 6/1/94

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4181

Level (low/med): LOW Date Received: 04/22/94

% Solids: 92.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7000			P
7440-36-0	Antimony	10.4	U		P
7440-38-2	Arsenic	4.1		N	F
7440-39-3	Barium	60.5			P
7440-41-7	Beryllium	0.40	B		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	9090			P
7440-47-3	Chromium	15.2			P
7440-48-4	Cobalt	8.5	B		P
7440-50-8	Copper	12.2			P
7439-89-6	Iron	17600			P
7439-92-1	Lead	5.1			F
7439-95-4	Magnesium	5430			P
7439-96-5	Manganese	299			P
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel	15.0			P
7440-09-7	Potassium	1380			P
7782-49-2	Selenium	0.42	U		F
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	130	B		P
7440-28-0	Thallium	0.42	U		F
7440-62-2	Vanadium	31.7		*	P
7440-66-6	Zinc	32.3			P
	Titanium	649		*	P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

ILM02.1

6/12/94

9613474.2617

0000270

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

309WH1
~~0334402~~ JDR
5/11/95

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4186

Level (low/med): LOW Date Received: 04/22/94

% Solids: 92.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.1	U	*	AS

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE ONLY.

FORM I - IN

ILM02.1

4/12/94

9613474.2618

0000271

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WJ3 ~~0334404~~ JDR 4/1/95

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4188

Level (low/med): LOW Date Received: 04/22/94

% Solids: 97.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4010			P
7440-36-0	Antimony	10.3	U		P
7440-38-2	Arsenic	0.68	B	N	F
7440-39-3	Barium	58.5			P
7440-41-7	Beryllium	0.50	B		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	5890			P
7440-47-3	Chromium	7.2			P
7440-48-4	Cobalt	11.4			P
7440-50-8	Copper	11.8			P
7439-89-6	Iron	22300			P
7439-92-1	Lead	2.0			F
7439-95-4	Magnesium	3310			P
7439-96-5	Manganese	235			P
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel	6.6	B		P
7440-09-7	Potassium	552	B		P
7782-49-2	Selenium	0.40	U	W	F
7440-22-4	Silver	1.1	B		P
7440-23-5	Sodium	171	B		P
7440-28-0	Thallium	0.40	U		F
7440-62-2	Vanadium	57.1		*	P
7440-66-6	Zinc	31.0			P
	Titanium	1910		*	P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: N/A Texture: COARSE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

ILM02.1

8

4/12/94

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WJ3 ~~0334404~~ JOR 8/1/97

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4194

Level (low/med): LOW Date Received: 04/22/94

% Solids: 97.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U	*	AS

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE ONLY.

FORM I - IN

ILM02.1

8

4/12/94

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WJ7
~~0334405~~ JDR 6/1/94

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4197

Level (low/med): LOW Date Received: 04/22/94

% Solids: 93.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7280			P
7440-36-0	Antimony	10.7	U		P
7440-38-2	Arsenic	1.8	B	N	F
7440-39-3	Barium	112			P
7440-41-7	Beryllium	0.64	B		P
7440-43-9	Cadmium	1.1	U		P
7440-70-2	Calcium	9220			P
7440-47-3	Chromium	7.4			P
7440-48-4	Cobalt	16.2			P
7440-50-8	Copper	12.6			P
7439-89-6	Iron	28900			P
7439-92-1	Lead	3.1			F
7439-95-4	Magnesium	4600			P
7439-96-5	Manganese	458			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	7.9	B		P
7440-09-7	Potassium	1110			P
7782-49-2	Selenium	0.41	U	W	F
7440-22-4	Silver	1.1	B		P
7440-23-5	Sodium	148	B		P
7440-28-0	Thallium	0.41	U		F
7440-62-2	Vanadium	73.1		*	P
7440-66-6	Zinc	34.3			P
	Titanium	1960		*	P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

ILM02.1

4/12/94

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WJ4 ~~0334405~~ JDR 6/1/94

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4203

Level (low/med): LOW Date Received: 04/22/94

% Solids: 93.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.1	U	*	AS

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE_ONLY.

FORM I - IN

ILM02.1

8

4/12/94

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WJ5 ~~0334406~~ VBK 4/1/97

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4205

Level (low/med): LOW Date Received: 04/22/94

% Solids: 94.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7830			P
7440-36-0	Antimony	10.3	U		P
7440-38-2	Arsenic	1.5	B	N	F
7440-39-3	Barium	102			P
7440-41-7	Beryllium	0.61	B		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	9130			P
7440-47-3	Chromium	9.4			P
7440-48-4	Cobalt	16.5			P
7440-50-8	Copper	13.0			P
7439-89-6	Iron	28700			P
7439-92-1	Lead	3.2			F
7439-95-4	Magnesium	5220			P
7439-96-5	Manganese	453			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	10.1			P
7440-09-7	Potassium	1350			P
7782-49-2	Selenium	0.42	U		F
7440-22-4	Silver	1.0	B		P
7440-23-5	Sodium	135	B		P
7440-28-0	Thallium	0.42	U		F
7440-62-2	Vanadium	68.0		*	P
7440-66-6	Zinc	35.2			P
	Titanium	1990		*	P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

ILM02.1

4/2/94

9613474.2623

0000276

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WJS ~~0334406~~ JDR 4/1/97

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4211

Level (low/med): LOW Date Received: 04/22/94

% Solids: 94.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.1	U	*	AS

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE ONLY.

FORM I - IN

ILM02.1

8

4/12/94

9613474.2624

0000277

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WJ7
~~0334408~~ JDK 6/1/97

Lab Name: ITAS KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002
Matrix (soil/water): SOIL Lab Sample ID: AA4213
Level (low/med): LOW Date Received: 04/22/94
% Solids: 92.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8750			P
7440-36-0	Antimony	10.8	U		P
7440-38-2	Arsenic	2.7		N	F
7440-39-3	Barium	104			P
7440-41-7	Beryllium	0.59	B		P
7440-43-9	Cadmium	1.1	U		P
7440-70-2	Calcium	10500			P
7440-47-3	Chromium	12.6			P
7440-48-4	Cobalt	11.4			P
7440-50-8	Copper	13.0			P
7439-89-6	Iron	21800			P
7439-92-1	Lead	5.7		S	F
7439-95-4	Magnesium	5670			P
7439-96-5	Manganese	384			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	12.4			P
7440-09-7	Potassium	1830			P
7782-49-2	Selenium	0.42	U	W	F
7440-22-4	Silver	1.1	B		P
7440-23-5	Sodium	127	B		P
7440-28-0	Thallium	0.42	U		F
7440-62-2	Vanadium	44.5		*	P
7440-66-6	Zinc	38.5			P
	Titanium	1140		*	P
5955-70-0	Cyanide				NR

Color Before: BROWN Clarity Before: N/A Texture: FINE
Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

ILM02.1

8
4/2/94

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOGWJ7 ~~0334408~~ JDR 4/1/97

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4219

Level (low/med): LOW Date Received: 04/22/94

% Solids: 92.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.1	U	*	AS

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE ONLY.

FORM I - IN

ILM02.1

8

4/12/94

NITRATE/NITRITE ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	167
Sample Matrix:	Soil	Extraction Date:	N/A
Concentration Units:	mg/kg (ppm)	Analysis Date:	03/29/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6063	2.5	U
B09WF9	AA3167	2.5	U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

NITRATE/NITRITE ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	193
Sample Matrix:	Soil	Extraction Date:	N/A
Concentration Units:	mg/kg (ppm)	Analysis Date:	03/29/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6063	2.5	U
~~WH03208 01E~~ B09WG0 KHP 10/7/94	AA3625	2.5	U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

NITRATE/NITRITE ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	212
Sample Matrix:	Soil	Extraction Date:	N/A
Concentration Units:	mg/kg (ppm)	Analysis Date:	03/29/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6063	2.5	U
B09WI9	AA3923	9	+
B09WJ0	AA3932	3.5	+
B09WG7	AA3952	2.5	U

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

NITRATE/NITRITE ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Sample Matrix:	Soil	Extraction Date:	N/A
Concentration Units:	mg/kg (ppm)	Analysis Date:	03/29/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6063	2.5	U
B09WH0	AA4174	2.5	U
B09WH1	AA4185	2.5	U
B09WJ3	AA4192	2.5	U
B09WJ4	AA4201	2.5	U
B09WJ5	AA4209	2.5	U
B09WJ7	AA4217	2.5	U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	167
Client Sample ID:	B09WF9	Extraction Date:	03/17/94
Lab Sample ID:	AA3169	Analysis Date:	04/07/94
Sample Matrix:	SOIL	Dryness Factor:	0.9568
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA3169	102	110

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	193
Client Sample ID:	~~WH03208-01G~~ BC9WG0 KAP 6/7/94	Extraction Date:	03/17/94
Lab Sample ID:	AA3627	Analysis Date:	04/07/94
Sample Matrix:	SOIL	Dryness Factor:	0.8844
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	11	U	11

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA3627	83	93

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	212
Client Sample ID:	B09WI9	Extraction Date:	03/23/94
Lab Sample ID:	~~AA3926~~ B09WI9	Analysis Date:	04/07/94
Sample Matrix:	SOIL MS 6/3/96	Dryness Factor:	0.9598
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA3627	88	96

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	212
Client Sample ID:	B09WJ0	Extraction Date:	03/23/94
Lab Sample ID:	AA3935	Analysis Date:	04/07/94
Sample Matrix:	SOIL	Dryness Factor:	0.9644
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA3935	93	102

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	212
Client Sample ID:	B09WG7	Extraction Date:	03/23/94
Lab Sample ID:	AA3954	Analysis Date:	04/07/94
Sample Matrix:	SOIL	Dryness Factor:	0.9654
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA3954	96	106

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WH0	Extraction Date:	03/23/94
Lab Sample ID:	AA4176	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.9441
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4176	94	104

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WH1	Extraction Date:	03/23/94
Lab Sample ID:	AA4187	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.9313
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	11	U	11

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4187	105	115

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WJ3	Extraction Date:	03/23/94
Lab Sample ID:	AA4195	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.9696
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4195	102	112

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WJ4	Extraction Date:	03/23/94
Lab Sample ID:	AA4204	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.9448
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4204	96	107

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WJ5	Extraction Date:	03/23/94
Lab Sample ID:	AA4212	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.9342
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	11	U	11

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4212	97	99

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WJ7	Extraction Date:	03/23/94
Lab Sample ID:	AA4220	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.9374
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	11	U	11

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4220	92	101

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	167
Client Sample ID:	B09WF9	Analysis Date:	03/26/94
Lab Sample ID:	AA3166	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	6.5	+	0.4
chloride	10	+	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	1.5	U	1.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	193
Client Sample ID:	~~WH03208-01D~~ B09WG0 KAP 6/7/94	Analysis Date:	03/26/94
Lab Sample ID:	AA3600	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	4.7	+	0.4
chloride	11	+	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	2.1	+	1.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	212
Client Sample ID:	B09WI9	Analysis Date:	03/28/94
Lab Sample ID:	AA3922	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	0.4	U	0.4
chloride	2.8	+	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	27	+	1.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	212
Client Sample ID:	B09WJ0	Analysis Date:	03/28/94
Lab Sample ID:	AA3931	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	0.4	U	0.4
chloride	3.9	+	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	13	+	1.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	212
Client Sample ID:	B09WG7	Analysis Date:	03/27/94
Lab Sample ID:	AA3951	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	0.4	U	0.4
chloride	0.4	U	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	7.5	+	1.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WH0	Analysis Date:	04/02/94
Lab Sample ID:	AA4173	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	0.4	U	0.4
chloride	0.4	U	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	7.4	+	1.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WH1	Analysis Date:	03/29/94
Lab Sample ID:	AA4184	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	0.4	U	0.4
chloride	2.2	+	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	17	+	1.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WJ3	Analysis Date:	03/29/94
Lab Sample ID:	AA4191	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	0.4	U	0.4
chloride	0.4	U	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	3.6	+	1.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WJ4	Analysis Date:	03/29/94
Lab Sample ID:	AA4200	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	0.4	U	0.4
chloride	0.4	U	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	1.9	+	1.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WJ5	Analysis Date:	03/29/94
Lab Sample ID:	AA4208	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	0.4	U	0.4
chloride	0.4	U	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	1.6	+	1.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WJ7	Analysis Date:	03/29/94
Lab Sample ID:	AA4216	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	0.4	U	0.4
chloride	0.4	U	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	1.8	+	1.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

9613474.2652

INTERNATIONAL TECHNOLOGY CORPORATION

MAY 1994 RECEIVED SDLA

CERTIFICATE OF ANALYSIS

Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

May 3, 1994

Attention: J.A.Lerch

RECORD COPY

SAF Number	:	94-065
Date Received by Lab	:	March 17, 1994
Number of Samples	:	Eleven (11)
Sample Type	:	Soil
SDG Number	:	W0002

I. Introduction

On March 4, 10, 14, and 17, 1994, eleven soil samples were received by ITAS-Richland for radiochemical analysis. Upon receipt, the samples were given the following laboratory ID numbers to correspond with the WHC specific IDs:

ITAS-Richland ID	WHC ID	Matrix	Date of Receipt
403099-01A	B09WF9	Soil	3/04/94
403209-01A	B09WG0	Soil	3/10/94
403267-01A	B09WI9	Soil	3/14/94
403267-02A	B09WJ0	Soil	3/14/94
403267-03A	B09WG7	Soil	3/14/94
403345-01A	B09WH0	Soil	3/17/94
403345-02A	B09WH1	Soil	3/17/94
403345-03A	B09WJ7	Soil	3/17/94
403345-04A	B09WJ3	Soil	3/17/94
403345-05A	B09WJ4	Soil	3/17/94
403345-06A	B09WJ5	Soil	3/17/94

II. 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 analyses were:

Alpha Spectroscopy
Americium-241, Curium-244 by method ITAS-RD-3302
Neptunium-237 by method ITAS-RD-3208
Plutonium-238, 239/40 by method ITAS-RD-3209
Uranium-234, 235, 238 by method ITAS-RD-3234
Gamma Spectroscopy
Gamma Scan by method ITAS-RD-3219
Iodine-129 by method ITAS-RD-3219
Gas Proportional Counting
Gross Alpha by method ITAS-RD-3222
Gross Beta by method ITAS-RD-3222
Strontium-90 by method ITAS-RD-3204
Liquid Scintillation Counting
Selenium-79 by method ITAS-RD-3253
Technetium-99 by method ITAS-IT-RS-0001
Total Uranium
Total Uranium by method ITAS-RD-4200

III. Quality Control

The analytical results for SDG W0002 include a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank, and one duplicate.

Quality control sample results are reported in the same units as sample results except for gross alpha and gross beta quality control sample results which are reported in pCi/sample.

IV. Comments

The initial radioactivity screening of the samples classified them as Category I.

Alpha Spectroscopy

Americium-241, Curium-244 by method ITAS-RD-3302
The laboratory control sample and batch blank results were acceptable. The sample and sample duplicate results were within the 3 sigma control limit.

Neptunium-237 by method ITAS-RD-3208
The matrix spike recovery was unacceptable and the complete batch was reanalyzed. The reanalysis results were accepted. The laboratory control sample and the batch blank results were acceptable. The sample and sample duplicate results were within the 3 sigma control limit. Three matrix spikes were analyzed with the batch and the average yield was used for yield correction.

Plutonium-238, 239/40 by method ITAS-RD-3209
The laboratory control sample and the batch blank results were acceptable. The sample and sample duplicate results were within the 3 sigma control limit.

Uranium-234, 235, 238 by method ITAS-RD-3234
The laboratory control sample and the batch blank results were acceptable. The sample and sample duplicate results were within the 3 sigma control limit for U-235. The duplicate results for U-234 and U-238 were outside the 3 sigma control limit. The duplicate difference was attributed to nonhomogeneity of the soil sample and the results were accepted.

Gamma Spectroscopy

Gamma Scan by method ITAS-RD-3219
Five samples were recounted for an extended counting time to meet the detection limit for Fe-59. The Chain of Custody forms did not request Fe-59 so the recount was unnecessary but the recount is acceptable and reported herein. The calculated detection limit for Eu-152 and Eu-154 is greater than the required detection limit for the laboratory control sample (LCS). The LCS is a reusable soil spike which has not been spiked with those isotopes so the results were accepted. The batch blank results were acceptable. The sample and sample duplicate results were within the 3 sigma control limit.

Iodine-129 by method ITAS-RD-3219
The laboratory control sample result was acceptable but biased high (143%). The batch blank result was acceptable. The sample and sample duplicate results were within the 3 sigma control limit.

Gas Proportional Counting

Gross Alpha by method ITAS-RD-3222
The laboratory control sample and batch blank results were acceptable. The sample and sample duplicate results were within the 3 sigma control limit.

Gross Beta by method ITAS-RD-3222
The laboratory control sample and batch blank results were acceptable. The sample and sample duplicate results were within the 3 sigma control limit.

Strontium-90 by method ITAS-RD-3204
The laboratory control sample (LCS) recovery was biased high and a recount of the batch was requested. The recount also indicated a high bias in the LCS. The batch was counted a third time and the results were accepted with an LCS recovery of 135%. The batch blank result was acceptable. The sample and sample duplicate results were within the 3 sigma control limit.

Liquid Scintillation Counting

Selenium-79 by method ITAS-RD-3253
The laboratory control sample and batch blank results were acceptable. The matrix spike result and duplicate matrix spike result for sample 40334506 (B09WJ5) were acceptable and the average chemical yield was used for batch yield corrections. The sample and sample duplicate results were within the 3 sigma control limit.

Technetium-99 by method ITAS-IT-RS-0001
The laboratory control sample and batch blank results were acceptable. The matrix spike results were acceptable and the average chemical yield was used for batch yield corrections. The sample and sample duplicate results were within the 3 sigma control limit.

Total Uranium

Total Uranium by method ITAS-RD-4200
The laboratory control sample and batch blank results were acceptable. The matrix spike results for samples W030991M (Ottowa sand) and W032091M (B09WG0) were acceptable and the average chemical yield was used for batch yield corrections. The sample and sample duplicate results were within the 3 sigma control limit.

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:

Van H. Pettey
Project Manager

9613474.2657

INTERNATIONAL
TECHNOLOGY
CORPORATION

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	**SDG NO.:**	W0002
LAB SAMPLE ID:	4-03-099-01	**MATRIX:**	SOIL
WHC ID:	B09WF9	**DATE RECEIVED:**	3/4/94
REPORTING UNITS:	pCi/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD
AM-241	1.40E-02	8.84E-03	8.97E-03	0.519	RD3302
CM-242	-1.68E-03	3.36E-03	3.36E-03	0.519	RD3302
CM-244	-1.40E-03	6.28E-03	6.28E-03	0.519	RD3302
NP-237	6.67E-03	1.33E-02	1.34E-02	0.623	RD3208
PU-238	5.31E-03	1.35E-02	1.36E-02	0.627	RD3209
PU239/40	0.00E+00	0.00E+00	1.99E-02	0.627	RD3209
U-234	7.40E-01	6.43E-02	9.61E-02	0.6	RD3234
U-235	2.89E-02	1.32E-02	1.35E-02	0.6	RD3234
U-238DA	7.79E-01	6.59E-02	1.00E-01	0.6	RD3234
K-40	1.17E+01	5.56E-01	5.56E-01	N/A	RD3219
CO-60	-7.24E-03	1.38E-02	1.39E-02	N/A	RD3219
EU-152	7.22E-02	5.28E-02	5.33E-02	N/A	RD3219
CS-137DA	7.16E-03	1.24E-02	1.24E-02	N/A	RD3219
CS-134	-8.00E-04	1.07E-02	1.07E-02	N/A	RD3219
RU-106DA	1.09E-01	1.09E-01	1.10E-01	N/A	RD3219
NA-22	-2.49E-02	1.56E-02	1.58E-02	N/A	RD3219
EU-155	2.13E-02	3.63E-02	3.63E-02	N/A	RD3219
EU-154	-6.91E-02	4.33E-02	4.38E-02	N/A	RD3219
I-129LP	-3.87E-01	4.90E-01	4.91E-01	N/A	RD3219
ALPHA	4.93E+00	2.44E+00	2.49E+00	1	RD3222
BETA	2.00E+01	2.34E+00	2.68E+00	1	RD3222
TOTAL-SR	3.72E-01	6.51E-02	1.35E-01	0.735	RD3204
SE-79	4.27E-01	3.02E-01	8.71E-01	0.776	RD3253
TC-99	2.78E-02	8.42E-02	3.98E-01	0.891	ITAS-IT-RS-0001
URANIUM	1.30E+00	N/A	1.94E-01	1	RD4200

INTERNATIONAL
TECHNOLOGY
CORPORATION

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	**SDG NO.:**	W0002
LAB SAMPLE ID:	4-03-209-01	**MATRIX:**	SOIL
WHC ID:	B09WG0	**DATE RECEIVED:**	3/10/94
REPORTING UNITS:	pCi/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD
AM-241	1.04E-02	8.30E-03	8.38E-03	0.504	RD3302
CM-242	0.00E+00	0.00E+00	5.16E-03	0.504	RD3302
CM-244	8.67E-04	3.11E-03	3.11E-03	0.504	RD3302
NP-237	-5.35E-04	1.07E-03	1.08E-03	0.623	RD3208
PU-238	1.30E-02	1.92E-02	1.93E-02	0.767	RD3209
PU239/40	5.43E-03	1.09E-02	1.09E-02	0.767	RD3209
U-234	5.44E-01	5.20E-02	7.33E-02	0.677	RD3234
U-235	3.27E-02	1.35E-02	1.38E-02	0.677	RD3234
U-238DA	5.77E-01	5.33E-02	7.65E-02	0.677	RD3234
K-40	1.34E+01	5.45E-01	5.45E-01	N/A	RD3219
CO-60	3.67E-03	1.31E-02	1.31E-02	N/A	RD3219
EU-152	2.52E-02	5.71E-02	5.72E-02	N/A	RD3219
CS-137DA	-9.40E-03	1.20E-02	1.21E-02	N/A	RD3219
CS-134	9.84E-04	1.13E-02	1.13E-02	N/A	RD3219
RU-106DA	-3.23E-02	1.08E-01	1.08E-01	N/A	RD3219
NA-22	1.59E-03	1.50E-02	1.50E-02	N/A	RD3219
EU-155	9.00E-03	3.43E-02	3.43E-02	N/A	RD3219
EU-154	1.68E-02	4.17E-02	4.17E-02	N/A	RD3219
I-129LP	3.70E-01	5.09E-01	5.11E-01	N/A	RD3219
ALPHA	1.13E+01	3.37E+00	3.59E+00	1	RD3222
BETA	2.12E+01	2.40E+00	2.78E+00	1	RD3222
TOTAL-SR	2.48E-02	3.27E-02	3.37E-02	0.76	RD3204
SE-79	6.14E-01	3.07E-01	8.89E-01	0.776	RD3253
TC-99	-4.38E-02	8.24E-02	3.92E-01	0.891	ITAS-IT-RS-0001
URANIUM	2.15E+00	N/A	3.23E-01	1	RD4200

9613474.2659

INTERNATIONAL
TECHNOLOGY
CORPORATION

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND

SDG NO.: W0002

LAB SAMPLE ID: 4-03-267-01

MATRIX: SOIL

WHC ID: B09WI9

DATE RECEIVED: 3/14/94

REPORTING UNITS: pCi/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD
AM-241	3.18E-01	3.25E-02	4.52E-02	0.872	RD3302
CM-242	1.55E-03	2.85E-03	2.85E-03	0.872	RD3302
CM-244	1.84E-03	3.04E-03	3.05E-03	0.872	RD3302
NP-237	1.34E-02	1.89E-02	1.91E-02	0.623	RD3208
PU-238	2.84E-01	7.87E-02	8.86E-02	0.771	RD3209
PU239/40	1.61E+00	1.86E-01	2.97E-01	0.771	RD3209
U-234	2.48E+00	1.29E-01	2.79E-01	0.496	RD3234
U-235	1.12E-01	2.81E-02	3.02E-02	0.496	RD3234
U-238DA	2.36E+00	1.26E-01	2.66E-01	0.496	RD3234
K-40	1.34E+01	3.93E-01	1.40E+00	N/A	RD3219
CO-60	-1.56E-03	9.50E-03	9.50E-03	N/A	RD3219
EU-152	3.33E-02	4.17E-02	4.18E-02	N/A	RD3219
CS-137DA	6.61E+01	1.99E-01	6.61E+00	N/A	RD3219
CS-134	1.65E-02	1.98E-02	1.99E-02	N/A	RD3219
RU-106DA	-1.36E-01	2.06E-01	2.07E-01	N/A	RD3219
NA-22	-6.72E-03	1.05E-02	1.05E-02	N/A	RD3219
EU-155	6.95E-02	6.56E-02	6.59E-02	N/A	RD3219
EU-154	5.06E-03	2.81E-02	2.81E-02	N/A	RD3219
I-129LP	-4.79E+00	1.20E+00	1.29E+00	N/A	RD3219
ALPHA	1.28E+01	3.62E+00	3.88E+00	1	RD3222
BETA	1.25E+02	5.23E+00	9.73E+00	1	RD3222
TOTAL-SR	1.85E-01	4.88E-02	7.70E-02	0.771	RD3204
SE-79	1.20E+00	3.19E-01	9.53E-01	0.776	RD3253
TC-99	1.85E-01	8.69E-02	4.10E-01	0.891	ITAS-IT-RS-0001
URANIUM	6.82E+00	0.00E+00	1.02E+00	1	RD4200

IT

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0002
LAB SAMPLE ID:	4-03-267-02	MATRIX:	SOIL
WHC ID:	B09WJ0	DATE RECEIVED:	3/14/94
REPORTING UNITS:	pCi/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD
AM-241	8.37E-02	2.03E-02	2.21E-02	0.59	RD3302
CM-242	8.57E-04	3.08E-03	3.08E-03	0.59	RD3302
CM-244	1.24E-03	2.47E-03	2.47E-03	0.59	RD3302
NP-237	6.68E-03	1.34E-02	1.34E-02	0.623	RD3208
PU-238	1.31E-01	5.86E-02	6.19E-02	0.636	RD3209
PU239/40	2.87E-01	8.69E-02	9.73E-02	0.636	RD3209
U-234	1.57E+00	9.79E-02	1.83E-01	0.548	RD3234
U-235	7.73E-02	2.22E-02	2.35E-02	0.548	RD3234
U-238DA	1.54E+00	9.66E-02	1.79E-01	0.548	RD3234
K-40	1.24E+01	6.61E-01	1.41E+00	N/A	RD3219
CO-60	2.50E-02	1.76E-02	1.77E-02	N/A	RD3219
EU-152	1.77E-02	9.47E-02	9.48E-02	N/A	RD3219
CS-137DA	7.78E-01	4.19E-02	8.84E-02	N/A	RD3219
CS-134	-6.20E-03	1.44E-02	1.44E-02	N/A	RD3219
RU-106DA	-9.45E-02	1.41E-01	1.42E-01	N/A	RD3219
NA-22	6.10E-03	2.05E-02	2.05E-02	N/A	RD3219
EU-155	3.18E-02	3.21E-02	3.22E-02	N/A	RD3219
EU-154	-1.15E-02	5.64E-02	5.64E-02	N/A	RD3219
I-129LP	2.55E-01	5.17E-01	5.17E-01	N/A	RD3219
ALPHA	7.28E+00	3.02E+00	3.12E+00	1	RD3222
BETA	2.99E+01	2.73E+00	3.37E+00	1	RD3222
TOTAL-SR	3.03E+00	1.70E-01	9.58E-01	0.688	RD3204
SE-79	8.67E-01	3.14E-01	9.18E-01	0.776	RD3253
TC-99	1.46E-01	8.67E-02	4.07E-01	0.891	ITAS-IT-RS-0001
URANIUM	3.69E+00	N/A	5.53E-01	1	RD4200

9613474.2661

INTERNATIONAL
TECHNOLOGY
CORPORATION

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0002
LAB SAMPLE ID:	4-03-267-03	MATRIX:	SOIL
WHC ID:	B09WG7	DATE RECEIVED:	3/14/94
REPORTING UNITS:	pCi/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD
AM-241	2.97E-03	4.06E-03	4.07E-03	0.635	RD3302
CM-242	-5.32E-04	1.07E-03	1.07E-03	0.635	RD3302
CM-244	4.58E-03	4.58E-03	4.61E-03	0.635	RD3302
NP-237	6.68E-03	1.34E-02	1.34E-02	0.623	RD3208
PU-238	0.00E+00	0.00E+00	1.56E-02	0.799	RD3209
PU239/40	-2.08E-03	2.94E-03	2.96E-03	0.799	RD3209
U-234	9.91E-01	1.04E-01	1.50E-01	0.306	RD3234
U-235	6.47E-02	2.75E-02	2.84E-02	0.306	RD3234
U-238DA	1.02E+00	1.05E-01	1.53E-01	0.306	RD3234
K-40	1.74E+01	5.62E-01	5.62E-01	N/A	RD3219
CO-60	-1.99E-03	1.21E-02	1.21E-02	N/A	RD3219
EU-152	4.81E-02	5.81E-02	5.83E-02	N/A	RD3219
CS-137DA	-6.35E-03	1.13E-02	1.14E-02	N/A	RD3219
CS-134	5.78E-03	1.03E-02	1.04E-02	N/A	RD3219
RU-106DA	-7.00E-02	1.05E-01	1.05E-01	N/A	RD3219
NA-22	6.84E-03	1.41E-02	1.41E-02	N/A	RD3219
EU-155	4.89E-02	3.13E-02	3.17E-02	N/A	RD3219
EU-154	1.91E-02	3.93E-02	3.93E-02	N/A	RD3219
I-129LP	-8.23E-02	5.46E-01	5.46E-01	N/A	RD3219
ALPHA	9.05E+00	3.24E+00	3.38E+00	1	RD3222
BETA	2.80E+01	2.67E+00	3.25E+00	1	RD3222
TOTAL-SR	6.08E-03	2.93E-02	2.94E-02	0.824	RD3204
SE-79	1.16E+00	3.21E-01	9.51E-01	0.776	RD3253
TC-99	-5.98E-02	8.24E-02	3.91E-01	0.891	ITAS-IT-RS-0001
URANIUM	1.88E+00	N/A	2.82E-01	1	RD4200

INTERNATIONAL
TECHNOLOGY
CORPORATION

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0002
LAB SAMPLE ID:	4-03-345-01	MATRIX:	SOIL
WHC ID:	B09WH0	DATE RECEIVED:	3/17/94
REPORTING UNITS:	pCi/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD
AM-241	1.24E-02	7.50E-03	7.61E-03	0.642	RD3302
CM-242	1.30E-03	2.59E-03	2.60E-03	0.642	RD3302
CM-244	1.14E-03	2.27E-03	2.27E-03	0.642	RD3302
NP-237	-1.07E-03	1.51E-03	1.53E-03	0.623	RD3208
PU-238	6.53E-03	1.67E-02	1.67E-02	0.511	RD3209
PU239/40	0.00E+00	0.00E+00	2.45E-02	0.511	RD3209
U-234	8.12E-01	8.48E-02	1.20E-01	0.379	RD3234
U-235	1.88E-02	1.51E-02	1.53E-02	0.379	RD3234
U-238DA	9.12E-01	8.94E-02	1.31E-01	0.379	RD3234
K-40	1.61E+01	5.33E-01	1.70E+00	N/A	RD3219
CO-60	-3.33E-03	1.25E-02	1.25E-02	N/A	RD3219
EU-152	1.06E-01	5.11E-02	5.21E-02	N/A	RD3219
CS-137DA	-3.38E-04	1.09E-02	1.09E-02	N/A	RD3219
CS-134	2.64E-03	1.01E-02	1.01E-02	N/A	RD3219
RU-106DA	4.55E-02	9.06E-02	9.07E-02	N/A	RD3219
NA-22	-3.62E-03	1.39E-02	1.39E-02	N/A	RD3219
EU-155	3.37E-02	3.21E-02	3.22E-02	N/A	RD3219
EU-154	-5.71E-02	4.02E-02	4.06E-02	N/A	RD3219
I-129LP	2.39E-01	5.30E-01	5.31E-01	N/A	RD3219
ALPHA	6.20E+00	2.69E+00	2.77E+00	1	RD3222
BETA	2.54E+01	2.54E+00	3.05E+00	1	RD3222
TOTAL-SR	6.43E-03	3.04E-02	3.05E-02	0.798	RD3204
SE-79	1.16E+00	3.20E-01	9.50E-01	0.776	RD3253
TC-99	-4.47E-02	8.30E-02	3.92E-01	0.891	ITAS-IT-RS-0001
URANIUM	2.14E+00	N/A	3.21E-01	1	RD4200

INTERNATIONAL
TECHNOLOGY
CORPORATION

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0002
LAB SAMPLE ID:	4-03-345-02	MATRIX:	SOIL
WHC ID:	B09WH1	DATE RECEIVED:	3/17/94
REPORTING UNITS:	pCi/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD
AM-241	7.64E-03	6.19E-03	6.24E-03	0.625	RD3302
CM-242	2.11E-03	3.88E-03	3.89E-03	0.625	RD3302
CM-244	8.13E-03	6.14E-03	6.20E-03	0.625	RD3302
NP-237	6.69E-03	1.34E-02	1.35E-02	0.623	RD3208
PU-238	0.00E+00	0.00E+00	2.32E-02	0.537	RD3209
PU239/40	0.00E+00	0.00E+00	2.32E-02	0.537	RD3209
U-234	8.74E-01	7.97E-02	1.19E-01	0.461	RD3234
U-235	3.50E-02	1.68E-02	1.72E-02	0.461	RD3234
U-238DA	9.24E-01	8.19E-02	1.24E-01	0.461	RD3234
K-40	1.74E+01	4.70E-01	1.80E+00	N/A	RD3219
CO-60	-5.82E-03	1.07E-02	1.07E-02	N/A	RD3219
EU-152	1.18E-01	5.00E-02	5.13E-02	N/A	RD3219
CS-137DA	-1.86E-03	9.77E-03	9.77E-03	N/A	RD3219
CS-134	-1.44E-02	9.57E-03	9.68E-03	N/A	RD3219
RU-106DA	-2.18E-02	8.90E-02	8.90E-02	N/A	RD3219
NA-22	-5.94E-03	1.22E-02	1.22E-02	N/A	RD3219
EU-155	5.02E-02	2.82E-02	2.87E-02	N/A	RD3219
EU-154	-1.65E-02	3.39E-02	3.39E-02	N/A	RD3219
I-129LP	2.22E-01	6.09E-01	6.10E-01	N/A	RD3219
ALPHA	1.34E+01	3.82E+00	4.09E+00	1	RD3222
BETA	2.77E+01	2.64E+00	3.21E+00	1	RD3222
TOTAL-SR	1.84E-02	3.52E-02	3.57E-02	0.8	RD3204
SE-79	1.09E+00	3.16E-01	9.40E-01	0.776	RD3253
TC-99	9.86E-02	8.51E-02	4.03E-01	0.891	ITAS-IT-RS-0001
URANIUM	2.76E+00	N/A	4.13E-01	1	RD4200

9613474.2664

INTERNATIONAL
TECHNOLOGY
CORPORATION

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0002
LAB SAMPLE ID:	4-03-345-03	MATRIX:	SOIL
WHC ID:	B09WJ7	DATE RECEIVED:	3/17/94
REPORTING UNITS:	pCi/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD
AM-241	6.66E-03	5.96E-03	6.00E-03	0.767	RD3302
CM-242	1.51E-03	3.03E-03	3.03E-03	0.767	RD3302
CM-244	1.34E-03	2.67E-03	2.68E-03	0.767	RD3302
NP-237	-1.34E-03	2.67E-03	2.69E-03	0.623	RD3208
PU-238	2.41E-03	1.27E-02	1.28E-02	0.691	RD3209
PU239/40	0.00E+00	0.00E+00	1.81E-02	0.691	RD3209
U-234	7.48E-01	6.91E-02	1.01E-01	0.522	RD3234
U-235	3.42E-02	1.58E-02	1.62E-02	0.522	RD3234
U-238DA	8.35E-01	7.28E-02	1.10E-01	0.522	RD3234
K-40	1.55E+01	5.29E-01	1.64E+00	N/A	RD3219
CO-60	3.45E-03	1.11E-02	1.11E-02	N/A	RD3219
EU-152	1.26E-01	4.77E-02	4.94E-02	N/A	RD3219
CS-137DA	7.99E-03	1.04E-02	1.05E-02	N/A	RD3219
CS-134	-2.32E-03	1.02E-02	1.02E-02	N/A	RD3219
RU-106DA	-9.29E-02	9.83E-02	9.88E-02	N/A	RD3219
NA-22	1.78E-02	1.19E-02	1.20E-02	N/A	RD3219
EU-155	7.20E-02	2.90E-02	2.99E-02	N/A	RD3219
EU-154	4.94E-02	3.29E-02	3.33E-02	N/A	RD3219
I-129LP	4.20E-01	5.82E-01	5.83E-01	N/A	RD3219
ALPHA	5.20E+00	2.64E+00	2.70E+00	1	RD3222
BETA	2.09E+01	2.40E+00	2.77E+00	1	RD3222
TOTAL-SR	1.65E-03	3.02E-02	3.02E-02	0.81	RD3204
SE-79	5.96E-01	3.06E-01	8.89E-01	0.776	RD3253
TC-99	-3.03E-02	8.31E-02	3.93E-01	0.891	ITAS-IT-RS-0001
URANIUM	2.28E+00	N/A	3.42E-01	1	RD4200

INTERNATIONAL
TECHNOLOGY
CORPORATION

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG NO.:	W0002
LAB SAMPLE ID:	4-03-345-04	MATRIX:	SOIL
WHC ID:	B09WJ3	DATE RECEIVED:	3/17/94
REPORTING UNITS:	pCi/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD
AM-241	3.69E-02	1.54E-02	1.59E-02	0.775	RD3302
CM-242	4.53E-03	5.23E-03	5.26E-03	0.775	RD3302
CM-244	6.61E-03	5.92E-03	5.96E-03	0.775	RD3302
NP-237	-5.35E-04	1.07E-03	1.08E-03	0.623	RD3208
PU-238	8.65E-02	5.43E-02	5.62E-02	0.51	RD3209
PU239/40	1.06E-01	5.88E-02	6.14E-02	0.51	RD3209
U-234	4.78E-01	5.07E-02	6.84E-02	0.628	RD3234
U-235	3.05E-02	1.35E-02	1.38E-02	0.628	RD3234
U-238DA	4.43E-01	4.87E-02	6.46E-02	0.628	RD3234
K-40	1.14E+01	5.33E-01	5.33E-01	N/A	RD3219
CO-60	3.59E-03	1.19E-02	1.19E-02	N/A	RD3219
EU-152	4.52E-02	5.69E-02	5.71E-02	N/A	RD3219
CS-137DA	1.80E-02	1.18E-02	1.19E-02	N/A	RD3219
CS-134	7.99E-03	1.02E-02	1.02E-02	N/A	RD3219
RU-106DA	2.84E-02	9.42E-02	9.42E-02	N/A	RD3219
NA-22	5.00E-03	1.35E-02	1.35E-02	N/A	RD3219
EU-155	6.95E-02	3.84E-02	3.90E-02	N/A	RD3219
EU-154	3.28E-02	3.62E-02	3.63E-02	N/A	RD3219
I-129LP	1.89E-01	6.67E-01	6.67E-01	N/A	RD3219
ALPHA	4.97E+00	2.49E+00	2.55E+00	1	RD3222
BETA	6.36E+01	3.81E+00	5.67E+00	1	RD3222
TOTAL-SR	1.51E+01	3.50E-01	4.86E+00	0.775	RD3204
SE-79	1.60E+00	3.27E-01	9.97E-01	0.776	RD3253
TC-99	8.68E-02	8.53E-02	4.02E-01	0.891	ITAS-IT-RS-0001
URANIUM	1.92E+00	N/A	2.87E-01	1	RD4200

INTERNATIONAL
TECHNOLOGY
CORPORATION

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	**SDG NO.:**	W0002
LAB SAMPLE ID:	4-03-345-05	**MATRIX:**	SOIL
WHC ID:	B09WJ4	**DATE RECEIVED:**	3/17/94
REPORTING UNITS:	pCi/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD
AM-241	9.22E-03	5.83E-03	5.91E-03	0.786	RD3302
CM-242	1.68E-03	3.09E-03	3.10E-03	0.786	RD3302
CM-244	1.67E-03	3.45E-03	3.46E-03	0.786	RD3302
NP-237	0.00E+00	0.00E+00	0.00E+00	0.623	RD3208
PU-238	1.41E-02	1.63E-02	1.64E-02	0.883	RD3209
PU239/40	-9.42E-04	1.88E-03	1.89E-03	0.883	RD3209
U-234	6.52E-01	5.75E-02	8.46E-02	0.661	RD3234
U-235	3.27E-02	1.35E-02	1.39E-02	0.661	RD3234
U-238DA	6.44E-01	5.70E-02	8.38E-02	0.661	RD3234
K-40	1.20E+01	4.92E-01	1.30E+00	N/A	RD3219
CO-60	1.29E-02	1.00E-02	1.01E-02	N/A	RD3219
EU-152	2.53E-03	5.16E-02	5.16E-02	N/A	RD3219
CS-137DA	3.76E-03	1.03E-02	1.03E-02	N/A	RD3219
CS-134	3.21E-03	9.72E-03	9.72E-03	N/A	RD3219
RU-106DA	-1.86E-02	9.08E-02	9.08E-02	N/A	RD3219
NA-22	1.04E-02	1.28E-02	1.28E-02	N/A	RD3219
EU-155	3.04E-02	2.79E-02	2.81E-02	N/A	RD3219
EU-154	2.92E-02	3.57E-02	3.58E-02	N/A	RD3219
I-129LP	-8.23E-03	5.00E-01	5.00E-01	N/A	RD3219
ALPHA	3.80E+00	2.22E+00	2.26E+00	1	RD3222
BETA	1.79E+01	2.25E+00	2.54E+00	1	RD3222
TOTAL-SR	5.70E-03	3.04E-02	3.05E-02	0.797	RD3204
SE-79	-5.42E-01	2.83E-01	7.68E-01	0.776	RD3253
TC-99	5.81E-02	8.46E-02	4.00E-01	0.891	ITAS-IT-RS-0001
URANIUM	2.06E+00	N/A	3.08E-01	1	RD4200

9613474.2667

INTERNATIONAL
TECHNOLOGY
CORPORATION

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	**SDG NO.:**	W0002
LAB SAMPLE ID:	4-03-345-06	**MATRIX:**	SOIL
WHC ID:	B09WJ5	**DATE RECEIVED:**	3/17/94
REPORTING UNITS:	pCi/g		

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	YIELD	METHOD
AM-241	9.71E-03	6.12E-03	6.20E-03	0.792	RD3302
CM-242	1.25E-03	3.18E-03	3.19E-03	0.792	RD3302
CM-244	1.12E-02	6.71E-03	6.80E-03	0.792	RD3302
NP-237	-1.60E-03	1.85E-03	1.88E-03	0.623	RD3208
PU-238	0.00E+00	0.00E+00	1.51E-02	0.826	RD3209
PU239/40	4.03E-03	1.03E-02	1.03E-02	0.826	RD3209
U-234	8.07E-01	6.80E-02	1.04E-01	0.586	RD3234
U-235	4.40E-02	1.65E-02	1.70E-02	0.586	RD3234
U-238DA	8.09E-01	6.79E-02	1.04E-01	0.586	RD3234
K-40	1.21E+01	4.94E-01	4.94E-01	N/A	RD3219
CO-60	-6.53E-03	1.05E-02	1.05E-02	N/A	RD3219
EU-152	6.28E-02	5.26E-02	5.29E-02	N/A	RD3219
CS-137DA	-5.51E-03	1.08E-02	1.08E-02	N/A	RD3219
CS-134	-1.25E-02	1.05E-02	1.06E-02	N/A	RD3219
RU-106DA	-6.24E-02	9.30E-02	9.32E-02	N/A	RD3219
NA-22	-7.58E-03	1.39E-02	1.39E-02	N/A	RD3219
EU-155	6.78E-02	2.82E-02	2.90E-02	N/A	RD3219
EU-154	-2.12E-02	3.88E-02	3.89E-02	N/A	RD3219
I-129LP	-4.69E-01	5.29E-01	5.31E-01	N/A	RD3219
ALPHA	5.24E+00	2.47E+00	2.54E+00	1	RD3222
BETA	1.96E+01	2.33E+00	2.67E+00	1	RD3222
TOTAL-SR	-9.34E-03	3.06E-02	3.07E-02	0.787	RD3204
SE-79	-1.24E-01	2.94E-01	8.11E-01	0.776	RD3253
TC-99	-6.74E-02	8.26E-02	3.90E-01	0.891	ITAS-IT-RS-0001
URANIUM	2.32E+00	N/A	3.48E-01	1	RD4200

9613474.2668

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 403209, 3099, 3345, 3467

Lab Sample Numbers or SDG: W0002

Method/Test/Parameter: RA3302 Ra/Cs

	Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A. 1.	**Calibration** Is the calibration documentation included where applicable?			✓	✓
B. 1.	**Sample Analysis** Are the sample Yields within acceptance criteria?	✓			✓
2.	Were all sample holding times met?	✓			✓
C. 1.	**QC Samples** Is the Blank Yield within acceptance criteria?	✓			✓
2.	Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?			✓	✓
3.	Is the Blank result ≤ the Contract Detection Limit?	✓			✓
4.	Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?	✓			✓
5.	Is the LCS result within acceptance criteria?	✓			✓
6.	Is the LCS yield within acceptance criteria?	✓			✓
7.	Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?	✓			✓
8.	MS/MSD results and yield meet acceptance criteria?			✓	✓
9.	Duplicate sample results and yield meet acceptance criteria?	✓			✓
D. 1.	**Other** Are all nonconformances included and noted?	✓			✓
2.	Are all required forms filled out?	✓			✓
3.	Correct methodology used?	✓			✓
4.	Transcription checked?	✓			✓
5.	Were all calculations checked at a minimum frequency?	✓			✓
6.	Units checked?	✓			✓

Comments on any "No" response:

Analyst: [signature] Date: 4-29-94

Second Level Review: [signature] Date: 5/2/94

Form No: LS-038, 3/94, Rev 2

OK to Trip 4-29-94 MMR

0032

9613474.2669

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 403099, 3267, 3345, 3209

Lab Sample Numbers or SDG: W10002

Method/Test/Parameter: RD3208 Na

	Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A. 1.	**Calibration** Is the calibration documentation included where applicable?			✓	✓
B. 1.	**Sample Analysis** Are the sample Yields within acceptance criteria?	✓			✓
2.	Were all sample holding times met?	✓			✓
C. 1.	**QC Samples** Is the Blank Yield within acceptance criteria?	✓			✓
2.	Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?	✓			✓
3.	Is the Blank result ≤ the Contract Detection Limit?	✓			✓
4.	Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?			✓	✓
5.	Is the LCS result within acceptance criteria?	✓			✓
6.	Is the LCS yield within acceptance criteria?	✓			✓
7.	Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?	✓			✓
8.	MS/MSD results and yield meet acceptance criteria?			✓	✓
9.	Duplicate sample results and yield meet acceptance criteria?	✓			✓
D. 1.	**Other** Are all nonconformances included and noted?	✓			✓
2.	Are all required forms filled out?	✓			✓
3.	Correct methodology used?	✓			✓
4.	Transcription checked?	✓			✓
5.	Were all calculations checked at a minimum frequency?	✓			✓
6.	Units checked?	✓			✓

Comments on any "No" response:

Analyst: M Kellogg Date: 5-2-94

Second Level Review: Suzy Davies Date: 5/2/94

Form No: LS-038, 3/94, Rev 2

OK to Mgr 5-2-94 MMM

9613474.267094

INTERNATIONAL TECHNOLOGY CORPORATION

LOG #: RD-94-_____ page 1 of 2

ITAS-Richland
LABORATORY NONCONFORMANCE MEMO (NCM)

PROJECT ID (Name/Number): WHC

NCM INITIATED BY (Name/Date): mmn 4-22-94

PARAMETER(S): Np

SAMPLE NUMBER(S) AFFECTED: 403099, 3267, 3345, 3209 W0002

MATRIX: soil

AREA: ☐ SHIP/REC ☐ RADIOCHEM ☐ COUNTING ☐ BIOASSAY ☐ DATA VERIF ☐ REPORTING ☐ OTHER:

NONCONFORMANCE [check appropriate item(s)]:

1. ☐ Not enough sample received for proper analysis.
2. ☐ Holding time exceeded by _____ days due to:
   - 2.1 ☐ CATEGORY I: Out of Laboratory Control
     - ☐ Holding time expired at receipt.
   - 2.2 ☐ CATEGORY II: Laboratory Dependent
     - ☐ work backlog ☐ instrument failure
     - ☐ communication ☐ other (see #10)
   - 2.3. ☒ CATEGORY III: Laboratory Reruns
     - 2.3.1. ☐ QA/QC:
       - ☐ surrogates ☐ internal standards
       - ☒ spike recoveries ☐ blank contamination
     - 2.3.2. ☐ CONFIRMATION:
       - ☐ second column ☐ contamination check
       - ☐ other (see #10)
     - 2.3.3. ☐ DILUTION:
       - ☐ over calibration ☐ under calibration
       - ☐ other (see #10)
     - 2.3.4. ☐ OTHER: (see #10)
3. ☐ Sample lost during extraction/analysis: no re-prep or re-analysis possible.
4. ☐ QC data reported to client outside of:
   - ☐ method limits ☐ internal limits
   - ☐ QAPP limits ☐ contract limits
   - ☐ regulatory limits ☐ blank criteria
5. ☐ Incorrect procedure(s) used. (See #10)
6. ☐ Invalid instrument calibration. (See #10)
7. ☐ Incorrect/incomplete data reported to client. (See #10)
8. ☒ Reported detection limit(s) higher than: SG 5/2/94
   - ☐ method limits ☐ QAPP limits
   - ☒ contract limits ☐ other (see #10)

   Due to:
   - ☐ sample matrix ☐ insufficient sample
   - ☐ instrumentation ☐ other (see #10)
9. ☐ Other (specify):
10. ☐ Comments/Explanation:

NOTIFICATION [check appropriate item(s)]:

1. ☐ Client notified by (name and date): _____
   - ☐ in writing ☐ by FAX
   - ☐ by phone ☐ Other (explain)
2. ☐ Client's name _____ and response:
   - ☐ process "as is" ☐ resample
   - ☐ on hold til ____ ☐ Other (explain)

PROJECT MANAGER (signature & date): Suzy Davies 5/2/94

FURTHER ACTION REQUIRED, SEE PAGE 2 OF 2

9613474.2671

IT CORPORATION

LOG #: RD-94-_____ page 2 of 2

CORRECTIVE ACTION

☐ **ROOT CAUSE:** INITIALS/DATE mmm 4-22-94

matrix spike recovery for tryd was unacceptable

☐ **CORRECTIVE ACTION:** INITIALS/DATE mmm 4-22-94

Rerun
rerun acceptable 5-1-94 mmm

☐ RESPONSIBILITY FOR PERFORMING CORRECTIVE ACTION ASSIGNED TO:

☐ **ACTIONS TO PREVENT RECURRENCE:** INITIALS/DATE _____

FIRST LEVEL SUPERVISOR: M Kellogg DATE: 4-22-94

RESPONSIBLE MANAGER: W MacKellar DATE: 5/2/94

QC REVIEW

☐ NONCONFORMANCE ☐ DEFICIENCY ☒ RERUN

☐ FURTHER ACTION REQUIRED:

ASSIGNED TO:

QC COORDINATOR: [signature] DATE: 5/2/94

CORRECTIVE ACTION VERIFICATION

☐ VERIFIED ☐ CANNOT VERIFY (specify reason) 0035

REASON:

NCM CLOSURE

QC COORDINATOR: [signature] DATE: 5/2/94

SIGNED ORIGINAL MUST BE RETAINED IN FILE: ☐ QUALITY/OPERATIONS FILE ☒ PROJECT FILE 0035

9613474.2672

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 402079, 3269, 3267, 3245

Lab Sample Numbers or SDG: L0002

Method/Test/Parameter: RA3209 Ra

	Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A. 1.	**Calibration** Is the calibration documentation included where applicable?			✓	✓
B. 1.	**Sample Analysis** Are the sample Yields within acceptance criteria?	✓			✓
2.	Were all sample holding times met?	✓			✓
C. 1.	**QC Samples** Is the Blank Yield within acceptance criteria?	✓			✓
2.	Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?	✓			✓
3.	Is the Blank result ≤ the Contract Detection Limit?	✓			✓
4.	Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?			✓	✓
5.	Is the LCS result within acceptance criteria?	✓			✓
6.	Is the LCS yield within acceptance criteria?	✓			✓
7.	Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?	✓			✓
8.	MS/MSD results and yield meet acceptance criteria?			✓	✓
9.	Duplicate sample results and yield meet acceptance criteria?	✓			✓
D. 1.	**Other** Are all nonconformances included and noted?	✓			✓
2.	Are all required forms filled out?	✓			✓
3.	Correct methodology used?	✓			✓
4.	Transcription checked?	✓			✓
5.	Were all calculations checked at a minimum frequency?	✓			✓
6.	Units checked?	✓			✓

Comments on any "No" response:

Analyst: M Kelling Date: 4-15-94

Second Level Review: Suzy Jones Date: 4/20/94

Form No: LS-038, 3/94, Rev 2

0036

9613474.2673

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 403245, 403099, 403209, 403267

Lab Sample Numbers or SOG: W0002

Method/Test/Parameter: RD3234 U,10

	Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A. 1.	**Calibration** Is the calibration documentation included where applicable?			✓	✓
B. 1.	**Sample Analysis** Are the sample Yields within acceptance criteria?	✓			✓
2.	Were all sample holding times met?	✓			✓
C. 1.	**QC Samples** Is the Blank Yield within acceptance criteria?	✓			✓
2.	Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?	✓			✓
3.	Is the Blank result ≤ the Contract Detection Limit?	✓			✓
4.	Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?			✓	✓
5.	Is the LCS result within acceptance criteria?	✓			✓
6.	Is the LCS yield within acceptance criteria?	✓			✓
7.	Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?	✓			✓
8.	MS/MSD results and yield meet acceptance criteria?			✓	✓
9.	Duplicate sample results and yield meet acceptance criteria?		✓		✓
D. 1.	**Other** Are all nonconformances included and noted?	✓			✓
2.	Are all required forms filled out?	✓			✓
3.	Correct methodology used?	✓			✓
4.	Transcription checked?	JMT			✓
5.	Were all calculations checked at a minimum frequency?	✓			✓
6.	Units checked?	✓			✓

Comments on any "No" response:

U234 is within 4.7σ. U238 is within 4.3σ

Analyst: _____ Date: _____

Second Level Review: M Kellogg Date: 4-7-94

Form No: LS-038, 3/94, Rev 2 Suzy Davies 4/11/94

0037

OK to Trafe 4-7-94 MMA

9613474.2674

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 403315, 403267, 403209, 403099

Lab Sample Numbers or SDG: L03345 1B - L03345 1J WD002

Method/Test/Parameter: X

	Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A.	**Calibration**				
1.	Is the calibration documentation included, where applicable?			✓	✓
B.	**Sample Analysis**				
1.	Are the sample yields within acceptance criteria?			✓	✓
2.	Were all sample holding times met?	✓			✓
C.	**QC Samples**				
1.	Is the Blank yield within acceptance criteria?			✓	✓
2.	Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?	✓			✓
3.	Is the Blank result ≤ the Contract Detection Limit?	✓			✓
4.	Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?			✓	✓
5.	Is the LCS result within acceptance criteria?	✓			✓
6.	Is the LCS yield within acceptance criteria?	2-94		✓	✓
7.	Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?	✗	✓		✓
8.	MS/MSD results and yield meet acceptance criteria?			✓	✓
9.	Duplicate sample results and yield meet acceptance criteria?	✓			✓
D.	**Other**				
1.	Are all nonconformances included and noted?	✓			✓
2.	Are all required forms filled out?	✓			✓
3.	Correct methodology used?	✓			✓
4.	Transcription checked?	✓			✓
5.	Were all calculations checked at a minimum frequency?	✓			✓
6.	Units checked?	✓			✓

Comments on any "No" response: Spike, which is a reusable soil LCS, has MDA > RCDL for Eu 152 Eu154 although these isotopes are not present in our lab control sample

Analyst: Joel Thompson Date: 5-2-94

Second Level Review: Suzy Davies Date: 5/2/94

Form No: LS-038, 3/94, Rev 2

0038

9613474.2675

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 403099, 403209, 403267, 403345

Lab Sample Numbers or SDG: L0309918 - L0309915 W0002

Method/Test/Parameter: I129

	Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A. 1.	**Calibration** Is the calibration documentation included where applicable?			✓	✓
B. 1.	**Sample Analysis** Are the sample yields within acceptance criteria?			✓	✓
2.	Were all sample holding times met?	✓			✓
C. 1.	**QC Samples** Is the Blank yield within acceptance criteria?			✓	✓
2.	Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?	✓			✓
3.	Is the Blank result ≤ the Contract Detection Limit?	✓			✓
4.	Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?			✓	✓
5.	Is the LCS result within acceptance criteria?	✓			✓
6.	Is the LCS yield within acceptance criteria?			✓	✓
7.	Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?				✓
8.	MS/MSD results and yield meet acceptance criteria?			✓	✓
9.	Duplicate sample results and yield meet acceptance criteria?	✓			✓
D. 1.	**Other** Are all nonconformances included and noted?			✓	✓
2.	Are all required forms filled out?	✓			✓
3.	Correct methodology used?	✓			✓
4.	Transcription checked?	✓			
5.	Were all calculations checked at a minimum frequency?	✓			✓
6.	Units checked?	✓			✓

Comments on any "No" response:

Analyst: Joel T Kemmerer Date: 5-2-94

Second Level Review: Sherry Davies Date: 5/2/94

Form No: LS-038, 3/94 Rev 2

0039

9613474.2676

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 403209, 403099, 403345, 403267

Lab Sample Numbers or SDG: L033451 B - L0334515

Method/Test/Parameter: Alpha

	Review item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A. 1.	**Calibration** Is the calibration documentation included where applicable?			✓	
B. 1.	**Sample Analysis** Are the sample yields within acceptance criteria?			✓	
2.	Were all sample holding times met?	✓			
C. 1.	**QC Samples** Is the Blank Yield within acceptance criteria?			✓	
2.	Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?	✓			
3.	Is the Blank result ≤ the Contract Detection Limit?	✓			
4.	Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?			✓	
5.	Is the LCS result within acceptance criteria?	✓			
6.	Is the LCS yield within acceptance criteria?			✓	
7.	Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?	✓			
8.	MS/MSD results and yield meet acceptance criteria?			✓	
9.	Duplicate sample results and yield meet acceptance criteria?	✓			
D. 1.	**Other** Are all nonconformances included and noted?			✓	
2.	Are all required forms filled out?	✓			
3.	Correct methodology used?	✓			
4.	Transcription checked?	✓			
5.	Were all calculations checked at a minimum frequency?	✓			
6.	Units checked?	✓			↓

Comments on any "No" response:

Analyst: Joel T Kempema Date: 4-1-94

Second Level Review: Sally Davies Date: 4/7/94

Form No: LS-038, 3/94, Rev 2

TRANSFER 0040

9613474.2677

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 403209, 403099, 403345, 403267

Lab Sample Numbers or SDG: L0334518 - L0334515

Method/Test/Parameter: Beta

	Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A. 1.	**Calibration** Is the calibration documentation included where applicable?			✓	✓
B. 1.	**Sample Analysis** Are the sample yields within acceptance criteria?			✓	✓
2.	Were all sample holding times met?	✓			✓
C. 1.	**QC Samples** Is the Blank Yield within acceptance criteria?			✓	✓
2.	Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?	✓			✓
3.	Is the Blank result ≤ the Contract Detection Limit?	✓			✓
4.	Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?			✓	✓
5.	Is the LCS result within acceptance criteria?	✓			✓
6.	Is the LCS yield within acceptance criteria?	~~✓~~	4/7/94	✓	✓
7.	Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?	✓			✓
8.	MS/MSD results and yield meet acceptance criteria?			✓	✓
9.	Duplicate sample results and yield meet acceptance criteria?	✓			
D. 1.	**Other** Are all nonconformances included and noted?			✓	✓
2.	Are all required forms filled out?	✓			✓
3.	Correct methodology used?	✓			✓
4.	Transcription checked?	✓			✓
5.	Were all calculations checked at a minimum frequency?	✓			✓
6.	Units checked?	✓			✓

Comments on any "No" response:

Analyst: Joel T Kimoama Date: 4-2-94

Second Level Review: Suzy Gaines Date: 4/7/94

Form No: LS-038, 3/94, Rev 2

TRANSFER

0041

9613474.2678

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 403245 403267 405099 403209

Lab Sample Numbers or SDG: WCCC3

Method/Test/Parameter: 5 To 7

	Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A. 1.	**Calibration** Is the calibration documentation included where applicable?			X	✓
B. 1.	**Sample Analysis** Are the sample Yields within acceptance criteria?	X			✓
2.	Were all sample holding times met?			X	✓
C. 1.	**QC Samples** Is the Blank Yield within acceptance criteria?	X			✓
2.	Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?	X			✓
3.	Is the Blank result ≤ the Contract Detection Limit?	X			✓
4.	Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?			X	✓
5.	Is the LCS result within acceptance criteria?		X		✓
6.	Is the LCS yield within acceptance criteria?	X			✓
7.	Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?	X			✓
8.	MS/MSD results and yield meet acceptance criteria?			X	✓
9.	Duplicate sample results and yield meet acceptance criteria?	X			✓
D. 1.	**Other** Are all nonconformances included and noted?	X			✓
2.	Are all required forms filled out?	X			✓
3.	Correct methodology used?	X			✓
4.	Transcription checked?	JM			✓
5.	Were all calculations checked at a minimum frequency?	X			✓
6.	Units checked?	X			✓

Comments on any "No" response:

See NCM Report 3rd count

Analyst: [signature] Date: 4/27/94

Second Level Review: [signature] Date: 11/3x/94

Form No: LS-038, 3/94, Rev 2

0042

9613474.2679

092

INTERNATIONAL TECHNOLOGY CORPORATION

LOG #: RD-94-_____ page 1 of 2

(TAS-Rolland)
LABORATORY NONCONFORMANCE MEMO (NCM)

PROJECT ID (Name/Number): WHC

NCM INITIATED BY (Name/Date): Gow 4/27/94

PARAMETER(S): SvTOT

SAMPLE NUMBER(S) AFFECTED: L0334515

MATRIX: soil

AREA: ☐ SHIP/REC ☒ RADIOCHEM ☐ COUNTING ☐ BIOASSAY ☐ DATA VERIF ☐ REPORTING ☐ OTHER:

NONCONFORMANCE [check appropriate item(s)]:

1. ☐ Not enough sample received for proper analysis.
2. ☐ Holding time exceeded by _____ days due to:
   - 2.1 ☐ CATEGORY I: Out of Laboratory Control
     - ☐ Holding time expired at receipt.
   - 2.2 ☐ CATEGORY II: Laboratory Dependent
     - ☐ work backlog ☐ instrument failure
     - ☐ communication ☐ other (see #10)
   - 2.3 ☒ CATEGORY III: Laboratory Reruns
     - 2.3.1. ☐ QA/QC:
       - ☐ surrogates ☐ internal standards
       - ☒ spike recoveries ☐ blank contamination
     - 2.3.2. ☐ CONFIRMATION:
       - ☐ second column ☐ contamination check
       - ☐ other (see #10)
     - 2.3.3. ☐ DILUTION:
       - ☐ over calibration ☐ under calibration
       - ☐ other (see #10)
     - 2.3.4. ☐ OTHER: (see #10)
3. ☐ Sample lost during extraction/analysis; no re-prep or re-analysis possible.
4. ☐ QC data reported to client outside of:
   - ☐ method limits ☐ internal limits
   - ☐ QAPP limits ☐ contract limits
   - ☐ regulatory limits ☐ blank criteria
5. ☐ Incorrect procedure(s) used. (See #10)
6. ☐ Invalid instrument calibration. (See #10)
7. ☐ Incorrect/incomplete data reported to client. (See #10)
8. ☐ Reported detection limit(s) higher than:
   - ☐ method limits ☐ QAPP limits
   - ☐ contract limits ☐ other (see #10)

   Due to:
   - ☐ sample matrix ☐ insufficient sample
   - ☐ instrumentation ☐ other (see #10)
9. ☐ Other (specify):
10. ☒ Comments/Explanation: 135% spike recovery. samples recounted two times

NOTIFICATION [check appropriate item(s)]:

1. ☐ Client notified by (name and date): _____
   - ☐ in writing ☐ by FAX
   - ☐ by phone ☐ Other (explain)
2. ☐ Client's name _____ and response:
   - ☐ process "as is" ☐ resample
   - ☐ on hold til ____ ☐ Other (explain)

PROJECT MANAGER (signature & date): Suzy Davies 4/28/94

FURTHER ACTION REQUIRED, SEE PAGE 2 OF 2

9613474.2680

IT CORPORATION

LOG #: RD-94-_____ page 2 of 2

CORRECTIVE ACTION

☒ ROOT CAUSE: INITIALS/DATE SE 4/27/94

Based on the change in spike yield from first count to second count indicates that some non-Sr nuclide was present. (Ra228 for example) Second count confirmed by third.

☒ CORRECTIVE ACTION: INITIALS/DATE SE 4/27/94

Report data. No sample exhibits this change in activity level. X contamination not suspected due to low level samples and blk results. Report third count.

☐ RESPONSIBILITY FOR PERFORMING CORRECTIVE ACTION ASSIGNED TO:

☒ ACTIONS TO PREVENT RECURRENCE: INITIALS/DATE SE 4/27/94

monitor for trends. Other recent Sr tests have not shown this problem.

FIRST LEVEL SUPERVISOR: [signature] DATE: 4/27/94

RESPONSIBLE MANAGER: [signature] DATE: 4/29/94

QC REVIEW

☐ NONCONFORMANCE ☐ DEFICIENCY ☒ RERUN

☐ FURTHER ACTION REQUIRED:

ASSIGNED TO

QC COORDINATOR: Jodie Cox DATE: 4/29/94

CORRECTIVE ACTION VERIFICATION

☒ VERIFIED ☐ CANNOT VERIFY (specify reason)

REASON:

NCM CLOSURE

QC COORDINATOR: Jodie Cox DATE: 4/29/94

0044

SIGNED ORIGINAL MUST BE RETAINED IN FILE: ☐ QUALITY/OPERATIONS FILE ☒ PROJECT FILE

9613474.2681

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 3-099, 3-209, 3-267, 3-345

Lab Sample Numbers or SDG: - W0002

Method/Test/Parameter: Selenium

	Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A. 1.	**Calibration** Is the calibration documentation included where applicable?			✓	✓
B. 1.	**Sample Analysis** Are the sample Yields within acceptance criteria?	✓			✓
2.	Were all sample holding times met?			N/A	✓
C. 1.	**QC Samples** Is the Blank Yield within acceptance criteria?	✓			✓
2.	Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?	✓			✓
3.	Is the Blank result ≤ the Contract Detection Limit?	✓			✓
4.	Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?			N/A	✓
5.	Is the LCS result within acceptance criteria?	✓			✓
6.	Is the LCS yield within acceptance criteria?	✓			✓
7.	Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?			N/A	✓
8.	MS/MSD results and yield meet acceptance criteria?	✓			✓
9.	Duplicate sample results and yield meet acceptance criteria?	✓			✓
D. 1.	**Other** Are all nonconformances included and noted?			N/A	✓
2.	Are all required forms filled out?				✓
3.	Correct methodology used?	✓			✓
4.	Transcription checked?				✓
5.	Were all calculations checked at a minimum frequency?	✓			✓
6.	Units checked?	✓			✓

Comments on any "No" response:

Analyst: [signature] Date: 4/25/94

Second Level Review: Suzy Daines Date: 4/29/94

Form No: LS-038, 3/94, Rev 2

0045

9613474.2682

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 403209901 403345 403209 403267

Lab Sample Numbers or SDG: W0002

Method/Test/Parameter: Tc99.

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A. Calibration 1. Is the calibration documentation included where applicable?			X	✓
B. Sample Analysis 1. Are the sample Yields within acceptance criteria?	X			✓
2. Were all sample holding times met?			X	✓
C. QC Samples 1. Is the Blank Yield within acceptance criteria?	X			✓
2. Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?	X			✓
3. Is the Blank result ≤ the Contract Detection Limit?	X			✓
4. Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?			X	✓
5. Is the LCS result within acceptance criteria?	X			✓
6. Is the LCS yield within acceptance criteria?	X			✓
7. Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?	X			✓
8. MS/MSD results and yield meet acceptance criteria?	X			✓
9. Duplicate sample results and yield meet acceptance criteria?	X			✓
D. Other 1. Are all nonconformances included and noted?	X			✓
2. Are all required forms filled out?	X			✓
3. Correct methodology used?	X			✓
4. Transcription checked?	X			✓
5. Were all calculations checked at a minimum frequency?	X			✓
6. Units checked?	X			✓

Comments on any "No" response:

Analyst: [illegible] Date: 4/29/94

Second Level Review: Suzy Davies Date: 4/29/94

Form No: LS-038, 3/94, Rev 2

9613474.2683

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 403099, 403209, 403267, 403345

Lab Sample Numbers or SDG: W 0002

Method/Test/Parameter: Total Uranium

	Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A. 1.	**Calibration** Is the calibration documentation included where applicable?			✓	✓
B. 1.	**Sample Analysis** Are the sample Yields within acceptance criteria?			✓	✓
2.	Were all sample holding times met?	✓			✓
C. 1.	**QC Samples** Is the Blank Yield within acceptance criteria?			✓	✓
2.	Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?			✓	✓
3.	Is the Blank result ≤ the Contract Detection Limit?	✓			✓
4.	Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?			✓	✓
5.	Is the LCS result within acceptance criteria?	✓			✓
6.	Is the LCS yield within acceptance criteria?			✓	✓
7.	Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?			✓	✓
8.	MS/MSD results and yield meet acceptance criteria?	✓			✓
9.	Duplicate sample results and yield meet acceptance criteria?	✓			✓
D. 1.	**Other** Are all nonconformances included and noted?	✓			✓
2.	Are all required forms filled out?	✓			✓
3.	Correct methodology used?	✓			✓
4.	Transcription checked?	PK			CBR
5.	Were all calculations checked at a minimum frequency?	✓			✓
6.	Units checked?	✓			✓

Comments on any "No" response:

Analyst: Pam Kenney Date: 4-18-94

Second Level Review: Sherry Davies Date: 4/22/94

Form No: LS-038, 3/94, Rev 2

0047

J.C. 5/3/94

9613474.2684

MEMORANDUM

JUN 1994 RECEIVED TQO

TO: 200-UP-2 Project QA Record

June 22, 1994

FR: Susan Winter, Golder Associates Inc.

RE: RADIOCHEMISTRY DATA VALIDATION SUMMARY FOR DATA PACKAGE: W0002-ITC-007 (923-E418, Filename W0002R.UP2)

INTRODUCTION

This memo presents the results of data validation on data package W0002-ITC-007 prepared by the International Technology Corporation (ITC) laboratory. The samples validated along with the analyses reported and the methods of analysis are provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA	ANALYSIS
B09WF9	03/03/04	SOIL	SEE NOTE 1
B09WG0	03/04/94	SOIL	
B09WG7	03/10/94	SOIL	
B09WH0	03/16/94	SOIL	
B09WH1	03/16/94	SOIL	
B09WI9	03/10/94	SOIL	
B09WJ0	03/11/94	SOIL	
B09WJ3	03/14/94	SOIL	
B09WJ4	03/14/94	SOIL	
B09WJ5	03/15/94	SOIL	
B09WJ7	03/16/94	SOIL	

RECEIVED JUN 24 1994 VALIDATION DOCUMENTATION SDLA

Note 1. All samples were analyzed for gross alpha, gross beta, selenium-79, total strontium, technetium-99, iodine-129, alpha spectroscopy (uranium 233/234, uranium 235, uranium-238, plutonium-238, plutonium-239/240, americium-241, curium-242, curium-244, and neptunium-237), total uranium, and gamma spectroscopy.

Data validation was conducted in accordance with the WHC statement of work (WHC 1993a) and validation procedures (WHC 1993b). Attachments 1 through 5 provide the following information as indicated below:

Attachment 1. Glossary of Data Reporting Qualifiers
Attachment 2. Summary of Data Qualifications
Attachment 3. Qualified Data Summary and Annotated Laboratory Reports
Attachment 4. Laboratory Narrative and Chain-of-Custody Documentation
Attachment 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

Precision. Goals for precision were met.

001

Accuracy. Goals for accuracy were met with the exception of the deficiencies identified below.

Sample Result Verification. All sample results were supported in the raw data. However, the calculations for the miniumum detectable activity and/or the sample result could not be verified for plutonium-238, technetium-99, selenium-79 and neptunium-237. Therefore, associated sample results have been qualified as estimated. Attachments 2 and 5 provide a summary of the samples affected, data qualifications applied and supporting documentation.

Detection Limits. Detection limit goals were met for all results with the exception of the europium-152 MDA value of 0.161 pCi/g which is greater than the required detection limit of 0.1 pCi/g.

Completeness. The data package was complete for all requested analyses. A total of eleven samples were validated in this data package with a total of 275 determinations reported, all of which were deemed valid. This results in a completeness of 100 percent, which meets normal work plan objectives of 90%.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

The following minor deficiencies were identified during data validation which required qualification of data.

Continuing Calibration

- The continuing calibration check for neptunium-237 was performed more than one week from the date of sample analysis. Attachments 2 and 5 provide a summary of the sample affected, data qualification applied and supporting documentation.

Accuracy

- Neptunium-237 matrix spike percent recovery was unacceptable. Attachments 2 and 5 provide a summary of the samples affected, data qualifications applied and supporting documentation.

- Total strontium laboratory control sample percent recovery was unacceptable. Attachments 2 and 5 provide a summary of the samples affected, data qualifications applied and supporting documentation.

Gamma Spectroscopy

- Sample B09WJ0 was analyzed in a different geometry than the associated blank and laboratory control sample for the gamma spectroscopy analysis. Attachments 2 and 5 provide a summary of the affected sample results, data qualifications applied and supporting documentation.

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation, Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Radiochemical Analyses, WHC-SD-EN-SPP-001, Rev. 1, 1993. Westinghouse Hanford Company, Richland, Washington.

9613474.2607

ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF RADIOCHEMISTRY DATA REPORTING QUALIFIERS

U - Indicates the constituent was analyzed for, but was not detected at a concentration above the minimum detectable activity (MDA). The concentration reported is the MDA corrected for sample aliquot size, dilution factors and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and was not detected at a concentration above the MDA. Due to a quality control deficiency identified during data validation, the concentration reported may not accurately reflect the sample MDA. The associated data should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. The concentration reported is qualified as estimated due to a quality control deficiency identified during data validation. The associated data should be considered usable for decision making purposes.

UR - Indicates the constituent was analyzed for and not detected. The concentration reported is qualified as unusable due to a quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. The concentration reported is qualified as unusable due to a quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

9613974.2609

ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY

SDG: W0002-ITC-029	VALIDATOR:	DATE: June 22, 1994	PAGE 1 OF 1
COMMENTS: RADIOCHEMISTRY			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
TOTAL STRONTIUM	J	B09WF9 B09WI9 B09WJ0 B09WJ3	LCS %R > 130%
NEPTUNIUM-237	J - DETECTS UJ - NONDETECTS	ALL SAMPLES	MS %R < 60% BUT > 10%
ALL GAMMA SPECTROSCOPY ANALYTES	J - DETECTS UJ - NONDETECTS	B09WJ0	SAMPLE WAS ANALYZED IN A DIFFERENT GEOMETRY THAN THE ASSOCIATED BLANK AND LCS
NEPTUNIUM-237	UJ	B09WG0	CONTINUING CALIBRATION WAS NOT PERFORMED WITHIN ONE WEEK OF SAMPLE ANALYSIS
PLUTONIUM-238	UJ - NONDETECTS	B09WF9 B09WG0 B09WG7 B09WH0 B09WH1 B09WJ5 B09WJ7	MDA CALCULATION COULD NOT BE VERIFIED
SELENIUM-79	J - DETECTS UJ - NONDETECTS	ALL SAMPLES	RESULT AND MDA CALCULATIONS COULD NOT BE VERIFIED
TECHNETIUM-99	UJ - NONDETECTS	ALL SAMPLES	RESULT AND MDA CALCULATIONS COULD NOT BE VERIFIED
NEPTUNIUM-237	UJ - NONDETECTS	B09WF9 B09WG0 B09WG7 B09WH0 B09WH1 B09WJ0 B09WJ3 B09WJ4 B09WJ5 B09WJ7	MDA CALCULATION COULD NOT BE VERIFIED

9615474.2691

ATTACHMENT 3

QUALIFIED DATA SUMMARY AND ANNOTATED LABORATORY REPORTS

Validated Data Summary, Data Package: W0002-ITC-007

	Samp#	B09WF9		B09WG0		B09WG7		B09WH0		B09WH1		B09WI9	
	Date	3-3-94		3-4-94		3-10-94		3-16-94		3-16-94		3-10-94	
	Location	---		---		---		---		---		---	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
AMERICIUM-241	PCI/G	0.014		0.010		0.006	U	0.012		0.008		0.318	
CURIUM-242	PCI/G	0.012	U	0.005	U	0.007	U	0.004	U	0.007	U	0.005	U
CURIUM-244	PCI/G	0.015	U	0.007	U	0.005		0.003	U	0.008		0.005	U
NEPTUNIUM-237	PCI/G	0.011	UJ	0.015	UJ	0.011	UJ	0.017	UJ	0.011	UJ	0.013	J
PLUTONIUM-238	PCI/G	0.029	UJ	0.030	UJ	0.014	UJ	0.035	UJ	0.021	UJ	0.284	
PLUTONIUM-239/240	PCI/G	0.018	U	0.015	U	0.026	U	0.022	U	0.021	U	1.610	
URANIUM-234	PCI/G	0.740		0.544		0.991		0.812		0.874		2.480	
URANIUM-235	PCI/G	0.029		0.033		0.065		0.019	U	0.035		0.112	
URANIUM-238	PCI/G	0.779		0.577		1.020		0.912		0.924		2.360	
POTASSIUM-40	PCI/G	11.700		13.400		17.400		16.100		17.400		13.400	
COBALT-60	PCI/G	0.023	U	0.023	U	0.020	U	0.020	U	0.017	U	0.015	U
EUROPIUM-152	PCI/G	0.105	U	0.101	U	0.105	U	0.106		0.118		0.073	U
CESIUM-137	PCI/G	0.022	U	0.020	U	0.019	U	0.018	U	0.016	U	66.100	
CESIUM-134	PCI/G	0.018	U	0.019	U	0.017	U	0.017	U	0.015	U	0.032	U
RUTHENIUM-106	PCI/G	0.192	U	0.179	U	0.170	U	0.154	U	0.145	U	0.326	U
SODIUM-22	PCI/G	0.024	U	0.025	U	0.024	U	0.023	U	0.020	U	0.017	U
EUROPIUM-155	PCI/G	0.058	U	0.054	U	0.055	U	0.052	U	0.050		0.106	U
EUROPIUM-154	PCI/G	0.066	U	0.071	U	0.067	U	0.064	U	0.054	U	0.048	U
IODINE-129	PCI/G	0.808	U	0.922	U	0.936	U	0.942	U	1.070	U	1.800	U
ALPHA	PCI/G	4.930		11.300		9.050		6.200		13.400		12.800	
BETA	PCI/G	20.000		21.200		28.000		25.400		27.700		125.000	
TOTAL STRONTIUM	PCI/G	0.372	J	0.120	U	0.118	U	0.122	U	0.134	U	0.185	J
SELENIUM-79	PCI/G	0.632	UJ	0.630	UJ	1.160	J	1.160	J	1.090	J	1.200	J
TECHNETIUM-99	PCI/G	0.195	UJ	0.195	UJ	0.195	UJ	0.195	UJ	0.195	UJ	0.195	UJ
URANIUM	UG/G	1.300		2.150		1.880		2.140		2.760		6.820	

Verified
6/22/94

2692.4/4/9196

Validated Data Summary, Data Package: W0002-ITC-007

	Samp#	B09WJ0		B09WJ3		B09WJ4		B09WJ5		B09WJ7	
	Date	3-11-94		3-14-94		3-14-94		3-15-94		3-16-94	
	Location	---		---		---		---		---	
	Depth	---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
AMERICIUM-241	PCI/G	0.084		0.037		0.009		0.010		0.007	
CURIUM-242	PCI/G	0.007	U	0.005		0.005	U	0.006	U	0.004	U
CURIUM-244	PCI/G	0.003	U	0.007		0.006	U	0.011		0.004	U
NEPTUNIUM-237	PCI/G	0.011	UJ	0.015	UJ	0.011	UJ	0.018	UJ	0.018	UJ
PLUTONIUM-238	PCI/G	0.131		0.086		0.014		0.014	UJ	0.033	UJ
PLUTONIUM-239/240	PCI/G	0.287		0.106		0.020	U	0.022	U	0.016	U
URANIUM-234	PCI/G	1.570		0.478		0.652		0.807		0.748	
URANIUM-235	PCI/G	0.077		0.031		0.033		0.044		0.034	
URANIUM-238	PCI/G	1.540		0.443		0.644		0.809		0.835	
POTASSIUM-40	PCI/G	12.400	J	11.400		12.000		12.100		15.500	
COBALT-60	PCI/G	0.033	UJ	0.021	U	0.019	U	0.017	U	0.019	U
EUROPIUM-152	PCI/G	0.161	UJ	0.105	U	0.089	U	0.098	U	0.126	
CESIUM-137	PCI/G	0.778	J	0.021	U	0.018	U	0.018	U	0.018	U
CESIUM-134	PCI/G	0.024	UJ	0.017	U	0.016	U	0.016	U	0.016	U
RUTHENIUM-106	PCI/G	0.234	UJ	0.157	U	0.150	U	0.151	U	0.150	U
SODIUM-22	PCI/G	0.035	UJ	0.023	U	0.022	U	0.022	U	0.022	U
EUROPIUM-155	PCI/G	0.052	UJ	0.069		0.048	U	0.068		0.072	
EUROPIUM-154	PCI/G	0.097	UJ	0.065	U	0.062	U	0.063	U	0.060	U
IODINE-129	PCI/G	0.922	U	1.160	U	0.867	U	0.867	U	1.040	U
ALPHA	PCI/G	7.280		4.970		3.800		5.240		5.200	
BETA	PCI/G	29.900		63.600		17.900		19.600		20.900	
TOTAL STRONTIUM	PCI/G	3.030	J	15.100	J	0.122	U	0.130	U	0.123	U
SELENIUM-79	PCI/G	0.867	J	1.600	J	0.632	UJ	0.631	UJ	0.632	UJ
TECHNETIUM-99	PCI/G	0.195	UJ	0.195	UJ	0.195	UJ	0.195	UJ	0.195	UJ
URANIUM	UG/G	3.690		1.920		2.060		2.320		2.280	

Verified
6/22/94

9613474.2693

010

9613474 2694

RECEIVED
JUN 14 1994
Golder Associates

IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0002
LAB SAMPLE ID: 4-03-099-01
MATRIX: SOIL
WHC ID: B09WF9
DATE RECEIVED 3/4/94
REPORTING UNITS pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD	Q
AM-241	1.40E-02	8.84E-03	8.97E-03	3.78E-03	0.519	RD3302	
CM-242	-1.68E-03	3.36E-03	3.36E-03	1.24E-02	0.519	RD3302	U
CM-244	-1.40E-03	6.28E-03	6.28E-03	1.51E-02	0.519	RD3302	U
NP-237	6.67E-03	1.33E-02	1.34E-02	1.12E-02	0.623	RD3208	UJ
PU-238	5.31E-03	1.35E-02	1.36E-02	2.87E-02	0.627	RD3209	UJ
PU239/40	0.00E+00	0.00E+00	1.99E-02	1.79E-02	0.627	RD3209	U
U-234	7.40E-01	6.43E-02	9.61E-02	1.28E-02	0.6	RD3234	
U-235	2.89E-02	1.32E-02	1.35E-02	9.67E-03	0.6	RD3234	
U-238DA	7.79E-01	6.59E-02	1.00E-01	1.06E-02	0.6	RD3234	
K-40	1.17E+01	5.56E-01	5.56E-01	N/A	N/A	RD3219	
CO-60	-7.24E-03	1.38E-02	1.39E-02	2.26E-02	N/A	RD3219	U
EU-152	7.22E-02	5.28E-02	5.33E-02	1.05E-01	N/A	RD3219	U
CS-137DA	7.16E-03	1.24E-02	1.24E-02	2.16E-02	N/A	RD3219	U
CS-134	-8.00E-04	1.07E-02	1.07E-02	1.78E-02	N/A	RD3219	U
RU-106DA	1.09E-01	1.09E-01	1.10E-01	1.92E-01	N/A	RD3219	U
NA-22	-2.49E-02	1.56E-02	1.58E-02	2.38E-02	N/A	RD3219	U
EU-155	2.13E-02	3.63E-02	3.63E-02	5.78E-02	N/A	RD3219	U
EU-154	-6.91E-02	4.33E-02	4.38E-02	6.57E-02	N/A	RD3219	U
I-129LP	-3.87E-01	4.90E-01	4.91E-01	8.08E-01	N/A	RD3219	U
ALPHA	4.93E+00	2.44E+00	2.49E+00	2.62E+00	1	RD3222	
BETA	2.00E+01	2.34E+00	2.68E+00	2.00E+00	1	RD3222	
TOTAL-SR	3.72E-01	6.51E-02	1.35E-01	1.25E-01	0.735	RD3204	UJ
SE-79	4.27E-01	3.02E-01	8.71E-01	6.32E-01	0.776	RD3253	UJ
TC-99	2.78E-02	8.42E-02	3.98E-01	1.95E-01	0.891	ITAS-IT-RS-0001	UJ
URANIUM	1.30E+00	N/A	1.94E-01	7.00E-02	1	RD4200	

Verified
6/21/94

011

~~0011~~

682A-6-93

9613474.2695

IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0002
LAB SAMPLE ID: 4-03-209-01
MATRIX: SOIL
WHC ID: B09WG0
DATE RECEIVED 3/10/94
REPORTING UNITS pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD	Q
AM-241	1.04E-02	8.30E-03	8.38E-03	8.90E-03	0.504	RD3302	
CM-242	0.00E+00	0.00E+00	5.16E-03	4.66E-03	0.504	RD3302	U
CM-244	8.67E-04	3.11E-03	3.11E-03	7.47E-03	0.504	RD3302	U
NP-237	-5.35E-04	1.07E-03	1.08E-03	1.53E-02	0.623	RD3208	UJ
PU-238	1.30E-02	1.92E-02	1.93E-02	2.99E-02	0.767	RD3209	UJ
PU239/40	5.43E-03	1.09E-02	1.09E-02	1.47E-02	0.767	RD3209	U
U-234	5.44E-01	5.20E-02	7.33E-02	1.13E-02	0.677	RD3234	
U-235	3.27E-02	1.35E-02	1.38E-02	1.07E-02	0.677	RD3234	
U-238DA	5.77E-01	5.33E-02	7.65E-02	7.61E-03	0.677	RD3234	
K-40	1.34E+01	5.45E-01	5.45E-01	N/A	N/A	RD3219	
CO-60	3.67E-03	1.31E-02	1.31E-02	2.26E-02	N/A	RD3219	U
EU-152	2.52E-02	5.71E-02	5.72E-02	1.01E-01	N/A	RD3219	U
CS-137DA	-9.40E-03	1.20E-02	1.21E-02	1.96E-02	N/A	RD3219	U
CS-134	9.84E-04	1.13E-02	1.13E-02	1.90E-02	N/A	RD3219	U
RU-106DA	-3.23E-02	1.08E-01	1.08E-01	1.79E-01	N/A	RD3219	U
NA-22	1.59E-03	1.50E-02	1.50E-02	2.54E-02	N/A	RD3219	U
EU-155	9.00E-03	3.43E-02	3.43E-02	5.41E-02	N/A	RD3219	U
EU-154	1.68E-02	4.17E-02	4.17E-02	7.07E-02	N/A	RD3219	U
I-129LP	3.70E-01	5.09E-01	5.11E-01	9.22E-01	N/A	RD3219	U
ALPHA	1.13E+01	3.37E+00	3.59E+00	2.37E+00	1	RD3222	
BETA	2.12E+01	2.40E+00	2.78E+00	2.06E+00	1	RD3222	
TOTAL-SR	2.48E-02	3.27E-02	3.37E-02	1.20E-01	0.76	RD3204	U
SE-79	6.14E-01	3.07E-01	8.89E-01	6.30E-01	0.776	RD3253	UJ
TC-99	-4.38E-02	8.24E-02	3.92E-01	1.95E-01	0.891	ITAS-IT-RS-0001	UJ
URANIUM	2.15E+00	N/A	3.23E-01	7.00E-02	1	RD4200	

Verified
6/21/94

012

~~0012~~

682A-6-93

9613474.2696

IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND SDG NO.: W0002

LAB SAMPLE ID: 4-03-267-03 MATRIX: SOIL

WHC ID: B09WG7 DATE RECEIVED 3/14/94

REPORTING UNITS pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD	Q
AM-241	2.97E-03	4.06E-03	4.07E-03	5.90E-03	0.635	RD3302	U
CM-242	-5.32E-04	1.07E-03	1.07E-03	6.88E-03	0.635	RD3302	U
CM-244	4.58E-03	4.58E-03	4.61E-03	3.10E-03	0.635	RD3302	
NP-237	6.68E-03	1.34E-02	1.34E-02	1.13E-02	0.623	RD3208	UJ
PU-238	0.00E+00	0.00E+00	1.56E-02	1.41E-02	0.799	RD3209	UJ
PU239/40	-2.08E-03	2.94E-03	2.96E-03	2.59E-02	0.799	RD3209	U
U-234	9.91E-01	1.04E-01	1.50E-01	2.08E-02	0.306	RD3234	
U-235	6.47E-02	2.75E-02	2.84E-02	1.90E-02	0.306	RD3234	
U-238DA	1.02E+00	1.05E-01	1.53E-01	1.68E-02	0.306	RD3234	
K-40	1.74E+01	5.62E-01	5.62E-01	N/A	N/A	RD3219	
CO-60	-1.99E-03	1.21E-02	1.21E-02	2.00E-02	N/A	RD3219	U
EU-152	4.81E-02	5.81E-02	5.83E-02	1.05E-01	N/A	RD3219	U
CS-137DA	-6.35E-03	1.13E-02	1.14E-02	1.86E-02	N/A	RD3219	U
CS-134	5.78E-03	1.03E-02	1.04E-02	1.73E-02	N/A	RD3219	U
RU-106DA	-7.00E-02	1.05E-01	1.05E-01	1.70E-01	N/A	RD3219	U
NA-22	6.84E-03	1.41E-02	1.41E-02	2.41E-02	N/A	RD3219	U
EU-155	4.89E-02	3.13E-02	3.17E-02	5.47E-02	N/A	RD3219	U
EU-154	1.91E-02	3.93E-02	3.93E-02	6.74E-02	N/A	RD3219	U
I-129LP	-8.23E-02	5.46E-01	5.46E-01	9.36E-01	N/A	RD3219	U
ALPHA	9.05E+00	3.24E+00	3.38E+00	3.10E+00	1	RD3222	
BETA	2.80E+01	2.67E+00	3.25E+00	2.02E+00	1	RD3222	
TOTAL-SR	6.08E-03	2.93E-02	2.94E-02	1.18E-01	0.824	RD3204	U
SE-79	1.16E+00	3.21E-01	9.51E-01	6.32E-01	0.776	RD3253	UJ
TC-99	-5.98E-02	8.24E-02	3.91E-01	1.95E-01	0.891	ITAS-IT-RS-0001	U
URANIUM	1.88E+00	N/A	2.82E-01	7.00E-02	1	RD4200	

Verified
6/21/94

682A-6-93

9613474.2697

IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0002
LAB SAMPLE ID: 4-03-345-01
MATRIX: SOIL
WHC ID: B09WH0
DATE RECEIVED 3/17/94
REPORTING UNITS pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD	Q
AM-241	1.24E-02	7.50E-03	7.61E-03	3.06E-03	0.642	RD3302	
CM-242	1.30E-03	2.59E-03	2.60E-03	3.51E-03	0.642	RD3302	U
CM-244	1.14E-03	2.27E-03	2.27E-03	3.07E-03	0.642	RD3302	U
NP-237	-1.07E-03	1.51E-03	1.53E-03	1.70E-02	0.623	RD3208	UB
PU-238	6.53E-03	1.67E-02	1.67E-02	3.53E-02	0.511	RD3209	UB
PU239/40	0.00E+00	0.00E+00	2.45E-02	2.21E-02	0.511	RD3209	U
U-234	8.12E-01	8.48E-02	1.20E-01	2.12E-02	0.379	RD3234	
U-235	1.88E-02	1.51E-02	1.53E-02	1.91E-02	0.379	RD3234	U
U-238DA	9.12E-01	8.94E-02	1.31E-01	1.13E-02	0.379	RD3234	
K-40	1.61E+01	5.33E-01	1.70E+00	N/A	N/A	RD3219	
CO-60	-3.33E-03	1.25E-02	1.25E-02	2.02E-02	N/A	RD3219	U
EU-152	1.06E-01	5.11E-02	5.21E-02	9.85E-02	N/A	RD3219	
CS-137DA	-3.38E-04	1.09E-02	1.09E-02	1.84E-02	N/A	RD3219	U
CS-134	2.64E-03	1.01E-02	1.01E-02	1.68E-02	N/A	RD3219	U
RU-106DA	4.55E-02	9.06E-02	9.07E-02	1.54E-01	N/A	RD3219	U
NA-22	-3.62E-03	1.39E-02	1.39E-02	2.32E-02	N/A	RD3219	U
EU-155	3.37E-02	3.21E-02	3.22E-02	5.18E-02	N/A	RD3219	U
EU-154	-5.71E-02	4.02E-02	4.06E-02	6.43E-02	N/A	RD3219	U
I-129LP	2.39E-01	5.30E-01	5.31E-01	9.42E-01	N/A	RD3219	U
ALPHA	6.20E+00	2.69E+00	2.77E+00	2.70E+00	1	RD3222	
BETA	2.54E+01	2.54E+00	3.05E+00	1.92E+00	1	RD3222	
TOTAL-SR	6.43E-03	3.04E-02	3.05E-02	1.22E-01	0.798	RD3204	U
SE-79	1.16E+00	3.20E-01	9.50E-01	6.31E-01	0.776	RD3253	U
TC-99	-4.47E-02	8.30E-02	3.92E-01	1.95E-01	0.891	ITAS-IT-RS-0001	U
URANIUM	2.14E+00	N/A	3.21E-01	7.00E-02	1	RD4200	

Verified

6/21/94

014

~~0016~~

682A-6-93

9613474.2698

IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0002
LAB SAMPLE ID: 4-03-345-02
MATRIX: SOIL
WHC ID: B09WH1
DATE RECEIVED 3/17/94
REPORTING UNITS pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD	Q
AM-241	7.64E-03	6.19E-03	6.24E-03	5.98E-03	0.625	RD3302	
CM-242	2.11E-03	3.88E-03	3.89E-03	6.82E-03	0.625	RD3302	U
CM-244	8.13E-03	6.14E-03	6.20E-03	3.14E-03	0.625	RD3302	
NP-237	6.69E-03	1.34E-02	1.35E-02	1.13E-02	0.623	RD3208	UJ
PU-238	0.00E+00	0.00E+00	2.32E-02	2.09E-02	0.537	RD3209	UJ
PU239/40	0.00E+00	0.00E+00	2.32E-02	2.09E-02	0.537	RD3209	U
U-234	8.74E-01	7.97E-02	1.19E-01	1.66E-02	0.461	RD3234	
U-235	3.50E-02	1.68E-02	1.72E-02	1.38E-02	0.461	RD3234	
U-238DA	9.24E-01	8.19E-02	1.24E-01	1.48E-02	0.461	RD3234	
K-40	1.74E+01	4.70E-01	1.80E+00	N/A	N/A	RD3219	
CO-60	-5.82E-03	1.07E-02	1.07E-02	1.73E-02	N/A	RD3219	U
EU-152	1.18E-01	5.00E-02	5.13E-02	9.22E-02	N/A	RD3219	
CS-137DA	-1.86E-03	9.77E-03	9.77E-03	1.61E-02	N/A	RD3219	U
CS-134	-1.44E-02	9.57E-03	9.68E-03	1.50E-02	N/A	RD3219	U
RU-106DA	-2.18E-02	8.90E-02	8.90E-02	1.45E-01	N/A	RD3219	U
NA-22	-5.94E-03	1.22E-02	1.22E-02	1.95E-02	N/A	RD3219	U
EU-155	5.02E-02	2.82E-02	2.87E-02	4.78E-02	N/A	RD3219	
EU-154	-1.65E-02	3.39E-02	3.39E-02	5.40E-02	N/A	RD3219	U
I-129LP	2.22E-01	6.09E-01	6.10E-01	1.07E+00	N/A	RD3219	U
ALPHA	1.34E+01	3.82E+00	4.09E+00	3.22E+00	1	RD3222	
BETA	2.77E+01	2.64E+00	3.21E+00	1.92E+00	1	RD3222	
TOTAL-SR	1.84E-02	3.52E-02	3.57E-02	1.34E-01	0.8	RD3204	U
SE-79	1.09E+00	3.16E-01	9.40E-01	6.30E-01	0.776	RD3253	UJ
TC-99	9.86E-02	8.51E-02	4.03E-01	1.95E-01	0.891	ITAS-IT-RS-0001	UJ
URANIUM	2.76E+00	N/A	4.13E-01	7.00E-02	1	RD4200	

Verified

[illegible] 6/21/94

682A-6-93

9613474.2699

IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND SDG NO.: W0002

LAB SAMPLE ID: 4-03-267-01 MATRIX: SOIL

WHC ID: B09WI9 DATE RECEIVED 3/14/94

REPORTING UNITS pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD	Q
AM-241	3.18E-01	3.25E-02	4.52E-02	4.30E-03	0.872	RD3302	
CM-242	1.55E-03	2.85E-03	2.85E-03	5.01E-03	0.872	RD3302	U
CM-244	1.84E-03	3.04E-03	3.05E-03	5.17E-03	0.872	RD3302	U
NP-237	1.34E-02	1.89E-02	1.91E-02	1.13E-02	0.623	RD3208	
PU-238	2.84E-01	7.87E-02	8.86E-02	2.70E-02	0.771	RD3209	
PU239/40	1.61E+00	1.86E-01	2.97E-01	1.46E-02	0.771	RD3209	
U-234	2.48E+00	1.29E-01	2.79E-01	1.55E-02	0.496	RD3234	
U-235	1.12E-01	2.81E-02	3.02E-02	1.47E-02	0.496	RD3234	
U-238DA	2.36E+00	1.26E-01	2.66E-01	1.04E-02	0.496	RD3234	
K-40	1.34E+01	3.93E-01	1.40E+00	N/A	N/A	RD3219	
CO-60	-1.56E-03	9.50E-03	9.50E-03	1.55E-02	N/A	RD3219	U
EU-152	3.33E-02	4.17E-02	4.18E-02	7.32E-02	N/A	RD3219	U
CS-137DA	6.61E+01	1.99E-01	6.61E+00	N/A	N/A	RD3219	
CS-134	1.65E-02	1.98E-02	1.99E-02	3.16E-02	N/A	RD3219	U
RU-106DA	-1.36E-01	2.06E-01	2.07E-01	3.26E-01	N/A	RD3219	U
NA-22	-6.72E-03	1.05E-02	1.05E-02	1.74E-02	N/A	RD3219	U
EU-155	6.95E-02	6.56E-02	6.59E-02	1.06E-01	N/A	RD3219	U
EU-154	5.06E-03	2.81E-02	2.81E-02	4.80E-02	N/A	RD3219	U
I-129LP	-4.79E+00	1.20E+00	1.29E+00	1.80E+00	N/A	RD3219	U
ALPHA	1.28E+01	3.62E+00	3.88E+00	2.69E+00	1	RD3222	
BETA	1.25E+02	5.23E+00	9.73E+00	2.08E+00	1	RD3222	
TOTAL-SR	1.85E-01	4.88E-02	7.70E-02	1.21E-01	0.771	RD3204	
SE-79	1.20E+00	3.19E-01	9.53E-01	6.31E-01	0.776	RD3253	
TC-99	1.85E-01	8.69E-02	4.10E-01	1.95E-01	0.891	ITAS-IT-RS-0001	U
URANIUM	6.82E+00	0.00E+00	1.02E+00	7.00E-02	1	RD4200	

Verified

6/21/94

016

~~0013~~

682A-6-93

9613474.2700

IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0002
LAB SAMPLE ID: 4-03-267-02
MATRIX: SOIL
WHC ID: B09WJ0
DATE RECEIVED 3/14/94
REPORTING UNITS pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD	Q
AM-241	8.37E-02	2.03E-02	2.21E-02	3.33E-03	0.59	RD3302	
CM-242	8.57E-04	3.08E-03	3.08E-03	7.39E-03	0.59	RD3302	U
CM-244	1.24E-03	2.47E-03	2.47E-03	3.34E-03	0.59	RD3302	U
NP-237	6.68E-03	1.34E-02	1.34E-02	1.13E-02	0.623	RD3208	U
PU-238	1.31E-01	5.86E-02	6.19E-02	1.77E-02	0.636	RD3209	U
PU239/40	2.87E-01	8.69E-02	9.73E-02	2.83E-02	0.636	RD3209	
U-234	1.57E+00	9.79E-02	1.83E-01	1.53E-02	0.548	RD3234	
U-235	7.73E-02	2.22E-02	2.35E-02	1.25E-02	0.548	RD3234	
U-238DA	1.54E+00	9.66E-02	1.79E-01	1.25E-02	0.548	RD3234	
K-40	1.24E+01	6.61E-01	1.41E+00	N/A	N/A	RD3219	U
CO-60	2.50E-02	1.76E-02	1.77E-02	3.34E-02	N/A	RD3219	U
EU-152	1.77E-02	9.47E-02	9.48E-02	1.61E-01	N/A	RD3219	U
CS-137DA	7.78E-01	4.19E-02	8.84E-02	N/A	N/A	RD3219	U
CS-134	-6.20E-03	1.44E-02	1.44E-02	2.37E-02	N/A	RD3219	U
RU-106DA	-9.45E-02	1.41E-01	1.42E-01	2.34E-01	N/A	RD3219	U
NA-22	6.10E-03	2.05E-02	2.05E-02	3.54E-02	N/A	RD3219	U
EU-155	3.18E-02	3.21E-02	3.22E-02	5.17E-02	N/A	RD3219	U
EU-154	-1.15E-02	5.64E-02	5.64E-02	9.66E-02	N/A	RD3219	U
I-129LP	2.55E-01	5.17E-01	5.17E-01	9.22E-01	N/A	RD3219	U
ALPHA	7.28E+00	3.02E+00	3.12E+00	3.22E+00	1	RD3222	
BETA	2.99E+01	2.73E+00	3.37E+00	1.95E+00	1	RD3222	
TOTAL-SR	3.03E+00	1.70E-01	9.58E-01	1.33E-01	0.688	RD3204	U
SE-79	8.67E-01	3.14E-01	9.18E-01	6.31E-01	0.776	RD3253	U
TC-99	1.46E-01	8.67E-02	4.07E-01	1.95E-01	0.891	ITAS-IT-RS-0001	U
URANIUM	3.69E+00	N/A	5.53E-01	7.00E-02	1	RD4200	

U 4/22/94

Verified
6/21/94

~~0014~~

017

682A-6-93

9613474.2701

IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0002
LAB SAMPLE ID: 4-03-345-04
MATRIX: SOIL
WHC ID: B09WJ3
DATE RECEIVED 3/17/94
REPORTING UNITS pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD
AM-241	3.69E-02	1.54E-02	1.59E-02	1.42E-02	0.775	RD3302
CM-242	4.53E-03	5.23E-03	5.26E-03	4.09E-03	0.775	RD3302
CM-244	6.61E-03	5.92E-03	5.96E-03	3.58E-03	0.775	RD3302
NP-237	-5.35E-04	1.07E-03	1.08E-03	1.53E-02	0.623	RD3208
PU-238	8.65E-02	5.43E-02	5.62E-02	4.07E-02	0.51	RD3209
PU239/40	1.06E-01	5.88E-02	6.14E-02	2.21E-02	0.51	RD3209
U-234	4.78E-01	5.07E-02	6.84E-02	1.34E-02	0.628	RD3234
U-235	3.05E-02	1.35E-02	1.38E-02	1.09E-02	0.628	RD3234
U-238DA	4.43E-01	4.87E-02	6.46E-02	1.09E-02	0.628	RD3234
K-40	1.14E+01	5.33E-01	5.33E-01	N/A	N/A	RD3219
CO-60	3.59E-03	1.19E-02	1.19E-02	2.12E-02	N/A	RD3219
EU-152	4.52E-02	5.69E-02	5.71E-02	1.05E-01	N/A	RD3219
CS-137DA	1.80E-02	1.18E-02	1.19E-02	2.10E-02	N/A	RD3219
CS-134	7.99E-03	1.02E-02	1.02E-02	1.74E-02	N/A	RD3219
RU-106DA	2.84E-02	9.42E-02	9.42E-02	1.57E-01	N/A	RD3219
NA-22	5.00E-03	1.35E-02	1.35E-02	2.33E-02	N/A	RD3219
EU-155	6.95E-02	3.84E-02	3.90E-02	6.30E-02	N/A	RD3219
EU-154	3.28E-02	3.62E-02	3.63E-02	6.53E-02	N/A	RD3219
I-129LP	1.89E-01	6.67E-01	6.67E-01	1.16E+00	N/A	RD3219
ALPHA	4.97E+00	2.49E+00	2.55E+00	2.77E+00	1	RD3222
BETA	6.36E+01	3.81E+00	5.67E+00	2.00E+00	1	RD3222
TOTAL-SR	1.51E+01	3.50E-01	4.86E+00	1.20E-01	0.775	RD3204
SE-79	1.60E+00	3.27E-01	9.97E-01	6.31E-01	0.776	RD3253
TC-99	8.68E-02	8.53E-02	4.02E-01	1.95E-01	0.891	ITAS-IT-RS-0001
URANIUM	1.92E+00	N/A	2.87E-01	7.00E-02	1	RD4200

Q
U
U
6/22/94
U
U
U
U
U
U
U
U
U
U
U
U
U
U
U

Verified
6/21/94

018 ~~0019~~

682A-6-93

9613474.2702

IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0002
LAB SAMPLE ID: 4-03-345-05
MATRIX: SOIL
WHC ID: B09WJ4
DATE RECEIVED 3/17/94
REPORTING UNITS pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD	Q
AM-241	9.22E-03	5.83E-03	5.91E-03	2.50E-03	0.786	RD3302	
CM-242	1.68E-03	3.09E-03	3.10E-03	5.44E-03	0.786	RD3302	U
CM-244	1.67E-03	3.45E-03	3.46E-03	6.45E-03	0.786	RD3302	U
NP-237	0.00E+00	0.00E+00	0.00E+00	1.13E-02	0.623	RD3208	UJ
PU-238	1.41E-02	1.63E-02	1.64E-02	1.28E-02	0.883	RD3209	UJ ⊗ 6/22/94
PU239/40	-9.42E-04	1.88E-03	1.89E-03	2.03E-02	0.883	RD3209	U
U-234	6.52E-01	5.75E-02	8.46E-02	1.16E-02	0.661	RD3234	
U-235	3.27E-02	1.35E-02	1.39E-02	1.03E-02	0.661	RD3234	
U-238DA	6.44E-01	5.70E-02	8.38E-02	7.78E-03	0.661	RD3234	
K-40	1.20E+01	4.92E-01	1.30E+00	N/A	N/A	RD3219	
CO-60	1.29E-02	1.00E-02	1.01E-02	1.88E-02	N/A	RD3219	U
EU-152	2.53E-03	5.16E-02	5.16E-02	8.93E-02	N/A	RD3219	U
CS-137DA	3.76E-03	1.03E-02	1.03E-02	1.75E-02	N/A	RD3219	U
CS-134	3.21E-03	9.72E-03	9.72E-03	1.62E-02	N/A	RD3219	U
RU-106DA	-1.86E-02	9.08E-02	9.08E-02	1.50E-01	N/A	RD3219	U
NA-22	1.04E-02	1.28E-02	1.28E-02	2.23E-02	N/A	RD3219	U
EU-155	3.04E-02	2.79E-02	2.81E-02	4.78E-02	N/A	RD3219	U
EU-154	2.92E-02	3.57E-02	3.58E-02	6.20E-02	N/A	RD3219	U
I-129LP	-8.23E-03	5.00E-01	5.00E-01	8.67E-01	N/A	RD3219	U
ALPHA	3.80E+00	2.22E+00	2.26E+00	2.62E+00	1	RD3222	
BETA	1.79E+01	2.25E+00	2.54E+00	2.05E+00	1	RD3222	
TOTAL-SR	5.70E-03	3.04E-02	3.05E-02	1.22E-01	0.797	RD3204	U
SE-79	-5.42E-01	2.83E-01	7.68E-01	6.32E-01	0.776	RD3253	UJ
TC-99	5.81E-02	8.46E-02	4.00E-01	1.95E-01	0.891	ITAS-IT-RS-0001	U
URANIUM	2.06E+00	N/A	3.08E-01	7.00E-02	1	RD4200	

Verified
6/21/94

682A-6-93

9613474.2703

IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0002
LAB SAMPLE ID: 4-03-345-06
MATRIX: SOIL
WHC ID: B09WJ5
DATE RECEIVED 3/17/94
REPORTING UNITS pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD	Q
AM-241	9.71E-03	6.12E-03	6.20E-03	4.73E-03	0.792	RD3302	
CM-242	1.25E-03	3.18E-03	3.19E-03	6.47E-03	0.792	RD3302	U
CM-244	1.12E-02	6.71E-03	6.80E-03	5.69E-03	0.792	RD3302	
NP-237	-1.60E-03	1.85E-03	1.88E-03	1.82E-02	0.623	RD3208	UJ
PU-238	0.00E+00	0.00E+00	1.51E-02	1.37E-02	0.826	RD3209	UJ
PU239/40	4.03E-03	1.03E-02	1.03E-02	2.18E-02	0.826	RD3209	U
U-234	8.07E-01	6.80E-02	1.04E-01	1.43E-02	0.586	RD3234	
U-235	4.40E-02	1.65E-02	1.70E-02	1.17E-02	0.586	RD3234	
U-238DA	8.09E-01	6.79E-02	1.04E-01	1.17E-02	0.586	RD3234	
K-40	1.21E+01	4.94E-01	4.94E-01	N/A	N/A	RD3219	
CO-60	-6.53E-03	1.05E-02	1.05E-02	1.72E-02	N/A	RD3219	U
EU-152	6.28E-02	5.26E-02	5.29E-02	9.83E-02	N/A	RD3219	U
CS-137DA	-5.51E-03	1.08E-02	1.08E-02	1.77E-02	N/A	RD3219	U
CS-134	-1.25E-02	1.05E-02	1.06E-02	1.65E-02	N/A	RD3219	U
RU-106DA	-6.24E-02	9.30E-02	9.32E-02	1.51E-01	N/A	RD3219	U
NA-22	-7.58E-03	1.39E-02	1.39E-02	2.24E-02	N/A	RD3219	U
EU-155	6.78E-02	2.82E-02	2.90E-02	5.11E-02	N/A	RD3219	
EU-154	-2.12E-02	3.88E-02	3.89E-02	6.27E-02	N/A	RD3219	U
I-129LP	-4.69E-01	5.29E-01	5.31E-01	8.67E-01	N/A	RD3219	U
ALPHA	5.24E+00	2.47E+00	2.54E+00	2.54E+00	1	RD3222	
BETA	1.96E+01	2.33E+00	2.67E+00	2.05E+00	1	RD3222	
TOTAL-SR	-9.34E-03	3.06E-02	3.07E-02	1.30E-01	0.787	RD3204	U
SE-79	-1.24E-01	2.94E-01	8.11E-01	6.31E-01	0.776	RD3253	UJ
TC-99	-6.74E-02	8.26E-02	3.90E-01	1.95E-01	0.891	ITAS-IT-RS-0001	UJ
URANIUM	2.32E+00	N/A	3.48E-01	7.00E-02	1	RD4200	

Verified
6/21/94

682A-6-93

9613474.2704

IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

SAMPLE RESULTS

LAB NAME: ITAS-RICHLAND
SDG NO.: W0002
LAB SAMPLE ID: 4-03-345-03
MATRIX: SOIL
WHC ID: B09WJ7
DATE RECEIVED 3/17/94
REPORTING UNITS pCi/g & ug/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	METHOD	Q
AM-241	6.66E-03	5.96E-03	6.00E-03	3.60E-03	0.767	RD3302	
CM-242	1.51E-03	3.03E-03	3.03E-03	4.09E-03	0.767	RD3302	U
CM-244	1.34E-03	2.67E-03	2.68E-03	3.61E-03	0.767	RD3302	U
NP-237	-1.34E-03	2.67E-03	2.69E-03	1.80E-02	0.623	RD3208	U
PU-238	2.41E-03	1.27E-02	1.28E-02	3.31E-02	0.691	RD3209	U
PU239/40	0.00E+00	0.00E+00	1.81E-02	1.63E-02	0.691	RD3209	U
U-234	7.48E-01	6.91E-02	1.01E-01	1.46E-02	0.522	RD3234	
U-235	3.42E-02	1.58E-02	1.62E-02	1.38E-02	0.522	RD3234	
U-238DA	8.35E-01	7.28E-02	1.10E-01	9.80E-03	0.522	RD3234	
K-40	1.55E+01	5.29E-01	1.64E+00	N/A	N/A	RD3219	
CO-60	3.45E-03	1.11E-02	1.11E-02	1.91E-02	N/A	RD3219	U
EU-152	1.26E-01	4.77E-02	4.94E-02	9.67E-02	N/A	RD3219	
CS-137DA	7.99E-03	1.04E-02	1.05E-02	1.75E-02	N/A	RD3219	U
CS-134	-2.32E-03	1.02E-02	1.02E-02	1.61E-02	N/A	RD3219	U
RU-106DA	-9.29E-02	9.83E-02	9.88E-02	1.50E-01	N/A	RD3219	U
NA-22	1.78E-02	1.19E-02	1.20E-02	2.15E-02	N/A	RD3219	U
EU-155	7.20E-02	2.90E-02	2.99E-02	5.07E-02	N/A	RD3219	
EU-154	4.94E-02	3.29E-02	3.33E-02	5.98E-02	N/A	RD3219	U
I-129LP	4.20E-01	5.82E-01	5.83E-01	1.04E+00	N/A	RD3219	U
ALPHA	5.20E+00	2.64E+00	2.70E+00	3.10E+00	1	RD3222	
BETA	2.09E+01	2.40E+00	2.77E+00	2.09E+00	1	RD3222	
TOTAL-SR	1.65E-03	3.02E-02	3.02E-02	1.23E-01	0.81	RD3204	U
SE-79	5.96E-01	3.06E-01	8.89E-01	6.32E-01	0.776	RD3253	U
TC-99	-3.03E-02	8.31E-02	3.93E-01	1.95E-01	0.891	ITAS-IT-RS-0001	U
URANIUM	2.28E+00	N/A	3.42E-01	7.00E-02	1	RD4200	

Verified
6/21/94

~~0018~~

682A-6-93

96193474.2705

ATTACHMENT 4

LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION

9613474.2706

INTERNATIONAL TECHNOLOGY CORPORATION

CERTIFICATE OF ANALYSIS

Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

May 3, 1994

Attention: J.A.Lerch

SAF Number	:	94-065
Date Received by Lab	:	March 17, 1994
Number of Samples	:	Eleven (11)
Sample Type	:	Soil
SDG Number	:	W0002

I. Introduction

On March 4, 10, 14, and 17, 1994, eleven soil samples were received by ITAS-Richland for radiochemical analysis. Upon receipt, the samples were given the following laboratory ID numbers to correspond with the WHC specific IDs:

ITAS-Richland ID	WHC ID	Matrix	Date of Receipt
403099-01A	B09WF9	Soil	3/04/94
403209-01A	B09WG0	Soil	3/10/94
403267-01A	B09WI9	Soil	3/14/94
403267-02A	B09WJ0	Soil	3/14/94
403267-03A	B09WG7	Soil	3/14/94
403345-01A	B09WH0	Soil	3/17/94
403345-02A	B09WH1	Soil	3/17/94
403345-03A	B09WJ7	Soil	3/17/94
403345-04A	B09WJ3	Soil	3/17/94
403345-05A	B09WJ4	Soil	3/17/94
403345-06A	B09WJ5	Soil	3/17/94

023

Regional Office
2800 George Washington Way • Richland, Washington 99352-1613 • 509-375-3131 • FAX: 509-375-5590

0006

IT Corporation is a wholly owned subsidiary of International Technology Corporation

---

II. 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 analyses were:

Alpha Spectroscopy
Americium-241, Curium-244 by method ITAS-RD-3302
Neptunium-237 by method ITAS-RD-3208
Plutonium-238, 239/40 by method ITAS-RD-3209
Uranium-234, 235, 238 by method ITAS-RD-3234
Gamma Spectroscopy
Gamma Scan by method ITAS-RD-3219
Iodine-129 by method ITAS-RD-3219
Gas Proportional Counting
Gross Alpha by method ITAS-RD-3222
Gross Beta by method ITAS-RD-3222
Strontium-90 by method ITAS-RD-3204
Liquid Scintillation Counting
Selenium-79 by method ITAS-RD-3253
Technetium-99 by method ITAS-IT-RS-0001
Total Uranium
Total Uranium by method ITAS-RD-4200

III. Quality Control

The analytical results for SDG W0002 include a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank, and one duplicate.

Quality control sample results are reported in the same units as sample results except for gross alpha and gross beta quality control sample results which are reported in pCi/sample.

IV. Comments

The initial radioactivity screening of the samples classified them as Category I.

Alpha Spectroscopy

Americium-241, Curium-244 by method ITAS-RD-3302
The laboratory control sample and batch blank results were acceptable. The sample and sample duplicate results were within the 3 sigma control limit.

Neptunium-237 by method ITAS-RD-3208
The matrix spike recovery was unacceptable and the complete batch was reanalyzed. The reanalysis results were accepted. The laboratory control sample and the batch blank results were acceptable. The sample and sample duplicate results were within the 3 sigma control limit. Three matrix spikes were analyzed with the batch and the average yield was used for yield correction.

Plutonium-238, 239/40 by method ITAS-RD-3209
The laboratory control sample and the batch blank results were acceptable. The sample and sample duplicate results were within the 3 sigma control limit.

Uranium-234, 235, 238 by method ITAS-RD-3234
The laboratory control sample and the batch blank results were acceptable. The sample and sample duplicate results were within the 3 sigma control limit for U-235. The duplicate results for U-234 and U-238 were outside the 3 sigma control limit. The duplicate difference was attributed to nonhomogeneity of the soil sample and the results were accepted.

Gamma Spectroscopy

Gamma Scan by method ITAS-RD-3219
Five samples were recounted for an extended counting time to meet the detection limit for Fe-59. The Chain of Custody forms did not request Fe-59 so the recount was unnecessary but the recount is acceptable and reported herein. The calculated detection limit for Eu-152 and Eu-154 is greater than the required detection limit for the laboratory control sample (LCS). The LCS is a reusable soil spike which has not been spiked with those isotopes so the results were accepted. The batch blank results were acceptable. The sample and sample duplicate results were within the 3 sigma control limit.

Iodine-129 by method ITAS-RD-3219
The laboratory control sample result was acceptable but biased high (143%). The batch blank result was acceptable. The sample and sample duplicate results were within the 3 sigma control limit.

Gas Proportional Counting

Gross Alpha by method ITAS-RD-3222
The laboratory control sample and batch blank results were acceptable. The sample and sample duplicate results were within the 3 sigma control limit.

Gross Beta by method ITAS-RD-3222
The laboratory control sample and batch blank results were acceptable. The sample and sample duplicate results were within the 3 sigma control limit.

Strontium-90 by method ITAS-RD-3204
The laboratory control sample (LCS) recovery was biased high and a recount of the batch was requested. The recount also indicated a high bias in the LCS. The batch was counted a third time and the results were accepted with an LCS recovery of 135%. The batch blank result was acceptable. The sample and sample duplicate results were within the 3 sigma control limit.

Liquid Scintillation Counting

Selenium-79 by method ITAS-RD-3253
The laboratory control sample and batch blank results were acceptable. The matrix spike result and duplicate matrix spike result for sample 40334506 (B09WJ5) were acceptable and the average chemical yield was used for batch yield corrections. The sample and sample duplicate results were within the 3 sigma control limit.

Technetium-99 by method ITAS-IT-RS-0001
The laboratory control sample and batch blank results were acceptable. The matrix spike results were acceptable and the average chemical yield was used for batch yield corrections. The sample and sample duplicate results were within the 3 sigma control limit.

Total Uranium

Total Uranium by method ITAS-RD-4200
The laboratory control sample and batch blank results were acceptable. The matrix spike results for samples W030991M (Ottowa sand) and W032091M (B09WG0) were acceptable and the average chemical yield was used for batch yield corrections. The sample and sample duplicate results were within the 3 sigma control limit.

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:

Van H. Pettey
Project Manager

9613474.2711

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator L E ROGERS

Company Contact L E ROGERS

Telephone 376-7690

Project Designation/Sampling Locations 200-UP-2

Collection Date

Ice Chest No.

Field Logbook No. EFL-1115

Bill of Lading/Airbill No.

Offsite Property No.

Method of Shipment Government vehicle

Shipped to IT, Richland

Possible Sample Hazards/Remarks Keep samples at 4C (SOIL) SAF # 94-065 RADIOACTIVE

Date of collection is 3/03/94 according to the SAR. 6/23/94

Sample Identification

1)

1,250ml P:CLP;TAL Metals,Hg,Ti B09WF9
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~ LER 3-3-94
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2)

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080) LER 3-3-94
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-4-94 Loren E Rogers 1033	Michael King Jr	3/4 @ 12:30
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

028

~~0052~~

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2712

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS — S.A.F. # 94-065 — Date 3-3-94

Company Contact L E ROGERS — Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09WF9	S	3-3-94	1225	40309801 A 1,250ml P:CLP;TAL Metals,Hg,Ti 6010 B 1,250ml Gs:VOA CLP 8240 C 1,250ml aG:Semi-VOA CLP 3270 D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) ~~1,250ml aGs:PCB/Pest (8080)~~ JER 3-3-94 F 1,125ml G:Cyanide CLP 9010 G 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253) 40309901
			JER 3-3-94	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

***Type of Sample** A = Air; DL = Drum Liquids; DS = Drum Solids; L = Liquid; O = Oil; S = Soil; SE = Sediment; SL = Sludge; SO = Solid; T = Tissue; W = Water; WI = Wipe; X = Other

Field Information **IT, Richland**

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards RADIOACTIVE

029

~~0054~~

A-6000-406 (06/91) WEF060

9613474.2713

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U SETZEY

Company Contact: L E ROGERS

Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2

Collection Date: 3-4-94

Ice Chest No.: SML-178

Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: N/A

Offsite Property No.: W94-0-0369 #

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1)

40320801 A 1,250ml P:CLP;TAL Metals,Hg,Ti B09WG0
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~ SER 3-9-94
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40320901

40320802 B09WG2
2) 1,250ml aGs : CIP: VOA

2)

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080) SER 3-9-94
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	Hildebrand	3/10/94 @ 1450
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

030

~~0061~~

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2714

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-10-94

Ice Chest No.: GW S028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: NA — Offsite Property No.: WHH-0-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065

Sample Identification

1) B09WG7

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

~~2) B09WJ2 1,250ml aGs: CLP; VOA~~ WWS 3-14-92

2)
1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080) WWS
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	R. Boyd IT CIBD	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

031

~~0072~~

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2715

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-16-94

Ice Chest No.: GWS-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) ~~500ml~~ ~~KER~~ 3-17-94 B09WH0

A 1, ~~250ml~~ P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~ KER 3-16-94
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40334401

40334501

~~KER~~ 3-17-94 B09WH1

2)

A 1, 500ml ~~1,250ml~~ P:CLP;TAL Metals,Hg,Ti
B 1, 500ml ~~1,250ml~~ Gs:VOA CLP
C 1, 500ml ~~1,250ml~~ aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~ KER 3-16-94
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40334402

40334502

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Loren E Rogers / Loren E. Rogers	J.D. Fowler / J.D. Fowler	3/17/94 1018
J.D. Fowler / J.D. Fowler	Heidelberg	3/17 1330

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

032

~~0034~~

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2716 SDG W0002

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-10-94

Ice Chest No.: GW 5028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.: WP4-0-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

B09W19 CAT I

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
I 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2)
1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

3-10-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	R. Boyd IT	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

033

~~0068~~

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2717

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.W. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-11-93

Ice Chest No.: GW 5028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.: W94-0-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09W50

Collected on 3/11/94 according to the SAR. 3/11/94

40326-02

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
I 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40326-01

2)

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

HAR 3-11-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.W. Setzer	R Bayl JT C.100	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

~~0070~~

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2718

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS S.A.F. # 94-065 Date 3-11-94

Company Contact L E ROGERS Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09WJ50	S	3-11-94	0830	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)
			3-11-94	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

*Type of Sample A = Air L = Liquid SE = Sediment T = Tissue X = Other
DL = Drum Liquids O = Oil SL = Sludge W = Water
DS = Drum Solids S = Soil SO = Solid WI = Wipe

Field Information IT, Richland

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards NONE NOTED

035

~~0071~~

A-6000-406 (06/91) WEF060

9613474.2719

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-14-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09WJ3

40334464

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40334504

2) B09WJ4

40334465

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40334505

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Loren E. Rogers / Loren E. Rogers	S.D. Fancher / J.P. Fahy	3/17/94 1018
Relinquished by:	Received by:	Date/Time:
S.D. Fancher / J.P. Fahy	[illegible]	3/17 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

036 ~~0090~~

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2720

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-15-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09WJS

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4C35344CG

4C35450G

~~2)~~

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

ER 3-15-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Loren E. Rogers	J.D. Fanher	3/17/94 1015
J.D. Fanher	[illegible]	3/17 1330

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

037

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

~~0032~~

9613474.2721

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-16-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1)

BC9WJ6

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~

1,250ml Gs:VOA CLP

4C334407

~~1,250ml aG:Semi-VOA CLP~~

~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~

~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~

~~1,250ml aGs:PCB/Pest (8080)~~

~~1,125ml G:Cyanide CLP~~

~~1,125ml Gw:Kerosene (8015M)~~

~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

SCR 3-16-94

2)

BC9WJ7

A 1,250ml P:CLP;TAL Metals,Hg,Ti

B 1,250ml Gs:VOA CLP

C 1,250ml aG:Semi-VOA CLP

D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)

E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)

F 1,250ml aGs:PCB/Pest (8080)

G 1,125ml G:Cyanide CLP

H 1,125ml Gw:Kerosene (8015M)

4C334408

1,1000ml. P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4C334507 3

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Loren E. Rogers	Received by: J.D. Fankhr	Date/Time: 3/17/94 1018
Relinquished by: J.D. Fankhr	Received by: [illegible]	Date/Time: 3/17 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

038

~~0086~~

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9615979.2722

ATTACHMENT 5

DATA VALIDATION SUPPORTING DOCUMENTATION

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E

PROJECT: 200-UP-2		DATA PACKAGE: W0002-ITC-007
VALIDATOR: [illegible]	LAB: ITC	DATE: 06/21/94
CASE:		SDG: W0002-ITC-007

ANALYSES PERFORMED

☒ Gross Alpha/Beta	☒ Strontium-90	☒ Technetium-99	☒ Alpha Spectroscopy	☒ Gamma Spectroscopy	
☒ Total Uranium	☐ Radium-22	☐ Tritium	☒ Se-79		

SAMPLES/MATRIX Soils

B09WF9	B09WH0	B09WJ5
B09WG0	B09WH1	
B09WJ9	B09WJ7	
B09WJ0	B09WJ3	
B09WG7	B09WJ4	

1. Completeness . . . . . ☐ N/A

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

Comments:

2. Initial Calibration . . . . . ☐ N/A

Instruments/detectors calibrated within one year of sample analysis? . . . . . Yes (No) N/A

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

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

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

Comments: No qualification is required if the detectors were calibrated more than 1 year from sample analysis

3. Continuing Calibration . . . . . ☐ N/A

Calibration checked within one week of sample analysis? . . . Yes No N/A 6/22/94
Calibration check acceptable? . . . . . Yes No N/A
Calibration check standards NIST traceable? . . . . . Yes No N/A
Calibration check standards expired? . . . . . Yes No N/A

Comments: Cont. cal check stds are not traceable. However, no qualification is required for this deficiency.
- Cont. cal check for neptunium-237, detector ALP 126, assoc. with sample B9WG0 was not performed within 1wk of sample analysis. The assoc. result has been qual. as estimated (J/UJ)

4. Blanks . . . . . ☐ N/A

Method blank analyzed? . . . . . Yes No N/A
Method blank results acceptable? . . . . . Yes No N/A 6/21/94
Analytes detected in method blank? . . . . . Yes No N/A
Field blank(s) analyzed? . . . . . Yes No N/A
Field blank results acceptable? . . . . . Yes No N/A
Analytes detected in field blank(s)? . . . . . Yes No N/A
Transcription/Calculation Errors? . . . . . Yes No N/A

Comments: Gross beta was detected in the lab blank at 0.406 pCi/g. However, all sample results are > 5x blank conc. Therefore, no qualification was ~~applied~~ required. 6/21/94

5. Matrix Spikes . . . . . ☐ N/A

Matrix spike analyzed? . . . . . Yes No N/A
Spike recoveries acceptable? . . . . . Yes No N/A
Spike source traceable? . . . . . Yes No N/A
Spike source expired? . . . . . Yes No N/A
Transcription/Calculation Errors? . . . . . Yes No N/A

Comments: MS %R for Np-237 was 48%. All assoc. results have been qual. as estimated (J/UJ).

6. Laboratory Control Samples . . . . . ☐ N/A

LCS analyzed? . . . . . (Yes) No N/A
LCS recoveries acceptable? . . . . . Yes (No) N/A
LCS traceable? . . . . . (Yes) No N/A
Transcription/Calculation Errors? . . . . . Yes (No) N/A

Comments: LCS 3 R for Sr was 135% and the LCS 3 R for I-129LP was 143%. The assoc. positive results have been qualified as estimated (J) for Sr. However, no qual. was required for I-129LP since all results < MDA.

7. Chemical Recovery . . . . . ☐ N/A

Chemical carrier added? . . . . . (Yes) No N/A
Chemical recovery acceptable? . . . . . (Yes) No N/A
Chemical carrier traceable? . . . . . (Yes) No N/A
Chemical carrier expired? . . . . . Yes (No) N/A
Transcription/Calculation errors? . . . . . Yes (No) N/A

Comments:

8. Duplicates . . . . . ☐ N/A

Duplicates Analyzed? . . . . . (Yes) No N/A
RPD Values Acceptable? . . . . . (Yes) No N/A
Transcription/Calculation Errors? . . . . . Yes (No) N/A

Comments: The narrative states that the RPD for U-234 & U-238 were out of the laboratory 3σ control limit. However, the associated duplicate results are within the DV requirements, therefore, no qualification is required.

9. Field QC Samples . . . . . ☒ N/A

Field duplicate sample(s) analyzed? . . . . . Yes No (N/A)
Field duplicate RPD values acceptable? . . . . . Yes No (N/A)
Field split sample(s) analyzed? . . . . . Yes No (N/A)
Field split RPD values acceptable? . . . . . Yes No (N/A)
Performance audit sample(s) analyzed? . . . . . Yes No (N/A)
Performance audit sample results acceptable? . . . . . Yes No (N/A)

Comments:

10. Holding Times

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

Comments: All samples were analyzed within 180 days of collection.

11. Results and Detection Limits (Levels D & E) . . . . . ☐ N/A

Results reported for all required sample analyses? . . . . . (Yes) No N/A
Results supported in raw data? . . . . . (Yes) No N/A
Results Acceptable? . . . . . (Yes) No N/A
Transcription/Calculation errors? . . . . . Yes (No) N/A
MDA's meet required detection limits? . . . . . Yes (No) N/A 6/22/94
Transcription/calculation errors? . . . . . (Yes) ~~No~~ N/A

Comments: The calculations for the MDA of plutonium-238 and neptunium-237 and the calculations for the MDA and sample results for Sr-79 and Tc-99 could not be verified. Therefore, the assoc. Sr-79 and Tc-99 sample results have been qualified as estimated (J/UJ), and the pu-238 and np-237 MDA results have been qual. as estimated (UJ).

Comments:

The sample B09W50 was analyzed in a different geometry than the assoc. blank and LCS for gamma spectroscopy. Therefore, the assoc. results have been qualified as estimated (J/UJ).

6/22/96

The calculations for all Isotopic uranium results were checked since there was apparently a flaw in the calculation reported in the raw data. All calc. results agree with the reported results on the Form Is and no qualifications or changes were required.

6/22/96

6/22/96

9613474.2728

IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

MATRIX SPIKE RESULTS

LAB NAME: ITAS-RICHLAND **SDG NO.:** W0002

LAB SAMPLE IDs: W0309901, W0326701 & W0326703

REPORTING UNITS pCi/g

ISOTOPE	SPIKE RESULT*	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	SAMPLE RESULT	EXPECTED	% RECOVERY
NP-237	2.72E+00	3.12E-01	1.07E-01	1.53E-02	6.67E-03	5.66E+00	48
NP-237	3.70E+00	4.17E-01	1.24E-01	1.13E-02	1.34E-02	5.62E+00	66
NP-237	4.11E+00	4.61E-01	1.31E-01	1.13E-02	6.68E-03	5.63E+00	73

J/UJ

LAB SAMPLE IDs: L033456M, L033457M & L030991S

REPORTING UNITS pCi/g

ISOTOPE	SPIKE RESULT*	COUNTING ERROR (2s)	MDA	SAMPLE RESULT	EXPECTED	% RECOVERY
SE-79 (SE-75)	2.12E+01	3.56E+00	N/A	-1.24E-01	2.69E+01	79
SE-79 (SE-75)	2.07E+01	3.27E+00	N/A	-1.24E-01	2.70E+01	76
SE-79 (SE-75)	2.28E+01	3.49E+00	N/A	4.27E-01	2.71E+01	84

*SPIKE RESULT CORRECTED FOR SAMPLE RESULT

6/21/94

9613474.2729

IT ANALYTICAL SERVICES
RICHLAND, WA
(509) 375-3131

LABORATORY CONTROL SAMPLES

LAB NAME: ITAS-RICHLAND SDG NO.: W0002

LAB SAMPLE ID: L-03-345-1M

REPORTING UNIT pCi/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	EXPECTED	% RECOVERY
CS-137DA	4.13E-01	1.46E-02	4.38E-02	N/A	N/A	3.58E-01	116
RA-226DA	1.15E+00	9.64E-02	9.64E-02	N/A	N/A	1.16E+00	99
RA-228DA	2.05E+00	2.03E-01	2.03E-01	N/A	N/A	1.89E+00	109

LAB SAMPLE ID: L-03-345-1S

REPORTING UNIT pCi/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	EXPECTED	% RECOVERY
U-234	1.75E+00	9.35E-02	1.81E-01	9.52E-03	0.668	1.73E+00	101
U-235	6.84E-02	1.88E-02	1.97E-02	8.70E-03	0.668	7.89E-02	87
U-238DA	1.81E+00	9.49E-02	1.87E-01	3.38E-03	0.668	1.81E+00	100
ALPHA	4.20E+00	2.90E-01	7.65E-01	5.23E-02	1	4.52E+00	93
BETA	1.11E+01	7.41E-01	1.08E+00	4.39E-01	1	1.13E+01	98
TOTAL-SR	7.13E+00	2.41E-01	2.39E+00	1.26E-01	0.85	5.29E+00	135

LAB SAMPLE ID: L-03-099-1M

REPORTING UNIT pCi/g

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	YIELD	EXPECTED	% RECOVERY
TC-99	6.96E+00	1.67E-01	1.09E+00	1.95E-01	0.891	7.52E+00	93

6/21/94

W0002-ITC-007

Americium/Curium

HEIS No.:	B09WF9
Lab ID:	40309901
Detector:	ALP132 1
Date Counted:	04/15/94
Aliquot:	2.004
Am241 net cpm:	0.0100
Am241 bkg cpm:	0.0000
Spl count time:	1000
Bkg count time:	1000
Eff d/c:	3.225
Decay:	1
Yield:	0.519
Am241 calc:	0.014
Am241 rptd:	1.40E-02
Am241 MDA calc:	3.79E-03
Am241 MDA rptd:	3.78E-03
Cm244 net cpm:	-0.0010
Cm244 bkg cpm:	0.0030
Cm244 decay:	1.005
Cm244 calc:	-1.40E-03
Cm244 rptd:	-1.40E-03
Cm244 MDA calc:	1.51E-02
Cm244 MDA rptd:	1.51E-02
Cm242 net cpm:	-0.0010
Cm242 bkg cpm:	0.0010
Cm242 decay:	1.201
Cm242 calc.:	-1.68E-03
Cm242 rptd:	-1.68E-03
Cm242 MDA calc:	1.23E-02
Cm242 MDA rptd:	1.24E-02

047

W0002-ITC-007

Neptunium

HEIS No.:	B09WF9
Lab ID:	40309901
Detector:	ALP124 1
Date Counted:	04/30/94
Aliquot:	2.01E+00
Np237 net cpm:	0.005
Np237 bkg cpm:	0
Spl count time:	200
Bkg count time:	2500
Eff d/c:	3.7
Decay:	1
Yield:	0.623
Np237 calc:	6.67E-03
Np237 rptd:	6.67E-03
Np237 MDA calc:	1.81E-02
Np237 MDA rptd:	1.12E-02

048

W0002-ITC-007

Plutonium

HEIS No.:	B09WF9
Lab ID:	40309901
Detector:	ALP22 1
Date Counted:	04/10/94
Aliquot:	2.00E+00
Pu238 net cpm:	0.004
Pu238 bkg cpm:	0.001
Spl count time:	200
Bkg count time:	1000
Pu238 Eff d/c:	3.703
Decay:	1.001
Yield:	0.627
Pu238 calc:	5.32E-03
Pu238 rptd:	5.31E-03
Pu238 MDA calc:	3.18E-02
Pu238 MDA rptd:	2.87E-02
Pu239 net cpm:	0
Pu239 bkg cpm:	0
Pu239 d/c:	3.7
Pu239 decay:	1
Pu239 calc:	0.00E+00
Pu239 rptd:	0.00E+00
Pu239 MDA calc:	1.80E-02
Pu239 MDA rptd:	1.79E-02

049

W0002-ITC-007

Isotopic Uranium

HEIS No.:	B09WF9	B09WG0	B09W19	B09WJ0	B09WG7	B09WH0	B09WH1	B09WJ7	B09WJ3	B09WJ4	B09WJ5
Lab ID:	40309901	40323901	40326701	40326702	40325703	40334501	40334502	40334503	40334504	40334505	40334506
Detector:	ALP5 1	ALP9 1	ALP9 1	ALP10 1	ALP3 1	ALP6 1	ALP7 1	ALP9 1	ALP10 1	ALP9 1	ALP10 1
Date Counted:	04/04/94	04/04/94	04/02/94	04/02/94	04/04/94	03/31/94	03/31/94	03/31/94	03/31/94	04/01/94	04/01/94
Aliquot:	2.01E+00	2.001	2.004	2.008	2.004	2.007	2.004	2.016	2.00'	2.004	2.005
U-234 net cpm:	0.5332	0.6422	1.4802	1.0374	0.3644	0.3708	0.4842	0.4722	0.3604	0.5182	0.5684
U-234 bkg cpm:	0.0028	0.0028	0.0028	0.0036	0.0016	0.0032	0.0028	0.0028	0.0036	0.0028	0.0036
Spl count time:	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Bkg count time:	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Eff d/c:	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Decay:	1	1	1	1	1	1	1	1	1	1	1
Yield:	0.6	0.677	0.496	0.548	0.306	0.379	0.461	0.522	0.628	0.661	0.586
U-234 calc:	7.38E-01	5.64E-01	2.48E+00	1.57E+00	9.90E-01	9.12E-01	8.74E-01	7.48E-01	4.78E-01	6.52E-01	8.06E-01
U-234 rptd:	7.40E-01	5.64E-01	2.48E+00	1.57E+00	9.91E-01	9.12E-01	8.74E-01	7.48E-01	4.78E-01	6.52E-01	8.07E-01
U-234 MDA calc:	1.28E-02	1.13E-02	1.55E-02	1.53E-02	2.07E-02	2.12E-02	1.66E-02	1.46E-02	1.34E-02	1.16E-02	1.43E-02
U-234 MDA rptd:	1.28E-02	1.13E-02	1.55E-02	1.53E-02	2.08E-02	2.12E-02	1.66E-02	1.46E-02	1.34E-02	1.16E-02	1.43E-02
U-235 net cpm:	0.0208	0.0266	0.0566	0.051	0.0238	0.0086	0.0194	0.0216	0.023	0.026	0.031
U-235 bkg cpm:	0.0012	0.0024	0.0024	0.002	0.0012	0.0024	0.0016	0.0024	0.002	0.002	0.002
U-235 decay:	1	1	1	1	1	1	1	1	1	1	1
U-235 calc:	2.88E-02	3.27E-02	1.12E-01	7.72E-02	6.47E-02	1.88E-02	3.50E-02	3.42E-02	3.35E-02	3.27E-02	4.40E-02
U-235 rptd:	2.89E-02	3.27E-02	1.12E-01	7.73E-02	6.47E-02	1.88E-02	3.50E-02	3.42E-02	3.35E-02	3.27E-02	4.40E-02
U-235 MDA calc:	9.65E-03	'.08E-02	1.47E-02	1.24E-02	'.90E-02	1.92E-02	1.38E-02	1.38E-02	1.09E-02	1.03E-02	1.17E-02
U-235 MDA rptd:	9.67E-03	'.07E-02	1.47E-02	1.25E-02	'.9CE-02	1.91E-02	1.38E-02	1.38E-02	1.09E-02	1.03E-02	1.17E-02
U-238 net cpm:	0.5614	0.4692	1.4042	1.013	0.3742	0.4166	0.512	0.5272	0.334	0.5122	0.57
U-238 bkg cpm:	0.0016	0.0008	0.0008	0.002	0.0008	0.0004	0.002	0.0008	0.002	0.0008	0.002
U-238 decay:	1	1	1	1	1	1	1	1	1	1	1
U-238 calc.:	7.77E-01	5.77E-01	2.35E+00	1.53E+00	1.02E-00	9.13E-01	9.24E-01	8.35E-01	4.43E-01	6.44E-01	8.09E-01
U-238 rptd:	7.79E-01	5.77E-01	2.36E+00	1.54E+00	1.02E+00	9.13E-01	9.24E-01	8.35E-01	4.43E-01	6.44E-01	8.09E-01
U-238 MDA calc:	1.06E-02	7.52E-03	1.04E-02	1.24E-02	1.66E-02	1.13E-02	1.48E-02	9.81E-03	1.09E-02	7.79E-03	1.17E-02
U-238 MDA rptd:	1.06E-02	7.51E-03	1.04E-02	1.25E-02	1.66E-02	1.13E-02	1.48E-02	9.80E-03	1.09E-02	7.78E-03	1.17E-02

Reviewed 6/27/94

050

W0002-ITC-007

Gross Alpha

HEIS No.:	B09WF9
Lab ID:	40309901
Detector:	SET 1
Date Counted:	03/25/94
Aliquot:	5.04E-02
Net counts:	0.109
Bkg counts:	0.026
Spl count time:	200
Bkg count time:	500
d/c:	5.056
Calc.:	4.93E+00
Rptd:	4.93E+00
MDA calc:	2.63E+00
MDA rptd:	2.62E+00

051

W0002-ITC-007

Gross Beta

HEIS No.:	B09WF9
Lab ID:	40309901
Detector:	SET 41
Date Counted:	03/24/94
Aliquot:	2.50E-01
Net counts:	3.836
Bkg counts:	0.974
Spl count time:	100
Bkg count time:	500
d/c:	2.898
Calc.:	2.00E+01
Rptd:	2.00E+01
MDA calc:	2.00E+00
MDA rptd:	2.00E+00

052

W0002-ITC-007

Strontium 90

HEIS No.:	B09WF9
Sample:	40309901
Detector:	SET 43
Date Counted:	04/22/94
Sep date:	4/14/94
Sep time:	15:25
Count date:	4/22/94
Count time:	19:30
Hours:	196.08333333
Sample amt:	6.10E+00
Net, cpm:	3.34
Count time:	50
Bkg, cpm:	0.86
Count time:	500
D/C 1:	2.459
D/C 2:	1.824
D/C 3:	1.773
Yield:	0.735
Calc:	3.72E-01
Rptd:	3.71E-01
MDA, Calc:	1.25E-01
MDA, rptd:	1.25E-01

053

W0002-ITC-007

Selenium 79

HEIS No.:	B09WF9
Sample:	40309901
Detector:	LSC4
Date Counted:	04/13/94
Bkg cpm:	20.68
Spl, amt:	2.00E+00
Spl cpm:	22.91
Count time:	100
Spl dpm:	24.96
d/c:	1.089
Yield:	0.776
Blk, dpm:	2.27E+01
Calc:	2.13E+00
Rptd:	4.27E-01
MDA, calc:	6.76E-01
MDA, rptd:	6.32E-01

054

W0002-ITC-007

Technetium-99

HEIS No.:	B09WF9
Sample:	40309901
Detector:	LSC3
Date Counted:	04/26/94
Bkg cpm:	27.74
Spl, amt:	6.00E+00
Spl cpm:	27.42
Count time:	125
Spl dpm:	29.25
d/c:	1.067
Yield:	0.891
Blk, dpm:	2.96E+01
Calc:	2.41E-01
Rptd:	2.78E-02
MDA, calc:	1.99E-01
MDA, rptd:	1.95E-01

9613474.2738

W0002-ITC-007

Total Uranium

HEIS No.:	B09WF9
Lab ID:	40309901
Date Counted:	04/15/94
ng, raw:	1.22E+01
g, sample:	1.00E+00
Dil. vol:	100
Yield, corr:	0.938
Calc.:	1.30E+00
Rptd:	1.30E+00

9613474.2739

9613474.2740

MEMORANDUM

JUN 1994 RECEIVED TQO

TO: 200-UP-2 Project QA Record

June 16, 1994

FR: Christina Jensen, Golder Associates Inc.

RE: GENERAL GC DATA VALIDATION SUMMARY FOR DATA PACKAGE: W0002-ITC-007 (923-E418 Filename W0002G.UP2)

INTRODUCTION

This memo presents the results of data validation on data package W0002-ITC-007 prepared by the International Technology Corporation (ITC) laboratory. The samples validated along with the analyses reported and the methods of analysis are provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA	ANALYSIS
B09WI9	03/10/94	SOIL	SEE NOTE 1
B09WJ0	03/11/94	SOIL	
B09WJ3	03/14/94	SOIL	
B09WJ4	03/14/94	SOIL	
B09WJ5	03/15/94	SOIL	
B09WJ7	03/16/94	SOIL	
B09WF9	03/03/94	SOIL	
B09WG0	03/04/94	SOIL	
B09WG7	03/10/94	SOIL	
B09WH0	03/16/94	SOIL	
B09WH1	03/16/94	SOIL	

Note 1. The samples were analyzed for total high boiling petroleum hydrocarbons, as diesel range organics using Method 8015M.

RECEIVED JUN 21 1994 VALIDATION DOCUMENTATION SDLA

Data validation was conducted in accordance with the WHC statement of work (WHC 1993a) and validation procedures (WHC 1993b). Attachments 1 through 5 provide the following information as indicated below:

Attachment 1. Glossary of Data Reporting Qualifiers
Attachment 2. Summary of Data Qualifications
Attachment 3. Qualified Data Summary and Annotated Laboratory Reports
Attachment 4. Laboratory Narrative and Chain-of-Custody Documentation
Attachment 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met for all sample results as specified in the reference analytical method.

Completeness. The data package was complete for all requested analyses. A total of eleven samples were validated in this data package with a total of eleven determinations reported, all of which were deemed valid. This results in a completeness of 100 percent, which meets normal work plan objectives of 90%.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

No minor deficiencies were identified during data validation which required qualification of data.

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation, Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993. Westinghouse Hanford Company, Richland, Washington.

9613474.2742

ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF ORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected in the associated laboratory blank. This qualifier is applied by the laboratory. During the process of data validation this qualifier may be replaced by other appropriate qualifiers as defined by the validation procedures. The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample quantitation limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration reported may not accurately reflect the sample quantitation limit. The associated data should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. This qualifier may be applied by the laboratory to indicate a concentration which is less than the contract required quantitation limit (CRQL) but greater than the instrument detection limit (IDL). During data validation this qualifier may be applied to indicate a minor quality control deficiency. However in either case, the associated data should be considered usable for decision making purposes.

NJ - Indicates presumptive evidence of a constituent at an estimated value. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

N - Indicates presumptive evidence of a constituent. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

JN - Indicates a tentatively identified compound (TIC) whose concentration and identification have been determined to be valid as a result of data validation. The associated data should be considered usable for decision making purposes.

UJN - Indicates a tentatively identified compound (TIC) that has been determined to be presumptive and valid (JN) in terms of identification and quantitation and has been qualified as undetected (U) due to associated blank contamination.

UR - Indicates the constituent was analyzed for and not detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

9613474.2744

ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY

SDG:	VALIDATOR: C. Jensen	DATE: 6/16/94	PAGE 1 OF 1
COMMENTS: HBH W0002-IFC-007			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
no qualification of the data was required			

9613474.2746

ATTACHMENT 3

QUALIFIED DATA SUMMARY AND ANNOTATED LABORATORY REPORTS

Validated Data Summary, Data Package: W0002-ITC-007

	Samp#	B09WF9		B09WG0		B09WG7		B09WH0		B09WH1		B09WI9	
	Date	3-3-94		3-4-94		3-10-94		3-16-94		3-16-94		3-10-94	
	Location	---		---		---		---		---		---	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
HIGH BOILING HYDROCARBONS	MG/KG	10.000	U	11.000	U	10.000	U	10.000	U	11.000	U	10.000	U

Virginia Qualifiers

008

9613974.2747

Validated Data Summary, Data Package: W0002-ITC-007

	Samp#	B09WJ0		B09WJ3		B09WJ4		B09WJ5		B09WJ7	
	Date	3-11-94		3-14-94		3-14-94		3-15-94		3-16-94	
	Location	---		---		---		---		---	
	Depth	---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
HIGH BOILING HYDROCARBONS	MG/KG	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U

Verified 6/6/94

009

B4/27.2748

961347.2748

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	167
Client Sample ID:	B09WF9	Extraction Date:	03/17/94
Lab Sample ID:	AA3169	Analysis Date:	04/07/94
Sample Matrix:	SOIL	Dryness Factor:	0.9568
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA3169	102	110

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Verified
_____ 07/11/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	193
Client Sample ID:	~~WH03208-01G~~ RESINGC KAP 6/21/94	Extraction Date:	03/17/94
Lab Sample ID:	AA3627	Analysis Date:	04/07/94
Sample Matrix:	SOIL	Dryness Factor:	0.8844
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	11	U	11

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA3627	83	93

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

verified
6/16/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	212
Client Sample ID:	B09WI9	Extraction Date:	03/23/94
Lab Sample ID:	AA3926	Analysis Date:	04/07/94
Sample Matrix:	SOIL	Dryness Factor:	0.9598
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA3627	88	96

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Verified
5/16/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	212
Client Sample ID:	B09WJ0	Extraction Date:	03/23/94
Lab Sample ID:	AA3935	Analysis Date:	04/07/94
Sample Matrix:	SOIL	Dryness Factor:	0.9644
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA3935	93	102

Verified 5/6/94

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	212
Client Sample ID:	B09WG7	Extraction Date:	03/23/94
Lab Sample ID:	AA3954	Analysis Date:	04/07/94
Sample Matrix:	SOIL	Dryness Factor:	0.9654
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA3954	96	106

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Verified
5/16/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WH0	Extraction Date:	03/23/94
Lab Sample ID:	AA4176	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.9441
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4176	94	104

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Verified
8/6/16/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WH1	Extraction Date:	03/23/94
Lab Sample ID:	AA4187	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.9313
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	11	U	11

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4187	105	115

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Verified
[illegible]

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WJ3	Extraction Date:	03/23/94
Lab Sample ID:	AA4195	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.9696
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4195	102	112

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Verified
Sjollelet

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WJ4	Extraction Date:	03/23/94
Lab Sample ID:	AA4204	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.9448
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	10	U	10

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4204	96	107

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Verified
gj 6/16/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WJ5	Extraction Date:	03/23/94
Lab Sample ID:	AA4212	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.9342
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	11	U	11

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4212	97	99

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Verified
7/6/1/94

HIGH BOILING PETROLEUM HYDROCARBONS ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG-Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WJ7	Extraction Date:	03/23/94
Lab Sample ID:	AA4220	Analysis Date:	04/08/94
Sample Matrix:	SOIL	Dryness Factor:	0.9374
Concentration Units:	mg/kg (ppm)		

Compound	Result	Qualifier	Detection Limit
total high boiling petroleum hydrocarbons, as diesel range organics	11	U	11

Surrogate Recovery	C23	C32
Acceptance Limits	(41-149%)	(59-179%)
Lab Sample ID: AA4220	92	101

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

verified
cj 6/16/94

9613474.2760

ATTACHMENT 4

LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION

9613474.2761

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

JUN 1994 RECEIVED SDLA

Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352
Attn: J.A. Lerch

June 3, 1994

Job Number: 167; 193; 212; 230 (Corrected Certificate)

P.O. Number: N/A

This is the Certificate of Analysis for the following samples:

SDG:	W0002
Client Project ID:	Westinghouse Hanford
Date Received by Lab:	03/05/94; 03/11/94; 03/16/94; 03/18/94
Number of Samples:	Eighteen (18)
Sample Type:	Soil - fifteen (15), Trip Blank - three (3)

I. Introduction

On March 5, March 11, March 16 and March 18, 1994, fifteen (15) soil samples and three (3) trip blank samples arrived at the ITAS-Richland, Washington and were transferred to ITAS-Knoxville for chemical analysis. The list of analytical tests performed, as well as date of receipt and analysis, can be found in the attached report.

II. Analytical Results/Methodology

The analytical results for this report are presented by analytical test. Each set of data will include sample identification information and the analytical results. Please note that the data are not blank corrected.

The samples were analyzed for Target Compound List (TCL) volatiles by gas chromatography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

Reviewed and Approved:

Sheree' A. Schneider
Project Manager

II. Analytical Results/Methodology (Continued)

The samples were analyzed for Target Compound List (TCL) semivolatiles by gas chromatography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

The samples were analyzed for Target Compound List (TCL) pesticides and PCBs by gas chromatography/electron capture detection (GC/ECD) in accordance with the EPA CLP 3/90 Statement of Work.

The samples were analyzed for Target Analyte List (TAL) metals by cold vapor atomic absorption spectroscopy (CVAA), graphite furnace atomic absorption spectroscopy (GFAA), and inductively coupled plasma spectroscopy (ICP) in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for total cyanide in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for nitrate-nitrite based on EPA method 353.2.

The samples were analyzed for anions by ion chromatography using EPA method 300.0.

The samples were analyzed for total high boiling petroleum hydrocarbons as diesel range organics (DRO) with a kerosene spike by gas chromatography/flame ionization detection (GC/FID) based on method 8015.

III. Quality Control

The volatiles analyses were performed March 8, March 13, March 21, March 22 through 24, 1994 by purge and trap with a J & W DB-624 column on Hewlett-Packard 5970 and Finnigan INCOS 500 GC/MS/DS units. Sample B09WF9 was analyzed as a matrix spike and a matrix spike duplicate set. Matrix effects were confirmed as the cause of low internal standard recoveries in sample BO9WJ0 in a reanalysis. Surrogate 1,2-dichloroethane-d4 recovery fell outside of QC limits in sample BO9WJ0 due to internal standard problems. Sample BO9WJ6 was also analyzed as a matrix spike and a matrix spike duplicate set.

The semivolatiles analyses were performed March 15-16, March 27, March 29-30 and April 5-6, 1994 by direct injection of sample extract on a Restek XTI-5 capillary column on a Finnigan INCOS XL and 4500 GC/MS/DS unit. Sample B09WF9 was analyzed as a matrix spike and a matrix spike duplicate set. Sample BO9WH0 was also analyzed as a matrix spike and a matrix spike duplicate set in which the recoveries of phenol and 4-chloro-3-methylphenol fell outside of QC limits.

III. Quality Control (Continued)

Data were reported with qualifiers as follows:

U - Compound analyzed for but not detected; value given is quantitation limit.
E - Compound exceeded calibration range.
D - Compound analyzed at a secondary dilution factor.
J - Compound detected but below quantitation limit; value estimated.
S - Spiked compound.
B - Compound found in method blank.
A - Suspected aldol condensation product.
Y - Indistinguishable isomer in tentatively identified compounds.
N - Presumptive evidence of compound presence.

The samples were analyzed for Pesticides/PCBs using DB-608 and DB-1701 0.53mm ID megabore capillary columns. 1.0 μl was injected for each column. Two blank spikes (LCS's) were analyzed with acceptable recoveries. A matrix spike and matrix spike duplicate were analyzed and reported for sample BO9WJ3 with acceptable results. Sample chromatograms that were manually integrated will be denoted by an M+ and an M-. The performance evaluation mixture which ran at 1752 on 5890C on March 25, 1994, PEMKD, had methoxychlor greater than 25 RPD (25.1 RPD). There were no positives for methoxychlor in the affected samples and the PEM on the confirmation column met all criteria.

Data were reported using qualifiers as follows:

U - Compound analyzed for but not detected; value given is the quantitation limit.
D - Compound analyzed at a secondary dilution; DL was appended to the sample number.
X - A flag that FORMASTER III inserts when the data were entered manually.
Z - Compound's response was such that it exceeded the established linearity range. The value is estimated.
J - Compound detected but below the quantitation limit; value estimated.
P - The percent difference for the calculated values from the two analytical columns differed by 25.0% or more.

The samples were digested on March 25 and April 1, 1994 for ICP and March 25 and March 31, 1994 for GFAA. The samples for mercury analysis were prepared just prior to analysis. The CVAA analysis for mercury was performed on March 24 and April 1, 1994; the GFAA analysis for arsenic, lead, selenium and thallium were performed from March 25 through April 2, 1994; the remaining metals were analyzed by ICP on March 29, April 2 and April 11, 1994. All run QC was acceptable. A duplicate/spike pair was prepared using sample number B09WF9. Spike recovery (accuracy) results

III. Quality Control (Continued)

were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for arsenic by GFAA analysis. As the titanium concentration was greater than four times (4X) the spike added spiking criteria are not applicable for this analyte. Duplicate RPD (precision) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for vanadium and titanium by ICP analysis. MSAs were performed as required by CLP protocol.

Data were reported with qualifiers as follows:

"C" Qualifiers

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
B - Value greater than instrument detection limit, but less than contract required quantitation limit.

"Q" Qualifiers

* - Duplicate analysis outside control limits.
N - Spiked sample recovery outside control limits.
W - Post-digestion spike for GFAA was out of control limits (85-115%), while sample absorbance was less than 50% of spike absorbance.
S - The reported value was determined by method of standard additions.

"M" Qualifiers

P - Analysis performed by ICP.
V - Analysis performed by CVAA.
F - Analysis performed by GFAA.
C - Cyanide analysis by manual distillation/colorimetric determination.

Miscellaneous

D - Duplicate.
S - Spike.
NR - Not required.
G - Native analyte > 4 times spike added, therefore, acceptance criteria do not apply.
X - Detection limits higher than normal due to sample matrix interferences.

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

III. Quality Control (Continued)

The samples were analyzed for total high boiling petroleum hydrocarbons as kerosene by gas chromatography/flame ionization detection using an SPB-1 column on a Hewlett Packard GC. Matrix spike/matrix spike analyses were performed using sample B09WF9 with acceptable results. Surrogates were not spiked into the matrix spike and duplicate due to operator error. This error is believed not to effect the data integrity since the matrix spikes were present in place of the surrogates. Spikes were injected with kerosene standard and reported out in terms of diesel range organics. All matrix spikes and laboratory control samples (LCS) had acceptable recoveries.

On March 29, 1994, the samples were analyzed for nitrate-nitrite by cadmium reduction followed by colorimetric determination using the LACHAT QuikChem automated flow injection analyzer (QuikChem Method No. 10-107-04-1-C). Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

The samples were analyzed for anions on March 26 and April 2, 1994. Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

III. Quality Control (Continued)

Table I is a cross reference between client IDs and abbreviated client IDs.

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA3163	BO9WF9	SOIL	METALS
AA3164	BO9WF9	SOIL	VOC
AA3165	BO9WF9	SOIL	SVOC
AA3166	BO9WF9	SOIL	ANIONS
AA3167	BO9WF9	SOIL	NO3NO2
AA3168	BO9WF9	SOIL	CN
AA3169	BO9WF9	SOIL	TPH
AA3170	BO9WG2	WATER	VOC
AA3586	BO9WG0	SOIL	METALS
AA3598	BO9WG0	SOIL	VOC
AA3599	BO9WG0	SOIL	SVOC
AA3600	BO9WG0	SOIL	ANIONS
AA3625	BO9WG0	SOIL	NO3NO2
AA3626	BO9WG0	SOIL	CN
AA3627	BO9WG0	SOIL	TPH
AA3628	BO9WG2	SOIL	VOC
AA3919	BO9WI9	SOIL	METALS
AA3920	BO9WI9	SOIL	VOC
AA3921	BO9WI9	SOIL	SVOC
AA3922	BO9WI9	SOIL	ANIONS
AA3923	BO9WI9	SOIL	NO3NO2
AA3924	BO9WI9	SOIL	PEST/PCB
AA3925	BO9WI9	SOIL	CN
AA3926	BO9WI9	SOIL	TPH
AA3928	BO9WJ0	SOIL	METALS
AA3929	BO9WJ0	SOIL	VOC
AA3930	BO9WJ0	SOIL	SVOC
AA3931	BO9WJ0	SOIL	ANIONS
AA3932	BO9WJ0	SOIL	NO3NO2
AA3933	BO9WJ0	SOIL	PEST/PCB
AA3934	BO9WJ0	SOIL	CN
AA3935	BO9WJ0	SOIL	TPH

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

III. Quality Control (Continued)

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA3948	BO9WG7	SOIL	METALS
AA3949	BO9WG7	SOIL	VOC
AA3950	BO9WG7	SOIL	SVOC
AA3951	BO9WG7	SOIL	ANIONS
AA3952	BO9WG7	SOIL	NO3NO2
AA3953	BO9WG7	SOIL	CN
AA3954	BO9WG7	SOIL	TPH
AA3960	BO9WJ2	SOIL	VOC
AA3961	TRIP BLANK	WATER	VOC
AA4170	BO9WH0	SOIL	METALS
AA4171	BO9WH0	SOIL	VOC
AA4172	BO9WH0	SOIL	SVOC
AA4173	BO9WH0	SOIL	ANIONS
AA4174	BO9WH0	SOIL	NO3NO2
AA4175	BO9WH0	SOIL	CN
AA4176	BO9WH0	SOIL	TPH
AA4181	BO9WH1	SOIL	METALS
AA4182	BO9WH1	SOIL	VOC
AA4183	BO9WH1	SOIL	SVOC
AA4184	BO9WH1	SOIL	ANIONS
AA4185	BO9WH1	SOIL	NO3NO2
AA4186	BO9WH1	SOIL	CN
AA4187	BO9WH1	SOIL	TPH
AA4221	BO9WJ8	SOIL	VOA
AA4188	BO9WJ3	SOIL	METALS
AA4189	BO9WJ3	SOIL	VOC
AA4190	BO9WJ3	SOIL	SVOC
AA4191	BO9WJ3	SOIL	ANIONS
AA4192	BO9WJ3	SOIL	NO3NO2
AA4193	BO9WJ3	SOIL	PEST/PCB
AA4194	BO9WJ3	SOIL	CN
AA4195	BO9WJ3	SOIL	TPH

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

III. Quality Control (Continued)

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA4197	BO9WJ4	SOIL	METALS
AA4198	BO9WJ4	SOIL	VOC
AA4199	BO9WJ4	SOIL	SVOC
AA4200	BO9WJ4	SOIL	ANIONS
AA4201	BO9WJ4	SOIL	NO3NO2
AA4202	BO9WJ4	SOIL	PEST/PCB
AA4203	BO9WJ4	SOIL	CN
AA4204	BO9WJ4	SOIL	TPH
AA4205	BO9WJ5	SOIL	METALS
AA4206	BO9WJ5	SOIL	VOC
AA4207	BO9WJ5	SOIL	SVOC
AA4208	BO9WJ5	SOIL	ANIONS
AA4209	BO9WJ5	SOIL	NO3NO2
AA4210	BO9WJ5	SOIL	PEST/PCB
AA4211	BO9WJ5	SOIL	CN
AA4212	BO9WJ5	SOIL	TPH
AA4222	BO9WJ6	SOIL	VOC
AA4213	BO9WJ7	SOIL	METALS
AA4214	BO9WJ7	SOIL	VOC
AA4215	BO9WJ7	SOIL	SVOC
AA4216	BO9WJ7	SOIL	ANIONS
AA4217	BO9WJ7	SOIL	NO3NO2
AA4218	BO9WJ7	SOIL	PEST/PCB
AA4219	BO9WJ7	SOIL	CN
AA4220	BO9WJ7	SOIL	TPH
AA4223	TRIP BLANK	WATER	VOC

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

IV. Certification

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature:

Reviewed and Approved:

Sheree' A. Schneider
Project Manager

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.J. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-4-94

Ice Chest No.: SMC-17B — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: N/A — Offsite Property No.: W94-1-0369 #13

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 40320801 B09W60

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~ HER 3-9-94
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40320901

40320802 B09W62

2) 1,250ml aGs : CLP: VOA

2)
1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

HER 3-9-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.J. Setzer	Heidelberg	3/10/94 @ 1450
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date:

Ice Chest No.: — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 RADIOACTIVE

Sample Identification

1)
- 1,250ml P:CLP;TAL Metals,Hg,Ti ✓ B09WF9
- 1,250ml ✓Gs:VOA CLP
- 1,250ml ✓aG:Semi-VOA CLP
- 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) ✓
- 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) ✓
- ~~1,250ml aGs:PCB/Pest (8080)~~ LER 3-3-94
- 1,125ml ✓G:Cyanide CLP
- 1,125ml Gw:Kerosene (8015M) ✓
- 1,1000ml ✓P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2)
- 1,250ml P:CLP;TAL Metals,Hg,Ti
- 1,250ml Gs:VOA CLP
- 1,250ml aG:Semi-VOA CLP
- 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
- 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
- 1,250ml aGs:PCB/Pest (8080) LER 3-3-94
- 1,125ml G:Cyanide CLP
- 1,125ml Gw:Kerosene (8015M)
- 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Loren E Rogers 3-4-94 1033	Michael Lang Jr	3/4 @ 12:30
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2772

0000041

SDG W0002 WO212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-10-94

Ice Chest No.: GW 5028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.: WA-0-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

CB 3-15-94 40A3264 01

BORW19

CAT I

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
40A3267 01 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2)

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

3-10-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	R. Boyd FT CWO	3/10/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

WO #212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.W. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-11-93

Ice Chest No.: GN 5028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.: W94A-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09W50

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
I 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

~~2)~~

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

3-11-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.W. Setzer	R Boyd IT CCO	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

WO #212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.V. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-14-94

Ice Chest No.: GW S028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: NA — Offsite Property No.: WWW-0-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065

Sample Identification

1) B09WG7

4032L4 03

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)

4032L109 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

~~2) B09WJ2 1,250ml aGs: CLP; VOA~~ WWS 3-14-92

2)

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080) WWS
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.V. Setzer	R. Boyd IT CLBD	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

WO #230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-16-94

Ice Chest No.: GWS -127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 500ml 3-17-94 B04W40

A ~~1,250ml~~ P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~ 3-16-94
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4633450 1

2) 3-17-94 B04W41

A 1, 500ml ~~1,250ml~~ P:CLP;TAL Metals,Hg,Ti
B 1, 500ml ~~1,250ml~~ Gs:VOA CLP
C 1, 500ml ~~1,250ml~~ aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~ 3-16-94
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4633450 2

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Loren E Rogers	Received by: J.D. Fowler	Date/Time: 3/17/94 1018
Relinquished by: J.D. Fowler	Received by: [illegible]	Date/Time: 3/17 @ 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2776

0000053

WO#230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-14-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09W53

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

10334464

10334504

B09W54

2)

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

10334465

10334505

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Loren E. Rogers	J.D. Fankhy	3/17/94 1018
J.D. Fankhy	Heidelberg	3/17 1330

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2777

0000055

WO#230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-15-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09W35

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4C334506

1C334406

2)

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

3-15-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Loren E. Rogers	J.D. Fambrough	3/17/94 1015
J.D. Fambrough	Heidelberg	3/17 1330

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2778

0000057

WO# 230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-16-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) BC9W56

4C334407

~~1,350ml P:CLP;TAL Metals,Hg,Tl~~
1,250ml Gs:VOA CLP
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

SEK 3-16-94

2) BC9W57

4C334408

A 1,250ml P:CLP;TAL Metals,Hg,Tl
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4C334507

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Loren E. Rogers	Received by: J.D. Fowler	Date/Time: 3/17/94 1018
Relinquished by: J.D. Fowler	Received by: [illegible]	Date/Time: 3/17 1332
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS S.A.F. # 94-065 Date 3-3-94
Company Contact L E ROGERS Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09WF9	S	3-3-94	1225	40309801 A 1,250ml P:CLP;TAL Metals,Hg,Ti 6010 B 1,250ml Ga:VOA CLP 8240 C 1,250ml aG:Semi-VOA CLP 8270 D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) ~~1,250ml aGa:PCB/Pest (8080)~~ JER 3-3-94 F 1,125ml G:Cyanide CLP 9010 G 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253) 40309901
			JER 3-3-94	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Ga:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGa:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

*Type of Sample A = Air L = Liquid SE = Sediment T = Tissue X = Other
DL = Drum Liquids O = Oil SL = Sludge W = Water
DS = Drum Solids S = Soil SO = Solid WI = Wipe

Field Information IT, Richland
Special Handling and/or Storage Maintain at 4C ; (SOIL)
Possible Sample Hazards RADIOACTIVE

Chain of custody did not have the collection date. This form date used to evaluate holding times for B09WF9.

A-6000-406 (06/91) WEF060

9613474.2790

ATTACHMENT 5

DATA VALIDATION SUPPORTING DOCUMENTATION

GENERAL GC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	~~E~~ gb 6/16/94

PROJECT: 200 UP 2		DATA PACKAGE: IN0002-ITC-007
VALIDATOR: C Jensen	LAB: ITC	DATE: 6/16/94
CASE:		SDG:

ANALYSES PERFORMED

☐ 8010	☒ 8015 Modified	☐ 8020	☐ 8021	8140	8141
☐ 8150	☐ 8151	☐ WTPH-HCID	☐ WTPH-G	☐ WTPH-D	☐
☐	☐	☐	☐	☐	☐

SAMPLES/MATRIX: Soil/

B09WF9	B09WH1	B09WG7 gj 6/24/94
B09WG0	B09WJ3	
B09WJ9	B09WJ4	
B09WJ0	B09WJ5	
B09WH0	B09WJ7	

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Is a case narrative present? . . . . . (Yes) No N/A

Comments: Verification performed by WHC

2. HOLDING TIMES

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

Comments:

revised page gj 6/24/94

042

GENERAL GC DATA VALIDATION CHECKLIST

3. INSTRUMENT CALIBRATION

3.1 INITIAL CALIBRATION

Was an initial calibration performed? . . . . . Yes No N/A

Are %RSD values for calibration or response factors acceptable? . . . . . Yes No N/A

Comments: r = ≥.995
Initial calibration 5 pt. used.

3.2 CONTINUING CALIBRATION

Was a continuing calibration check performed? . . . . . Yes No N/A

Are %D values for calibration or response factors acceptable? . Yes No N/A

Comments: Continuing cal. checks were compared to the ICAL, all acceptable %D.

4. BLANKS

Were laboratory blanks analyzed? . . . . . Yes No N/A

Are laboratory blank results acceptable? . . . . . Yes No N/A

Were field/trip blanks analyzed? . . . . . Yes No N/A

Are field/trip blank results acceptable? . . . . . Yes No N/A

Comments:

5. ACCURACY

Were surrogates analyzed? . . . . . ① Yes No N/A

Are surrogate recoveries acceptable? . . . . . Yes No N/A

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

Are MS/MSD recoveries acceptable? . . . . . Yes No N/A

Were LCS samples analyzed? . . . . . Yes No N/A

Are LCS recoveries acceptable? . . . . . Yes No N/A

GENERAL GC DATA VALIDATION CHECKLIST

Comments: As stated in the laboratory case narrative, surrogates were not added to B09WF9 MS/MSD. Two ~~LCS~~ LCS analyzed the same day was within limits. MS/MSD %R and RPDs were within limits. No qualification to the data will be made.

6. PRECISION

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

Are field duplicate RPD values acceptable? . . . . . Yes No N/A

Are field split RPD values acceptable? . . . . . Yes No N/A

Comments:

7. COMPOUND IDENTIFICATION AND QUANTITATION

Is compound identification acceptable? . . . . . Yes No N/A

Is compound quantitation acceptable? . . . . . Yes No N/A

Comments:

8. REPORTED RESULTS AND DETECTION LIMITS

Are results reported for all requested analyses? . . . . . Yes No N/A

Are all results supported in the raw data? . . . . . Yes No N/A

Do results meet the CRQLs? . . . . . Yes No N/A

Comments: The reporting limit is 10 mg/kg.

HOLDING TIME SUMMARY

SDG:	VALIDATOR: C Jensen	DATE: 6/16/94	PAGE 1 OF 1
COMMENTS: HBH W0002-ITC-007			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09WF9	HBH	3/3/94	3/17/94	4/7/94	14	~~14~~ 21	none
B09WG0		3/4/94	3/17/94	4/7/94	13	21	
B09WJ9		3/10/94	3/23/94	4/7/94	13	15	
B09WJ0		3/11/94	3/23/94	4/7/94	12	15	
B09WG7		3/10/94	3/23/94	4/7/94	13	15	
B09WH0		3/16/94	3/23/94	4/8/94	7	16	
B09WH1		3/16/94	3/23/94	4/8/94	7	16	
B09WJ3		3/14/94	3/23/94	4/8/94	9	16	
B09WJ4		3/14/94	3/23/94	4/8/94	9	16	
B09WJ5		3/15/94	3/23/94	4/8/94	8	16	
B09WJ7		3/16/94	3/23/94	4/8/94	7	16	

9613474.2784

9613474.2785

MEMORANDUM

JUN 1994 RECEIVED TOB

TO: 200-UP-2 Project QA Record

June 24, 1994

FR: Sandra Schildt, Golder Associates Inc. oj for

RE: GENERAL CHEMISTRY ANALYSIS DATA VALIDATION SUMMARY FOR DATA PACKAGE W0002-ITC-017 (923-E418 filename W0002W.UP2)

INTRODUCTION

This memorandum presents the results of data validation on data package W0002-ITC-017 prepared by International Technology Corp. (IT). A list of the samples validated along with the analyses reported and the method of analysis is provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA	ANALYSIS
B09WF9	3/03/94	SOIL	SEE NOTE 1
B09WG0	3/04/94	SOIL	
B09WI9	3/10/94	SOIL	
B09WJ0	3/11/94	SOIL	
B09WG7	3/10/94	SOIL	
B09WH0	3/16/94	SOIL	
B09WH1	3/16/94	SOIL	
B09WJ3	3/14/94	SOIL	
B09WJ4	3/14/94	SOIL	
B09WJ5	3/15/94	SOIL	
B09WJ7	3/16/94	SOIL	

Note 1: Samples were analyzed for IC anions (chloride, fluoride, and sulfate) and nitrate/nitrite using WHC approved methods.

Data validation was conducted in accordance with the WHC statement of work (WHC 1993a) and validation procedures (WHC 1993b). Attachments 1 through 5 to this memo provide the following information:

Attachment 1. Glossary of Data Reporting Qualifiers
Attachment 2. Summary of Data Qualifications
Attachment 3. Qualified Data Summary and Annotated Laboratory Reports
Attachment 4. Laboratory Narrative and Chain-of-Custody Documentation
Attachment 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

Precision. Goals for precision were met.

revised page 6/24/94

Accuracy. Goals for accuracy were met. With the exception of the minor discrepancies noted below.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met for all sample results as specified in the reference analytical method.

Completeness. The data package was complete for all requested analyses. Eleven samples (11) were validated in this data set with a total of 44 determinations reported, all of which were deemed valid. This results in a completeness of 100 percent which meets normal work plan objectives of 90%.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

The following minor deficiencies were identified during data validation which required qualification of the data.

Laboratory Control Sample

- The laboratory control sample (LCS) recovery of fluoride was unacceptable. Attachments 2 and 5 provide a summary of the samples affected, data qualifications applied, and supporting documentation.

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993. Westinghouse Hanford Company, Richland, Washington.

9613474.2707

ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF INORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected. The concentration reported is less than the contract required detection limit (CRDL) but greater than the instrument detection limit (IDL). The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample detection limit corrected for sample aliquot size, dilution factors and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and was not detected. Due to a minor quality control deficiency identified during data validation, the concentration reported may not accurately reflect the sample detection limit. The associated data have been qualified as estimated but should be considered usable for decision making purposes.

BJ - Indicates the constituent was analyzed for and detected at a concentration less than the CRDL but greater then the IDL. Due to a minor quality control deficiency identified during data validation, The associated data have been qualified as estimated, but should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. Due to a minor quality control deficiency identified during data validation the associated data have been qualified as estimated, but should be considered usable for decision making purposes.

UR - Indicates the constituent was analyzed for and not detected. Due to a major quality control deficiency identified during data validation, the associated data have been qualified as unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. Due to a major quality control deficiency identified during data validation, the associated data have been qualified as unusable for decision making purposes.

9613474.2789

ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY - FORM B-7

PKG: W0002-ITC-007	REVIEWER: S. Schildt	DATE: 6/17/94	PAGE 1 OF 1
COMMENTS: Wet Chemistry			
PARAMETER	QUALIFIER	SAMPLES AFFECTED	REASON
Fluoride	J for detects	B09WF9 B09WG0	LCS recovery of fluoride > 120%

9613474.2791

ATTACHMENT 3

QUALIFIED DATA SUMMARY AND ANNOTATED LABORATORY REPORTS

Validated Data Summary, Data Package: W0002-ITC-007

	Samp#	B09WF9		B09WG0		B09WG7		B09WH0		B09WH1		B09WI9	
	Date	3-3-94		3-4-94		3-10-94		3-16-94		3-16-94		3-10-94	
	Location	---		---		---		---		---		---	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
FLUORIDE	MG/KG	6.500	J	4.700	J	0.400	U	0.400	U	0.400	U	0.400	U
CHLORIDE	MG/KG	10.000		11.000		0.400	U	0.400	U	2.200		2.800	
SULFATE	MG/KG	1.500	U	2.100		7.500		7.400		17.000		27.000	
NITRATE+NITRITE AS N	MG/KG	2.500	U	2.500	U	2.500	U	2.500	U	2.500	U	9.000	

Verified 6/17/94

9613474.2792

Validated Data Summary, Data Package: W0002-ITC-007

	Samp#	B09WJ0		B09WJ3		B09WJ4		B09WJ5		B09WJ7	
	Date	3-11-94		3-14-94		3-14-94		3-15-94		3-16-94	
	Location	---		---		---		---		---	
	Depth	---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
FLUORIDE	MG/KG	0.400	U	0.400	U	0.400	U	0.400	U	0.400	U
CHLORIDE	MG/KG	3.900		0.400	U	0.400	U	0.400	U	0.400	U
SULFATE	MG/KG	13.000		3.600		1.900		1.600		1.800	
NITRATE+NITRITE AS N	MG/KG	3.500		2.500	U	2.500	U	2.500	U	2.500	U

Verified
6/17/94

009

9613471.2793

9613474.2794

NITRATE/NITRITE ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	167
Sample Matrix:	Soil	Extraction Date:	N/A
Concentration Units:	mg/kg (ppm)	Analysis Date:	03/29/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6063	2.5	U
B09WF9	AA3167	2.5	U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

6/16/94

NITRATE/NITRITE ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	193
Sample Matrix:	Soil	Extraction Date:	N/A
Concentration Units:	mg/kg (ppm)	Analysis Date:	03/29/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6063	2.5	U
~~WH03208 01E~~ BC9WGC 6/7/94	AA3625	2.5	U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

6/16/94

9613474.2796

NITRATE/NITRITE ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	212
Sample Matrix:	Soil	Extraction Date:	N/A
Concentration Units:	mg/kg (ppm)	Analysis Date:	03/29/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6063	2.5	U
B09WI9	AA3923	9	+
B09WJ0	AA3932	3.5	+
B09WG7	AA3952	2.5	U

\+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

6/16/94

NITRATE/NITRITE ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Sample Matrix:	Soil	Extraction Date:	N/A
Concentration Units:	mg/kg (ppm)	Analysis Date:	03/29/94

Client Sample ID	Lab Sample ID	Result	Qualifiers
Method Blank	P6063	2.5	U
B09WH0	AA4174	2.5	U
B09WH1	AA4185	2.5	U
B09WJ3	AA4192	2.5	U
B09WJ4	AA4201	2.5	U
B09WJ5	AA4209	2.5	U
B09WJ7	AA4217	2.5	U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

6/16/94

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	167
Client Sample ID:	B09WF9	Analysis Date:	03/26/94
Lab Sample ID:	AA3166	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	6.5	+	0.4
chloride	10	+	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	1.5	U	1.5

G/J

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

6/16/94

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	193
Client Sample ID:	~~WH03208-01D~~ B09WG0 KAP 6/7/94	Analysis Date:	03/26/94
Lab Sample ID:	AA3600	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit	Q
fluoride	4.7	+	0.4	J
chloride	11	+	0.4	
nitrite	0.4	U	0.4	
bromide	1.0	U	1.0	
nitrate	0.4	U	0.4	
phosphate	1.0	U	1.0	
sulfate	2.1	+	1.5	

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

6/16/94

9613474.2800

~~CCCC411~~

ANION ANALYSIS

Name:	ITAS-KNOXVILLE	SDG Number:	W0002
ame:	Westinghouse Hanford	Job Number:	212
ple ID:	B09WG7	Analysis Date:	03/27/94
e ID:	AA3951	Confirmation Date:	N/A
trix:	SOIL	Concentration Units:	mg/kg (ppm)

nd	Result	Qualifier	Detection Limit
	0.4	U	0.4
	0.4	U	0.4
	0.4	U	0.4
	1.0	U	1.0
	0.4	U	0.4
e	1.0	U	1.0
	7.5	+	1.5

sitive result.
ompound was analyzed for but not detected. The number is the detection limit for the sample.

6/16/94

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	212
Client Sample ID:	B09WI9	Analysis Date:	03/28/94
Lab Sample ID:	AA3922	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	0.4	U	0.4
chloride	2.8	+	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	27	+	1.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

6/16/94

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	212
Client Sample ID:	B09WJ0	Analysis Date:	03/28/94
Lab Sample ID:	AA3931	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	0.4	U	0.4
chloride	3.9	+	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	13	+	1.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

revised:
Signed page
5/6/24/94

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WJ5	Analysis Date:	03/29/94
Lab Sample ID:	AA4208	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	0.4	U	0.4
chloride	0.4	U	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	1.6	+	1.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

revised:
signed page
cj 6/24/94

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WJ3	Analysis Date:	03/29/94
Lab Sample ID:	AA4191	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	0.4	U	0.4
chloride	0.4	U	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	3.6	+	1.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

revised
signed 5/6/24/94

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WJ4	Analysis Date:	03/29/94
Lab Sample ID:	AA4200	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	0.4	U	0.4
chloride	0.4	U	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	1.9	+	1.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

revised:
signed
5/24/94

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WH1	Analysis Date:	03/29/94
Lab Sample ID:	AA4184	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	0.4	U	0.4
chloride	2.2	+	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	17	+	1.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

revised:
signed
6/24/94

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WJ7	Analysis Date:	03/29/94
Lab Sample ID:	AA4216	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	0.4	U	0.4
chloride	0.4	U	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	1.8	+	1.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

revised: signed page 5/6/24/94

ANION ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0002
Contract Name:	Westinghouse Hanford	Job Number:	230
Client Sample ID:	B09WH0	Analysis Date:	04/02/94
Lab Sample ID:	AA4173	Confirmation Date:	N/A
Sample Matrix:	SOIL	Concentration Units:	mg/kg (ppm)

Compound	Result	Qualifier	Detection Limit
fluoride	0.4	U	0.4
chloride	0.4	U	0.4
nitrite	0.4	U	0.4
bromide	1.0	U	1.0
nitrate	0.4	U	0.4
phosphate	1.0	U	1.0
sulfate	7.4	+	1.5

+ - Positive result.
U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

revised signed page on 6/24/94

9613474.2009

ATTACHMENT 4

LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION

9613474.2810

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

JUN 1994 RECEIVED SDLA

CERTIFICATE OF ANALYSIS

Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352
Attn: J.A. Lerch

June 3, 1994

Job Number: 167; 193; 212; 230 (Corrected Certificate)

P.O. Number: N/A

This is the Certificate of Analysis for the following samples:

SDG:	W0002
Client Project ID:	Westinghouse Hanford
Date Received by Lab:	03/05/94; 03/11/94; 03/16/94; 03/18/94
Number of Samples:	Eighteen (18)
Sample Type:	Soil - fifteen (15), Trip Blank - three (3)

I. Introduction

On March 5, March 11, March 16 and March 18, 1994, fifteen (15) soil samples and three (3) trip blank samples arrived at the ITAS-Richland, Washington and were transferred to ITAS-Knoxville for chemical analysis. The list of analytical tests performed, as well as date of receipt and analysis, can be found in the attached report.

II. Analytical Results/Methodology

The analytical results for this report are presented by analytical test. Each set of data will include sample identification information and the analytical results. Please note that the data are not blank corrected.

The samples were analyzed for Target Compound List (TCL) volatiles by gas chromatography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

Reviewed and Approved:

Sheree' A. Schneider
Project Manager

6/7/94

American Council of Independent Laboratories
International Association of Environmental Testing Laboratories
American Association for Laboratory Accreditation

026

II. Analytical Results/Methodology (Continued)

The samples were analyzed for Target Compound List (TCL) semivolatiles by gas chromatography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

The samples were analyzed for Target Compound List (TCL) pesticides and PCBs by gas chromatography/electron capture detection (GC/ECD) in accordance with the EPA CLP 3/90 Statement of Work.

The samples were analyzed for Target Analyte List (TAL) metals by cold vapor atomic absorption spectroscopy (CVAA), graphite furnace atomic absorption spectroscopy (GFAA), and inductively coupled plasma spectroscopy (ICP) in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for total cyanide in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for nitrate-nitrite based on EPA method 353.2.

The samples were analyzed for anions by ion chromatography using EPA method 300.0.

The samples were analyzed for total high boiling petroleum hydrocarbons as diesel range organics (DRO) with a kerosene spike by gas chromatography/flame ionization detection (GC/FID) based on method 8015.

III. Quality Control

The volatiles analyses were performed March 8, March 13, March 21, March 22 through 24, 1994 by purge and trap with a J & W DB-624 column on Hewlett-Packard 5970 and Finnigan INCOS 500 GC/MS/DS units. Sample B09WF9 was analyzed as a matrix spike and a matrix spike duplicate set. Matrix effects were confirmed as the cause of low internal standard recoveries in sample BO9WJ0 in a reanalysis. Surrogate 1,2-dichloroethane-d4 recovery fell outside of QC limits in sample BO9WJ0 due to internal standard problems. Sample BO9WJ6 was also analyzed as a matrix spike and a matrix spike duplicate set.

The semivolatiles analyses were performed March 15-16, March 27, March 29-30 and April 5-6, 1994 by direct injection of sample extract on a Restek XTI-5 capillary column on a Finnigan INCOS XL and 4500 GC/MS/DS unit. Sample B09WF9 was analyzed as a matrix spike and a matrix spike duplicate set. Sample BO9WH0 was also analyzed as a matrix spike and a matrix spike duplicate set in which the recoveries of phenol and 4-chloro-3-methylphenol fell outside of QC limits.

KSS 6/17/94

III. Quality Control (Continued)

Data were reported with qualifiers as follows:

U - Compound analyzed for but not detected; value given is quantitation limit.
E - Compound exceeded calibration range.
D - Compound analyzed at a secondary dilution factor.
J - Compound detected but below quantitation limit; value estimated.
S - Spiked compound.
B - Compound found in method blank.
A - Suspected aldol condensation product.
Y - Indistinguishable isomer in tentatively identified compounds.
N - Presumptive evidence of compound presence.

The samples were analyzed for Pesticides/PCBs using DB-608 and DB-1701 0.53mm ID megabore capillary columns. 1.0 μl was injected for each column. Two blank spikes (LCS's) were analyzed with acceptable recoveries. A matrix spike and matrix spike duplicate were analyzed and reported for sample BO9WJ3 with acceptable results. Sample chromatograms that were manually integrated will be denoted by an M+ and an M-. The performance evaluation mixture which ran at 1752 on 5890C on March 25, 1994, PEMKD, had methoxychlor greater than 25 RPD (25.1 RPD). There were no positives for methoxychlor in the affected samples and the PEM on the confirmation column met all criteria.

Data were reported using qualifiers as follows:

U - Compound analyzed for but not detected; value given is the quantitation limit.
D - Compound analyzed at a secondary dilution; DL was appended to the sample number.
X - A flag that FORMASTER III inserts when the data were entered manually.
Z - Compound's response was such that it exceeded the established linearity range. The value is estimated.
J - Compound detected but below the quantitation limit; value estimated.
P - The percent difference for the calculated values from the two analytical columns differed by 25.0% or more.

The samples were digested on March 25 and April 1, 1994 for ICP and March 25 and March 31, 1994 for GFAA. The samples for mercury analysis were prepared just prior to analysis. The CVAA analysis for mercury was performed on March 24 and April 1, 1994; the GFAA analysis for arsenic, lead, selenium and thallium were performed from March 25 through April 2, 1994; the remaining metals were analyzed by ICP on March 29, April 2 and April 11, 1994. All run QC was acceptable. A duplicate/spike pair was prepared using sample number B09WF9. Spike recovery (accuracy) results

AHL 6/17/94

III. Quality Control (Continued)

were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for arsenic by GFAA analysis. As the titanium concentration was greater than four times (4X) the spike added spiking criteria are not applicable for this analyte. Duplicate RPD (precision) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for vanadium and titanium by ICP analysis. MSAs were performed as required by CLP protocol.

Data were reported with qualifiers as follows:

"C" Qualifiers

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
B - Value greater than instrument detection limit, but less than contract required quantitation limit.

"Q" Qualifiers

* - Duplicate analysis outside control limits.
N - Spiked sample recovery outside control limits.
W - Post-digestion spike for GFAA was out of control limits (85-115%), while sample absorbance was less than 50% of spike absorbance.
S - The reported value was determined by method of standard additions.

"M" Qualifiers

P - Analysis performed by ICP.
V - Analysis performed by CVAA.
F - Analysis performed by GFAA.
C - Cyanide analysis by manual distillation/colorimetric determination.

Miscellaneous

D - Duplicate.
S - Spike.
NR - Not required.
G - Native analyte > 4 times spike added, therefore, acceptance criteria do not apply.
X - Detection limits higher than normal due to sample matrix interferences.

ASS 6/17/94

029

III. Quality Control (Continued)

The samples were analyzed for total high boiling petroleum hydrocarbons as kerosene by gas chromatography/flame ionization detection using an SPB-1 column on a Hewlett Packard GC. Matrix spike/matrix spike analyses were performed using sample B09WF9 with acceptable results. Surrogates were not spiked into the matrix spike and duplicate due to operator error. This error is believed not to effect the data integrity since the matrix spikes were present in place of the surrogates. Spikes were injected with kerosene standard and reported out in terms of diesel range organics. All matrix spikes and laboratory control samples (LCS) had acceptable recoveries.

On March 29, 1994, the samples were analyzed for nitrate-nitrite by cadmium reduction followed by colorimetric determination using the LACHAT QuikChem automated flow injection analyzer (QuikChem Method No. 10-107-04-1-C). Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

The samples were analyzed for anions on March 26 and April 2, 1994. Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

AXL 11/18/94

III. Quality Control (Continued)

Table I is a cross reference between client IDs and abbreviated client IDs.

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA3163	BO9WF9	SOIL	METALS
AA3164	BO9WF9	SOIL	VOC
AA3165	BO9WF9	SOIL	SVOC
AA3166	BO9WF9	SOIL	ANIONS
AA3167	BO9WF9	SOIL	NO3NO2
AA3168	BO9WF9	SOIL	CN
AA3169	BO9WF9	SOIL	TPH
AA3170	BO9WG2	WATER	VOC
AA3586	BO9WG0	SOIL	METALS
AA3598	BO9WG0	SOIL	VOC
AA3599	BO9WG0	SOIL	SVOC
AA3600	BO9WG0	SOIL	ANIONS
AA3625	BO9WG0	SOIL	NO3NO2
AA3626	BO9WG0	SOIL	CN
AA3627	BO9WG0	SOIL	TPH
AA3628	BO9WG2	SOIL	VOC
AA3919	BO9WI9	SOIL	METALS
AA3920	BO9WI9	SOIL	VOC
AA3921	BO9WI9	SOIL	SVOC
AA3922	BO9WI9	SOIL	ANIONS
AA3923	BO9WI9	SOIL	NO3NO2
AA3924	BO9WI9	SOIL	PEST/PCB
AA3925	BO9WI9	SOIL	CN
AA3926	BO9WI9	SOIL	TPH
AA3928	BO9WJ0	SOIL	METALS
AA3929	BO9WJ0	SOIL	VOC
AA3930	BO9WJ0	SOIL	SVOC
AA3931	BO9WJ0	SOIL	ANIONS
AA3932	BO9WJ0	SOIL	NO3NO2
AA3933	BO9WJ0	SOIL	PEST/PCB
AA3934	BO9WJ0	SOIL	CN
AA3935	BO9WJ0	SOIL	TPH

AHS 6/17/94

III. **Quality Control** (Continued)

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA3948	BO9WG7	SOIL	METALS
AA3949	BO9WG7	SOIL	VOC
AA3950	BO9WG7	SOIL	SVOC
AA3951	BO9WG7	SOIL	ANIONS
AA3952	BO9WG7	SOIL	NO3NO2
AA3953	BO9WG7	SOIL	CN
AA3954	BO9WG7	SOIL	TPH
AA3960	BO9WJ2	SOIL	VOC
AA3961	TRIP BLANK	WATER	VOC
AA4170	BO9WH0	SOIL	METALS
AA4171	BO9WH0	SOIL	VOC
AA4172	BO9WH0	SOIL	SVOC
AA4173	BO9WH0	SOIL	ANIONS
AA4174	BO9WH0	SOIL	NO3NO2
AA4175	BO9WH0	SOIL	CN
AA4176	BO9WH0	SOIL	TPH
AA4181	BO9WH1	SOIL	METALS
AA4182	BO9WH1	SOIL	VOC
AA4183	BO9WH1	SOIL	SVOC
AA4184	BO9WH1	SOIL	ANIONS
AA4185	BO9WH1	SOIL	NO3NO2
AA4186	BO9WH1	SOIL	CN
AA4187	BO9WH1	SOIL	TPH
AA4221	BO9WJ8	SOIL	VOA
AA4188	BO9WJ3	SOIL	METALS
AA4189	BO9WJ3	SOIL	VOC
AA4190	BO9WJ3	SOIL	SVOC
AA4191	BO9WJ3	SOIL	ANIONS
AA4192	BO9WJ3	SOIL	NO3NO2
AA4193	BO9WJ3	SOIL	PEST/PCB
AA4194	BO9WJ3	SOIL	CN
AA4195	BO9WJ3	SOIL	TPH

6/17/94

III. Quality Control (Continued)

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA4197	BO9WJ4	SOIL	METALS
AA4198	BO9WJ4	SOIL	VOC
AA4199	BO9WJ4	SOIL	SVOC
AA4200	BO9WJ4	SOIL	ANIONS
AA4201	BO9WJ4	SOIL	NO3NO2
AA4202	BO9WJ4	SOIL	PEST/PCB
AA4203	BO9WJ4	SOIL	CN
AA4204	BO9WJ4	SOIL	TPH
AA4205	BO9WJ5	SOIL	METALS
AA4206	BO9WJ5	SOIL	VOC
AA4207	BO9WJ5	SOIL	SVOC
AA4208	BO9WJ5	SOIL	ANIONS
AA4209	BO9WJ5	SOIL	NO3NO2
AA4210	BO9WJ5	SOIL	PEST/PCB
AA4211	BO9WJ5	SOIL	CN
AA4212	BO9WJ5	SOIL	TPH
AA4222	BO9WJ6	SOIL	VOC
AA4213	BO9WJ7	SOIL	METALS
AA4214	BO9WJ7	SOIL	VOC
AA4215	BO9WJ7	SOIL	SVOC
AA4216	BO9WJ7	SOIL	ANIONS
AA4217	BO9WJ7	SOIL	NO3NO2
AA4218	BO9WJ7	SOIL	PEST/PCB
AA4219	BO9WJ7	SOIL	CN
AA4220	BO9WJ7	SOIL	TPH
AA4223	TRIP BLANK	WATER	VOC

6/17/94

682-1-89
033

IV. Certification

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature:

Reviewed and Approved:

Sheree' A. Schneider

Sheree' A. Schneider
Project Manager

6/17/94

9613474.2819

0000032

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.V. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-4-94

Ice Chest No.: SML #178 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: N/A — Offsite Property No.: WGU-1-0369 #13

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 40320801 B09WG0

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~ BR 3-9-94
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40320901

40320802 B09WG2

2) 1,250ml aGs : CLP: VOA

~~2)~~
~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~ BR 3-9-94
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.V. Setzer	Heidelberg	3/10/94 @ 1450
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

6/17/94

9613474.2820

0000034

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-4-94

Ice Chest No.: SML-178 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: N/A — Offsite Property No.: W94-1-0369 #13

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09WG0

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~ HER 3-9-94
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

B09WG2
2) 1,250ml aGs : CIP:VOA

2)

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

HER 3-9-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	Herdelberg	3/10/94 @ 1450
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

4/17/94

036

9613474 2821 0000036

CHAIN OF CUSTODY

Telephone 376-7690

Collection Date

Field Logbook No. EFL-1115

Offsite Property No.

4C (SOIL) SAF # 94-065 RADIOACTIVE

le Identification

9

a (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152,
ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-
-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99
-3302) Se-79 (ITAS-RD-3253)

R

ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152,
-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-
08) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99
2) Se-79 (ITAS-RD-3253)

ssession	(Sign and Print Names)
	Date/Time: 3/4 @ 12:30
	Date/Time:
	Date/Time:
	Date/Time:
position	
	Date/Time:

6/17/94

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS S.A.F. # 94-065 Date 3-3-94
Company Contact L. E ROGERS Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09WF9	S	3-3-94	1225	40309801 A 1,250ml P:CLP;TAL Metals,Hg,Tl 6010 B 1,250ml Gs:VOA CLP 8240 C 1,250ml aG:Semi-VOA CLP 8270 D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) ~~1,250ml aGs:PCB/Pest (8080)~~ JER 3-3-94 F 1,125ml G:Cyanide CLP 9010 G 1,125ml Gw:Kerosene (8015M) 1,000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253) 40309901
			JER 3-3-94	1,250ml P:CLP;TAL Metals,Hg,Tl 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

*Type of Sample A = Air L = Liquid SE = Sediment T = Tissue X = Other
DL = Drum Liquids O = Oil SL = Sludge W = Water
DS = Drum Solids S = Soil SO = Solid WI = Wipe

Field Information IT, Richland
Special Handling and/or Storage Maintain at 4C ; (SOIL)
Possible Sample Hazards RADIOACTIVE

Chain of custody did not have the collection date. This form date used to evaluate holding times for B09WF9.

new page 5/6/94

A-6000-406 (06/91) WEF060

037A

9613474.2823

0000038

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS

Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2

Collection Date: 3-4-94

Ice Chest No.:

Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.:

Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1)

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~ B09WG2

1,250ml Gs:VOA CLP

~~1,250ml aG:Semi-VOA CLP~~

~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~

~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~

~~1,250ml aGs:PCB/Pest (8080)~~

~~1,125ml G:Cyanide CLP~~ 22R 3-4-94

~~1,125ml Gw:Kerosene (8015M)~~

~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322)~~, Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium ~~(ITAS-RD-4200~~, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 ~~(ITAS-RD-3204)~~ Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2)

~~1,250ml~~ P:CLP;TAL Metals,Hg,Ti

1,250ml ~~Gs:VOA CLP~~

1,250ml aG:Semi-VOA CLP

1,125ml G:Anions F,Cl,SO4 (EPA 300.0)

1,125ml P/G:Anions NO2,NO3 (EPA 353.2)

1,250ml aGs:PCB/Pest (8080)

1,125ml G:Cyanide CLP 22R 3-4-94

1,125ml Gw:Kerosene (8015M)

1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-4-94 1033 Lorne E. Rogers	Heidelberg	3/4 @ 1230
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

6/17/94

9613474.2824

0000041

SDG W0002 WO212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-10-94

Ice Chest No.: GW 5028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.: WA4-0-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

B09W19 CAT I

4073264 01

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
I 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4073265 01

2)

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

3-10-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	R. Boyd IT CWD	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

6/17/94

039

9613474.2825

0000043

WO #212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-11-93

Ice Chest No.: GN 5028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.: W94-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09W50

3244 A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
72 D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
3267 CI 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

~~2)~~
~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

3-11-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	R. Boyd JT CDD	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

6/17/94

040

9613474.2826

0000045

WO #212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-14-94

Ice Chest No.: GW S028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: NA — Offsite Property No.: WHO-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065

Sample Identification

1) B09WG7

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40326'09

~~2) B09WJ2 1,250ml aGs: CLP; VOA~~ WWS 3-14-92

2)
~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~ WWS
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	R. Boyd IT CIBD	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

6/17/94

041

9613474.2827

0000047

WO#212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.W. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-10-94

Ice Chest No.: GW 5028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.: W94-0

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065

Sample Identification

1) B09W52

03266
04

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
1,250ml Gs:VOA CLP
~~1,250ml aG:Semi VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Co-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

SR 3-10-94

2)

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
1,250ml Gs:VOA CLP
1,250ml aG:Semi VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

SR 3-14-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.W. Setzer	R Boyd IT <100	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

AJS 6/17/94

042

9613474.2828

~~0000049~~

WO #230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-16-94

Ice Chest No.: GWS -127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) ~~500ml~~ ~~HR~~ 3-17-94 B04W40

A ~~1,250ml~~ P:CLP;TAL Metals,Hg,Ti

B 1,250ml Gs:VOA CLP

C 1,250ml aG:Semi-VOA CLP

D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)

E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)

~~1,250ml aGs:PCB/Pest (8080)~~ HR 3-16-94

F 1,125ml G:Cyanide CLP

G 1,125ml Gw:Kerosene (8015M)

1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4633450 1

4633450 1

2) ~~HR~~ 3-17-94 B04WH1

A 1, 500ml ~~1,250ml~~ P:CLP;TAL Metals,Hg,Ti

B 1, 500ml ~~1,250ml~~ Gs:VOA CLP

C 1, 500ml ~~1,250ml~~ aG:Semi-VOA CLP

D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)

E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)

~~1,250ml aGs:PCB/Pest (8080)~~ HR 3-16-94

F 1,125ml G:Cyanide CLP

G 1,125ml Gw:Kerosene (8015M)

1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4633450 2

4633450 2

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Loren E Rogers Loren E. Rogers	Received by: S.D. Fowler S.D. Fowler	Date/Time: 3/17/94 1018
Relinquished by: S.D. Fowler S.D. Fowler	Received by: [illegible]	Date/Time: 3/17 @ 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

6/17/94

9613474.2829

0000051

WO#230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-16-94

Ice Chest No.: GWS-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09WJ8

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
1,250ml Gs:VOA CLP
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152,Eu-154;Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

H6534463

~~2)~~
~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (FPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152,Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Lorene E. Rogers	J.D. Fowler	3/17/94 1018
Relinquished by: J.D. Fowler	Received by:	Date/Time: 3/17 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

6/17/94

044

9613474.2830

0000053

WO#230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-14-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09W53

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

10334464

10334504

2) B09W54

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

10334465

10334505

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Leroy E. Rogers	Received by: S.D. Fuchs	Date/Time: 3/17/94 1018
Relinquished by: S.D. Fuchs	Received by: [illegible]	Date/Time: 3/17 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

6/17/94

045

9613474.2831

0000055

WO#236

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-15-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09W55

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

1165344CC

4C334SCC

~~2)~~

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

~~LR 3-15-94~~

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Lorne E. Rogers	Received by: J.D. Fanhu	Date/Time: 3/17/94 1015
Relinquished by: J.D. Fanhu	Received by: Heidelberg	Date/Time: 3/17 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

6/17/94

9613474.2832

0000057

WO# 230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-16-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) BC9WJ6

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
1,250ml Gs:VOA CLP
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152,Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

40334407

SEN 3-16-94

2) BC9WJ7

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152,Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40334408

40334507

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Loren E. Rogers	Received by: J.D. Fowler	Date/Time: 3/17/94 1115
Relinquished by: J.D. Fowler	Received by: Heidelberg	Date/Time: 3/17 1332
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

4/17/94

047

9616474.2835

ATTACHMENT 5

DATA VALIDATION SUPPORTING DOCUMENTATION

GENERAL CHEMISTRY DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E

PROJECT: 200-UP-2		DATA PACKAGE: W0002
VALIDATOR: S. Schlicht	LAB: IT	DATE: 6/16/94
CASE: NA		SDG: W002

ANALYSES PERFORMED

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

SAMPLES/MATRIX B09WF9, B09WG0, B09WI9, B09WJ0, B09WG7, B09WH0, B09WH1, B09WJ3, B09WJ4, B09WJ5, B09WJ7/Soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Is technical verification documentation present? . . . . . Yes No N/A

Is a case narrative present? . . . . . Yes No N/A

Comments:

2. HOLDING TIMES

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

Comments:

049

GENERAL CHEMISTRY DATA VALIDATION CHECKLIST

3. INSTRUMENT CALIBRATION

Was initial calibration performed for all applicable analyses? Yes No N/A

Are initial calibration results acceptable? . . . . . Yes No N/A

Was a calibration check performed for all applicable analyses? Yes No N/A

Are calibration check results acceptable? . . . . . Yes No N/A

Comments:

4. BLANKS

Were laboratory blanks analyzed? . . . . . Yes No N/A

Are laboratory blank results acceptable? . . . . . Yes No N/A

Were field/trip blanks analyzed? . . . . . Yes No N/A

Are field/trip blank results acceptable? . . . . . Yes No N/A

Comments: Field QC information was unavailable, field QC results will be evaluated in the summary report

5. ACCURACY

Were spike samples analyzed at the required frequency? . . . . Yes No N/A

Are spike recoveries acceptable? . . . . . Yes No N/A

Were LCS analyses performed at the required frequency? . . . . Yes No N/A

Are LCS recoveries acceptable? . . . . . Yes No N/A

Comments: Recovery of fluoride in the LCS was 124%, associated sample results have been qualified as estimated (J).

6. PRECISION

Were laboratory duplicate samples analyzed at the required frequency? . . . . . Yes No N/A

Are laboratory duplicate sample RPD values acceptable? . . . . Yes No N/A

Are field duplicate RPD values acceptable? . . . . . Yes No N/A

Are field split RPD values acceptable? . . . . . Yes No N/A

GENERAL CHEMISTRY DATA VALIDATION CHECKLIST

Comments: Field QC information was unavailable, field QC results will be evaluated in the summary report

7. ANALYTE QUANTITATION

Was analyte quantitation performed properly? . . . . . Yes No N/A

Comments:

8. REPORTED RESULTS AND DETECTION LIMITS

Are results reported for all requested analyses? . . . . . Yes No N/A

Are results supported in the raw data? . . . . . Yes No N/A

Are results calculated properly? . . . . . Yes No N/A

Do results meet the CRDLs? . . . . . Yes No N/A

Comments:

051

HOLDING TIME SUMMARY

SDG: W0002-ITC | VALIDATOR: A. Schildt | DATE: 6/16/94 | PAGE 1 OF 1

COMMENTS: General Chemistry

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09WJ3,4	F,Cl,SO4 IC-Anions	3/14/94	3/29/94	3/29/94	15	0	none
B09WJ5		3/15/94	3/29/94	3/29/94	14		
B09WJ7,WH1		3/16/94	3/29/94	3/29/94	13		
B09WH0.		3/16/94	4/2/94	4/2/94	17		
B09WG7 ~~B09WG7~~		3/10/94	3/27/94	3/27/94	17		
B09WJ0		3/11/94	3/28/94	3/28/94	17		
B09WI9		3/10/94	3/28/94	3/28/94	18		
B09~~WJ4~~ WG0		3/4/94	3/26/94	3/26/94	22		
B09WF9		3/3/94	3/26/94	3/26/94	23	0	none.
B09WJ3,4	NO_3/NO_2	3/14/94	3/29/94	3/29/94	15	0	none
B09WJ5		3/15/94			14		
B09WJ7,WH0,WH1		3/16/94			13		
B09WG7,WI9		3/10/94			19		
B09WJ0		3/11/94			18		
B09~~WJ4~~ WG0		3/4/94			25		
B09WF9	NO_2/NO_3	3/3/94			26	0	none.

revised page 6/22/94

LABORATORY CONTROL SAMPLE ANALYSIS

Laboratory Name:	ITAS-KNOXVILLE	SDG Number:	W0004
Contract Name:	Westinghouse Hanford	Job Number:	204
Client Sample ID:	LCS	Extraction Date:	N/A
Lab Sample ID:	AA5396	Analysis Date:	03/26/94
Sample Matrix:	Soil	Concentration Units:	mg/kg (ppm)

Compound	Orig. Sample Result	Conc. Spike Added	Conc. LCS	% Rec.
fluoride	0.4 U	2	2.5	125
chloride	0.4 U	3	3.2	107
nitrite	0.4 U	N/A	-	-
bromide	1 U	N/A	-	-
nitrate	0.4 U	N/A	-	-
phosphate	1 U	N/A	-	-
sulfate	1.5 U	15	14	93

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

6/16/94

9613474.2839

MEMORANDUM

JUN 1994 RECEIVED PDO

TO: 200 UP-2 Project QA Record June 24, 1994

FR: Thomas Stapp, Golder Associates Inc. ij for

RE: VOLATILES DATA VALIDATION SUMMARY FOR DATA PACKAGE W0002-ITC-007 (923-E418 W0002V.UP2)

INTRODUCTION

This memo presents the results of data validation on data package W0002-ITC-007 prepared by International Technology (ITC) laboratory, Knoxville. A list of samples validated along with the analyses reported and the methods of analysis is provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA	ANALYSES
B09WF9	3/03/94	SOIL	SEE NOTE 1
B09WG0	3/04/94	SOIL	
B09WG2	3/04/94	SOIL	
B09WI9	3/10/94	SOIL	
B09WJ0	3/11/94	SOIL	
B09WG7	3/10/94	SOIL	
B09WJ2	3/10/94	SOIL	
B09WH0	3/16/94	SOIL	
B09WH1	3/16/94	SOIL	
B09WJ8	3/16/94	SOIL	
B09WJ3	3/14/94	SOIL	
B09WJ4	3/14/94	SOIL	
B09WJ5	3/15/94	SOIL	
B09WJ6	3/16/94	SOIL	
B09WJ7	3/16/94	SOIL	
TRIP BLANK #1	3/15/94	WATER	
TRIP BLANK #2	3/17/94	WATER	

Notes:
1. Indicates the samples were analyzed for target compound list (TCL) volatile organics.

Data validation was conducted in accordance with the WHC statement of work (WHC 1993a) and validation procedures (WHC 1993b). Attachments 1 through 5 provide the following information as indicated below:

Attachment 1. Glossary of Data Reporting Qualifiers
Attachment 2. Summary of Data Qualifications
Attachment 3. Qualified Data Summary and Annotated Laboratory Reports
Attachment 4. Laboratory Narrative and Chain-of-Custody Documentation
Attachment 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

Precision. Goals for precision were met.

revised page
ij 6/24/94

Accuracy. Goals for accuracy were met.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met.

Completeness. The data package was complete for all requested analyses. A total of seventeen (17) samples were validated in this data package with a total of 561 determinations reported, all of which were deemed valid. The reanalysis of sample B09WJ0 was not considered a requested analysis and not included in the number of determinations. This results in a completeness of 100 percent which meets the work plan completeness objective of 90 percent.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

The following minor deficiencies were identified during data validation which required qualification of data.

Laboratory Blanks

- Methylene chloride, acetone, toluene, 1,2-dichloropropane, and xylenes were detected in the laboratory method blanks. Attachments 2 and 5 provide a summary of samples affected, qualification applied and supporting documentation.

Calibration

- The relative response factor (RRF) percent difference for bromoform, 1,1,2,2-tetrachloroethane, and 1,1,1-trichloroethane were unacceptable for continuing calibration analyses. Attachments 2 and 5 provide a summary of samples affected, qualification applied and supporting documentation.

Internal Standards

- The internal standard areas were unacceptable for samples B09WJ0 and B09WJ0RE. Attachments 2 and 5 provide a summary of samples affected, qualification applied and supporting documentation.

Revised page
6/23/94

Surrogate Recovery

- The surrogate recovery for 1,2-Dichloroethane for sample B09WJ0 was unacceptable. Attachments 2 and 5 provide a summary of samples affected, qualification applied and supporting documentation.

DATA REPORTING

- Laboratory report forms for samples identified as "Trip Blank" have been annotated to clarify their identities as Trip Blank #1 and Trip Blank #2. Acetone, carbon disulfide, and chloroform were detected in these samples, however no qualification is applied to field samples in accordance with validation procedures.

- The laboratory report form for sample B09WJ0RE indicates a reanalysis of sample B09WJ0.

TENTATIVELY IDENTIFIED COMPOUND EVALUATION

Tentatively identified compounds (TICs) reported by the laboratory were evaluated during validation and qualified as follows:

- TICs were detected in the sample(s) and determined to be valid, resulting in qualification of the results as presumptive and valid (JN).

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation, Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993. Westinghouse Hanford Company, Richland, Washington.

revised page
6/22/94

9613474.2842

ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF ORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected in the associated laboratory blank. This qualifier is applied by the laboratory. During the process of data validation this qualifier may be replaced by other appropriate qualifiers as defined by the validation procedures. The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample quantitation limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration reported may not accurately reflect the sample quantitation limit. The associated data should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. This qualifier may be applied by the laboratory to indicate a concentration which is less than the contract required quantitation limit (CRQL) but greater than the instrument detection limit (IDL). During data validation this qualifier may be applied to indicate a minor quality control deficiency. However in either case, the associated data should be considered usable for decision making purposes.

NJ - Indicates presumptive evidence of a constituent at an estimated value. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

N - Indicates presumptive evidence of a constituent. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

JN - Indicates a tentatively identified compound (TIC) whose concentration and identification have been determined to be valid as a result of data validation. The associated data should be considered usable for decision making purposes.

UJN - Indicates a tentatively identified compound (TIC) that has been determined to be presumptive and valid (JN) in terms of identification and quantitation and has been qualified as undetected (U) due to associated blank contamination.

UR - Indicates the constituent was analyzed for and not detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

9615474.2844

ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY

SDG: W0002-ITC-007	VALIDATOR: Tom Stapp	DATE: June 18, 1994	PAGE 1 OF ~~1~~ 2
COMMENTS: VOLATILE ORGANICS			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
BROMOFORM, 1,1,2,2-TETRACHLOROETHANE	UJ	B09WG0	RRF %D FOR CONTINUING CALIBRATION >25%
1,1,1-TRICHLOROETHANE	UJ	B09WI9, B09WJ2 B09WJ0, B09WJORE B09WG7	RRF %D FOR CONTINUING CALIBRATION >25%
ACETONE	U	B09WF9, B09WG2, B09WG0, B09WI9, B09WJ0, B09WJ0RE, B09WG7, B09WJ2, B09WH0, B09WH1, B09WJ8, B09WJ4, B09WJ5, B09WJ6, B09WJ7	CONTAMINANT DETECTED IN BLANK
METHYLENE CHLORIDE	U	B09WF9, B09WG0, B09WG2 B09WJ0, B09WG7, B09WH0, B09WH1, B09WJ8, B09WJ3, B09WJ4, B09WJ5, B09WJ6, B09WJ7	CONTAMINANT DETECTED IN BLANK
XYLENES	U	B09WH1, B09WJ6, B09WJ7	CONTAMINANT DETECTED IN BLANK
TOLUENE	U	B09WH1	CONTAMINANT DETECTED IN BLANK
1,2-DICHLOROPROPANE	U	TRIP BLANK #2	CONTAMINANT DETECTED IN BLANK

COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
CHLOROMETHANE, BROMOMETHANE, VINYL CHLORIDE, CHLOROETHANE, METHYLENE CHLORIDE, ACETONE, CARBON DISULFIDE, 1,1-DICHLOROETHENE, 1,1-DICHLOROETHANE, 1,2-DICHLOROETHENE, CHLOROFORM, 1,2-DICHLOROETHANE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE, VINYL ACETATE, BROMODICHLOROMETHANE, 1,2-DICHLOROPROPANE, TRANS,1,3-DICHLOROPROPENE, TRICHLORETHENE, DIBROMOCHLOROMETHANE, 1,1,2-TRICHLOROETHANE, CIS-1,3-DICHLOROPROPENE, BROMOFORM, 4-METHYL-2-PENTANONE, 2-HEXANONE, TETRACHLOROETHENE, 1,1,2,2-TETRACHLOROETHANE	J/UJ	B09WJ0	1,2-DICHLOROETHANE SURROGATE RECOVERY BELOW LIMITS BUT >10%
CHLOROMETHANE, BROMOMETHANE, VINYL CHLORIDE, CHLOROETHANE, METHYLENE CHLORIDE, ACETONE, CARBON DISULFIDE, 1,1-DICHLOROETHENE, 1,1-DICHLOROETHANE, 1,2-DICHLOROETHENE, CHLOROFORM, 1,2-DICHLOROETHANE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE, VINYL ACETATE, BROMODICHLOROMETHANE, 1,2-DICHLOROPROPANE, TRANS,1,3-DICHLOROPROPENE, TRICHLORETHENE, DIBROMOCHLOROMETHANE, 1,1,2-TRICHLOROETHANE, CIS-1,3-DICHLOROPROPENE, BROMOFORM	J/UJ	B09WJ0	INTERNAL STANDARDS BELOW 50% LIMIT
ALL	J/UJ	B09WJ0RE	INTERNAL STANDARDS BELOW 50% LIMIT

9613474.2847

ATTACHMENT 3

QUALIFIED DATA SUMMARY AND ANNOTATED LABORATORY REPORTS

Validated Data Summary, Data Package: W0002-ITC-007

	Samp#	B09WF9		B09WG0		B09WG2		B09WG7		B09WH0		B09WH1	
	Date	3-8-94		3-4-94		3-4-94		3-10-94		3-16-94		3-16-94	
	Location	---		---		---		---		---		---	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
CHLOROMETHANE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
BROMOMETHANE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
VINYL CHLORIDE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
CHLOROETHANE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
METHYLENE CHLORIDE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
ACETONE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
CARBON DISULFIDE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
1,1-DICHLOROETHENE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
1,1-DICHLOROETHANE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
CHLOROFORM	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
1,2-DICHLOROETHANE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
2-BUTANONE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
1,1,1-TRICHLOROETHANE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	UJ	11.000	U	11.000	U
CARBON TETRACHLORIDE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
BROMODICHLOROMETHANE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
1,2-DICHLOROPROPANE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
CIS-1,3-DICHLOROPROPENE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
TRICHLOROETHENE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
DIBROMOCHLOROMETHANE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
1,1,2-TRICHLOROETHANE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
BENZENE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
TRANS-1,3-DICHLOROPROPENE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
BROMOFORM	UG/KG	11.000	U	10.000	UJ	10.000	U	10.000	U	11.000	U	11.000	U
4-METHYL-2-PENTANONE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
2-HEXANONE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
TETRACHLOROETHENE	UG/KG	11.000	U	5.000	J	10.000	U	10.000	U	11.000	U	11.000	U
1,1,2,2-TETRACHLOROETHANE	UG/KG	11.000	U	10.000	UJ	10.000	U	10.000	U	11.000	U	11.000	U
TOLUENE	UG/KG	11.000	U	10.000	U	10.000	U	1.000	J	11.000	U	11.000	U
CHLOROBENZENE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
ETHYLBENZENE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
STYRENE	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U
XYLENES (TOTAL)	UG/KG	11.000	U	10.000	U	10.000	U	10.000	U	11.000	U	11.000	U

Verified 6-20-94

9613474.2848

Validated Data Summary, Data Package: W0002-ITC-007

	Samp#	B09WI9		B09WJ0		B09WJ0RE		B09WJ2		B09WJ3		B09WJ4	
	Date	3-10-94		3-11-94		3-11-94		3-10-94		3-14-94		3-14-94	
	Location	---		---		---		---		---		---	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
CHLOROMETHANE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
BROMOMETHANE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
VINYL CHLORIDE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
CHLOROETHANE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
METHYLENE CHLORIDE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
ACETONE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
CARBON DISULFIDE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
1,1-DICHLOROETHENE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
1,1-DICHLOROETHANE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
CHLOROFORM	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
1,2-DICHLOROETHANE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
2-BUTANONE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
1,1,1-TRICHLOROETHANE	UG/KG	10.000	UJ	10.000	UJ	10.000	UJ	10.000	UJ	10.000	U	11.000	U
CARBON TETRACHLORIDE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
BROMODICHLOROMETHANE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
1,2-DICHLOROPROPANE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
CIS-1,3-DICHLOROPROPENE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
TRICHLOROETHENE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
DIBROMOCHLOROMETHANE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
1,1,2-TRICHLOROETHANE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
BENZENE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
TRANS-1,3-DICHLOROPROPENE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
BROMOFORM	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
4-METHYL-2-PENTANONE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
2-HEXANONE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
TETRACHLOROETHENE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
1,1,2,2-TETRACHLOROETHANE	UG/KG	10.000	U	10.000	UJ	10.000	UJ	10.000	U	10.000	U	11.000	U
TOLUENE	UG/KG	10.000	U	10.000	U	10.000	UJ	10.000	U	10.000	U	11.000	U
CHLOROBENZENE	UG/KG	10.000	U	10.000	U	10.000	UJ	10.000	U	10.000	U	11.000	U
ETHYLBENZENE	UG/KG	10.000	U	10.000	U	10.000	UJ	10.000	U	10.000	U	11.000	U
STYRENE	UG/KG	10.000	U	10.000	U	10.000	UJ	10.000	U	10.000	U	11.000	U
XYLENES (TOTAL)	UG/KG	10.000	U	10.000	U	10.000	UJ	10.000	U	10.000	U	11.000	U

Verified 6-20-94

96134794.2809

Validated Data Summary, Data Package: W0002-ITC-007

	Samp#	B09WJ5		B09WJ6		B09WJ7		B09WJ8	
	Date	3-15-94		3-16-94		3-16-94		3-16-94	
	Location	---		---		---		---	
	Depth	---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q
CHLOROMETHANE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
BROMOMETHANE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
VINYL CHLORIDE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
CHLOROETHANE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
METHYLENE CHLORIDE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
ACETONE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
CARBON DISULFIDE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
1,1-DICHLOROETHENE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
1,1-DICHLOROETHANE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
1,2-DICHLOROETHENE (TOTAL)	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
CHLOROFORM	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
1,2-DICHLOROETHANE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
2-BUTANONE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
1,1,1-TRICHLOROETHANE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
CARBON TETRACHLORIDE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
BROMODICHLOROMETHANE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
1,2-DICHLOROPROPANE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
CIS-1,3-DICHLOROPROPENE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
TRICHLOROETHENE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
DIBROMOCHLOROMETHANE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
1,1,2-TRICHLOROETHANE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
BENZENE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
TRANS-1,3-DICHLOROPROPENE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
BROMOFORM	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
4-METHYL-2-PENTANONE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
2-HEXANONE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
TETRACHLOROETHENE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
1,1,2,2-TETRACHLOROETHANE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
TOLUENE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
CHLOROBENZENE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
ETHYLBENZENE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
STYRENE	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U
XYLENES (TOTAL)	UG/KG	11.000	U	10.000	U	11.000	U	10.000	U

Verified RS 6-20-94

09613474.2850

Validated Data Summary, Data Package: W0002-ITC-007

	Samp#	W0002-TR_BL1		W0002-TR_BL2	
	Date	3-15-94		3-17-94	
	Location	---		---	
	Depth	---		---	
	Type	WATER		WATER	
	Comments	---		---	
Parameter	Units	Result	Q	Result	Q
CHLOROMETHANE	UG/L	10.000	U	10.000	U
BROMOMETHANE	UG/L	10.000	U	10.000	U
VINYL CHLORIDE	UG/L	10.000	U	10.000	U
CHLOROETHANE	UG/L	10.000	U	10.000	U
METHYLENE CHLORIDE	UG/L	10.000	U	10.000	U
ACETONE	UG/L	15.000		7.000	J
CARBON DISULFIDE	UG/L	3.000	B	2.000	B
1,1-DICHLOROETHENE	UG/L	10.000	U	10.000	U
1,1-DICHLOROETHANE	UG/L	10.000	U	10.000	U
1,2-DICHLOROETHENE (TOTAL)	UG/L	10.000	U	10.000	U
CHLOROFORM	UG/L	9.000	B	10.000	U
1,2-DICHLOROETHANE	UG/L	10.000	U	10.000	U
2-BUTANONE	UG/L	10.000	U	10.000	U
1,1,1-TRICHLOROETHANE	UG/L	10.000	U	10.000	U
CARBON TETRACHLORIDE	UG/L	10.000	U	10.000	U
BROMODICHLOROMETHANE	UG/L	10.000	U	10.000	U
1,2-DICHLOROPROPANE	UG/L	10.000	U	10.000	U
CIS-1,3-DICHLOROPROPENE	UG/L	10.000	U	10.000	U
TRICHLOROETHENE	UG/L	10.000	U	10.000	U
DIBROMOCHLOROMETHANE	UG/L	10.000	U	10.000	U
1,1,2-TRICHLOROETHANE	UG/L	10.000	U	10.000	U
BENZENE	UG/L	10.000	U	10.000	U
TRANS-1,3-DICHLOROPROPENE	UG/L	10.000	U	10.000	U
BROMOFORM	UG/L	10.000	U	10.000	U
4-METHYL-2-PENTANONE	UG/L	10.000	U	10.000	U
2-HEXANONE	UG/L	10.000	U	10.000	U
TETRACHLOROETHENE	UG/L	10.000	U	10.000	U
1,1,2,2-TETRACHLOROETHANE	UG/L	10.000	U	10.000	U
TOLUENE	UG/L	10.000	U	10.000	U
CHLOROBENZENE	UG/L	10.000	U	10.000	U
ETHYLBENZENE	UG/L	10.000	U	10.000	U
STYRENE	UG/L	10.000	U	10.000	U
XYLENES (TOTAL)	UG/L	10.000	U	10.000	U

Verified 6-20-94

9613474.2851

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WF9 ~~B09WF5~~ KAP 6/7/94

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 167 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3164

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ACH09

Level: (low/med) LOW Date Received: 03/05/94

% Moisture: not dec. 7 Date Analyzed: 03/08/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND			Q	Q
74-87-3	Chloromethane		11	U	
74-83-9	Bromomethane		11	U	
75-01-4	Vinyl Chloride		11	U	
75-00-3	Chloroethane		11	U	
75-09-2	Methylene Chloride	11	~~3~~	~~J~~	U
67-64-1	Acetone	11	~~5~~	~~BJ~~	U
75-15-0	Carbon Disulfide		11	U	
75-35-4	1,1-Dichloroethene		11	U	
75-34-3	1,1-Dichloroethane		11	U	
540-59-0	1,2-Dichloroethene (total)		11	U	
67-66-3	Chloroform		11	U	
107-06-2	1,2-Dichloroethane		11	U	
78-93-3	2-Butanone		11	U	
71-55-6	1,1,1-Trichloroethane		11	U	
56-23-5	Carbon Tetrachloride		11	U	
75-27-4	Bromodichloromethane		11	U	
78-87-5	1,2-Dichloropropane		11	U	
10061-01-5	cis-1,3-Dichloropropene		11	U	
79-01-6	Trichloroethene		11	U	
124-48-1	Dibromochloromethane		11	U	
79-00-5	1,1,2-Trichloroethane		11	U	
71-43-2	Benzene		11	U	
10061-02-6	trans-1,3-Dichloropropene		11	U	
75-25-2	Bromoform		11	U	
108-10-1	4-Methyl-2-Pentanone		11	U	
591-78-6	2-Hexanone		11	U	
127-18-4	Tetrachloroethene		11	U	
79-34-5	1,1,2,2-Tetrachloroethane		11	U	
108-88-3	Toluene		11	U	
108-90-7	Chlorobenzene		11	U	
100-41-4	Ethylbenzene		11	U	
100-42-5	Styrene		11	U	
1330-20-7	Xylenes (total)		11	U	

FORM I VOA 3/90

Verified 6-16-94

SDG: W0002-ITCH007 761947.2853

~~0000035~~

B09WG2

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WG2 ~~B09WG2~~ RAD 6/7/94

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 167 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3170

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ACH10

Level: (low/med) LOW Date Received: 03/05/94

% Moisture: not dec. 0 Date Analyzed: 03/08/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 ~~3~~	~~J~~	U
67-64-1	Acetone	10 ~~4~~	~~BJ~~	U
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-Pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylenes (total)	10	U	

FORM I VOA 3/90

Verified 6-16-94

9613474.2854

~~VOA-TIC B0000001~~

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09WG2~~-A~~ ~~RG~~-18

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 167 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3170

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ACH10

Level: (low/med) LOW Date Received: 03/05/94

% Moisture: not dec. 0 Date Analyzed: 03/08/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	11.69	56	~~J~~	JN
2.	UNKNOWN	21.40	6	~~J~~	JN
3.	UNKNOWN	21.97	10	~~J~~	JN

Verified [illegible]
6-16-94

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WG0 KAP
~~WH0310801B~~ 6/7/94

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 193 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3598

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ACM22

Level: (low/med) LOW Date Received: 03/11/94

% Moisture: not dec. 3 Date Analyzed: 03/13/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 ~~3~~	~~BJ~~	U
67-64-1	Acetone	10 ~~4~~	~~BJ~~	U
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	~~U~~	UJ
108-10-1	4-Methyl-2-Pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	5	J	
79-34-5	1,1,2,2-Tetrachloroethane	10	~~U~~	UJ
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylenes (total)	10	U	

FORM I VOA 3/90

Verified 6-16-94

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09WG0

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 193 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3598

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ACM22

Level: (low/med) LOW Date Received: 03/11/94

% Moisture: not dec. 3 Date Analyzed: 03/13/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	21.98	7	~~J~~	JN
2.	UNKNOWN HYDROCARBON	22.62	6	~~J~~	JN

Verified
RS 6-16-94

9613474.2857

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WI9 ~~40326601~~ JJK 6/1/94

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3920

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ACV03

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: not dec. 3 Date Analyzed: 03/22/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10	U	
67-64-1	Acetone	10 ~~1~~	~~BJ~~	U
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	~~U~~	UJ
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-Pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylenes (total)	10	U	

FORM I VOA 3/90

Verified KC 6-16-94

9613474.2858

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
B09WJ0
-4C326602 JOM 6/16

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3929

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ACV07

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: not dec. 3 Date Analyzed: 03/22/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
74-87-3	Chloromethane	10	~~U~~	UJ
74-83-9	Bromomethane	10	~~U~~	↓
75-01-4	Vinyl Chloride	10	~~U~~	↓
75-00-3	Chloroethane	10	~~U~~	↓
75-09-2	Methylene Chloride	10 ~~8~~	~~BJ~~	UJ
67-64-1	Acetone	10 ~~5~~	~~BJ~~	UJ
75-15-0	Carbon Disulfide	10	~~U~~	↓
75-35-4	1,1-Dichloroethene	10	~~U~~	↓
75-34-3	1,1-Dichloroethane	10	~~U~~	↓
540-59-0	1,2-Dichloroethene (total)	10	~~U~~	↓
67-66-3	Chloroform	10	~~U~~	↓
107-06-2	1,2-Dichloroethane	10	~~U~~	↓
78-93-3	2-Butanone	10	~~U~~	↓
71-55-6	1,1,1-Trichloroethane	10	~~U~~	UJ
56-23-5	Carbon Tetrachloride	10	~~U~~	↓
75-27-4	Bromodichloromethane	10	~~U~~	↓
78-87-5	1,2-Dichloropropane	10	~~U~~	↓
10061-01-5	cis-1,3-Dichloropropene	10	~~U~~	↓
79-01-6	Trichloroethene	10	~~U~~	↓
124-48-1	Dibromochloromethane	10	~~U~~	↓
79-00-5	1,1,2-Trichloroethane	10	~~U~~	UJ
71-43-2	Benzene	10	~~U~~	UJ
10061-02-6	trans-1,3-Dichloropropene	10	~~U~~	UJ
75-25-2	Bromoform	10	~~U~~	↓
108-10-1	4-Methyl-2-Pentanone	10	~~U~~	↓
591-78-6	2-Hexanone	10	~~U~~	↓
127-18-4	Tetrachloroethene	10	~~U~~	↓
79-34-5	1,1,2,2-Tetrachloroethane	10	~~U~~	UJ
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylenes (total)	10	U	

FORM I VOA 3/90

Verified
6-16-94

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09W JO RE
40326602RE

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3929

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ACV11

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: not dec. 3 Date Analyzed: 03/22/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
74-87-3	Chloromethane	10	U	UJ
74-83-9	Bromomethane	10	U	↓
75-01-4	Vinyl Chloride	10	U	↓
75-00-3	Chloroethane	10	U	↓
75-09-2	Methylene Chloride	10	U	↓
67-64-1	Acetone	10 ~~5~~	~~BJ~~	UJ
75-15-0	Carbon Disulfide	10	U	↓
75-35-4	1,1-Dichloroethene	10	U	↓
75-34-3	1,1-Dichloroethane	10	U	↓
540-59-0	1,2-Dichloroethene (total)	10	U	↓
67-66-3	Chloroform	10	U	↓
107-06-2	1,2-Dichloroethane	10	U	↓
78-93-3	2-Butanone	10	U	↓
71-55-6	1,1,1-Trichloroethane	10	U	UJ
56-23-5	Carbon Tetrachloride	10	U	↓
75-27-4	Bromodichloromethane	10	U	↓
78-87-5	1,2-Dichloropropane	10	U	↓
10061-01-5	cis-1,3-Dichloropropene	10	U	↓
79-01-6	Trichloroethene	10	U	↓
124-48-1	Dibromochloromethane	10	U	↓
79-00-5	1,1,2-Trichloroethane	10	U	↓
71-43-2	Benzene	10	U	↓
10061-02-6	trans-1,3-Dichloropropene	10	U	↓
75-25-2	Bromoform	10	U	↓
108-10-1	4-Methyl-2-Pentanone	10	U	↓
591-78-6	2-Hexanone	10	U	↓
127-18-4	Tetrachloroethene	10	U	↓
79-34-5	1,1,2,2-Tetrachloroethane	10	U	↓
108-88-3	Toluene	10	U	↓
108-90-7	Chlorobenzene	10	U	↓
100-41-4	Ethylbenzene	10	U	↓
100-42-5	Styrene	10	U	↓
1330-20-7	Xylenes (total)	10	U	↓

FORM I VOA 3/90

Verified 6-16-94

9613474.2860

~~0000031~~

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09W G7
~~40526603~~ JDK 4/1/94

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3949

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ACV08

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: not dec. 1 Date Analyzed: 03/22/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 ~~2~~	~~BJ~~	U
67-64-1	Acetone	10 ~~4~~	~~BJ~~	U
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	~~U~~	UJ
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-Pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	
108-88-3	Toluene	1	J	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylenes (total)	10	U	

FORM I VOA

Verified 6-16-94

3/90

9613474.2861

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ2
40326604

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3960

Sample wt/vol: 5.0 (g/mL) G Lab File ID: ACV06

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: not dec. 0 Date Analyzed: 03/22/94

GC Column: DB-624 ID: 0.250 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10	U	
67-64-1	Acetone	10 ~~4~~	~~BJ~~	U
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	~~U~~	UJ
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-Pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylenes (total)	10	U	

FORM I VOA 3/90

Verified RS 6-16-94

9613474.2862

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BLANK #1
~~40226605~~ JOK 6/1/97

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) WATER Lab Sample ID: AA3961

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AA3961

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. ____ Date Analyzed: 03/21/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10	U	
67-64-1	Acetone	15		
75-15-0	Carbon Disulfide	3	~~J~~	B
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	9	~~J~~	B
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-Pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylenes (total)	10	U	

FORM I VOA 3/90

Verified 6-16-94

9613474.2863

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09 WHO
~~40324.102~~ JDC 4/1/94

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4171

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4171

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 6 Date Analyzed: 03/23/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND			Q
74-87-3	Chloromethane		11	U
74-83-9	Bromomethane		11	U
75-01-4	Vinyl Chloride		11	U
75-00-3	Chloroethane		11	U
75-09-2	Methylene Chloride	11	~~4~~	~~J~~ U
67-64-1	Acetone	11	~~9~~	~~J~~ U
75-15-0	Carbon Disulfide		11	U
75-35-4	1,1-Dichloroethene		11	U
75-34-3	1,1-Dichloroethane		11	U
540-59-0	1,2-Dichloroethene (total)		11	U
67-66-3	Chloroform		11	U
107-06-2	1,2-Dichloroethane		11	U
78-93-3	2-Butanone		11	U
71-55-6	1,1,1-Trichloroethane		11	U
56-23-5	Carbon Tetrachloride		11	U
75-27-4	Bromodichloromethane		11	U
78-87-5	1,2-Dichloropropane		11	U
10061-01-5	cis-1,3-Dichloropropene		11	U
79-01-6	Trichloroethene		11	U
124-48-1	Dibromochloromethane		11	U
79-00-5	1,1,2-Trichloroethane		11	U
71-43-2	Benzene		11	U
10061-02-6	trans-1,3-Dichloropropene		11	U
75-25-2	Bromoform		11	U
108-10-1	4-Methyl-2-Pentanone		11	U
591-78-6	2-Hexanone		11	U
127-18-4	Tetrachloroethene		11	U
79-34-5	1,1,2,2-Tetrachloroethane		11	U
108-88-3	Toluene		11	U
108-90-7	Chlorobenzene		11	U
100-41-4	Ethylbenzene		11	U
100-42-5	Styrene		11	U
1330-20-7	Xylenes (total)		11	U

FORM I VOA 3/90

Verified 6-16-94

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09WH0

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4171

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4171

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 6 Date Analyzed: 03/23/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.03	13	~~BJ~~ JN

This TIC although indicated by the "B" qualifier to be present in the blank, is not in the associated blank and no spectra was available with which to compare.

Verified 6-16-94

9613474.2865

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WH1
4023-402 JCK 6/1/93

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4182

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4182

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 8 Date Analyzed: 03/23/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
74-87-3	Chloromethane	11	U	
74-83-9	Bromomethane	11	U	
75-01-4	Vinyl Chloride	11	U	
75-00-3	Chloroethane	11	U	
75-09-2	Methylene Chloride	11 ~~4~~	~~J~~	U
67-64-1	Acetone	11 ~~7~~	~~J~~	U
75-15-0	Carbon Disulfide	11	U	
75-35-4	1,1-Dichloroethene	11	U	
75-34-3	1,1-Dichloroethane	11	U	
540-59-0	1,2-Dichloroethene (total)	11	U	
67-66-3	Chloroform	11	U	
107-06-2	1,2-Dichloroethane	11	U	
78-93-3	2-Butanone	11	U	
71-55-6	1,1,1-Trichloroethane	11	U	
56-23-5	Carbon Tetrachloride	11	U	
75-27-4	Bromodichloromethane	11	U	
78-87-5	1,2-Dichloropropane	11	U	
10061-01-5	cis-1,3-Dichloropropene	11	U	
79-01-6	Trichloroethene	11	U	
124-48-1	Dibromochloromethane	11	U	
79-00-5	1,1,2-Trichloroethane	11	U	
71-43-2	Benzene	11	U	
10061-02-6	trans-1,3-Dichloropropene	11	U	
75-25-2	Bromoform	11	U	
108-10-1	4-Methyl-2-Pentanone	11	U	
591-78-6	2-Hexanone	11	U	
127-18-4	Tetrachloroethene	11	U	
79-34-5	1,1,2,2-Tetrachloroethane	11	U	
108-88-3	Toluene	11 ~~1~~	~~J~~	U
108-90-7	Chlorobenzene	11	U	
100-41-4	Ethylbenzene	11	U	
100-42-5	Styrene	11	U	
1330-20-7	Xylenes (total)	11 ~~3~~	~~BJ~~	U

FORM I VOA 3/90

Verified 6-16-94

027

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09WH1

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4182

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4182

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 8 Date Analyzed: 03/23/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	2.03	15	~~BJ~~	JN
2.	UNKNOWN	2.10	8	~~BJ~~	JN

Verified RB 6-16-94

9613474.2867

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ8
40334403 JOK 6/1/97

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4221

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4221

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 0 Date Analyzed: 03/24/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 ~~3~~	~~J~~	U
67-64-1	Acetone	10 ~~3~~	~~J~~	U
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-Pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylenes (total)	10	U	

FORM I VOA Verified 6-16-94 3/90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09WJ8

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4221

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4221

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 0 Date Analyzed: 03/24/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	2.07	11	~~BJ~~	JN

Verified 6-16-94

9613474.2869

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09W J3
-40234404- JDR 6/1/94

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4189

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4189

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 3 Date Analyzed: 03/23/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 ~~3~~	~~J~~	U
67-64-1	Acetone	10	J	
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-Pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylenes (total)	10	U	

FORM I VOA 3/90

Verified 6-16-94

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09WJ3

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4189

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4189

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 3 Date Analyzed: 03/23/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	2.07	13	~~BJ~~	JN

Verified 6-16-94

9613474.2871

~~0000023~~

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BC9WJ4
~~40334405~~ JK 5/1/97

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4198

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4198

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 6 Date Analyzed: 03/23/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
74-87-3	Chloromethane	11	U	
74-83-9	Bromomethane	11	U	
75-01-4	Vinyl Chloride	11	U	
75-00-3	Chloroethane	11	U	
75-09-2	Methylene Chloride	11 ~~4~~	~~J~~	U
67-64-1	Acetone	11 ~~6~~	~~J~~	U
75-15-0	Carbon Disulfide	11	U	
75-35-4	1,1-Dichloroethene	11	U	
75-34-3	1,1-Dichloroethane	11	U	
540-59-0	1,2-Dichloroethene (total)	11	U	
67-66-3	Chloroform	11	U	
107-06-2	1,2-Dichloroethane	11	U	
78-93-3	2-Butanone	11	U	
71-55-6	1,1,1-Trichloroethane	11	U	
56-23-5	Carbon Tetrachloride	11	U	
75-27-4	Bromodichloromethane	11	U	
78-87-5	1,2-Dichloropropane	11	U	
10061-01-5	cis-1,3-Dichloropropene	11	U	
79-01-6	Trichloroethene	11	U	
124-48-1	Dibromochloromethane	11	U	
79-00-5	1,1,2-Trichloroethane	11	U	
71-43-2	Benzene	11	U	
10061-02-6	trans-1,3-Dichloropropene	11	U	
75-25-2	Bromoform	11	U	
108-10-1	4-Methyl-2-Pentanone	11	U	
591-78-6	2-Hexanone	11	U	
127-18-4	Tetrachloroethene	11	U	
79-34-5	1,1,2,2-Tetrachloroethane	11	U	
108-88-3	Toluene	11	U	
108-90-7	Chlorobenzene	11	U	
100-41-4	Ethylbenzene	11	U	
100-42-5	Styrene	11	U	
1330-20-7	Xylenes (total)	11	U	

FORM I VOA Verified RC 6-16-94 3/90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09WJ4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4198

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4198

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 3 Date Analyzed: 03/23/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.03	14	~~BJ~~ JN

Q

Verified 6-16-94

9613474.2873

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ5
40334406 JOK 7/1/97

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4206

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4206

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 5 Date Analyzed: 03/24/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q	
74-87-3	Chloromethane	11	U	
74-83-9	Bromomethane	11	U	
75-01-4	Vinyl Chloride	11	U	
75-00-3	Chloroethane	11	U	
75-09-2	Methylene Chloride	11 ~~4~~	~~J~~	U
67-64-1	Acetone	11 ~~8~~	~~J~~	U
75-15-0	Carbon Disulfide	11	U	
75-35-4	1,1-Dichloroethene	11	U	
75-34-3	1,1-Dichloroethane	11	U	
540-59-0	1,2-Dichloroethene (total)	11	U	
67-66-3	Chloroform	11	U	
107-06-2	1,2-Dichloroethane	11	U	
78-93-3	2-Butanone	11	U	
71-55-6	1,1,1-Trichloroethane	11	U	
56-23-5	Carbon Tetrachloride	11	U	
75-27-4	Bromodichloromethane	11	U	
78-87-5	1,2-Dichloropropane	11	U	
10061-01-5	cis-1,3-Dichloropropene	11	U	
79-01-6	Trichloroethene	11	U	
124-48-1	Dibromochloromethane	11	U	
79-00-5	1,1,2-Trichloroethane	11	U	
71-43-2	Benzene	11	U	
10061-02-6	trans-1,3-Dichloropropene	11	U	
75-25-2	Bromoform	11	U	
108-10-1	4-Methyl-2-Pentanone	11	U	
591-78-6	2-Hexanone	11	U	
127-18-4	Tetrachloroethene	11	U	
79-34-5	1,1,2,2-Tetrachloroethane	11	U	
108-88-3	Toluene	11	U	
108-90-7	Chlorobenzene	11	U	
100-41-4	Ethylbenzene	11	U	
100-42-5	Styrene	11	U	
1330-20-7	Xylenes (total)	11	U	

Q

FORM I VOA 3/90

Verified RC 6-16-94

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09WJ5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4206

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4206

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 5 Date Analyzed: 03/24/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	2.03	15	~~BJ~~	JN

Verified 6-16-94

9613474.2875

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ6
-40334407- JDK 6/1/94

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4222

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4222

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 0 Date Analyzed: 03/24/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 ~~5~~	~~J~~	U
67-64-1	Acetone	10 ~~7~~	~~J~~	U
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-Pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylenes (total)	10 ~~1~~	~~BJ~~	U

FORM I VOA Verified RS 6-16-94 3/90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09WJ6

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4222

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4222

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 0 Date Analyzed: 03/24/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	2.03	12	~~BJ~~	JN

Verified 6-16-94

9613474.2877

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ7
40534408 JDK 6/1/94

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4214

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4214

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 7 Date Analyzed: 03/24/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
74-87-3	Chloromethane	11	U	
74-83-9	Bromomethane	11	U	
75-01-4	Vinyl Chloride	11	U	
75-00-3	Chloroethane	11	U	
75-09-2	Methylene Chloride	11 ~~4~~	~~J~~	U
67-64-1	Acetone	11 ~~8~~	~~J~~	U
75-15-0	Carbon Disulfide	11	U	
75-35-4	1,1-Dichloroethene	11	U	
75-34-3	1,1-Dichloroethane	11	U	
540-59-0	1,2-Dichloroethene (total)	11	U	
67-66-3	Chloroform	11	U	
107-06-2	1,2-Dichloroethane	11	U	
78-93-3	2-Butanone	11	U	
71-55-6	1,1,1-Trichloroethane	11	U	
56-23-5	Carbon Tetrachloride	11	U	
75-27-4	Bromodichloromethane	11	U	
78-87-5	1,2-Dichloropropane	11	U	
10061-01-5	cis-1,3-Dichloropropene	11	U	
79-01-6	Trichloroethene	11	U	
124-48-1	Dibromochloromethane	11	U	
79-00-5	1,1,2-Trichloroethane	11	U	
71-43-2	Benzene	11	U	
10061-02-6	trans-1,3-Dichloropropene	11	U	
75-25-2	Bromoform	11	U	
108-10-1	4-Methyl-2-Pentanone	11	U	
591-78-6	2-Hexanone	11	U	
127-18-4	Tetrachloroethene	11	U	
79-34-5	1,1,2,2-Tetrachloroethane	11	U	
108-88-3	Toluene	11	U	
108-90-7	Chlorobenzene	11	U	
100-41-4	Ethylbenzene	11	U	
100-42-5	Styrene	11	U	
1330-20-7	Xylenes (total)	11 ~~3~~	~~BJ~~	U

FORM I VOA

Verified 6-16-94

3/90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09WJ7

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4214

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AA4214

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. 7 Date Analyzed: 03/24/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.07	15	~~BJ~~ JN

Q

Verified 6-16-94

9613474.2879

~~0000027~~

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLANK #2
~~4C334409~~ JDK

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) WATER Lab Sample ID: AA4223

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AA4223

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: not dec. _____ Date Analyzed: 03/21/94

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q	
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 ~~1~~	~~J~~	U
67-64-1	Acetone	7	J	
75-15-0	Carbon Disulfide	2	~~J~~	B
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10 ~~1~~	~~J~~	U
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-Pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylenes (total)	10	U	

FORM I VOA

Verified RC 6-16-94

3/90

9613474.2880

ATTACHMENT 4

LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION

9613474.2881

Westinghouse Hanford Company	NONCONFORMANCE REPORT	1. Page 1 of 21 MLY 4/27/94	2. Preprinted No. 051953 QA Log No. EQA-94-030

3. P. O., W. O., or Job Control No.	4. System/End Use	5. Item/Material	6. Dwg./Spec./Other No.	7. Rev.
N/A	Site Characterization	Samples	N/A	N/A

8. Program/Project/Other	9. Safety Class	10. ASME Code Items
200-UP-2 LFI	N/A	☐ Yes ☒ No (If yes, notify authorized inspector)

11. Supplier Name/Address	12. Notification of Potential Occurence Require
Environmental Field Services	☐ Yes ☒ No

13. Code: Lot/Heat/Serial	14. Lot Size	15. Sample	16. Qty. Acc.	17. Inspection Criteria
N/A	1	B09WG2	0	☐ Dwg. ☐ Spec. ☐ Insp. Plan ☒ Other EII 5.11 Rev 3

18. Item	19. Description of Nonconformance (list serial no. where applicable)	22. Disposition, Justification, and Instructions
1	Sample ID B09WG2 was used twice. The ID# was used on samples received by IT on 3/4/94 and 3/10/94. (see ROD-94-0067)	Reject - Cancel analysis of sample received on 3/10/94 labeled B09WG2.

20. Originator's Signature JA Lerch Jeff Lerch Date 3/28/94	23. Design Document Change Required? ☐ Yes, Doc. No. ☒ No
21. Cognizant QA Manager's Signature D.D. Volkman D.D. Volkman Date 4/27/94	24. Corrective Action Required? ☐ Yes, No. ☒ No

Disp. App.	25. Cognizant Engineer	Date	26. Technical Rep.	Date	Signature/Org.	Date
	Mark A. Mosselle	3/30/94				
	QA Engineer	Date	Signature/Org.	Date	Signature/Org.	Date
	Gary Corrigan	5-9-94				

Close	27.
	Accept 1 Reject 0 Follow on NCR N/A Gary L. Corrigan QA/C Personnel 5-9-94 Date

043

9613474.2882

HANFORD ANALYTICAL SERVICES MANAGEMENT

RECORD OF DISPOSITION

ROD-94-0067
Record of Disposition No.

DATE: March 28, 1994	LABORATORY: IT
PROJECT TITLE/NO.: 200-UP-2/SAF 94-065	NCR NO.: 051953

SAMPLE IDENTIFICATION NUMBERS: B09WG2

DESCRIPTION OF EVENT:

a) Due to oversight by the sampler, identification #B09WG2 was used twice. The identification # was used on samples received by IT on 3/4/94 and 3/10/94.

b) Due to oversight by the sampler, the collection dates recorded on the sample analysis request and Chain of Custody (COC) forms are inconsistent for sample B09WG2 received on 3/10/94. A collection date of 3/10/94 is specified on the sample analysis request form and a collection date of 3/4/94 is documented on the COC. Field logbook EFL-1115 documents on one sample with an identification number of B09WG2, collected on 3/4/94.

DISPOSITION OF SAMPLES:

a) IT is directed to proceed with the requested analysis and use identification number B09WG2 for the sample received on 3/4/94.

b) IT is directed to cancel analysis of the sample identified as B09WG2 which was received on 3/10/94.

The issues identified above are to be noted in the Case Narrative for the associated delivery group.

APPROVAL SIGNATURES:

J. A. Lerch — 3/28/94
CAS Project Coordinator (Print/Sign Name) — Date

M. A. Wasemiller — 3/30/94
Technical Representative (Print/Sign Name) — Date

N/A
Quality Assurance (Print/Sign Name) — Date

9613474.2883

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

JUN 1994 RECEIVED SOLA

CERTIFICATE OF ANALYSIS

Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352
Attn: J.A. Lerch

June 3, 1994

Job Number: 167; 193; 212; 230 (Corrected Certificate)

P.O. Number: N/A

This is the Certificate of Analysis for the following samples:

SDG:	W0002
Client Project ID:	Westinghouse Hanford
Date Received by Lab:	03/05/94; 03/11/94; 03/16/94; 03/18/94
Number of Samples:	Eighteen (18)
Sample Type:	Soil - fifteen (15), Trip Blank - three (3)

I. Introduction

On March 5, March 11, March 16 and March 18, 1994, fifteen (15) soil samples and three (3) trip blank samples arrived at the ITAS-Richland, Washington and were transferred to ITAS-Knoxville for chemical analysis. The list of analytical tests performed, as well as date of receipt and analysis, can be found in the attached report.

II. Analytical Results/Methodology

The analytical results for this report are presented by analytical test. Each set of data will include sample identification information and the analytical results. Please note that the data are not blank corrected.

The samples were analyzed for Target Compound List (TCL) volatiles by gas chromatography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

Reviewed and Approved:

Sheree' A. Schneider
Project Manager

II. Analytical Results/Methodology (Continued)

The samples were analyzed for Target Compound List (TCL) semivolatiles by gas chromatography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

The samples were analyzed for Target Compound List (TCL) pesticides and PCBs by gas chromatography/electron capture detection (GC/ECD) in accordance with the EPA CLP 3/90 Statement of Work.

The samples were analyzed for Target Analyte List (TAL) metals by cold vapor atomic absorption spectroscopy (CVAA), graphite furnace atomic absorption spectroscopy (GFAA), and inductively coupled plasma spectroscopy (ICP) in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for total cyanide in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for nitrate-nitrite based on EPA method 353.2.

The samples were analyzed for anions by ion chromatography using EPA method 300.0.

The samples were analyzed for total high boiling petroleum hydrocarbons as diesel range organics (DRO) with a kerosene spike by gas chromatography/flame ionization detection (GC/FID) based on method 8015.

III. Quality Control

The volatiles analyses were performed March 8, March 13, March 21, March 22 through 24, 1994 by purge and trap with a J & W DB-624 column on Hewlett-Packard 5970 and Finnigan INCOS 500 GC/MS/DS units. Sample B09WF9 was analyzed as a matrix spike and a matrix spike duplicate set. Matrix effects were confirmed as the cause of low internal standard recoveries in sample BO9WJ0 in a reanalysis. Surrogate 1,2-dichloroethane-d4 recovery fell outside of QC limits in sample BO9WJ0 due to internal standard problems. Sample BO9WJ6 was also analyzed as a matrix spike and a matrix spike duplicate set.

The semivolatiles analyses were performed March 15-16, March 27, March 29-30 and April 5-6, 1994 by direct injection of sample extract on a Restek XTI-5 capillary column on a Finnigan INCOS XL and 4500 GC/MS/DS unit. Sample B09WF9 was analyzed as a matrix spike and a matrix spike duplicate set. Sample BO9WH0 was also analyzed as a matrix spike and a matrix spike duplicate set in which the recoveries of phenol and 4-chloro-3-methylphenol fell outside of QC limits.

III. Quality Control (Continued)

Data were reported with qualifiers as follows:

U - Compound analyzed for but not detected; value given is quantitation limit.
E - Compound exceeded calibration range.
D - Compound analyzed at a secondary dilution factor.
J - Compound detected but below quantitation limit; value estimated.
S - Spiked compound.
B - Compound found in method blank.
A - Suspected aldol condensation product.
Y - Indistinguishable isomer in tentatively identified compounds.
N - Presumptive evidence of compound presence.

The samples were analyzed for Pesticides/PCBs using DB-608 and DB-1701 0.53mm ID megabore capillary columns. 1.0 μl was injected for each column. Two blank spikes (LCS's) were analyzed with acceptable recoveries. A matrix spike and matrix spike duplicate were analyzed and reported for sample BO9WJ3 with acceptable results. Sample chromatograms that were manually integrated will be denoted by an M+ and an M-. The performance evaluation mixture which ran at 1752 on 5890C on March 25, 1994, PEMKD, had methoxychlor greater than 25 RPD (25.1 RPD). There were no positives for methoxychlor in the affected samples and the PEM on the confirmation column met all criteria.

Data were reported using qualifiers as follows:

U - Compound analyzed for but not detected; value given is the quantitation limit.
D - Compound analyzed at a secondary dilution; DL was appended to the sample number.
X - A flag that FORMASTER III inserts when the data were entered manually.
Z - Compound's response was such that it exceeded the established linearity range. The value is estimated.
J - Compound detected but below the quantitation limit; value estimated.
P - The percent difference for the calculated values from the two analytical columns differed by 25.0% or more.

The samples were digested on March 25 and April 1, 1994 for ICP and March 25 and March 31, 1994 for GFAA. The samples for mercury analysis were prepared just prior to analysis. The CVAA analysis for mercury was performed on March 24 and April 1, 1994; the GFAA analysis for arsenic, lead, selenium and thallium were performed from March 25 through April 2, 1994; the remaining metals were analyzed by ICP on March 29, April 2 and April 11, 1994. All run QC was acceptable. A duplicate/spike pair was prepared using sample number B09WF9. Spike recovery (accuracy) results

III. Quality Control (Continued)

were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for arsenic by GFAA analysis. As the titanium concentration was greater than four times (4X) the spike added spiking criteria are not applicable for this analyte. Duplicate RPD (precision) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for vanadium and titanium by ICP analysis. MSAs were performed as required by CLP protocol.

Data were reported with qualifiers as follows:

"C" Qualifiers

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
B - Value greater than instrument detection limit, but less than contract required quantitation limit.

"Q" Qualifiers

* - Duplicate analysis outside control limits.
N - Spiked sample recovery outside control limits.
W - Post-digestion spike for GFAA was out of control limits (85-115%), while sample absorbance was less than 50% of spike absorbance.
S - The reported value was determined by method of standard additions.

"M" Qualifiers

P - Analysis performed by ICP.
V - Analysis performed by CVAA.
F - Analysis performed by GFAA.
C - Cyanide analysis by manual distillation/colorimetric determination.

Miscellaneous

D - Duplicate.
S - Spike.
NR - Not required.
G - Native analyte > 4 times spike added, therefore, acceptance criteria do not apply.
X - Detection limits higher than normal due to sample matrix interferences.

III. Quality Control (Continued)

The samples were analyzed for total high boiling petroleum hydrocarbons as kerosene by gas chromatography/flame ionization detection using an SPB-1 column on a Hewlett Packard GC. Matrix spike/matrix spike analyses were performed using sample B09WF9 with acceptable results. Surrogates were not spiked into the matrix spike and duplicate due to operator error. This error is believed not to effect the data integrity since the matrix spikes were present in place of the surrogates. Spikes were injected with kerosene standard and reported out in terms of diesel range organics. All matrix spikes and laboratory control samples (LCS) had acceptable recoveries.

On March 29, 1994, the samples were analyzed for nitrate-nitrite by cadmium reduction followed by colorimetric determination using the LACHAT QuikChem automated flow injection analyzer (QuikChem Method No. 10-107-04-1-C). Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

The samples were analyzed for anions on March 26 and April 2, 1994. Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

III. Quality Control (Continued)

Table I is a cross reference between client IDs and abbreviated client IDs.

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA3163	BO9WF9	SOIL	METALS
AA3164	BO9WF9	SOIL	VOC
AA3165	BO9WF9	SOIL	SVOC
AA3166	BO9WF9	SOIL	ANIONS
AA3167	BO9WF9	SOIL	NO3NO2
AA3168	BO9WF9	SOIL	CN
AA3169	BO9WF9	SOIL	TPH
AA3170	BO9WG2	WATER	VOC
AA3586	BO9WG0	SOIL	METALS
AA3598	BO9WG0	SOIL	VOC
AA3599	BO9WG0	SOIL	SVOC
AA3600	BO9WG0	SOIL	ANIONS
AA3625	BO9WG0	SOIL	NO3NO2
AA3626	BO9WG0	SOIL	CN
AA3627	BO9WG0	SOIL	TPH
AA3628	BO9WG2	SOIL	VOC
AA3919	BO9WI9	SOIL	METALS
AA3920	BO9WI9	SOIL	VOC
AA3921	BO9WI9	SOIL	SVOC
AA3922	BO9WI9	SOIL	ANIONS
AA3923	BO9WI9	SOIL	NO3NO2
AA3924	BO9WI9	SOIL	PEST/PCB
AA3925	BO9WI9	SOIL	CN
AA3926	BO9WI9	SOIL	TPH
AA3928	BO9WJ0	SOIL	METALS
AA3929	BO9WJ0	SOIL	VOC
AA3930	BO9WJ0	SOIL	SVOC
AA3931	BO9WJ0	SOIL	ANIONS
AA3932	BO9WJ0	SOIL	NO3NO2
AA3933	BO9WJ0	SOIL	PEST/PCB
AA3934	BO9WJ0	SOIL	CN
AA3935	BO9WJ0	SOIL	TPH

III. **Quality Control** (Continued)

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA3948	BO9WG7	SOIL	METALS
AA3949	BO9WG7	SOIL	VOC
AA3950	BO9WG7	SOIL	SVOC
AA3951	BO9WG7	SOIL	ANIONS
AA3952	BO9WG7	SOIL	NO3NO2
AA3953	BO9WG7	SOIL	CN
AA3954	BO9WG7	SOIL	TPH
AA3960	BO9WJ2	SOIL	VOC
AA3961	TRIP BLANK	WATER	VOC
AA4170	BO9WH0	SOIL	METALS
AA4171	BO9WH0	SOIL	VOC
AA4172	BO9WH0	SOIL	SVOC
AA4173	BO9WH0	SOIL	ANIONS
AA4174	BO9WH0	SOIL	NO3NO2
AA4175	BO9WH0	SOIL	CN
AA4176	BO9WH0	SOIL	TPH
AA4181	BO9WH1	SOIL	METALS
AA4182	BO9WH1	SOIL	VOC
AA4183	BO9WH1	SOIL	SVOC
AA4184	BO9WH1	SOIL	ANIONS
AA4185	BO9WH1	SOIL	NO3NO2
AA4186	BO9WH1	SOIL	CN
AA4187	BO9WH1	SOIL	TPH
AA4221	BO9WJ8	SOIL	VOA
AA4188	BO9WJ3	SOIL	METALS
AA4189	BO9WJ3	SOIL	VOC
AA4190	BO9WJ3	SOIL	SVOC
AA4191	BO9WJ3	SOIL	ANIONS
AA4192	BO9WJ3	SOIL	NO3NO2
AA4193	BO9WJ3	SOIL	PEST/PCB
AA4194	BO9WJ3	SOIL	CN
AA4195	BO9WJ3	SOIL	TPH

III. Quality Control (Continued)

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA4197	BO9WJ4	SOIL	METALS
AA4198	BO9WJ4	SOIL	VOC
AA4199	BO9WJ4	SOIL	SVOC
AA4200	BO9WJ4	SOIL	ANIONS
AA4201	BO9WJ4	SOIL	NO3NO2
AA4202	BO9WJ4	SOIL	PEST/PCB
AA4203	BO9WJ4	SOIL	CN
AA4204	BO9WJ4	SOIL	TPH
AA4205	BO9WJ5	SOIL	METALS
AA4206	BO9WJ5	SOIL	VOC
AA4207	BO9WJ5	SOIL	SVOC
AA4208	BO9WJ5	SOIL	ANIONS
AA4209	BO9WJ5	SOIL	NO3NO2
AA4210	BO9WJ5	SOIL	PEST/PCB
AA4211	BO9WJ5	SOIL	CN
AA4212	BO9WJ5	SOIL	TPH
AA4222	BO9WJ6	SOIL	VOC
AA4213	BO9WJ7	SOIL	METALS
AA4214	BO9WJ7	SOIL	VOC
AA4215	BO9WJ7	SOIL	SVOC
AA4216	BO9WJ7	SOIL	ANIONS
AA4217	BO9WJ7	SOIL	NO3NO2
AA4218	BO9WJ7	SOIL	PEST/PCB
AA4219	BO9WJ7	SOIL	CN
AA4220	BO9WJ7	SOIL	TPH
AA4223	TRIP BLANK	WATER	VOC

IV. Certification

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature:

Reviewed and Approved:

Sheree' A. Schneider

Sheree' A. Schneider
Project Manager

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U SETZER

Company Contact: L E ROGERS

Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2

Collection Date: 3-4-94

Ice Chest No.: SML-17B

Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: N/A

Offsite Property No.: W94-1-0369 #13

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09W60

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~ SER 3-9-94
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2) B09W62
1,250ml aGs : CLP: VOA

~~2)~~

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

SER 3-9-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	Heidelberg	3/10/94 @ 1450
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS

Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2

Collection Date:

Ice Chest No.:

Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.:

Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 RADIOACTIVE

Sample Identification

1)
- 1,250ml P:CLP;TAL Metals,Hg,Ti ✓ B09WF9
- 1,250ml ✓Gs:VOA CLP
- 1,250ml ✓aG:Semi-VOA CLP
- 1,125ml ✓G:Anions F,Cl,SO4 (EPA 300.0) ✓
- 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) ✓
- ~~1,250ml aGs:PCB/Pest (8080)~~ LER 3-3-94
- 1,125ml ✓G:Cyanide CLP
- 1,125ml Gw:Kerosene (8015M) ✓
- 1,1000ml ✓P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

~~2)~~
- ~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
- ~~1,250ml Gs:VOA CLP~~
- ~~1,250ml aG:Semi-VOA CLP~~
- ~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
- ~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
- ~~1,250ml aGs:PCB/Pest (8080)~~ LER 3-3-94
- ~~1,125ml G:Cyanide CLP~~
- ~~1,125ml Gw:Kerosene (8015M)~~
- ~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-4-94 Loren E Rogers 1033	Muddelberg Jr	3/4 @ 12:30
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2894

0000037

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS — S.A.F. # 94-065 — Date 3-3-94

Company Contact L E ROGERS — Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09WF9	S	3-3-94	1225	40309801 A 1,250ml P:CLP;TAL Metals,Hg,Tl 6010 B 1,250ml G:VOA CLP 8240 C 1,250ml aG:Semi-VOA CLP 8270 D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) ~~1,250ml aGas:PCB/Pest (8080)~~ JER 3-3-94 F 1,125ml G:Cyanide CLP 9010 G 1,125ml GW:Kerosene (8015M) 1,000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253) 40309901
			JER 3-3-94	~~1,250ml P:CLP;TAL Metals,Hg,Tl~~ ~~1,250ml G:VOA CLP~~ ~~1,250ml aG:Semi-VOA CLP~~ ~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~ ~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~ ~~1,250ml aGas:PCB/Pest (8080)~~ ~~1,125ml G:Cyanide CLP~~ ~~1,125ml GW:Kerosene (8015M)~~ ~~1,000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

*Type of Sample: A = Air; DL = Drum Liquids; DS = Drum Solids; L = Liquid; O = Oil; S = Soil; SE = Sediment; SL = Sludge; SO = Solid; T = Tissue; W = Water; WI = Wipe; X = Other

Field Information IT, Richland

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards RADIOACTIVE

Chain of custody did not have the collection date. This form date used to evaluate holding times for B09WF9.

added page 03/24/94

A-6000-406 (06/91) WEF060

055A

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-4-94

Ice Chest No.: — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1)

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~ B09WG2

1,250ml Gs:VOA CLP

~~1,250ml aG:Semi-VOA CLP~~

~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~

~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~

~~1,250ml aGs:PCB/Pest (8080)~~

~~1,125ml G:Cyanide CLP~~

~~1,125ml Gw:Kerosene (8015M)~~

~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322)~~, Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium ~~(ITAS-RD-4200~~, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 ~~(ITAS-RD-3204)~~ Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2)

1,250ml P:CLP;TAL Metals,Hg,Ti

1,250ml ~~Gs:VOA CLP~~

1,250ml aG:Semi-VOA CLP

1,125ml G:Anions F,Cl,SO4 (EPA 300.0)

1,125ml P/G:Anions NO2,NO3 (EPA 353.2)

1,250ml aGs:PCB/Pest (8080)

1,125ml G:Cyanide CLP

1,125ml Gw:Kerosene (8015M)

1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-4-94 1033	Heidelberg	3/4 @ 1230
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2896

0000041

SDW W0002 WO212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-10-94

Ice Chest No.: GW 5028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.: WP4-0-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

CAT I

1) 4073264 01

A 1,250ml P:CLP;TAL Metals,Hg,Ti B09W19
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
I 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4073267 01

2)

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

3-10-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	R. Boyd FT CWD	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

WO #212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-11-93

Ice Chest No.: GW 5028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.: W94-1-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09W50

3244 A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
72 C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
3267 I 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

~~2)~~
~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

3-11-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	D Boyd JT CCO	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

WO #212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-16-94

Ice Chest No.: GW S028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: NA — Offsite Property No.: WW4-0-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065

Sample Identification

1) B09WG7

403264 03

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)

403267 09

1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

~~2) B09WJ2 1,250ml aGs: CLP; VOA~~ WJS 3-14-92

2)

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080) WJS
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	R. Boyd IT CLBD	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

WO#212

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.W. SETZER

Company Contact: L E ROGERS

Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2

Collection Date: 3-10-94

Ice Chest No.: GW 5028

Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.:

Offsite Property No.: W94-0

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065

Sample Identification

1) B09WJ2

03264
04

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
1,250ml Gs:VOA CLP
~~1,250ml aG:Semi VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Co-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

SR 3-10-94

~~2)~~
~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

SR 3-14-94

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)		
Relinquished by: W.W. Setzer	Received by: R Boyd IT 2100	Date/Time: 3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2900

0000049

WO #230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-16-94

Ice Chest No.: GWS -127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 500ml 3-17-94 B04W40

A 1,~~250ml~~ P:CLP;TAL Metals,Hg,Ti

B 1,250ml Gs:VOA CLP

C 1,250ml aG:Semi-VOA CLP

D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)

E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)

~~1,250ml aGs:PCB/Pest (8080)~~

F 1,125ml G:Cyanide CLP

G 1,125ml Gw:Kerosene (8015M)

1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4633450 1

2) 3-17-94 B04W41

A 1, 500ml ~~1,250ml~~ P:CLP;TAL Metals,Hg,Ti

B 1, 500ml ~~1,250ml~~ Gs:VOA CLP

C 1, 500ml ~~1,250ml~~ aG:Semi-VOA CLP

D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)

E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)

~~1,250ml aGs:PCB/Pest (8080)~~

F 1,125ml G:Cyanide CLP

G 1,125ml Gw:Kerosene (8015M)

1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4633450 2

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Loren E Rogers	Received by: S.D. Fowler	Date/Time: 3/17/94 1018
Relinquished by: S.D. Fowler	Received by: [illegible]	Date/Time: 3/17 @ 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2901

0000051

WOH230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-16-94

Ice Chest No.: GWS-127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09WJ8

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
1,250ml Gs:VOA CLP
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152,Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

4G5334463

2)
~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152,Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Lorene E. Rogers	J.D. Fowler	3/17/94 1018
Relinquished by:	Received by:	Date/Time:
J.D. Fowler	[illegible]	3/17 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

WO#230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-14-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09W53

10334464

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

10334504

2) B09W54

10334465

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

10334505

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Loren E. Rogers / Loren E. Rogers	S.D. Sanders / J.P. Fahy	3/17/94 1018
Relinquished by: S.D. Sanders / J.P. Fahy	Received by: Heidelberg	Date/Time: 3/17 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

WO#230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-15-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 609W35

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

1163534406

4633450C

~~2)~~

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

3-15-94

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Loren E. Rogers	Received by: J.D. Fank	Date/Time: 3/17/94 1015
Relinquished by: J.D. Fank	Received by: Heidelberg	Date/Time: 3/17 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2904

0000057

WO# 230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-16-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) BC9WJ6

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~

1,250ml Gs:VOA CLP

40334407

~~1,250ml aG:Semi-VOA CLP~~

~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~

~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~

~~1,250ml aGs:PCB/Pest (8080)~~

SCK 3-16-94

~~1,125ml G:Cyanide CLP~~

~~1,125ml Gw:Kerosene (8015M)~~

~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152,Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

2) BC9WJ7

A 1,250ml P:CLP;TAL Metals,Hg,Ti

B 1,250ml Gs:VOA CLP

C 1,250ml aG:Semi-VOA CLP

D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)

E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)

F 1,250ml aGs:PCB/Pest (8080)

G 1,125ml G:Cyanide CLP

H 1,125ml Gw:Kerosene (8015M)

1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152,Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40334408

40334507

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Loren E. Rogers	Received by: J.D. Fanker	Date/Time: 3/17/94 1018
Relinquished by: J.D. Fanker	Received by: Heidelberg	Date/Time: 3/17 1332
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

INTERNATIONAL TECHNOLOGY CORPORATION

CoC # 1307

WO# 212
RL# 283

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

Reference Document No.[30] 340327

Page 2 of 2

Project Name SAF # 94-065

Project No. _____

Samples Shipment Date 3-15-94

ONE CONTAINER PER LINE

Sample[14] Number	Sample[15] Description/Type	Date/Time[16] Collected	Container[17] Type	Sample[18] Volume	Pre-[19] servative	Requested Testing[20] Program	Condition on[21] Receipt	Disposal[22] Record No.
40326602 A	BOAWJ0 /soil	3-11-94 08:30	AG	250ml	Cool 4°	ICP Metal, Hg, Ti	KAK 3-16-94 2°C	
B						Voa	FOR LAB USE ONLY	
C						Semi Voa		
D				125ml		EPA 300.0	FOR LAB USE ONLY	
E						EPA 353.2		
F				250ml		PCB /Pest		
G				125ml		Cyanide	FOR LAB USE ONLY	
H						Kerosene		
40326603 A	BOAWG7 /soil	3-10-94 10:59	AG	250ml	Cool 4°	ICP Metal, Hg, Ti	FOR LAB USE ONLY	
B						Voa		
C						Semi Voa		
D				125ml		EPA 300.0	FOR LAB USE ONLY	
E						EPA 353.2		
F						Cyanide		
G						Kerosene		
40326604	BOAWJ2 /soil	3-10-94 07:00	AG	250ml	cool 4°	Voa		
40326605 A	Trip Blank	3-15-94	AG	40 ml	Cool 4°	Voa	FOR LAB USE ONLY	
B								

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

MCA 3/15/91

990

96134741.2905

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

WO# 230
RL# 301

Reference Document No.[30] 340333
Page 4 of 4

Project Name SAF 94-005

Project No. SDB-W0002

Samples Shipment Date _____

ONE CONTAINER PER LINE

Sample[14] Number	Sample[15] Description/Type	Date/Time[16] Collected	Container[17] Type	Sample[18] Volume	Pre-[19] servative	Requested Testing[20] Program	Condition on[21] Receipt	Disposal[22] Record No.
4-03-344-09A	Trip blank	3/17	glass	40ml	cool 4° AG	VOA	Rec'd at 2°, 4°, 2° KAK 3-18-94	
B							FOR LAB USE ONLY	
C								
D							FOR LAB USE ONLY	
E								
F								
	JH 3/17/94							
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

MCA 3/15/91

9613474.2906

067

9613474.2907

ATTACHMENT 5

DATA VALIDATION SUPPORTING DOCUMENTATION

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	(D)	E

PROJECT: 200-UP-2		DATA PACKAGE: W0002-ITC-007
VALIDATOR: T. Stapp	LAB: ITC Knoxville	DATE: 6-15-94
CASE:		SDG:

ANALYSES PERFORMED

☑ CLP Volatiles	☐ SW-846 8240 (cap column)	☐ SW-846 8260 (packed column)	☐ CLP Semivolatiles	☐ SW-846 8270 (cap column)	☐ SW-846 (packed column)
☐	☐	☐	☐	☐	☐

SAMPLES/MATRIX B09WF9, B09WG0, ~~B09WG2~~, B09WG2, B09WI9, B09WJ0, B09WG7, B09WJ2, B09WH0, B09WH1, B09WJ8, B09WJ3, B09WJ4, B09WJ5, B09WJ6, B09WJ7 / SOIL

~~B09WG2~~, Trip Blank #1, Trip Blank #2 / WATER

6-18-94

6-18-94

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Is technical verification documentation present? . . . . . Note ① . . (Yes) No N/A

Is a case narrative present? . . . . . (Yes) No N/A

Comments: ① Performed by WHC.

2. HOLDING TIMES

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

Comments: See holding time Summary page B-1.

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. INSTRUMENT TUNING AND CALIBRATION

Is the GC/MS tuning/performance check acceptable? . . . . . Yes No N/A

Are initial calibrations acceptable? . . . . . Yes No N/A

Are continuing calibrations acceptable? . . Note ① . . . . . Yes No N/A

Comments: ① CCAL RRF % Diff. on 3-13-94 for Bromoform, 1122 Tetrachloroethane; and CCAL RRF % Diff. on 3-22-94 for 111 TCE were out of limits. See Calibration Summary sheets for samples affected.

4. BLANKS

Were laboratory blanks analyzed? . . . . . Yes No N/A

Are laboratory blank results acceptable? . See Note ① . . . . Yes No N/A

Were field/trip blanks analyzed? . . . . . Note ② . . Yes No N/A

Are field/trip blank results acceptable? . . . . . Yes No N/A

Comments: ① Contaminants were detected in 5 method blanks associated with the samples of this SDG. See blank Summary for samples affected and Qualification applied.

② Contaminants not associated with the analysis method blank were detected in the Trip Blanks (Lab ID 3961 and 4223). See form 1's for detects.

5. ACCURACY

Were surrogates/System Monitoring Compounds analyzed? . . . . . Yes No N/A

Are surrogate/System Monitoring Compound recoveries acceptable? Yes No N/A Note ①

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

Are MS/MSD results acceptable? . . . . . Yes No N/A

Comments: ① Surrogate recovery for 1,2-Dichloroethane-d4 was out of limits in Sample B09WJ0. See surrogate Summary page.

GC/MS ORGANIC DATA VALIDATION CHECKLIST

6. PRECISION

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

Are field duplicate RPD values acceptable? . . Note ① . . . . Yes No (N/A)

Are field split RPD values acceptable? . . . . . Yes No (N/A)

Comments: ① Field Duplicates were not identified in this sample set, but identification has been requested. They will be evaluated in the final data summary.

7. SYSTEM PERFORMANCE

Were internal standards analyzed? . . . . . (Yes) No N/A

Are internal standard areas acceptable? . . See note ① . . . Yes (No) N/A

Are internal standard retention times acceptable? . . . . . (Yes) No N/A

Comments: ① IS areas associated with samples B09WJ0 and B09WJ0RE are out of limits. See IS summary page for IS out of limits and form I's of samples indicated for qualification applied.

8. COMPOUND IDENTIFICATION AND QUANTITATION

Is compound identification acceptable? . . . . . (Yes) No N/A

Is compound quantitation acceptable? . . . . . (Yes) No N/A

Comments:

9. REPORTED RESULTS AND QUANTITATION LIMITS

Are results reported for all requested analyses? . . . . . (Yes) No N/A

Are all results supported in the raw data? . . . . . (Yes) No N/A

Do results meet the CRQLs? . . . . . (Yes) No N/A

Has the laboratory properly identified and coded all TIC? . . (Yes) No N/A Note ① Note ②

Comments: ~~① TIC report for VBLK AA4516 method blank was not provided and associated sample TICs for B09WH0, -WH1, -WJ8, -WJ3, -WJ4, -WJ5, -WJ6 and -WJ7 are in question.~~

6-18-94

② TIC found @ 2.07 min. associated with samples B09WH0, -WH1, -WJ8, -WJ3, -WJ4, -WJ5, -WJ6, and -WJ7 was not detected in the associated blank and BJ qualifier for this TIC has been replaced with "JN" qualification for ~~A-3~~ all samples listed here.

6-20-94

W0002-ITC-007

HOLDING TIME SUMMARY - FORM B-1

SDG:	REVIEWER: T. Stapp	DATE: 6-15-94	PAGE 1 OF 1

COMMENTS:

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09WF9	VOA	3-3-94	N/A	3-8-94	N/A	≤ 14	NONE
B09WG0		3-4-94		3-13-94			
~~B09WG2~~		"		~~3-8-94~~ 3-13-94			
B09WI9		3-10-94		3-22-94			
B09WJ0		3-11-94		"			
B09WG7		3-10-94		"			
B09WJ2		"		"			
B09WH0		3-16-94		3-23-94			
B09WH1		"		"			
B09WJ8		"		3-24-94			
B09WJ3		3-14-94		3-23-94			
B09WJ4		"		"			
B09WJ5		3-15-94		3-24-94			
B09WJ6		3-16-94		"			
B09WJ7		"		"			
B09WG2*		3-4-94		3-8-94		≤ 7	
Trip Blank 3961		3-15-94		3-21-94			NONE
Trip Blank 4223		3-17-94		3-21-94			

6-18-94

6-18-94 * ~~Identified as WATER~~

6-16-94

9613474.2911

WHC-SD-EN-SPP-002, ~~Rev. 1~~ Rev. 2

SDG: W0002-ITC-0007 4.2912

CALIBRATION SUMMARY

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 193 SAS No.: _____ SDG No.: W0002

Instrument ID: 5970A Calibration date: 03/13/94 Time: 1000 *

Lab File ID: ACM01 Init. Calib. Date(s): 01/26/94 01/26/94

Heated Purge: (Y/N) Y Init. Calib. Times: 0949 1211

GC Column: DB-624 ID: 0.250(mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Chloromethane	1.462	1.646		-12.6	
Bromomethane	0.970	1.024	0.100	-5.6	25.0
Vinyl Chloride	1.462	1.665	0.100	-13.9	25.0
Chloroethane	0.509	0.474		6.9	
Methylene Chloride	1.692	1.885		-11.4	
Acetone	0.917	0.565		38.4	
Carbon Disulfide	4.477	4.943		-10.4	
1,1-Dichloroethene	1.154	1.260	0.100	-9.2	25.0
1,1-Dichloroethane	2.814	2.816	0.200	-0.1	25.0
1,2-Dichloroethene (total)	1.474	1.642		-11.4	
Chloroform	2.962	2.945	0.200	0.6	25.0
1,2-Dichloroethane	2.540	2.324	0.100	8.5	25.0
2-Butanone	1.423	0.844		40.7	
1,1,1-Trichloroethane	0.551	0.467	0.100	15.2	25.0
Carbon Tetrachloride	0.497	0.426	0.100	14.3	25.0
Bromodichloromethane	0.516	0.445	0.200	13.8	25.0
1,2-Dichloropropane	0.360	0.349		3.1	
cis-1,3-Dichloropropene	0.602	0.560	0.200	7.0	25.0
Trichloroethene	0.401	0.375	0.300	6.5	25.0
Dibromochloromethane	0.484	0.397	0.100	18.0	25.0
1,1,2-Trichloroethane	0.364	0.319	0.100	12.4	25.0
Benzene	1.192	1.204	0.500	-1.0	25.0
trans-1,3-Dichloropropene	0.590	0.503	0.100	14.8	25.0
Bromoform	0.358	0.252	0.100	29.6	25.0
4-Methyl-2-Pentanone	0.670	0.394		41.2	
2-Hexanone	0.548	0.294		46.4	
Tetrachloroethene	0.334	0.292	0.200	12.6	25.0
1,1,2,2-Tetrachloroethane	0.714	0.516	0.500	27.7	25.0
Toluene	1.425	1.403	0.400	1.5	25.0
Chlorobenzene	1.029	0.973	0.500	5.4	25.0
Ethylbenzene	0.498	0.478	0.100	4.0	25.0
Styrene	1.019	0.967	0.300	5.1	25.0
Xylenes (total)	0.584	0.559	0.300	4.3	25.0
Toluene-d8	1.215	1.232		-1.4	
4-Bromofluorobenzene	0.529	0.495	0.200	6.4	25.0
1,2-Dichloroethane-d4	1.906	1.884		1.2	

All other compounds must meet a minimum RRF of 0.010.

FORM VII VOA 3/90

* This calibration associated with Samples B09WG0, ~~B09WG2~~.
Compounds indicated are qualified J/UJ. 6-18-94

SDG: W0002-ITC-007 06134.2913

CALIBRATION SUMMARY

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Instrument ID: 5970A Calibration date: 03/22/94 Time: 0753 *

Lab File ID: ACV01 Init. Calib. Date(s): 01/26/94 01/26/94

Heated Purge: (Y/N) Y Init. Calib. Times: 0949 1211

GC Column: DB-624 ID: 0.250(mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Chloromethane	1.462	1.010		30.9	
Bromomethane	0.970	0.920	0.100	5.2	25.0
Vinyl Chloride	1.462	1.305	0.100	10.7	25.0
Chloroethane	0.509	0.477		6.3	
Methylene Chloride	1.692	1.504		11.1	
Acetone	0.917	0.973		-6.1	
Carbon Disulfide	4.477	4.225		5.6	
1,1-Dichloroethene	1.154	1.224	0.100	-6.1	25.0
1,1-Dichloroethane	2.814	2.523	0.200	10.3	25.0
1,2-Dichloroethene (total)	1.474	1.460		0.9	
Chloroform	2.962	2.596	0.200	12.4	25.0
1,2-Dichloroethane	2.540	2.273	0.100	10.5	25.0
2-Butanone	1.423	1.726		-21.3	
1,1,1-Trichloroethane	0.551	0.389	0.100	29.4	25.0
Carbon Tetrachloride	0.497	0.375	0.100	24.6	25.0
Bromodichloromethane	0.516	0.452	0.200	12.4	25.0
1,2-Dichloropropane	0.360	0.333		7.5	
cis-1,3-Dichloropropene	0.602	0.562	0.200	6.6	25.0
Trichloroethene	0.401	0.376	0.300	6.2	25.0
Dibromochloromethane	0.484	0.416	0.100	14.0	25.0
1,1,2-Trichloroethane	0.364	0.341	0.100	6.3	25.0
Benzene	1.192	1.166	0.500	2.2	25.0
trans-1,3-Dichloropropene	0.590	0.532	0.100	9.8	25.0
Bromoform	0.358	0.340	0.100	5.0	25.0
4-Methyl-2-Pentanone	0.670	0.758		-13.1	
2-Hexanone	0.548	0.603		-10.0	
Tetrachloroethene	0.334	0.329	0.200	1.5	25.0
1,1,2,2-Tetrachloroethane	0.714	0.723	0.500	-1.3	25.0
Toluene	1.425	1.376	0.400	3.4	25.0
Chlorobenzene	1.029	0.996	0.500	3.2	25.0
Ethylbenzene	0.498	0.478	0.100	4.0	25.0
Styrene	1.019	0.989	0.300	2.9	25.0
Xylenes (total)	0.584	0.562	0.300	3.8	25.0
Toluene-d8	1.215	1.174		3.4	
4-Bromofluorobenzene	0.529	0.495	0.200	6.4	25.0
1,2-Dichloroethane-d4	1.906	1.726		9.4	

All other compounds must meet a minimum RRF of 0.010.

FORM VII VOA 3/90

* This calibration associated with samples B09WI9, B09WJ2, B09WJ0, B09WG7, and B09WJ0RE. Indicated analyte will be qualified J/UJ. 6-18-94

WO002-ITC-007

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG:	REVIEWER: T. Stapp	DATE: 6-16-94	PAGE 1 OF 1

COMMENTS:

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
VBLK 1P	Acetone	3			ug/Kg		30	B09WF9 B09WG2A	U
VBLK 2P	"	2					20	B09WG0 ~~B09WG2B~~	U
"	Methylene Chloride	2					20	↓	↓
VBLK 3P	Acetone	2					20	B09WI9, -WJ0 -WJ0RE, -WG7, -WJ2	↓
"	Methylene Chloride	3					30	B09WJ0 B09WG7	↓
~~VBLK 6W~~	~~6-16-94~~								
AA4516	Xylenes	1				5		B09WH1 B09WJ6	U
"	"	"				"		B09WJ7	U
~~" ~~	~~MeCl2~~	~~0.98~~					~~9.8~~		
~~" ~~	~~Acetone~~	~~2.86~~					~~28.6~~		
"	Toluene	0.32				1.6	~~1.6~~	B09WH1	U
"	Methylene Chlor	0.98					9.8	B09WH0, -WH1 -WJ8, -WJ3,	U
"	"	"					"	-WJ4, -WJ5, -WJ6, -WJ7	↓
"	Acetone	2.86					28.6	All above except -WJ3	↓
VBLK 1P	Methylene Chloride	0.97					9.7	B09WF9 B09WG2A	U
VBLK 6W	MeCl2	0.5					5.	Trip Blank #2	U
"	1,2-Dichloropropane	0.21				1.1		Trip Blank #2 (4223)	U

6-18-94 6-18-94 6-16-94 6-18-94

~~6-16-94~~ ~~6-16-94~~

WHC-SD-EN-SPP-002, ~~Rev. 1~~ Rev. 2 6-16-94

9613474.2914

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Lab File ID (Standard): ACV01 Date Analyzed: 03/22/94

Instrument ID: 5970A Time Analyzed: 0753

GC Column: DB-624 ID: 0.250(mm) Heated Purge: (Y/N) Y

	IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
12 HOUR STD	45824	11.79	197845	13.54	180598	17.97
UPPER LIMIT	91648	12.29	395690	14.04	361196	18.47
LOWER LIMIT	22912	11.29	98922	13.04	90299	17.47
EPA SAMPLE NO.						
B09WI901 ~~40326601~~ J..	38749	11.79	164979	13.55	155404	17.97
B09WJO 02 ~~40326602~~	11331 *	11.86	33165 *	13.66	99051	18.05
B09WJO 03 ~~40326602RE~~	17410 *	11.86	80487 *	13.61	77178 *	18.04
B09WG7 04 ~~40326603~~	27312	11.85	118882	13.60	116566	18.03
B09WW2 05 ~~40326604~~	26871	11.83	115438	13.58	112841	18.00
06 VBLK3P	38516	11.79	162362	13.54	152434	17.96

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

J/UJ Qualification applied to TCL constituents associated with the indicated internal standards for samples B09WJO and B09WJORE. See table 3-10 (page 3-23) of validation procedures, and annotated form 1's.

6-16-94

2B
SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
B09WI9 01	~~40326601~~	99	97	102	0	0
B09WJ0 02	~~40326602~~	110	105	27 *	0	1
B09WJ0 03	~~40326602~~RE	99	95	118	0	0
B09WG7 04	~~40326603~~	101	98	116	0	0
B09WJ1 05	~~40326604~~	98	97	118	0	0
06	VBLK3P	99	98	102	0	0

		QC LIMITS
SMC1 (TOL)	= Toluene-d8	(84-138)
SMC2 (BFB)	= Bromofluorobenzene	(59-113)
SMC3 (DCE)	= 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

J/UJ Qualification is applied to target compound list constituents associated with the indicated surrogate for sample B09WJ0. See table 3-5 (page 3-18) of validation procedures, and annotated form 1.
6-16-94

9613474.2917

MEMORANDUM

JUN 1994

TO: 200-UP-2 Project QA Record

June 20, 1994

FR: Susan Winter, Golder Associates Inc.

RE: SEMIVOLATILE ORGANICS DATA VALIDATION SUMMARY FOR DATA PACKAGE: W0002-ITC-007 (923-E418, Filename W0002B.UP2)

INTRODUCTION

This memo presents the results of data validation on data package W0002-ITC-007 prepared by the International Technology Corporation (ITC) laboratory. The samples validated along with the analyses reported and the methods of analysis are provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA	ANALYSIS
B09WF9	03/03/94	SOIL	SEE NOTE 1
B09WG0	03/04/94	SOIL	
B09WG7	03/10/94	SOIL	
B09WH0	03/16/94	SOIL	
B09WH1	03/16/94	SOIL	
B09WI9	03/10/94	SOIL	
B09WJ0	03/11/94	SOIL	
B09WJ3	03/14/94	SOIL	
B09WJ4	03/14/94	SOIL	
B09WJ5	03/15/94	SOIL	
B09WJ7	03/16/94	SOIL	

RECEIVED
JUN 21 1994
VALIDATION DOCUMENTATION
SDLA

Note 1. All samples were analyzed for CLP TCL semivolatile organics.

Data validation was conducted in accordance with the WHC statement of work (WHC 1993a) and validation procedures (WHC 1993b). Attachments 1 through 5 provide the following information as indicated below:

Attachment 1. Glossary of Data Reporting Qualifiers
Attachment 2. Summary of Data Qualifications
Attachment 3. Qualified Data Summary and Annotated Laboratory Reports
Attachment 4. Laboratory Narrative and Chain-of-Custody Documentation
Attachment 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met for all sample results as specified in the reference analytical method.

Completeness. The data package was complete for all requested analyses. A total of eleven samples were validated in this data package with a total of 704 determinations reported, of which 696 were deemed valid. This results in a completeness of 99 percent, which meets normal work plan objectives of 90%.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

The following minor deficiencies were identified during data validation which required qualification of data as estimated.

Initial Calibration

- The initial calibration relative response factors for acenaphthene, fluorene, and benzo(a)anthracene and the relative standard deviations for 4-chloro-3-methylphenol and benzo(k)fluoranthene were unacceptable. Attachments 2 and 5 provide a summary of the affected samples, data qualifications applied and supporting documentation.

Continuing Calibration

- The continuing calibration percent differences for benzo(k)fluoranthene, 4-methylphenol, and hexachlorobenzene were unacceptable. Attachments 2 and 5 provide a summary of the affected samples, data qualifications applied and supporting documentation.

Laboratory Blanks

- Bis(2-ethylhexyl)phthalate was detected in the associated laboratory blank. Attachments 2 and 5 provide a summary of the samples affected, data qualification applied and supporting documentation.

TENTATIVELY IDENTIFIED COMPOUND EVALUATION

Tentatively identified compounds (TICs) reported by the laboratory were evaluated during validation and qualified as follows:

- TICs were detected in the samples and associated laboratory blank and were common laboratory contaminants, resulting in qualification of the TICs as unusable (UR) as shown in Attachment 3.

- TICs were detected in the samples and associated laboratory blank and have been qualified due to associated blank contamination and have been determined to be presumptive and valid (UJN). In this data set, TICs were detected in both the sample and associated laboratory blank, with the sample concentration greater than five times the associated blank concentration. These TIC results have been qualified "BJN" to denote the TIC was detected in the blank (B) and determined to be presumptive and valid (JN).

- TICs were detected in the samples and identified as common laboratory contaminants, resulting in qualification of the results as unusable (R) as shown in Attachment 3.

- TICs were detected in the samples and determined to be valid, resulting in qualification of the results as presumptive and valid (JN).

- TICs reported by the laboratory as "unknown" have been corrected to "hexanedioic acid isomer, hexadecanoic acid isomer, unknown alkane or unknown acid" following review of the spectra and qualified as estimated and presumptive (JN).

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation, Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993. Westinghouse Hanford Company, Richland, Washington.

revised page

9613474.2920

ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF ORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected in the associated laboratory blank. This qualifier is applied by the laboratory. During the process of data validation this qualifier may be replaced by other appropriate qualifiers as defined by the validation procedures. The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample quantitation limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration reported may not accurately reflect the sample quantitation limit. The associated data should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. This qualifier may be applied by the laboratory to indicate a concentration which is less than the contract required quantitation limit (CRQL) but greater than the instrument detection limit (IDL). During data validation this qualifier may be applied to indicate a minor quality control deficiency. However in either case, the associated data should be considered usable for decision making purposes.

NJ - Indicates presumptive evidence of a constituent at an estimated value. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

N - Indicates presumptive evidence of a constituent. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

JN - Indicates a tentatively identified compound (TIC) whose concentration and identification have been determined to be valid as a result of data validation. The associated data should be considered usable for decision making purposes.

UJN - Indicates a tentatively identified compound (TIC) that has been determined to be presumptive and valid (JN) in terms of identification and quantitation and has been qualified as undetected (U) due to associated blank contamination.

UR - Indicates the constituent was analyzed for and not detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

9613474.2922

ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY

SDG: W0002-ITC-007	VALIDATOR:	DATE: June 20, 1994	PAGE 1 OF 1
COMMENTS: SEMIVOLATILE ORGANICS			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
4-CHLORO-3-METHYLPHENOL	UJ	B09WH0 B09WH1 B09WJ3 B09WJ4 B09WJ5 B09WJ7	ICV %RSD > 20.5%
ACENAPHTHENE	UJ	B09WI9 B09WJ0 B09WG7	ICV RRF < 0.8 BUT > 0.01
FLUORENE	UJ	B09WI9 B09WJ0 B09WG7	ICV RRF < 0.9 BUT > 0.01
BENZO(A)ANTHRACENE	UJ	B09WG0 B09WF9	ICV RRF < 0.8 BUT > 0.01
BENZO(K)FLUORANTHENE	UJ	B09WG0 B09WF9	ICV RSD > 20.5% AND CCV %D > 25%
4-METHYLPHENOL	UJ	B09WG0 B09WF9	CCV %D > 25%
HEXACHLOROBENZENE	UJ	B09WG0 B09WF9	CCV %D > 25%
BIS(2-ETHYLHEXYL)PHTHALATE	U	B09WF9	PRESENT IN ASSOCIATED BLANK

9613474.2924

ATTACHMENT 3

QUALIFIED DATA SUMMARY AND ANNOTATED LABORATORY REPORTS

Validated Data Summary, Data Package: W0002-ITC-007

	Samp#	B09WF9		B09WG0		B09WG7		B09WH0		B09WH1		B09WI9	
	Date	3-3-94		3-4-94		3-10-94		3-16-94		3-16-94		3-10-94	
	Location	---		---		---		---		---		---	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
PHENOL	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
BIS(2-CHLOROETHYL)ETHER	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
2-CHLOROPHENOL	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
1,3-DICHLOROBENZENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
1,4-DICHLOROBENZENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
1,2-DICHLOROBENZENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
2-METHYLPHENOL	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
2,2'-OXYBIS(1-CHLOROPROPANE)	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
4-METHYLPHENOL	UG/KG	350.000	UJ	340.000	UJ	330.000	U	340.000	U	350.000	U	340.000	U
N-NITROSO-DI-N-PROPYLAMINE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
HEXACHLOROETHANE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
NITROBENZENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
ISOPHORONE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
2-NITROPHENOL	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
2,4-DIMETHYLPHENOL	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
2,4-DICHLOROPHENOL	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
1,2,4-TRICHLOROBENZENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
NAPHTHALENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
4-CHLOROANILINE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
HEXACHLOROBUTADIENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
4-CHLORO-3-METHYLPHENOL	UG/KG	350.000	U	340.000	U	330.000	U	340.000	UJ	350.000	UJ	340.000	U
2-METHYLNAPHTHALENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
HEXACHLOROCYCLOPENTADIENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
2,4,6-TRICHLOROPHENOL	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
2,4,5-TRICHLOROPHENOL	UG/KG	860.000	U	820.000	U	800.000	U	820.000	U	860.000	U	820.000	U
2-CHLORONAPHTHALENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
2-NITROANILINE	UG/KG	860.000	U	820.000	U	800.000	U	820.000	U	860.000	U	820.000	U
DIMETHYLPHTHALATE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
ACENAPHTHYLENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
3-NITROANILINE	UG/KG	860.000	U	820.000	U	800.000	U	820.000	U	860.000	U	820.000	U

Verified
6/20/94

6/20/94

009

9613474.2925

Validated Data Summary, Data Package: W0002-ITC-007

	Samp#	B09WF9		B09WG0		B09WG7		B09WH0		B09WH1		B09WI9	
	Date	3-3-94		3-4-94		3-10-94		3-16-94		3-16-94		3-10-94	
	Location	---		---		---		---		---		---	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
ACENAPHTHENE	UG/KG	350.000	U	340.000	U	330.000	UJ	340.000	U	350.000	U	340.000	UJ
2,4-DINITROPHENOL	UG/KG	860.000	U	820.000	U	800.000	U	820.000	U	860.000	U	820.000	U
4-NITROPHENOL	UG/KG	860.000	U	820.000	U	800.000	U	820.000	U	860.000	U	820.000	U
DIBENZOFURAN	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
2,4-DINITROTOLUENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
2,6-DINITROTOLUENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
DIETHYLPHTHALATE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
4-CHLOROPHENYL-PHENYLETHER	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
FLUORENE	UG/KG	350.000	U	340.000	U	330.000	UJ	340.000	U	350.000	U	340.000	UJ
4-NITROANILINE	UG/KG	860.000	U	820.000	U	800.000	U	820.000	U	860.000	U	820.000	U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	860.000	U	820.000	U	800.000	U	820.000	U	860.000	U	820.000	U
N-NITROSODIPHENYLAMINE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
4-BROMOPHENYL-PHENYLETHER	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
HEXACHLOROBENZENE	UG/KG	350.000	UJ	340.000	UJ	330.000	U	340.000	U	350.000	U	340.000	U
PENTACHLOROPHENOL	UG/KG	860.000	U	820.000	U	800.000	U	820.000	U	860.000	U	820.000	U
PHENANTHRENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
ANTHRACENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
CARBAZOLE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
DI-N-BUTYLPHTHALATE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
FLUORANTHENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
PYRENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
BUTYLBENZYLPHTHALATE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
3,3'-DICHLOROBENZIDINE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
BENZO(A)ANTHRACENE	UG/KG	350.000	UJ	340.000	UJ	330.000	U	340.000	U	350.000	U	340.000	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
CHRYSENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
DI-N-OCTYLPHTHALATE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
BENZO(B)FLUORANTHENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
BENZO(K)FLUORANTHENE	UG/KG	350.000	UJ	340.000	UJ	330.000	U	340.000	U	350.000	U	340.000	U
BENZO(A)PYRENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
INDENO(1,2,3-CD)PYRENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
DIBENZ(A,H)ANTHRACENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U
BENZO(G,H,I)PERYLENE	UG/KG	350.000	U	340.000	U	330.000	U	340.000	U	350.000	U	340.000	U

9613474.2926

010

6/20/94

Verified

6/20/94

Validated Data Summary, Data Package: W0002-ITC-007

	Samp#	B09WJ0		B09WJ3		B09WJ4		B09WJ5		B09WJ7	
	Date	3-11-94		3-14-94		3-14-94		3-15-94		3-16-94	
	Location	---		---		---		---		---	
	Depth	---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
PHENOL	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
BIS(2-CHLOROETHYL)ETHER	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
2-CHLOROPHENOL	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
1,3-DICHLOROBENZENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
1,4-DICHLOROBENZENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
1,2-DICHLOROBENZENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
2-METHYLPHENOL	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
2,2'-OXYBIS(1-CHLOROPROPANE)	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
4-METHYLPHENOL	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
N-NITROSO-DI-N-PROPYLAMINE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
HEXACHLOROETHANE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
NITROBENZENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
ISOPHORONE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
2-NITROPHENOL	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
2,4-DIMETHYLPHENOL	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
2,4-DICHLOROPHENOL	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
1,2,4-TRICHLOROBENZENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
NAPHTHALENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
4-CHLOROANILINE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
HEXACHLOROBUTADIENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
4-CHLORO-3-METHYLPHENOL	UG/KG	340.000	U	330.000	UJ	350.000	UJ	340.000	UJ	350.000	UJ
2-METHYLNAPHTHALENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
HEXACHLOROCYCLOPENTADIENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
2,4,6-TRICHLOROPHENOL	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
2,4,5-TRICHLOROPHENOL	UG/KG	820.000	U	800.000	U	840.000	U	840.000	U	850.000	U
2-CHLORONAPHTHALENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
2-NITROANILINE	UG/KG	820.000	U	800.000	U	840.000	U	840.000	U	850.000	U
DIMETHYLPHTHALATE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
ACENAPHTHYLENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
3-NITROANILINE	UG/KG	820.000	U	800.000	U	840.000	U	840.000	U	850.000	U

Verified

6/20/94

6/20/94

011

9613474.2927

Validated Data Summary, Data Package: W0002-ITC-007

	Samp#	B09WJ0		B09WJ3		B09WJ4		B09WJ5		B09WJ7	
	Date	3-11-94		3-14-94		3-14-94		3-15-94		3-16-94	
	Location	---		---		---		---		---	
	Depth	---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
ACENAPHTHENE	UG/KG	340.000	UJ	330.000	U	350.000	U	340.000	U	350.000	U
2,4-DINITROPHENOL	UG/KG	820.000	U	800.000	U	840.000	U	840.000	U	850.000	U
4-NITROPHENOL	UG/KG	820.000	U	800.000	U	840.000	U	840.000	U	850.000	U
DIBENZOFURAN	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
2,4-DINITROTOLUENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
2,6-DINITROTOLUENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
DIETHYLPHTHALATE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
4-CHLOROPHENYL-PHENYLETHER	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
FLUORENE	UG/KG	340.000	UJ	330.000	U	350.000	U	340.000	U	350.000	U
4-NITROANILINE	UG/KG	820.000	U	800.000	U	840.000	U	840.000	U	850.000	U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	820.000	U	800.000	U	840.000	U	840.000	U	850.000	U
N-NITROSODIPHENYLAMINE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
4-BROMOPHENYL-PHENYLETHER	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
HEXACHLOROBENZENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
PENTACHLOROPHENOL	UG/KG	820.000	U	800.000	U	840.000	U	840.000	U	850.000	U
PHENANTHRENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
ANTHRACENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
CARBAZOLE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
DI-N-BUTYLPHTHALATE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
FLUORANTHENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
PYRENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
BUTYLBENZYLPHTHALATE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
3,3'-DICHLOROBENZIDINE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
BENZO(A)ANTHRACENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
BIS(2-ETHYLHEXYL)PHTHALATE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
CHRYSENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
DI-N-OCTYLPHTHALATE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
BENZO(B)FLUORANTHENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
BENZO(K)FLUORANTHENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
BENZO(A)PYRENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
INDENO(1,2,3-CD)PYRENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
DIBENZ(A,H)ANTHRACENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U
BENZO(G,H,I)PERYLENE	UG/KG	340.000	U	330.000	U	350.000	U	340.000	U	350.000	U

Verified
6/20/94

012
6/20/94

9613474.2920

9613474.2929

~~0000767~~

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WF9

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 167 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3165

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA3165

Level: (low/med) LOW Date Received: 03/05/94

% Moisture: 7 decanted: (Y/N) N Date Extracted: 03/10/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/29/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	~~U~~
621-64-7	N-Nitroso-Di-n-Propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)Methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	860	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	860	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	860	U
83-32-9	Acenaphthene	350	U

Q

013

FORM I SV-1 3/90

6/17/94

~~003~~
6/20/94

9613474.2930

~~0000768~~

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WF9

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 167 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3165

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA3165

Level: (low/med) LOW Date Received: 03/05/94

% Moisture: 7 decanted: (Y/N) N Date Extracted: 03/10/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/29/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
51-28-5	2,4-Dinitrophenol	860	U	
100-02-7	4-Nitrophenol	860	U	
132-64-9	Dibenzofuran	350	U	
121-14-2	2,4-Dinitrotoluene	350	U	
84-66-2	Diethylphthalate	350	U	
7005-72-3	4-Chlorophenyl-phenylether	350	U	
86-73-7	Fluorene	350	U	
100-01-6	4-Nitroaniline	860	U	
534-52-1	4,6-Dinitro-2-Methylphenol	860	U	
86-30-6	N-Nitrosodiphenylamine (1)	350	U	
101-55-3	4-Bromophenyl-phenylether	350	U	
118-74-1	Hexachlorobenzene	350	~~U~~	BJ
87-86-5	Pentachlorophenol	860	U	
85-01-8	Phenanthrene	350	U	
120-12-7	Anthracene	350	U	
86-74-8	Carbazole	350	U	
84-74-2	Di-n-Butylphthalate	350	U	
206-44-0	Fluoranthene	350	U	
129-00-0	Pyrene	350	U	
85-68-7	Butylbenzylphthalate	350	U	
91-94-1	3,3'-Dichlorobenzidine	350	U	
56-55-3	Benzo(a)Anthracene	350	~~U~~	BJ
218-01-9	Chrysene	350	U	
117-81-7	bis(2-Ethylhexyl)Phthalate	350 ~~68~~	~~BJ~~	J
117-84-0	Di-n-Octyl Phthalate	350	U	
205-99-2	Benzo(b)Fluoranthene	350	U	
207-08-9	Benzo(k)Fluoranthene	350	~~U~~	BJ
50-32-8	Benzo(a)Pyrene	350	U	
193-39-5	Indeno(1,2,3-cd)Pyrene	350	U	
53-70-3	Dibenz(a,h)Anthracene	350	U	
191-24-2	Benzo(g,h,i)Perylene	350	U	

014

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 3/90

6/20/94

~~010~~ 6/20/94

9613474.2931

~~BNA - TIC A0000001~~

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09WF9

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 167 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3165

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA3165

Level: (low/med) LOW Date Received: 03/05/94

% Moisture: 7 decanted: (Y/N) N Date Extracted: 03/10/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/29/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.5

Number TICs found: 25

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.90	250	~~J~~
2.	UNKNOWN	3.30	230	~~J~~
3.	UNKNOWN	3.48	97	~~J~~
4.	UNKNOWN	3.80	10000	~~J~~
~~5.~~	~~UNKNOWN~~	~~4.33~~	~~800~~	~~J~~ R
6.	UNKNOWN	4.97	180	~~J~~ JN
7.	UNKNOWN	5.15	82	~~J~~ JN
8.	UNKNOWN	5.48	250	~~J~~ JN
~~9.~~	~~UNKNOWN~~	~~6.05~~	~~1100~~	~~J~~ R
~~10.~~	~~UNKNOWN~~	~~6.20~~	~~1200~~	~~J~~ R
~~11.~~	~~UNKNOWN~~	~~6.92~~	~~1300~~	~~J~~ R
~~12.~~	~~UNKNOWN~~	~~7.72~~	~~1400~~	~~J~~ R
~~13.~~	~~UNKNOWN~~	~~11.47~~	~~1100~~	~~J~~ R
~~14.~~	~~UNKNOWN~~	~~14.68~~	~~350~~	~~J~~ R
~~15.~~	~~UNKNOWN~~	~~19.65~~	~~1300~~	~~J~~ R
16.	UNKNOWN	20.87	7700	~~J~~
17.	UNKNOWN	21.47	220	~~J~~
18.	UNKNOWN	22.15	250	~~J~~
19.	UNKNOWN	22.23	110	~~J~~
20.	UNKNOWN	22.82	270	~~J~~
21.	UNKNOWN	23.28	140	~~J~~
22.	UNKNOWN	23.45	180	~~J~~
23.	UNKNOWN	24.08	160	~~J~~
24.	UNKNOWN	24.68	120	~~J~~
25.	UNKNOWN	25.32	90	~~J~~

015

~~011~~

6/19/94

6/20/94

9613474.2932

~~0000782~~

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WG0
~~WH0320801C~~
J.C 6/7/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 193 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3599

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA3599

Level: (low/med) LOW Date Received: 03/11/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/29/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
108-95-2	Phenol	340	U	
111-44-4	bis(2-Chloroethyl)Ether	340	U	
95-57-8	2-Chlorophenol	340	U	
541-73-1	1,3-Dichlorobenzene	340	U	
106-46-7	1,4-Dichlorobenzene	340	U	
95-50-1	1,2-Dichlorobenzene	340	U	
95-48-7	2-Methylphenol	340	U	
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U	
106-44-5	4-Methylphenol	340	~~U~~	UJ
621-64-7	N-Nitroso-Di-n-Propylamine	340	U	
67-72-1	Hexachloroethane	340	U	
98-95-3	Nitrobenzene	340	U	
78-59-1	Isophorone	340	U	
88-75-5	2-Nitrophenol	340	U	
105-67-9	2,4-Dimethylphenol	340	U	
111-91-1	bis(2-Chloroethoxy)Methane	340	U	
120-83-2	2,4-Dichlorophenol	340	U	
120-82-1	1,2,4-Trichlorobenzene	340	U	
91-20-3	Naphthalene	340	U	
106-47-8	4-Chloroaniline	340	U	
87-68-3	Hexachlorobutadiene	340	U	
59-50-7	4-Chloro-3-Methylphenol	340	U	
91-57-6	2-Methylnaphthalene	340	U	
77-47-4	Hexachlorocyclopentadiene	340	U	
88-06-2	2,4,6-Trichlorophenol	340	U	
95-95-4	2,4,5-Trichlorophenol	820	U	
91-58-7	2-Chloronaphthalene	340	U	
88-74-4	2-Nitroaniline	820	U	
131-11-3	Dimethylphthalate	340	U	
208-96-8	Acenaphthylene	340	U	
606-20-2	2,6-Dinitrotoluene	340	U	
99-09-2	3-Nitroaniline	820	U	016
83-32-9	Acenaphthene	340	U	

6/17/94 ~~012~~

6/20/94

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WX0
~~WH0320801C~~
J.C. 6/7/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 193 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3599

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA3599

Level: (low/med) LOW Date Received: 03/11/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/29/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
51-28-5	2,4-Dinitrophenol	820	U	
100-02-7	4-Nitrophenol	820	U	
132-64-9	Dibenzofuran	340	U	
121-14-2	2,4-Dinitrotoluene	340	U	
84-66-2	Diethylphthalate	340	U	
7005-72-3	4-Chlorophenyl-phenylether	340	U	
86-73-7	Fluorene	340	U	
100-01-6	4-Nitroaniline	820	U	
534-52-1	4,6-Dinitro-2-Methylphenol	820	U	
86-30-6	N-Nitrosodiphenylamine (1)	340	U	
101-55-3	4-Bromophenyl-phenylether	340	U	
118-74-1	Hexachlorobenzene	340	~~U~~	UJ
87-86-5	Pentachlorophenol	820	U	
85-01-8	Phenanthrene	340	U	
120-12-7	Anthracene	340	U	
86-74-8	Carbazole	340	U	
84-74-2	Di-n-Butylphthalate	340	U	
206-44-0	Fluoranthene	340	U	
129-00-0	Pyrene	340	U	
85-68-7	Butylbenzylphthalate	340	U	
91-94-1	3,3'-Dichlorobenzidine	340	U	
56-55-3	Benzo(a)Anthracene	340	~~U~~	UJ
218-01-9	Chrysene	340	U	
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U	
117-84-0	Di-n-Octyl Phthalate	340	U	
205-99-2	Benzo(b)Fluoranthene	340	U	
207-08-9	Benzo(k)Fluoranthene	340	~~U~~	UJ
50-32-8	Benzo(a)Pyrene	340	U	
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U	
53-70-3	Dibenz(a,h)Anthracene	340	U	
191-24-2	Benzo(g,h,i)Perylene	340	U	

(1) - Cannot be separated from Diphenylamine

Reviewed 10/25/94

9613474.2934

~~0000784~~

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09WG0 KHP/6/7/94
~~WH0320801C~~

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 193 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3599

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA3599

Level: (low/med) LOW Date Received: 03/11/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/29/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	2.90	160	~~BJ~~	UR
2.	UNKNOWN	3.28	190	~~ABJ~~	UR
3. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.78	8200	~~JNAB~~	UR
4.	UNKNOWN	5.48	110	~~ABJ~~	UR
5.	UNKNOWN	13.58	180	~~BJ~~	UJN
6.	UNKNOWN	13.92	110	~~BJ~~	UJN
7.	UNKNOWN Phthalate	16.62	150	~~BJ~~	UR
8.	UNKNOWN	22.13	72	~~J~~	JN
9.	UNKNOWN	23.52	2100	~~BJ~~	UJN

6/17/94

6/17/94

018

9613474.2935

0000840

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
B09WG7 4/12/94
~~B09WJ7~~
~~40326603~~ JDR 4/14/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3950

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA3950

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/30/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
108-95-2	Phenol	330	U	
111-44-4	bis(2-Chloroethyl)Ether	330	U	
95-57-8	2-Chlorophenol	330	U	
541-73-1	1,3-Dichlorobenzene	330	U	
106-46-7	1,4-Dichlorobenzene	330	U	
95-50-1	1,2-Dichlorobenzene	330	U	
95-48-7	2-Methylphenol	330	U	
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U	
106-44-5	4-Methylphenol	330	U	
621-64-7	N-Nitroso-Di-n-Propylamine	330	U	
67-72-1	Hexachloroethane	330	U	
98-95-3	Nitrobenzene	330	U	
78-59-1	Isophorone	330	U	
88-75-5	2-Nitrophenol	330	U	
105-67-9	2,4-Dimethylphenol	330	U	
111-91-1	bis(2-Chloroethoxy)Methane	330	U	
120-83-2	2,4-Dichlorophenol	330	U	
120-82-1	1,2,4-Trichlorobenzene	330	U	
91-20-3	Naphthalene	330	U	
106-47-8	4-Chloroaniline	330	U	
87-68-3	Hexachlorobutadiene	330	U	
59-50-7	4-Chloro-3-Methylphenol	330	U	
91-57-6	2-Methylnaphthalene	330	U	
77-47-4	Hexachlorocyclopentadiene	330	U	
88-06-2	2,4,6-Trichlorophenol	330	U	
95-95-4	2,4,5-Trichlorophenol	800	U	
91-58-7	2-Chloronaphthalene	330	U	
88-74-4	2-Nitroaniline	800	U	
131-11-3	Dimethylphthalate	330	U	
208-96-8	Acenaphthylene	330	U	6/30/94
606-20-2	2,6-Dinitrotoluene	330	U	
99-09-2	3-Nitroaniline	800	U	
83-32-9	Acenaphthene	330	~~U~~	~~UR~~ U

FORM I SV-1 3/90

6/17/94

9613474.2936

~~0000841~~

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
B09WG7 KAP/6
~~B09WJ7~~
~~40326603-J02~~
~~wt/1/94~~

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3950

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA3950

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/30/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
51-28-5	2,4-Dinitrophenol	800	U	
100-02-7	4-Nitrophenol	800	U	
132-64-9	Dibenzofuran	330	U	
121-14-2	2,4-Dinitrotoluene	330	U	
84-66-2	Diethylphthalate	330	U	
7005-72-3	4-Chlorophenyl-phenylether	330	U	
86-73-7	Fluorene	330	~~U~~	~~UR~~
100-01-6	4-Nitroaniline	800	U	
534-52-1	4,6-Dinitro-2-Methylphenol	800	U	
86-30-6	N-Nitrosodiphenylamine (1)	330	U	
101-55-3	4-Bromophenyl-phenylether	330	U	
118-74-1	Hexachlorobenzene	330	U	
87-86-5	Pentachlorophenol	800	U	
85-01-8	Phenanthrene	330	U	
120-12-7	Anthracene	330	U	
86-74-8	Carbazole	330	U	
84-74-2	Di-n-Butylphthalate	330	U	
206-44-0	Fluoranthene	330	U	
129-00-0	Pyrene	330	U	
85-68-7	Butylbenzylphthalate	330	U	
91-94-1	3,3'-Dichlorobenzidine	330	U	
56-55-3	Benzo(a)Anthracene	330	U	
218-01-9	Chrysene	330	U	
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U	
117-84-0	Di-n-Octyl Phthalate	330	U	
205-99-2	Benzo(b)Fluoranthene	330	U	
207-08-9	Benzo(k)Fluoranthene	330	U	
50-32-8	Benzo(a)Pyrene	330	U	
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U	
53-70-3	Dibenz(a,h)Anthracene	330	U	
191-24-2	Benzo(g,h,i)Perylene	330	U	

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 6/17/94 020 3/90

9613474.2937

~~BNA-TIC C0000001~~

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BO9WG7

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3950

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA3950

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: 1 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/30/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.1

Number TICs found: 14

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.87	350	~~BAJ~~
2.	UNKNOWN	5.02	4300	~~BAJ~~
3. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	5.15	6100	~~BAJN~~
4.	UNKNOWN	5.87	940	~~BAJ~~
5.	UNKNOWN	6.17	320	~~BAJ~~
6.	UNKNOWN	6.60	290	~~BAJ~~
7.	UNKNOWN	11.92	67	~~BJ~~
8. 719-22-2	2,5-CYCLOHEXADIENE-1,4-DIONE	12.02	70	~~BJN~~
9.	UNKNOWN	12.97	340	~~BJ~~
10.	UNKNOWN	13.40	260	~~BJ~~
11.	UNKNOWN PHTHALATE	16.50	610	~~BJ~~
12.	~~UNKNOWN~~ Hexadecanoic Acid Isomer	17.25	72	~~J~~
13.	~~UNKNOWN~~ Hexadecanoic Acid Isomer	20.55	110	~~J~~
14.	UNKNOWN	23.10	1200	~~BJ~~

Q: N, RRRRRRRRRRRRRR

6/17/94 6/17/94 6/17/94 ~~EA~~ (SBLKAA4039) 6/18/94

Associated blank does not contain any TICs. Refer to Attmt 5.

6/17/94

FORM I SV-TIC 3/90

9613474.2938

~~0000056~~

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

609WHO ~~40334401~~ 102 6/1/97

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4172

Sample wt/vol: 31.0 (g/mL) G Lab File ID: AA4172

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 6 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	~~U~~
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	820	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	820	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	820	U
83-32-9	Acenaphthene	340	U

6/17/94

9613474.2939

0000857

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BG9W40 ~~40324401~~ JDR 4/1/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4172

Sample wt/vol: 31.0 (g/mL) G Lab File ID: AA4172

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 6 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	820	U
100-02-7	4-Nitrophenol	820	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	820	U
534-52-1	4,6-Dinitro-2-Methylphenol	820	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	820	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 6/17/94 3/90

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09WH0

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4172

Sample wt/vol: 31.0 (g/mL) G Lab File ID: AA4172

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 6 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.1

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	4.87	90	~~AJ~~	R
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	5.03	6300	~~BAJN~~	
3.	~~UNKNOWN~~ Hexanedioic Acid Isomer	16.23	110	~~J~~	
4.	~~UNKNOWN~~ Hexanedioic Acid Isomer	20.50	6700	~~BJ~~ B	

6/17/94
6/17/94

6/17/94

6/28/94

6/17/94

revised page 06/28/94

9613474.2941

0000871

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WH1
~~40334402~~ JOR 6/1/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4183

Sample wt/vol: 30.5 (g/mL) G Lab File ID: AA4183

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 8 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
108-95-2	Phenol	350	U	
111-44-4	bis(2-Chloroethyl)Ether	350	U	
95-57-8	2-Chlorophenol	350	U	
541-73-1	1,3-Dichlorobenzene	350	U	
106-46-7	1,4-Dichlorobenzene	350	U	
95-50-1	1,2-Dichlorobenzene	350	U	
95-48-7	2-Methylphenol	350	U	
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U	
106-44-5	4-Methylphenol	350	U	
621-64-7	N-Nitroso-Di-n-Propylamine	350	U	
67-72-1	Hexachloroethane	350	U	
98-95-3	Nitrobenzene	350	U	
78-59-1	Isophorone	350	U	
88-75-5	2-Nitrophenol	350	U	
105-67-9	2,4-Dimethylphenol	350	U	
111-91-1	bis(2-Chloroethoxy)Methane	350	U	
120-83-2	2,4-Dichlorophenol	350	U	
120-82-1	1,2,4-Trichlorobenzene	350	U	
91-20-3	Naphthalene	350	U	
106-47-8	4-Chloroaniline	350	U	
87-68-3	Hexachlorobutadiene	350	U	
59-50-7	4-Chloro-3-Methylphenol	350	~~U~~	UJ
91-57-6	2-Methylnaphthalene	350	U	
77-47-4	Hexachlorocyclopentadiene	350	U	
88-06-2	2,4,6-Trichlorophenol	350	U	
95-95-4	2,4,5-Trichlorophenol	860	U	
91-58-7	2-Chloronaphthalene	350	U	
88-74-4	2-Nitroaniline	860	U	
131-11-3	Dimethylphthalate	350	U	
208-96-8	Acenaphthylene	350	U	
606-20-2	2,6-Dinitrotoluene	350	U	
99-09-2	3-Nitroaniline	860	U	
83-32-9	Acenaphthene	350	U	

6/17/94

9613474.2942

~~0000072~~

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WH1 ~~40334403~~ JDR 4/1/97

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4183

Sample wt/vol: 30.5 (g/mL) G Lab File ID: AA4183

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 8 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	860	U
100-02-7	4-Nitrophenol	860	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	860	U
534-52-1	4,6-Dinitro-2-Methylphenol	860	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	860	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-Butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)Anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)Phthalate	350	U
117-84-0	Di-n-Octyl Phthalate	350	U
205-99-2	Benzo(b)Fluoranthene	350	U
207-08-9	Benzo(k)Fluoranthene	350	U
50-32-8	Benzo(a)Pyrene	350	U
193-39-5	Indeno(1,2,3-cd)Pyrene	350	U
53-70-3	Dibenz(a,h)Anthracene	350	U
191-24-2	Benzo(g,h,i)Perylene	350	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 6/17/94 3/90

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BO9WH1

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4183

Sample wt/vol: 30.5 (g/mL) G Lab File ID: AA4183

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 8 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.8

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.87	100	~~AJ~~
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	5.05	7400	~~BAJN~~
3.	UNKNOWN Acid	6.35	100	~~J~~
4.	~~UNKNOWN~~ Hexanedioic Acid Isomer	16.25	310	~~J~~
5.	~~UNKNOWN~~ Hexanedioic Acid Isomer	20.52	7100	~~BJ~~

Q
R
R
R
R
R

6/17/94
6/17/94

6/20/94

6/17/94

revised page 6/20/94

9613474.2944

~~0000810~~

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WI9 ~~40326601~~ JDA 4/1/97

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3921

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA3921

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/30/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	820	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	820	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	820	U
83-32-9	Acenaphthene	340	~~U~~ ~~UR~~ U

@ 6/20/97

FORM I SV-1 3/90

6/17/94

9613474.2945

~~0000811~~

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WI9 ~~40326601~~ JDR 6/1/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3921

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA3921

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/30/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	820	U
100-02-7	4-Nitrophenol	820	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	~~U~~
100-01-6	4-Nitroaniline	820	U
534-52-1	4,6-Dinitro-2-Methylphenol	820	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	820	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

Q

6/20/94 ~~UR~~ UI

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 6/17/94 3/90

029

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BO9WI9

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3921

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA3921

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/30/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

Number TICs found: 18

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

6/17/94

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN Alkane	4.87	280	~~BAJ~~	JN
2.	UNKNOWN	5.02	4800	~~BAJ~~	JN
3. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	5.13	6800	~~BAJN~~	JN
4.	UNKNOWN	5.87	1100	~~BAJ~~	JN
5.	UNKNOWN	6.17	240	~~BAJ~~	JN
6.	UNKNOWN	6.60	530	~~BAJ~~	JN
7.	UNKNOWN	11.92	100	~~BJ~~	JN
8. 719-22-2	2,5-CYCLOHEXADIENE-1,4-DIONE	12.02	100	~~BJN~~	JN
9.	UNKNOWN	12.97	430	~~BJ~~	JN
10.	UNKNOWN	13.40	90	~~BJ~~	JN
11.	UNKNOWN PHTHALATE	16.50	150	~~BJ~~	JN
12.	UNKNOWN	17.25	71	~~J~~	JN
13.	UNKNOWN	18.65	100	~~BJ~~	JN
14.	UNKNOWN	22.27	76	~~J~~	JN
15.	UNKNOWN	23.10	1300	~~BJ~~	JN
16.	UNKNOWN	23.77	190	~~J~~	JN
17.	UNKNOWN	24.02	110	~~J~~	JN
18.	UNKNOWN	25.82	89	~~J~~	JN
19.	Unknown	8.22	70	—	JN
20.	Unknown	9.67	70	—	JN

Associated Blank (SBLKAA4039) does not contain any TICs.

6/17/94

FORM I SV-TIC 3/90

9613474.2947

0000825

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJC ~~40326602~~ JOR 6/1/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3930

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA3930

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/30/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
108-95-2	Phenol	340	U	
111-44-4	bis(2-Chloroethyl)Ether	340	U	
95-57-8	2-Chlorophenol	340	U	
541-73-1	1,3-Dichlorobenzene	340	U	
106-46-7	1,4-Dichlorobenzene	340	U	
95-50-1	1,2-Dichlorobenzene	340	U	
95-48-7	2-Methylphenol	340	U	
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U	
106-44-5	4-Methylphenol	340	U	
621-64-7	N-Nitroso-Di-n-Propylamine	340	U	
67-72-1	Hexachloroethane	340	U	
98-95-3	Nitrobenzene	340	U	
78-59-1	Isophorone	340	U	
88-75-5	2-Nitrophenol	340	U	
105-67-9	2,4-Dimethylphenol	340	U	
111-91-1	bis(2-Chloroethoxy)Methane	340	U	
120-83-2	2,4-Dichlorophenol	340	U	
120-82-1	1,2,4-Trichlorobenzene	340	U	
91-20-3	Naphthalene	340	U	
106-47-8	4-Chloroaniline	340	U	
87-68-3	Hexachlorobutadiene	340	U	
59-50-7	4-Chloro-3-Methylphenol	340	U	
91-57-6	2-Methylnaphthalene	340	U	
77-47-4	Hexachlorocyclopentadiene	340	U	
88-06-2	2,4,6-Trichlorophenol	340	U	
95-95-4	2,4,5-Trichlorophenol	820	U	
91-58-7	2-Chloronaphthalene	340	U	
88-74-4	2-Nitroaniline	820	U	
131-11-3	Dimethylphthalate	340	U	
208-96-8	Acenaphthylene	340	U	
606-20-2	2,6-Dinitrotoluene	340	U	
99-09-2	3-Nitroaniline	820	U	
83-32-9	Acenaphthene	340	~~U~~	~~UR~~

6/20/94 ~~UR~~ US

FORM I SV-1 3/90

6/17/94

9613474.2948

0000826

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ0 ~~40326602~~ JOR 6/1/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3930

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA3930

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/30/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
51-28-5	2,4-Dinitrophenol	820	U	
100-02-7	4-Nitrophenol	820	U	
132-64-9	Dibenzofuran	340	U	
121-14-2	2,4-Dinitrotoluene	340	U	
84-66-2	Diethylphthalate	340	U	
7005-72-3	4-Chlorophenyl-phenylether	340	U	6/20/94
86-73-7	Fluorene	340	~~U~~	~~UR~~ UJ
100-01-6	4-Nitroaniline	820	U	
534-52-1	4,6-Dinitro-2-Methylphenol	820	U	
86-30-6	N-Nitrosodiphenylamine (1)	340	U	
101-55-3	4-Bromophenyl-phenylether	340	U	
118-74-1	Hexachlorobenzene	340	U	
87-86-5	Pentachlorophenol	820	U	
85-01-8	Phenanthrene	340	U	
120-12-7	Anthracene	340	U	
86-74-8	Carbazole	340	U	
84-74-2	Di-n-Butylphthalate	340	U	
206-44-0	Fluoranthene	340	U	
129-00-0	Pyrene	340	U	
85-68-7	Butylbenzylphthalate	340	U	
91-94-1	3,3'-Dichlorobenzidine	340	U	
56-55-3	Benzo(a)Anthracene	340	U	
218-01-9	Chrysene	340	U	
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U	
117-84-0	Di-n-Octyl Phthalate	340	U	
205-99-2	Benzo(b)Fluoranthene	340	U	
207-08-9	Benzo(k)Fluoranthene	340	U	
50-32-8	Benzo(a)Pyrene	340	U	
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U	
53-70-3	Dibenz(a,h)Anthracene	340	U	
191-24-2	Benzo(g,h,i)Perylene	340	U	

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 6/17/94 3/90

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
BO9WJ0

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3930

Sample wt/vol: 30.1 (g/mL) G Lab File ID: AA3930

Level: (low/med) LOW Date Received: 03/16/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/30/94

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.		UNKNOWN	4.87	340	~~BAJ~~	N
2.		~~UNKNOWN~~ 2-Pentanone, 4-Hydroxy-4-met	5.02	5100	~~BAJ~~	R
3.	123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	5.13	7300	~~BAJN~~	R
4.		UNKNOWN Ketone	5.87	1300	~~BAJ~~	R
5.		UNKNOWN Ketone	6.17	250	~~BAJ~~	R
6.		UNKNOWN Ketone	6.60	510	~~BAJ~~	R
7.		UNKNOWN	11.92	100	~~BJ~~	N
8.	719-22-2	2,5-CYCLOHEXADIENE-1,4-DIONE	12.02	120	~~BJN~~	N
9.		UNKNOWN	12.97	420	~~BJ~~	N
10.		UNKNOWN	13.40	130	~~BJ~~	N
11.		UNKNOWN PHTHALATE	16.50	220	~~BJ~~	N
12.		UNKNOWN	23.08	1300	~~BJ~~	N
13.		Unknown Hydrocarbon	23.77	80	—	JN

6/17/94

6/17/94

Associated blank (SBLKAA4039) does not contain any TICs.

6/17/94

9613474.2950

0000886

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ3
~~40334404~~ JDR 6/1/97

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4190

Sample wt/vol: 30.9 (g/mL) G Lab File ID: AA4190

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	~~U~~
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	800	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	800	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	800	U
83-32-9	Acenaphthene	330	U

Q

6/17/94

9613474.2951

0000887

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ3 ~~40334404~~ JAR 4/1/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4190

Sample wt/vol: 30.9 (g/mL) G Lab File ID: AA4190

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	800	U
100-02-7	4-Nitrophenol	800	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	800	U
534-52-1	4,6-Dinitro-2-Methylphenol	800	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	800	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 6/17/94 3/90

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B09WJ3

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4190

Sample wt/vol: 30.9 (g/mL) G Lab File ID: AA4190

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.0

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	4.87	99	~~AJ~~	R
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	5.05	7100	~~BAJN~~	UR
3.	UNKNOWN	16.25	75	~~J~~	JH
4.	~~UNKNOWN~~ Hexanedioic Acid ~~Isomer~~	20.52	9700	~~BJ~~	BTN

6/17/94

6/17/94

9613474.2953

0000901

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

309WJ4
~~40334405~~ JDK
4/1/95

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4199

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA4199

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 6 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
108-95-2	Phenol	350	U	
111-44-4	bis(2-Chloroethyl)Ether	350	U	
95-57-8	2-Chlorophenol	350	U	
541-73-1	1,3-Dichlorobenzene	350	U	
106-46-7	1,4-Dichlorobenzene	350	U	
95-50-1	1,2-Dichlorobenzene	350	U	
95-48-7	2-Methylphenol	350	U	
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U	
106-44-5	4-Methylphenol	350	U	
621-64-7	N-Nitroso-Di-n-Propylamine	350	U	
67-72-1	Hexachloroethane	350	U	
98-95-3	Nitrobenzene	350	U	
78-59-1	Isophorone	350	U	
88-75-5	2-Nitrophenol	350	U	
105-67-9	2,4-Dimethylphenol	350	U	
111-91-1	bis(2-Chloroethoxy)Methane	350	U	
120-83-2	2,4-Dichlorophenol	350	U	
120-82-1	1,2,4-Trichlorobenzene	350	U	
91-20-3	Naphthalene	350	U	
106-47-8	4-Chloroaniline	350	U	
87-68-3	Hexachlorobutadiene	350	U	
59-50-7	4-Chloro-3-Methylphenol	350	~~U~~	US
91-57-6	2-Methylnaphthalene	350	U	
77-47-4	Hexachlorocyclopentadiene	350	U	
88-06-2	2,4,6-Trichlorophenol	350	U	
95-95-4	2,4,5-Trichlorophenol	840	U	
91-58-7	2-Chloronaphthalene	350	U	
88-74-4	2-Nitroaniline	840	U	
131-11-3	Dimethylphthalate	350	U	
208-96-8	Acenaphthylene	350	U	
606-20-2	2,6-Dinitrotoluene	350	U	
99-09-2	3-Nitroaniline	840	U	
83-32-9	Acenaphthene	350	U	

FORM I SV-1 3/90

6/17/94

9613474.2954

0000902

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

~~40334405~~ 1809WJJ JDK 6/1/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4199

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA4199

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 6 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	840	U
100-02-7	4-Nitrophenol	840	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	840	U
534-52-1	4,6-Dinitro-2-Methylphenol	840	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	840	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-Butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)Anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)Phthalate	350	U
117-84-0	Di-n-Octyl Phthalate	350	U
205-99-2	Benzo(b)Fluoranthene	350	U
207-08-9	Benzo(k)Fluoranthene	350	U
50-32-8	Benzo(a)Pyrene	350	U
193-39-5	Indeno(1,2,3-cd)Pyrene	350	U
53-70-3	Dibenz(a,h)Anthracene	350	U
191-24-2	Benzo(g,h,i)Perylene	350	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 6/17/94 3/90

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B09WJ4

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4199

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA4199

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 6 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.2

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	4.87	94	~~AJ~~	R.
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	5.05	6900	~~BAJN~~	WR
3.	UNKNOWN	5.75	71	~~J~~	WR
4.	UNKNOWN Acid	6.33	74	~~J~~	WR
5.	~~UNKNOWN~~ Hexanedioic Acid Isomer	16.25	420	~~J~~	WR
6.	~~UNKNOWN~~ Hexanedioic Acid Isomer	20.53	15000	~~BJ~~ B	WR

6/17/94
6/17/94
6/17/94

5/6/2/94

6/17/94

FORM I SV-TIC 3/90

revised 5/6/2/94

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

~~40334406~~ 609WJS JDR 6/1/97

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4207

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA4207

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 5 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-Propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)Methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	~~U~~
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	840	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	840	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	840	U
83-32-9	Acenaphthene	340	U

Q

6/17/94

9613474.2957

0000917

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJS JOK ~~40334406~~ 6/1/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4207

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA4207

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 5 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	840	U
100-02-7	4-Nitrophenol	840	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	840	U
534-52-1	4,6-Dinitro-2-Methylphenol	840	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	840	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-Butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)Anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)Phthalate	340	U
117-84-0	Di-n-Octyl Phthalate	340	U
205-99-2	Benzo(b)Fluoranthene	340	U
207-08-9	Benzo(k)Fluoranthene	340	U
50-32-8	Benzo(a)Pyrene	340	U
193-39-5	Indeno(1,2,3-cd)Pyrene	340	U
53-70-3	Dibenz(a,h)Anthracene	340	U
191-24-2	Benzo(g,h,i)Perylene	340	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 6/17/94 3/90

041

DNA-TIC J0000001

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
R09WJ5

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4207

Sample wt/vol: 30.2 (g/mL) G Lab File ID: AA4207

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 5 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/94

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.0

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
	1.	UNKNOWN	4.87	140	~~AJ~~	R
Unknit	2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	5.00	7000	~~BATN~~	UR
	3.	~~UNKNOWN~~ Hexanedioic Acid Isomer	16.27	110	~~J~~	UH
Unknit	4.	~~UNKNOWN~~ Hexanedioic Acid Isomer	20.53	10000	~~BJ~~	B UH

5/12/94

6/17/94

FORM I SV-TIC 3/90

Revised page 5/12/94

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ7 ~~40334408~~ JOR 6/1/94

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4215

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA4215

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 7 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-Propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)Methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	~~U~~
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	850	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	850	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	850	U
83-32-9	Acenaphthene	350	U

Q

FORM I SV-1 3/90

6/17/94

9613474.2960

0000932

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09WJ7 ~~40334408~~ JDR 4/1/97

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4215

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA4215

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 7 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	850	U
100-02-7	4-Nitrophenol	850	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	850	U
534-52-1	4,6-Dinitro-2-Methylphenol	850	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	850	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-Butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)Anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)Phthalate	350	U
117-84-0	Di-n-Octyl Phthalate	350	U
205-99-2	Benzo(b)Fluoranthene	350	U
207-08-9	Benzo(k)Fluoranthene	350	U
50-32-8	Benzo(a)Pyrene	350	U
193-39-5	Indeno(1,2,3-cd)Pyrene	350	U
53-70-3	Dibenz(a,h)Anthracene	350	U
191-24-2	Benzo(g,h,i)Perylene	350	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 6/17/94 3/90

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BO9WJ7

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4215

Sample wt/vol: 30.4 (g/mL) G Lab File ID: AA4215

Level: (low/med) LOW Date Received: 03/18/94

% Moisture: 7 decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/06/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.0

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
	1.	UNKNOWN	4.87	110	~~AJ~~	R
6/17/94	2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	5.00	6200	~~BAJN~~	UR
	3.	UNKNOWN Acid	6.35	83	~~J~~	JN
6/17/94	4.	UNKNOWN PHTHALATE	16.45	490	~~J~~	R
	5.	~~UNKNOWN~~ Hexanedioic Acid Isomer	20.52	180	~~BJ~~	UJN

6/17/94

9613474.2962

ATTACHMENT 4

LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION

9613474.2963

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

JUN 1994 RECEIVED SDLA

Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352
Attn: J.A. Lerch

June 3, 1994

Job Number: 167; 193; 212; 230 (Corrected Certificate)

P.O. Number: N/A

This is the Certificate of Analysis for the following samples:

SDG:	W0002
Client Project ID:	Westinghouse Hanford
Date Received by Lab:	03/05/94; 03/11/94; 03/16/94; 03/18/94
Number of Samples:	Eighteen (18)
Sample Type:	Soil - fifteen (15), Trip Blank - three (3)

I. Introduction

On March 5, March 11, March 16 and March 18, 1994, fifteen (15) soil samples and three (3) trip blank samples arrived at the ITAS-Richland, Washington and were transferred to ITAS-Knoxville for chemical analysis. The list of analytical tests performed, as well as date of receipt and analysis, can be found in the attached report.

II. Analytical Results/Methodology

The analytical results for this report are presented by analytical test. Each set of data will include sample identification information and the analytical results. Please note that the data are not blank corrected.

The samples were analyzed for Target Compound List (TCL) volatiles by gas chromatography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

Reviewed and Approved:

Sheree' A. Schneider
Project Manager

II. Analytical Results/Methodology (Continued)

The samples were analyzed for Target Compound List (TCL) semivolatiles by gas chromatography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

The samples were analyzed for Target Compound List (TCL) pesticides and PCBs by gas chromatography/electron capture detection (GC/ECD) in accordance with the EPA CLP 3/90 Statement of Work.

The samples were analyzed for Target Analyte List (TAL) metals by cold vapor atomic absorption spectroscopy (CVAA), graphite furnace atomic absorption spectroscopy (GFAA), and inductively coupled plasma spectroscopy (ICP) in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for total cyanide in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for nitrate-nitrite based on EPA method 353.2.

The samples were analyzed for anions by ion chromatography using EPA method 300.0.

The samples were analyzed for total high boiling petroleum hydrocarbons as diesel range organics (DRO) with a kerosene spike by gas chromatography/flame ionization detection (GC/FID) based on method 8015.

III. Quality Control

The volatiles analyses were performed March 8, March 13, March 21, March 22 through 24, 1994 by purge and trap with a J & W DB-624 column on Hewlett-Packard 5970 and Finnigan INCOS 500 GC/MS/DS units. Sample B09WF9 was analyzed as a matrix spike and a matrix spike duplicate set. Matrix effects were confirmed as the cause of low internal standard recoveries in sample BO9WJ0 in a reanalysis. Surrogate 1,2-dichloroethane-d4 recovery fell outside of QC limits in sample BO9WJ0 due to internal standard problems. Sample BO9WJ6 was also analyzed as a matrix spike and a matrix spike duplicate set.

The semivolatiles analyses were performed March 15-16, March 27, March 29-30 and April 5-6, 1994 by direct injection of sample extract on a Restek XTI-5 capillary column on a Finnigan INCOS XL and 4500 GC/MS/DS unit. Sample B09WF9 was analyzed as a matrix spike and a matrix spike duplicate set. Sample BO9WH0 was also analyzed as a matrix spike and a matrix spike duplicate set in which the recoveries of phenol and 4-chloro-3-methylphenol fell outside of QC limits.

III. Quality Control (Continued)

Data were reported with qualifiers as follows:

U - Compound analyzed for but not detected; value given is quantitation limit.
E - Compound exceeded calibration range.
D - Compound analyzed at a secondary dilution factor.
J - Compound detected but below quantitation limit; value estimated.
S - Spiked compound.
B - Compound found in method blank.
A - Suspected aldol condensation product.
Y - Indistinguishable isomer in tentatively identified compounds.
N - Presumptive evidence of compound presence.

The samples were analyzed for Pesticides/PCBs using DB-608 and DB-1701 0.53mm ID megabore capillary columns. 1.0 μl was injected for each column. Two blank spikes (LCS's) were analyzed with acceptable recoveries. A matrix spike and matrix spike duplicate were analyzed and reported for sample BO9WJ3 with acceptable results. Sample chromatograms that were manually integrated will be denoted by an M+ and an M-. The performance evaluation mixture which ran at 1752 on 5890C on March 25, 1994, PEMKD, had methoxychlor greater than 25 RPD (25.1 RPD). There were no positives for methoxychlor in the affected samples and the PEM on the confirmation column met all criteria.

Data were reported using qualifiers as follows:

U - Compound analyzed for but not detected; value given is the quantitation limit.
D - Compound analyzed at a secondary dilution; DL was appended to the sample number.
X - A flag that FORMASTER III inserts when the data were entered manually.
Z - Compound's response was such that it exceeded the established linearity range. The value is estimated.
J - Compound detected but below the quantitation limit; value estimated.
P - The percent difference for the calculated values from the two analytical columns differed by 25.0% or more.

The samples were digested on March 25 and April 1, 1994 for ICP and March 25 and March 31, 1994 for GFAA. The samples for mercury analysis were prepared just prior to analysis. The CVAA analysis for mercury was performed on March 24 and April 1, 1994; the GFAA analysis for arsenic, lead, selenium and thallium were performed from March 25 through April 2, 1994; the remaining metals were analyzed by ICP on March 29, April 2 and April 11, 1994. All run QC was acceptable. A duplicate/spike pair was prepared using sample number B09WF9. Spike recovery (accuracy) results

III. Quality Control (Continued)

were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for arsenic by GFAA analysis. As the titanium concentration was greater than four times (4X) the spike added spiking criteria are not applicable for this analyte. Duplicate RPD (precision) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for vanadium and titanium by ICP analysis. MSAs were performed as required by CLP protocol.

Data were reported with qualifiers as follows:

"C" Qualifiers

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
B - Value greater than instrument detection limit, but less than contract required quantitation limit.

"Q" Qualifiers

* - Duplicate analysis outside control limits.
N - Spiked sample recovery outside control limits.
W - Post-digestion spike for GFAA was out of control limits (85-115%), while sample absorbance was less than 50% of spike absorbance.
S - The reported value was determined by method of standard additions.

"M" Qualifiers

P - Analysis performed by ICP.
V - Analysis performed by CVAA.
F - Analysis performed by GFAA.
C - Cyanide analysis by manual distillation/colorimetric determination.

Miscellaneous

D - Duplicate.
S - Spike.
NR - Not required.
G - Native analyte > 4 times spike added, therefore, acceptance criteria do not apply.
X - Detection limits higher than normal due to sample matrix interferences.

III. Quality Control (Continued)

The samples were analyzed for total high boiling petroleum hydrocarbons as kerosene by gas chromatography/flame ionization detection using an SPB-1 column on a Hewlett Packard GC. Matrix spike/matrix spike analyses were performed using sample B09WF9 with acceptable results. Surrogates were not spiked into the matrix spike and duplicate due to operator error. This error is believed not to effect the data integrity since the matrix spikes were present in place of the surrogates. Spikes were injected with kerosene standard and reported out in terms of diesel range organics. All matrix spikes and laboratory control samples (LCS) had acceptable recoveries.

On March 29, 1994, the samples were analyzed for nitrate-nitrite by cadmium reduction followed by colorimetric determination using the LACHAT QuikChem automated flow injection analyzer (QuikChem Method No. 10-107-04-1-C). Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

The samples were analyzed for anions on March 26 and April 2, 1994. Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

III. Quality Control (Continued)

Table I is a cross reference between client IDs and abbreviated client IDs.

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA3163	BO9WF9	SOIL	METALS
AA3164	BO9WF9	SOIL	VOC
AA3165	BO9WF9	SOIL	SVOC
AA3166	BO9WF9	SOIL	ANIONS
AA3167	BO9WF9	SOIL	NO3NO2
AA3168	BO9WF9	SOIL	CN
AA3169	BO9WF9	SOIL	TPH
AA3170	BO9WG2	WATER	VOC
AA3586	BO9WG0	SOIL	METALS
AA3598	BO9WG0	SOIL	VOC
AA3599	BO9WG0	SOIL	SVOC
AA3600	BO9WG0	SOIL	ANIONS
AA3625	BO9WG0	SOIL	NO3NO2
AA3626	BO9WG0	SOIL	CN
AA3627	BO9WG0	SOIL	TPH
AA3628	BO9WG2	SOIL	VOC
AA3919	BO9WI9	SOIL	METALS
AA3920	BO9WI9	SOIL	VOC
AA3921	BO9WI9	SOIL	SVOC
AA3922	BO9WI9	SOIL	ANIONS
AA3923	BO9WI9	SOIL	NO3NO2
AA3924	BO9WI9	SOIL	PEST/PCB
AA3925	BO9WI9	SOIL	CN
AA3926	BO9WI9	SOIL	TPH
AA3928	BO9WJ0	SOIL	METALS
AA3929	BO9WJ0	SOIL	VOC
AA3930	BO9WJ0	SOIL	SVOC
AA3931	BO9WJ0	SOIL	ANIONS
AA3932	BO9WJ0	SOIL	NO3NO2
AA3933	BO9WJ0	SOIL	PEST/PCB
AA3934	BO9WJ0	SOIL	CN
AA3935	BO9WJ0	SOIL	TPH

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

III. Quality Control (Continued)

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA3948	BO9WG7	SOIL	METALS
AA3949	BO9WG7	SOIL	VOC
AA3950	BO9WG7	SOIL	SVOC
AA3951	BO9WG7	SOIL	ANIONS
AA3952	BO9WG7	SOIL	NO3NO2
AA3953	BO9WG7	SOIL	CN
AA3954	BO9WG7	SOIL	TPH
AA3960	BO9WJ2	SOIL	VOC
AA3961	TRIP BLANK	WATER	VOC
AA4170	BO9WH0	SOIL	METALS
AA4171	BO9WH0	SOIL	VOC
AA4172	BO9WH0	SOIL	SVOC
AA4173	BO9WH0	SOIL	ANIONS
AA4174	BO9WH0	SOIL	NO3NO2
AA4175	BO9WH0	SOIL	CN
AA4176	BO9WH0	SOIL	TPH
AA4181	BO9WH1	SOIL	METALS
AA4182	BO9WH1	SOIL	VOC
AA4183	BO9WH1	SOIL	SVOC
AA4184	BO9WH1	SOIL	ANIONS
AA4185	BO9WH1	SOIL	NO3NO2
AA4186	BO9WH1	SOIL	CN
AA4187	BO9WH1	SOIL	TPH
AA4221	BO9WJ8	SOIL	VOA
AA4188	BO9WJ3	SOIL	METALS
AA4189	BO9WJ3	SOIL	VOC
AA4190	BO9WJ3	SOIL	SVOC
AA4191	BO9WJ3	SOIL	ANIONS
AA4192	BO9WJ3	SOIL	NO3NO2
AA4193	BO9WJ3	SOIL	PEST/PCB
AA4194	BO9WJ3	SOIL	CN
AA4195	BO9WJ3	SOIL	TPH

III. Quality Control (Continued)

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA4197	BO9WJ4	SOIL	METALS
AA4198	BO9WJ4	SOIL	VOC
AA4199	BO9WJ4	SOIL	SVOC
AA4200	BO9WJ4	SOIL	ANIONS
AA4201	BO9WJ4	SOIL	NO3NO2
AA4202	BO9WJ4	SOIL	PEST/PCB
AA4203	BO9WJ4	SOIL	CN
AA4204	BO9WJ4	SOIL	TPH
AA4205	BO9WJ5	SOIL	METALS
AA4206	BO9WJ5	SOIL	VOC
AA4207	BO9WJ5	SOIL	SVOC
AA4208	BO9WJ5	SOIL	ANIONS
AA4209	BO9WJ5	SOIL	NO3NO2
AA4210	BO9WJ5	SOIL	PEST/PCB
AA4211	BO9WJ5	SOIL	CN
AA4212	BO9WJ5	SOIL	TPH
AA4222	BO9WJ6	SOIL	VOC
AA4213	BO9WJ7	SOIL	METALS
AA4214	BO9WJ7	SOIL	VOC
AA4215	BO9WJ7	SOIL	SVOC
AA4216	BO9WJ7	SOIL	ANIONS
AA4217	BO9WJ7	SOIL	NO3NO2
AA4218	BO9WJ7	SOIL	PEST/PCB
AA4219	BO9WJ7	SOIL	CN
AA4220	BO9WJ7	SOIL	TPH
AA4223	TRIP BLANK	WATER	VOC

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

IV. Certification

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature:

Reviewed and Approved:

Sheree' A. Schneider
Project Manager

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS

Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2

Collection Date:

Ice Chest No.:

Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.:

Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 RADIOACTIVE

Sample Identification

1)
- 1,250ml P:CLP;TAL Metals,Hg,Ti ✓ B09WF9
- 1,250ml ✓Gs:VOA CLP
- 1,250ml ✓aG:Semi-VOA CLP
- 1,125ml ✓G:Anions F,Cl,SO4 (EPA 300.0) ✓
- 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) ✓
- ~~1,250ml aGs:PCB/Pest (8080)~~ LER 3-3-94
- 1,125ml ✓G:Cyanide CLP
- 1,125ml Gw:Kerosene (8015M) ✓
- 1,1000ml ✓P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2)
- 1,250ml P:CLP;TAL Metals,Hg,Ti
- 1,250ml Gs:VOA CLP
- 1,250ml aG:Semi-VOA CLP
- 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
- 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
- 1,250ml aGs:PCB/Pest (8080)
- 1,125ml G:Cyanide CLP
- 1,125ml Gw:Kerosene (8015M)
- 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

LER 3-3-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
3-4-94 Loren E Rogers 1033	Mueller Jr	3/4 @ 12:30
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS — S.A.F. # 94-065 — Date 3-3-94

Company Contact L E ROGERS — Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09WF9	S	3-3-94	1225	40309801 A 1,250ml P:CLP;TAL Metals,Hg,Ti 6010 B 1,250ml Gs:VOA CLP 8240 C 1,250ml aG:Semi-VOA CLP 8270 D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) ~~1,250ml aGs:PCB/Pest (8080)~~ JER 3-3-94 F 1,125ml G:Cyanide CLP 9010 G 1,125ml GW:Kerosene (8015M) 1,000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253) 40309901
			JER 3-3-94	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml GW:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

*Type of Sample: A = Air; DL = Drum Liquids; DS = Drum Solids; L = Liquid; O = Oil; S = Soil; SE = Sediment; SL = Sludge; SO = Solid; T = Tissue; W = Water; WI = Wipe; X = Other

Field Information IT, Richland

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards RADIOACTIVE

Chain of Custody did not have the collection date. This form date used to evaluate holding times for B09WF9.

A-6000-406 (06/91) WEF060

added page 5/24/94

056 A

9613474.2974

0000034

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS

Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2

Collection Date: 3-4-94

Ice Chest No.: SML-178

Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: N/A

Offsite Property No.: WA4-1-0369 #13

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09W60

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~ BR 3-9-94
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

B09W62
2) 1,250ml aGs: CLP: VOA

2)

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

BR 3-9-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	Heidelberg	3/10/94 @ 1450
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2975

0000045

WO #212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-16-94

Ice Chest No.: GW S028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: NA — Offsite Property No.: WW4-0-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065

Sample Identification

1) B09WG7

403264 03

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)

403264 09 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

~~2) B09WJ2 1,250ml aGs: CLP; VOA~~ WJS 3-14-92

2)
1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080) WJS
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: W.U. Setzer	Received by: R. Boyd IT CLBD	Date/Time: 3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2976

0000049

WO #230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-16-94

Ice Chest No.: GWS -127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 500ml ~~1,250ml~~ 3-17-94 B09W40

A 1,~~250ml~~ P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~ 3-16-94
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)
T 1,000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4633450 1

2) 3-17-94 B09WH1

A 1, 500ml ~~1,250ml~~ P:CLP;TAL Metals,Hg,Ti
B 1, 500ml ~~1,250ml~~ Gs:VOA CLP
C 1, 500ml ~~1,250ml~~ aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~ 3-16-94
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)
T 1,000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4633450 2

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Loren E Rogers	Received by: J.D. Fowler	Date/Time: 3/17/94 1018
Relinquished by: J.D. Fowler	Received by: [illegible]	Date/Time: 3/17 @ 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2977

0000041

SD6 W0002 W0212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-10-94

Ice Chest No.: GW 5028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.: WA-0-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

PB 3-15-94 403264 01

A 1,250ml P:CLP;TAL Metals,Hg,Ti B09W19 CAT I
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
I 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

403267 01

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

3-10-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	R. Boyd FT CWD	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

WO #212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-11-93

Ice Chest No.: GW S02R — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.: W94-0-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09W30

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
I 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

~~2)~~

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

3-11-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	R Boyd JT CHOO	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

WO#230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-14-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09W53

10334464

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
I 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

10334504

B09W54

2)

10334465

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
I 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

10334505

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Loren E. Rogers	Received by: S.D. Fowler	Date/Time: 3/17/94 1018
Relinquished by: S.D. Fowler	Received by: [illegible]	Date/Time: 3/17 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

WO#236

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-15-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) BORWSS

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

1165344CC

4C334SCC

~~2)~~

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

~~LR 3-15-94~~

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Loren E. Rogers	Received by: J.D. Fanher	Date/Time: 3/17/94 1015
Relinquished by: J.D. Fanher	Received by: Heidelberg	Date/Time: 3/17 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2981

0000057

WO# 230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-16-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) BC9WJ6

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
1,250ml Gs:VOA CLP
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

4C334407

3-16-94

2) BC9WJ7

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4C334408

4C334507

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Loren E. Rogers	Received by: J.D. Fahy	Date/Time: 3/17/94 1018
Relinquished by: J.D. Fahy	Received by: [illegible]	Date/Time: 3/17 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.2982

ATTACHMENT 5

DATA VALIDATION SUPPORTING DOCUMENTATION

9613474.2983

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E

PROJECT: 200-UP-2		DATA PACKAGE: W0002-ITC-007
VALIDATOR: [illegible]	LAB: ITC	DATE: 06/15/94
~~CASE:~~ work order #		SDG: W0002-ITC-007

6/15/94

ANALYSES PERFORMED					
☐ CLP Volatiles	☐ SW-846 8240 (cap column)	☐ SW-846 8260 (packed column)	☒ CLP Semivolatiles	☐ SW-846 8270 (cap column)	☐ SW-846 (packed column)
☐	☐	☐	☐	☐	☐

SAMPLES/MATRIX Soils

5/6/24/94	B09WF9	B09WI9	B09WJ7
	B09WG0	B09WJ0	
	B09W67	B09WJ3	
	B09WH0	B09WJ4	
	B09WH1	B09WJ5	

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Is a case narrative present? . . . . . (Yes) No N/A

Comments:

2. HOLDING TIMES

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

Comments:

066

revised page 5/6/24/94

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. INSTRUMENT TUNING AND CALIBRATION

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

Are initial calibrations acceptable? . . . . . Yes (No) N/A

Are continuing calibrations acceptable? . . . . . Yes (No) N/A

Comments: See attached laboratory calibration forms for unacceptable initial and continuing calibration data.

4. BLANKS

Were laboratory blanks analyzed? . . . . . (Yes) No N/A

Are laboratory blank results acceptable? . . . . . Yes (No) N/A

Were field/trip blanks analyzed? . . . . . Yes No (N/A)

Are field/trip blank results acceptable? . . . . . Yes No (N/A)

Comments: bis(2-Ethylhexyl)Phthalate was detected in the laboratory blank, resulting in qualification of sample B09WF9 as U for the indicated compound. cj 6/24/94

5. ACCURACY

Were surrogates/System Monitoring Compounds analyzed? . . . . (Yes) No N/A

Are surrogate/System Monitoring Compound recoveries acceptable? (Yes) No N/A

Were MS/MSD samples analyzed? . . . . . (Yes) No N/A

Are MS/MSD results acceptable? . . . . . Yes (No) N/A

Comments: 8/15/94

B09WH0 MS %R for phenol and 4-chloro-3-methylphenol were ~~not~~ above the upper control limit at 97% and 107%, respectively. No qual. is required since MSD %R are acceptable and all surrogate recoveries are acceptable.

revised page cj 6/24/94

GC/MS ORGANIC DATA VALIDATION CHECKLIST

6. PRECISION

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

Are field duplicate RPD values acceptable? . . . . . Yes No N/A

Are field split RPD values acceptable? . . . . . Yes No N/A

Comments:

7. SYSTEM PERFORMANCE

Were internal standards analyzed? . . . . . Yes No N/A

Are internal standard areas acceptable? . . . . . Yes No N/A

Are internal standard retention times acceptable? . . . . . Yes No N/A

Comments:

8. COMPOUND IDENTIFICATION AND QUANTITATION

Is compound identification acceptable? . . . . . Yes No N/A

Is compound quantitation acceptable? . . . . . Yes No N/A

Comments:

9. REPORTED RESULTS AND QUANTITATION LIMITS

Are results reported for all requested analyses? . . . . . Yes No N/A

Are all results supported in the raw data? . . . . . Yes No N/A

Do results meet the CRQLs? . . . . . Yes No N/A

Has the laboratory properly identified and coded all TIC? . . . Yes No N/A

Comments: Two TIC compounds were not reported for sample B9WJ19 and one for B9WJ10. These TICs were added to the TIC Form I.

Several TICs identified as "unknown" were more specifically identified following review of the spectra during validation. See TIC Forms in Attachment 3 for corrected identifications.

6/18/91

W0002-ITC-~~027~~ 007 6/17/94

HOLDING TIME SUMMARY

SDG:	VALIDATOR:	DATE: 6/17/94	PAGE 1 OF 1
COMMENTS: Semivolatile Organics			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09WF9	SVOA	3/04/94	3/10/94	3/29/94	6	19	None
B09WG0		3/04/94	3/17/94	3/29/94	13	12	
B09WG7		3/10/94	3/17/94	3/30/94	7	13	
B09WH0		3/16/94	3/23/94	4/05/94	7	13	
B09WH1		3/16/94	3/23/94	4/05/94	7	13	
B09WI9		3/10/94	3/17/94	3/30/94	7	13	
B09WJ0		3/11/94	3/17/94	3/30/94	6	13	
B09WJ3		3/14/94	3/23/94	4/05/94	9	13	
B09WJ4		3/14/94	3/23/94	4/06/94	9	14	
B09WJ5		3/15/94	3/23/94	4/06/94	8	14	
B09WJ7		3/16/94	3/23/94	4/06/94	7	14	

9613474.2996

6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Instrument ID: FINN Calibration Date(s): 03/29/94 03/29/94

Calibration Times: 0054 0319

Assoc. w/B09WI9, B09WJ0, and B09WG7.

LAB FILE ID: RRF20 = IC03281 RRF50 = IC03282

RRF80 = IC03283 RRF120= IC03284 RRF160= IC03285

COMPOUND		RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD
Phenol	*	2.021	2.302	2.151	2.201	2.475	2.230	7.6*
bis(2-Chloroethyl)Ether	*	1.671	1.882	1.811	1.862	1.921	1.829	5.3*
2-Chlorophenol	*	1.494	1.563	1.432	1.364	1.329	1.436	6.6*
1,3-Dichlorobenzene	*	1.543	1.518	1.502	1.404	1.474	1.488	3.6*
1,4-Dichlorobenzene	*	1.504	1.598	1.417	1.387	1.352	1.452	6.8*
1,2-Dichlorobenzene	*	1.297	1.317	1.141	1.131	1.084	1.194	8.8*
2-Methylphenol	*	1.183	1.255	1.088	1.093	1.017	1.127	8.2*
2,2'-oxybis(1-Chloropropane		1.590	1.721	1.497	1.497	1.438	1.549	7.1
4-Methylphenol	*	1.143	1.279	1.170	1.230	1.234	1.211	4.5*
N-Nitroso-Di-n-Propylamine	*	0.924	1.059	0.930	0.971	0.969	0.971	5.6*
Hexachloroethane	*	0.635	0.675	0.659	0.706	0.670	0.669	3.9*
Nitrobenzene	*	0.516	0.532	0.468	0.450	0.406	0.474	10.7*
Isophorone	*	0.978	1.047	0.941	0.888	0.847	0.940	8.3*
2-Nitrophenol	*	0.237	0.235	0.222	0.198	0.188	0.216	10.2*
2,4-Dimethylphenol	*	0.429	0.452	0.399	0.399	0.371	0.410	7.6*
bis(2-Chloroethoxy)Methane	*	0.525	0.559	0.497	0.467	0.470	0.504	7.7*
2,4-Dichlorophenol	*	0.310	0.327	0.296	0.288	0.283	0.301	5.9*
1,2,4-Trichlorobenzene	*	0.345	0.340	0.320	0.304	0.296	0.321	6.7*
Naphthalene	*	1.069	1.051	0.907	0.853	0.800	0.936	12.8*
4-Chloroaniline		0.375	0.542	0.399	0.498	0.371	0.437	17.9
Hexachlorobutadiene		0.195	0.193	0.187	0.174	0.176	0.185	5.2
4-Chloro-3-Methylphenol	*	0.343	0.401	0.399	0.389	0.412	0.389	6.9*
2-Methylnaphthalene	*	0.723	0.718	0.672	0.620	0.660	0.679	6.3*
Hexachlorocyclopentadiene		0.319	0.352	0.359	0.352	0.369	0.350	5.4
2,4,6-Trichlorophenol	*	0.418	0.449	0.421	0.394	0.394	0.415	5.5*
2,4,5-Trichlorophenol	*		0.446	0.399	0.375	0.370	0.398	8.7*
2-Chloronaphthalene	*	1.210	1.185	1.043	0.943	0.914	1.059	12.8*
2-Nitroaniline			0.534	0.510	0.487	0.480	0.503	4.9
Dimethylphthalate		1.375	1.403	1.239	1.134	1.130	1.256	10.3
Acenaphthylene	*	1.916	1.789	1.558	1.383	1.263	1.582	17.2*
2,6-Dinitrotoluene	*	0.313	0.349	0.325	0.314	0.311	0.322	4.9*
Acenaphthene	*	1.074	1.031	0.901	0.813	0.768	0.917	14.5*
2,4-Dinitrophenol			0.158	0.160	0.158	0.158	0.158	0.6
4-Nitrophenol			0.186	0.185	0.183	0.172	0.182	3.5
Dibenzofuran	*	1.532	1.508	1.300	1.172	1.120	1.326	14.2*
Diethylphthalate		1.382	1.389	1.252	1.159	1.123	1.261	9.8
4-Chlorophenyl-phenylether	*	0.627	0.633	0.571	0.532	0.519	0.576	9.1*

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

FORM VI SV-1 3/90

6/17/94

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Instrument ID: FINN Calibration Date(s): 03/29/94 03/29/94

Calibration Times: 0054 0319

Assoc. with B09WJ9, B09WJ0, and B09WG7.

LAB FILE ID: RRF20 = IC03281 RRF50 = IC03282

RRF80 = IC03283 RRF120= IC03284 RRF160= IC03285

COMPOUND		RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD	
Fluorene	*	1.225	1.185	1.008	0.923	0.866	1.041	15.2*	~~UR~~
4-Nitroaniline			0.246	0.208	0.194	0.120	0.192	27.5	
4,6-Dinitro-2-Methylphenol			0.155	0.157	0.156	0.146	0.154	3.3	
N-Nitrosodiphenylamine (1)		0.634	0.548	0.508	0.449	0.393	0.506	18.3	
4-Bromophenyl-phenylether	*	0.246	0.244	0.240	0.229	0.218	0.235	5.0*	
Hexachlorobenzene	*	0.251	0.253	0.233	0.225	0.224	0.237	5.9*	
Pentachlorophenol	*		0.163	0.161	0.158	0.158	0.160	1.5*	
Phenanthrene	*	1.221	1.162	1.029	0.921	0.899	1.046	13.6*	
Anthracene	*	1.166	1.121	0.987	0.881	0.823	0.996	14.9*	
Carbazole		0.994	0.911	0.779	0.683	0.644	0.802	18.5	
Di-n-Butylphthalate		1.598	1.645	1.508	1.348	1.269	1.474	10.9	
Fluoranthene	*	1.077	1.091	1.012	0.946	0.907	1.007	8.0*	
Pyrene	*	1.420	1.420	1.282	1.135	1.212	1.294	9.8*	
Butylbenzylphthalate		0.933	1.056	0.954	0.822	0.822	0.917	10.8	
3,3'-Dichlorobenzidine		0.388	0.439	0.425	0.377	0.348	0.395	9.3	
Benzo(a)Anthracene	*	1.185	1.176	1.080	0.938	0.934	1.063	11.5*	
Chrysene	*	1.117	1.059	0.946	0.833	0.793	0.950	14.7*	
bis(2-Ethylhexyl)Phthalate		1.303	1.435	1.312	1.136	1.130	1.263	10.3	
Di-n-Octyl Phthalate		2.016	2.134	1.760	1.579	1.388	1.775	17.3	
Benzo(b)Fluoranthene	*	1.266	1.275	1.043	1.000	0.985	1.114	13.0*	
Benzo(k)Fluoranthene	*	1.066	0.931	1.098	1.020	0.855	0.994	10.1*	
Benzo(a)Pyrene	*	0.924	1.070	0.972	0.916	0.848	0.946	8.7*	
Indeno(1,2,3-cd)Pyrene	*	0.719	0.947	0.954	0.944	0.903	0.893	11.1*	
Dibenz(a,h)Anthracene	*	0.536	0.715	0.721	0.733	0.748	0.691	12.6*	
Benzo(g,h,i)Perylene	*	0.615	0.809	0.825	0.828	0.807	0.777	11.7*	
Nitrobenzene-d5	*	0.603	0.546	0.509	0.486	0.456	0.520	10.9*	
2-Fluorobiphenyl	*	1.427	1.266	1.073	0.951	0.944	1.132	18.6*	
Terphenyl-d14	*	0.990	0.922	0.861	0.783	0.816	0.874	9.5*	
Phenol-d5	*	2.207	2.441	2.429	2.562	3.058	2.539	12.5*	
2-Fluorophenol	*	2.043	2.350	2.490	2.703	3.652	2.648	23.1*	
2,4,6-Tribromophenol		0.121	0.115	0.113	0.112	0.108	0.114	4.2	
2-Chlorophenol-d4	*	1.650	1.656	1.547	1.498	1.484	1.567	5.2*	
1,2-Dichlorobenzene-d4	*	0.899	0.889	0.778	0.775	0.756	0.819	8.4*	

(1) Cannot be separated from Diphenylamine

* Compounds with required minimum RRF and maximum %RSD values. All other compounds must meet a minimum RRF of 0.010.

6/17/94

No qual. is required for 2-fluorophenol since ~~the~~ it is a surrogate compound only.

6/17/94

6B
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Instrument ID: FINN Calibration Date(s): 04/05/94 04/05/94

Calibration Times: 1712 1938

Assoc. with B0QWH0, B0QWH1, B0QWJ3, B0QWJ4, B0QWJ5, B0QWJ7

LAB FILE ID: RRF20 = IC04051 RRF50 = IC04052
RRF80 = IC04053 RRF120= IC04054 RRF160= IC04055

COMPOUND		RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD
Phenol	*	1.347	1.747	1.886	1.996	2.332	1.862	19.3*
bis(2-Chloroethyl)Ether	*	1.079	1.335	1.346	1.393	1.555	1.342	12.8*
2-Chlorophenol	*	1.129	1.367	1.341	1.311	1.329	1.295	7.4*
1,3-Dichlorobenzene	*	1.286	1.401	1.361	1.359	1.351	1.352	3.1*
1,4-Dichlorobenzene	*	1.358	1.528	1.490	1.382	1.358	1.423	5.6*
1,2-Dichlorobenzene	*	1.153	1.346	1.292	1.248	1.219	1.252	5.8*
2-Methylphenol	*	0.888	1.079	1.051	1.025	1.014	1.011	7.3*
2,2'-oxybis(1-Chloropropane		1.268	1.386	1.397	1.423	1.483	1.391	5.6
4-Methylphenol	*	0.790	0.971	0.979	1.036	1.040	0.963	10.6*
N-Nitroso-Di-n-Propylamine	*	0.721	0.835	0.844	0.833	0.937	0.834	9.2*
Hexachloroethane	*	0.513	0.570	0.579	0.594	0.630	0.577	7.4*
Nitrobenzene	*	0.413	0.484	0.499	0.521	0.578	0.499	12.0*
Isophorone	*	0.761	0.909	0.964	0.979	1.026	0.928	11.0*
2-Nitrophenol	*	0.192	0.227	0.237	0.247	0.261	0.233	11.2*
2,4-Dimethylphenol	*	0.337	0.422	0.451	0.481	0.502	0.439	14.7*
bis(2-Chloroethoxy)Methane	*	0.381	0.465	0.498	0.526	0.529	0.480	12.7*
2,4-Dichlorophenol	*	0.285	0.344	0.357	0.386	0.378	0.350	11.4*
1,2,4-Trichlorobenzene	*	0.353	0.409	0.412	0.419	0.423	0.403	7.1*
Naphthalene	*	0.909	1.076	1.117	1.171	1.129	1.080	9.4*
4-Chloroaniline		0.248	0.308	0.339	0.371	0.419	0.337	19.1
Hexachlorobutadiene		0.229	0.264	0.276	0.274	0.281	0.265	7.9
4-Chloro-3-Methylphenol	*	0.259	0.347	0.387	0.435	0.472	0.380	21.7*
2-Methylnaphthalene	*	0.636	0.823	0.878	0.885	0.946	0.834	14.2*
Hexachlorocyclopentadiene		0.320	0.386	0.440	0.483	0.514	0.429	18.0
2,4,6-Trichlorophenol	*	0.375	0.456	0.474	0.488	0.496	0.458	10.6*
2,4,5-Trichlorophenol	*		0.443	0.437	0.465	0.472	0.454	3.7*
2-Chloronaphthalene	*	1.017	1.162	1.163	1.190	1.214	1.149	6.7*
2-Nitroaniline			0.390	0.411	0.451	0.488	0.435	10.0
Dimethylphthalate		1.145	1.316	1.302	1.327	1.383	1.295	6.9
Acenaphthylene	*	1.569	1.699	1.728	1.787	1.688	1.694	4.7*
2,6-Dinitrotoluene	*	0.243	0.299	0.307	0.325	0.335	0.302	11.9*
Acenaphthene	*	0.900	1.017	1.033	1.012	1.061	1.005	6.1*
2,4-Dinitrophenol			0.112	0.130	0.145	0.162	0.137	15.6
4-Nitrophenol			0.116	0.134	0.154	0.169	0.143	16.2
Dibenzofuran	*	1.371	1.553	1.526	1.556	1.610	1.523	5.9*
2,4-Dinitrotoluene	*	0.287	0.342	0.341	0.359	0.385	0.343	10.5*
Diethylphthalate		1.072	1.231	1.249	1.305	1.350	1.241	8.5

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

Signed [illegible] 6/24/94

6C
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 167 SAS No.: _____ SDG No.: W0002

Instrument ID: 4500 Calibration Date(s): 03/25/94 03/25/94

Calibration Times: 1613 1903

Assoc. with B09WG0 and B09WF9

LAB FILE ID: RRF20 = BIC0325E RRF50 = BCC0325
RRF80 = BIC0325C RRF120= BIC0325B RRF160= BIC0325A

COMPOUND		RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD	
Fluorene	*	1.438	1.368	1.312	1.201	1.112	1.286	10.1*	
4-Nitroaniline			0.438	0.477	0.477	0.476	0.467	4.1	
4,6-Dinitro-2-Methylphenol			0.076	0.092	0.091	0.088	0.087	8.5	
N-Nitrosodiphenylamine (1)		0.585	0.569	0.535	0.476	0.440	0.521	11.8	
4-Bromophenyl-phenylether	*	0.189	0.195	0.181	0.172	0.164	0.180	7.0*	
Hexachlorobenzene	*	0.200	0.207	0.189	0.178	0.170	0.189	8.1*	
Pentachlorophenol	*		0.135	0.124	0.131	0.136	0.132	4.1*	
Phenanthrene	*	1.244	1.216	1.152	1.031	0.967	1.122	10.6*	
Anthracene	*	1.230	1.112	1.058	0.953	0.873	1.045	13.3*	
Carbazole		1.207	1.148	1.104	1.003	0.939	1.080	10.0	
Di-n-Butylphthalate		1.667	1.576	1.539	1.352	1.276	1.482	11.0	
Fluoranthene	*	1.373	1.302	1.242	1.104	1.021	1.208	11.9*	6/27/94
Pyrene	*	1.309	1.358	1.301	1.180	1.091	1.248	8.8*	
Butylbenzylphthalate		0.723	0.756	0.783	0.728	0.665	0.731	6.0	
3,3'-Dichlorobenzidine		0.437	0.423	0.447	0.404	0.349	0.412	9.4	
Benzo(a)Anthracene	*	1.243	1.153	1.035	0.857	0.730	1.004	21.0*	
Chrysene	*	1.179	1.147	1.097	0.971	0.881	1.055	11.9*	
bis(2-Ethylhexyl)Phthalate		0.999	0.939	0.894	0.758	0.649	0.848	16.8	
Di-n-Octyl Phthalate		1.627	1.610	1.570	1.386	1.256	1.490	10.9	
Benzo(b)Fluoranthene	*	1.113	1.150	1.275	1.080	0.942	1.112	10.8*	
Benzo(k)Fluoranthene	*	1.375	1.236	0.905	0.790	0.719	1.005	28.5*	
Benzo(a)Pyrene	*	1.026	1.016	0.954	0.847	0.773	0.923	11.9*	
Indeno(1,2,3-cd)Pyrene	*	1.138	1.159	1.017	0.912	0.843	1.014	13.6*	
Dibenz(a,h)Anthracene	*	0.913	0.911	0.810	0.710	0.641	0.797	15.2*	
Benzo(g,h,i)Perylene	*	0.967	1.067	0.961	0.908	0.853	0.951	8.4*	
Nitrobenzene-d5	*	0.424	0.421	0.397	0.387	0.388	0.403	4.4*	
2-Fluorobiphenyl	*	1.391	1.369	1.282	1.234	1.151	1.285	7.7*	
Terphenyl-d14	*	0.918	0.914	0.840	0.752	0.693	0.823	12.1*	
Phenol-d5	*	2.087	2.187	2.112	1.987	1.999	2.074	4.0*	
2-Fluorophenol	*	1.290	1.462	1.423	1.377	1.425	1.395	4.7*	
2,4,6-Tribromophenol		0.136	0.155	0.148	0.151	0.158	0.150	5.7	
2-Chlorophenol-d4	*	1.495	1.557	1.504	1.435	1.412	1.481	3.9*	
1,2-Dichlorobenzene-d4	*	0.970	0.950	0.891	0.831	0.805	0.889	8.1*	

(1) Cannot be separated from Diphenylamine
* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 167 SAS No.: _____ SDG No.: W0002

Instrument ID: 4500 Calibration date: 03/29/94 Time: 1955

Lab File ID: BCC0329 Init. Calib. Date(s): 03/25/94 03/25/94

Init. Calib. Times: 1613 1903

Assoc. with B09W60 and B09WF9

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
Phenol	2.116	2.109	0.800	0.3	25.0
bis(2-Chloroethyl)Ether	1.675	1.683	0.700	-0.5	25.0
2-Chlorophenol	1.421	1.482	0.800	-4.3	25.0
1,3-Dichlorobenzene	1.458	1.557	0.600	-6.8	25.0
1,4-Dichlorobenzene	1.483	1.610	0.500	-8.6	25.0
1,2-Dichlorobenzene	1.369	1.531	0.400	-11.8	25.0
2-Methylphenol	1.568	1.476	0.700	5.9	25.0
2,2'-oxybis(1-Chloropropane)	2.833	3.204		-13.1	
4-Methylphenol	1.561	2.035	0.600	-30.4	25.0
N-Nitroso-Di-n-Propylamine	0.996	1.128	0.500	-13.2	25.0
Hexachloroethane	0.573	0.604	0.300	-5.4	25.0
Nitrobenzene	0.411	0.417	0.200	-1.5	25.0
Isophorone	0.788	0.778	0.400	1.3	25.0
2-Nitrophenol	0.189	0.181	0.100	4.2	25.0
2,4-Dimethylphenol	0.345	0.345	0.200	0.0	25.0
bis(2-Chloroethoxy)Methane	0.519	0.521	0.300	-0.4	25.0
2,4-Dichlorophenol	0.278	0.295	0.200	-6.1	25.0
1,2,4-Trichlorobenzene	0.277	0.305	0.200	-10.1	25.0
Naphthalene	1.001	1.074	0.700	-7.3	25.0
4-Chloroaniline	0.447	0.467		-4.5	
Hexachlorobutadiene	0.127	0.146		-15.0	
4-Chloro-3-Methylphenol	0.354	0.371	0.200	-4.8	25.0
2-Methylnaphthalene	0.691	0.766	0.400	-10.8	25.0
Hexachlorocyclopentadiene	0.243	0.083		65.8	
2,4,6-Trichlorophenol	0.373	0.365	0.200	2.1	25.0
2,4,5-Trichlorophenol	0.431	0.458	0.200	-6.3	25.0
2-Chloronaphthalene	1.208	1.245	0.800	-3.1	25.0
2-Nitroaniline	0.549	0.543		1.1	
Dimethylphthalate	1.452	1.510		-4.0	
Acenaphthylene	1.958	2.039	1.300	-4.1	25.0
2,6-Dinitrotoluene	0.326	0.336	0.200	-3.1	25.0
3-Nitroaniline	0.417	0.407		2.4	
Acenaphthene	1.223	1.307	0.800	-6.9	25.0
2,4-Dinitrophenol	0.087	0.040		54.0	
4-Nitrophenol	0.142	0.102		28.2	
Dibenzofuran	1.765	1.914	0.800	-8.4	25.0
2,4-Dinitrotoluene	0.495	0.518	0.200	-4.6	25.0

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

FORM VII SV-1 3/90

6/20/94

7C
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 167 SAS No.: _____ SDG No.: W0002

Instrument ID: 4500 Calibration date: 03/29/94 Time: 1955

Lab File ID: BCC0329 Init. Calib. Date(s): 03/25/94 03/25/94

Init. Calib. Times: 1613 1903

Assoc. with B09WG0 and B09WF9

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D	
Diethylphthalate	1.526	1.600		-4.8		
4-Chlorophenyl-phenylether	0.562	0.676	0.400	-20.3	25.0	
Fluorene	1.286	1.457	0.900	-13.3	25.0	
4-Nitroaniline	0.467	0.443		5.1		
4,6-Dinitro-2-Methylphenol	0.087	0.082		5.7		
N-Nitrosodiphenylamine (1)	0.521	0.555		-6.5		
4-Bromophenyl-phenylether	0.180	0.213	0.100	-18.3	25.0	
Hexachlorobenzene	0.189	0.244	0.100	-29.1	25.0	US
Pentachlorophenol	0.132	0.101	0.050	23.5	25.0	
Phenanthrene	1.122	1.218	0.700	-8.6	25.0	
Anthracene	1.045	1.205	0.700	-15.3	25.0	
Carbazole	1.080	1.148		-6.3		
Di-n-Butylphthalate	1.482	1.633		-10.2		
Fluoranthene	1.208	1.426	0.600	-18.0	25.0	
Pyrene	1.248	1.308	0.600	-4.8	25.0	
Butylbenzylphthalate	0.731	0.748		-2.3		
3,3'-Dichlorobenzidine	0.412	0.486		-18.0		
Benzo(a)Anthracene	1.004	1.110	0.800	-10.6	25.0	
Chrysene	1.055	1.130	0.700	-7.1	25.0	
bis(2-Ethylhexyl)Phthalate	0.848	0.936		-10.4		
Di-n-Octyl Phthalate	1.490	1.855		-24.5		
Benzo(b)Fluoranthene	1.112	1.179	0.700	-6.0	25.0	
Benzo(k)Fluoranthene	1.005	1.378	0.700	-37.1	25.0	US
Benzo(a)Pyrene	0.923	1.044	0.700	-13.1	25.0	
Indeno(1,2,3-cd)Pyrene	1.014	1.067	0.500	-5.2	25.0	
Dibenz(a,h)Anthracene	0.797	0.872	0.400	-9.4	25.0	
Benzo(g,h,i)Perylene	0.951	0.933	0.500	1.9	25.0	
Nitrobenzene-d5	0.403	0.400	0.200	0.7	25.0	
2-Fluorobiphenyl	1.285	1.325	0.700	-3.1	25.0	
Terphenyl-d14	0.823	0.956	0.500	-16.2	25.0	
Phenol-d5	2.074	1.995	0.800	3.8	25.0	
2-Fluorophenol	1.395	0.864	0.600	38.1	25.0	
2,4,6-Tribromophenol	0.150	0.169		-12.7		
2-Chlorophenol-d4	1.481	1.503	0.800	-1.5	25.0	
1,2-Dichlorobenzene-d4	0.889	0.962	0.400	-8.2	25.0	

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

No qualification is required for 2-fluorophenol since it is a surrogate compound only.

FORM VII SV-2 3/90

6/17/94

9613474.2993

0001301

Assoc. with ~~Bott~~ B09WF9 only. 6/18/94

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK1B

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 167 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3330

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA3330

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N) N Date Extracted: 03/10/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	800	U
100-02-7	4-Nitrophenol	800	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	800	U
534-52-1	4,6-Dinitro-2-Methylphenol	800	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	800	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	40	J
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

X10=400

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 3/90

6/16/94

076

9613474.2994

0001317

Assoc. with BOQWGO

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKAA4040B

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 193 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4040

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA4040

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/27/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____

Number TICs found: 13

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1.	UNKNOWN	2.88	290	~~J~~	R
2.	UNKNOWN	3.28	320	~~AJ~~	R
3.	UNKNOWN	3.48	87	~~J~~	R
4. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	3.80	9500	~~JNA~~	R
5. 542-58-5	ETHANOL, 2-CHLORO-, ACETATE	4.87	77	~~JNA~~	R
6.	UNKNOWN	4.95	480	~~AJ~~	R
7.	UNKNOWN	5.47	280	~~J~~	R
8.	UNKNOWN	12.60	100	~~J~~	N
9.	UNKNOWN	13.55	180	~~J~~	N
10.	UNKNOWN	13.90	120	~~J~~	N
11.	UNKNOWN Phthalate	16.60	160	~~J~~	R
12.	UNKNOWN	23.50	1800	~~J~~	N
13.	UNKNOWN	27.45	90	~~J~~	N

6/18/94

FORM I SV-TIC 3/90

Assoc. with B09WI9, B09WT0, B09WG7

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKAA4039

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 212 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4039

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA4039R

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N) N Date Extracted: 03/17/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/30/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

6/18/94

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKAA4420A

Lab Name: ITAS-KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: 230 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4420

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AA4420

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N) N Date Extracted: 03/23/94

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/05/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.97	5200	~~AJN~~	R
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	5.03	5300	~~AJN~~	R
3. 6/16/94	~~UNKNOWN~~ Hexanedioic Acid Isomer	20.50	580	~~J~~	JN

Assoc. with samples: B09W40
B09W41
B09W33
B09W34
B09W35
B09W37
~~B09W40~~ 6/18/94

6/16/94

9613474.2997

MEMORANDUM

JUN 1994 RECEIVED

TO: 200-UP-2 Project QA Record June 16, 1994

FR: Christina Jensen, Golder Associates Inc. CJ

RE: PESTICIDE\PCBs DATA VALIDATION SUMMARY FOR DATA PACKAGE: W0002-ITC-007 (923-E418 Filename W0002P.UP2)

INTRODUCTION

This memo presents the results of data validation on data package W0002-ITC-007 prepared by the International Technology Corporation (ITC) laboratory. The samples validated along with the analyses reported and the methods of analysis are provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA		ANALYSIS
B09WI9	03/10/94	SOIL		SEE NOTE 1
B09WJ0	03/11/94	SOIL		
B09WJ3	03/14/94	SOIL		
B09WJ4	03/14/94	SOIL		
B09WJ5	03/15/94	SOIL		
B09WJ7	03/16/94	SOIL		

Note 1. The samples were analyzed for CLP Pesticide/PCBs.

RECEIVED JUN 21 1994 VALIDATION DOCUMENTATION SDLA

Data validation was conducted in accordance with the WHC statement of work (WHC 1993a) and validation procedures (WHC 1993b). Attachments 1 through 5 provide the following information as indicated below:

Attachment 1. Glossary of Data Reporting Qualifiers
Attachment 2. Summary of Data Qualifications
Attachment 3. Qualified Data Summary and Annotated Laboratory Reports
Attachment 4. Laboratory Narrative and Chain-of-Custody Documentation
Attachment 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met for all sample results as specified in the reference analytical method.

Completeness. The data package was complete for all requested analyses. A total of six samples were validated in this data package with a total of 168 determinations reported, all of which were deemed valid. This results in a completeness of 100 percent, which meets normal work plan objectives of 90%.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

No minor deficiencies were identified during data validation which required qualification of data.

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation, Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993. Westinghouse Hanford Company, Richland, Washington.

9613474.2999

ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF ORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected in the associated laboratory blank. This qualifier is applied by the laboratory. During the process of data validation this qualifier may be replaced by other appropriate qualifiers as defined by the validation procedures. The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample quantitation limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration reported may not accurately reflect the sample quantitation limit. The associated data should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. This qualifier may be applied by the laboratory to indicate a concentration which is less than the contract required quantitation limit (CRQL) but greater than the instrument detection limit (IDL). During data validation this qualifier may be applied to indicate a minor quality control deficiency. However in either case, the associated data should be considered usable for decision making purposes.

NJ - Indicates presumptive evidence of a constituent at an estimated value. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

N - Indicates presumptive evidence of a constituent. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.

JN - Indicates a tentatively identified compound (TIC) whose concentration and identification have been determined to be valid as a result of data validation. The associated data should be considered usable for decision making purposes.

UJN - Indicates a tentatively identified compound (TIC) that has been determined to be presumptive and valid (JN) in terms of identification and quantitation and has been qualified as undetected (U) due to associated blank contamination.

UR - Indicates the constituent was analyzed for and not detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

9613474.3001

ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY

SDG:	VALIDATOR: C Jensen	DATE: 6/16/94	PAGE 1 OF 1
COMMENTS: Pest/PCB W0002-ITC-007			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
No qualification of the data was required.			

9613474.3003

ATTACHMENT 3

QUALIFIED DATA SUMMARY AND ANNOTATED LABORATORY REPORTS

Validated Data Summary, Data Package: W0002-ITC-007

	Samp#	B09WI9		B09WJ0		B09WJ3		B09WJ4		B09WJ5		B09WJ7	
	Date	3-10-94		3-11-94		3-14-94		3-14-94		3-15-94		3-16-94	
	Location	---		---		---		---		---		---	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
ALPHA-BHC	UG/KG	1.800	U	1.700	U	1.800	U	1.800	U	1.800	U	1.800	U
BETA-BHC	UG/KG	1.800	U	1.700	U	1.800	U	1.800	U	1.800	U	1.800	U
DELTA-BHC	UG/KG	1.800	U	1.700	U	1.800	U	1.800	U	1.800	U	1.800	U
GAMMA-BHC (LINDANE)	UG/KG	1.800	U	1.700	U	1.800	U	1.800	U	1.800	U	1.800	U
HEPTACHLOR	UG/KG	1.800	U	1.700	U	1.800	U	1.800	U	1.800	U	1.800	U
ALDRIN	UG/KG	1.800	U	1.700	U	1.800	U	1.800	U	1.800	U	1.800	U
HEPTACHLOR EPOXIDE	UG/KG	1.800	U	1.700	U	1.800	U	1.800	U	1.800	U	1.800	U
ENDOSULFAN I	UG/KG	1.800	U	1.700	U	1.800	U	1.800	U	1.800	U	1.800	U
DIELDRIN	UG/KG	3.400	U	3.400	U	3.400	U	3.400	U	3.500	U	3.500	U
4,4'-DDE	UG/KG	3.400	U	3.400	U	3.400	U	3.400	U	3.500	U	3.500	U
ENDRIN	UG/KG	3.400	U	3.400	U	3.400	U	3.400	U	3.500	U	3.500	U
ENDOSULFAN II	UG/KG	3.400	U	3.400	U	3.400	U	3.400	U	3.500	U	3.500	U
4,4'-DDD	UG/KG	3.600		3.400	U	3.400	U	3.400	U	3.500	U	3.500	U
ENDOSULFAN SULFATE	UG/KG	3.400	U	3.400	U	3.400	U	3.400	U	3.500	U	3.500	U
4,4'-DDT	UG/KG	3.400	U	3.400	U	3.400	U	3.400	U	3.500	U	3.500	U
METHOXYCHLOR	UG/KG	18.000	U	17.000	U	18.000	U	18.000	U	18.000	U	18.000	U
ENDRIN KETONE	UG/KG	3.400	U	3.400	U	3.400	U	3.400	U	3.500	U	3.500	U
ENDRIN ALDEHYDE	UG/KG	3.400	U	3.400	U	3.400	U	3.400	U	3.500	U	3.500	U
ALPHA-CHLORDANE	UG/KG	1.800	U	1.700	U	1.800	U	1.800	U	1.800	U	1.800	U
GAMMA-CHLORDANE	UG/KG	1.800	U	1.700	U	1.800	U	1.800	U	180.000	U	1.800	U
TOXAPHENE	UG/KG	180.000	U	170.000	U	180.000	U	180.000	U	35.000	U	180.000	U
AROCLOR-1016	UG/KG	34.000	U	34.000	U	34.000	U	34.000	U	71.000	U	35.000	U
AROCLOR-1221	UG/KG	70.000	U	69.000	U	69.000	U	70.000	U	35.000	U	71.000	U
AROCLOR-1232	UG/KG	34.000	U	34.000	U	34.000	U	34.000	U	35.000	U	35.000	U
AROCLOR-1242	UG/KG	34.000	U	34.000	U	34.000	U	34.000	U	35.000	U	35.000	U
AROCLOR-1248	UG/KG	34.000	U	34.000	U	34.000	U	34.000	U	35.000	U	35.000	U
AROCLOR-1254	UG/KG	34.000	U	34.000	U	34.000	U	34.000	U	35.000	U	35.000	U
AROCLOR-1260	UG/KG	34.000	U	34.000	U	34.000	U	34.000	U	35.000	U	35.000	U

96134734.3004

Original Signature

9613474.3005

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BG9W19
~~40326601~~ JDR 4/1/97

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0002 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3924

Sample wt/vol: 30.1 (g/mL) G Lab File ID: _____

% Moisture: 4 decanted: (Y/N) N Date Received: 03/16/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/17/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/24/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: ~~1.0~~ CEM 3/29/94 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.4	U
72-55-9	4,4'-DDE	3.4	U
72-20-8	Endrin	3.4	U
33213-65-9	Endosulfan II	3.4	U
72-54-8	4,4'-DDD	3.6	
1031-07-8	Endosulfan sulfate	3.4	U
50-29-3	4,4'-DDT	3.4	U
72-43-5	Methoxychlor	18	U
53494-70-5	Endrin ketone	3.4	U
7421-93-4	Endrin aldehyde	3.4	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	70	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	34	U

FORM I PEST 3/90

Verified 5/6/10/94

9613474.3006

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

309 WJO
~~40326602~~ JDR 4/1/94

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0002 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA3933

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 3 decanted: (Y/N) N Date Received: 03/16/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/17/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/24/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: ~~1.0~~ CEM 3/29/99 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.7	U
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
58-89-9	gamma-BHC (Lindane)	1.7	U
76-44-8	Heptachlor	1.7	U
309-00-2	Aldrin	1.7	U
1024-57-3	Heptachlor epoxide	1.7	U
959-98-8	Endosulfan I	1.7	U
60-57-1	Dieldrin	3.4	U
72-55-9	4,4'-DDE	3.4	U
72-20-8	Endrin	3.4	U
33213-65-9	Endosulfan II	3.4	U
72-54-8	4,4'-DDD	3.4	U
1031-07-8	Endosulfan sulfate	3.4	U
50-29-3	4,4'-DDT	3.4	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin ketone	3.4	U
7421-93-4	Endrin aldehyde	3.4	U
5103-71-9	alpha-Chlordane	1.7	U
5103-74-2	gamma-Chlordane	1.7	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	69	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	34	U

verified 5/16/94

9613474.3007

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BEGW33
~~40334404~~ JDR 4/1/97

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0002 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4193

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 3 decanted: (Y/N) N Date Received: 03/18/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/23/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/25/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: ~~1.0~~ CEM 3/29/94 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.4	U
72-55-9	4,4'-DDE	3.4	U
72-20-8	Endrin	3.4	U
33213-65-9	Endosulfan II	3.4	U
72-54-8	4,4'-DDD	3.4	U
1031-07-8	Endosulfan sulfate	3.4	U
50-29-3	4,4'-DDT	3.4	U
72-43-5	Methoxychlor	18	U
53494-70-5	Endrin ketone	3.4	U
7421-93-4	Endrin aldehyde	3.4	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	69	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	34	U

FORM I PEST 3/90

Verified
5/6/94

9613474.3008

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BCGWJ4
~~40334405~~ JAR 2/1/99

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0002 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4202

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 5 decanted: (Y/N) N Date Received: 03/18/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/23/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/25/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: ~~1.0~~ CEM 3/23/94 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.4	U
72-55-9	4,4'-DDE	3.4	U
72-20-8	Endrin	3.4	U
33213-65-9	Endosulfan II	3.4	U
72-54-8	4,4'-DDD	3.4	U
1031-07-8	Endosulfan sulfate	3.4	U
50-29-3	4,4'-DDT	3.4	U
72-43-5	Methoxychlor	18	U
53494-70-5	Endrin ketone	3.4	U
7421-93-4	Endrin aldehyde	3.4	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	70	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	34	U

FORM I PEST 3/90

Verified 5/26/1994

9613474.3009

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BG4033JS
~~40334406~~ JDK 6/1/94

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0002 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4210

Sample wt/vol: 30.1 (g/mL) G Lab File ID: _____

% Moisture: 6 decanted: (Y/N) N Date Received: 03/18/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/23/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/25/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: ~~1.0~~ CEM 3/29/94 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.5	U
72-55-9	4,4'-DDE	3.5	U
72-20-8	Endrin	3.5	U
33213-65-9	Endosulfan II	3.5	U
72-54-8	4,4'-DDD	3.5	U
1031-07-8	Endosulfan sulfate	3.5	U
50-29-3	4,4'-DDT	3.5	U
72-43-5	Methoxychlor	18	U
53494-70-5	Endrin ketone	3.5	U
7421-93-4	Endrin aldehyde	3.5	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	71	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

FORM I PEST 3/90

Verified 7/01/94

9613474.3010

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BC9W37
~~40334408~~ JDK 4/1/97

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W0002 SAS No.: _____ SDG No.: W0002

Matrix: (soil/water) SOIL Lab Sample ID: AA4218

Sample wt/vol: 30.1 (g/mL) G Lab File ID: _____

% Moisture: 6 decanted: (Y/N) N Date Received: 03/18/94

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/23/94

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/25/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: ~~1.0~~ CEM 3/29/94 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.5	U
72-55-9	4,4'-DDE	3.5	U
72-20-8	Endrin	3.5	U
33213-65-9	Endosulfan II	3.5	U
72-54-8	4,4'-DDD	3.5	U
1031-07-8	Endosulfan sulfate	3.5	U
50-29-3	4,4'-DDT	3.5	U
72-43-5	Methoxychlor	18	U
53494-70-5	Endrin ketone	3.5	U
7421-93-4	Endrin aldehyde	3.5	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	71	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

FORM I PEST 3/90

verified 5/6/14/94

9613974.3011

ATTACHMENT 4

LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION

9613474.3012

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

JUN 1994 RECEIVED SDLA

Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352
Attn: J.A. Lerch

June 3, 1994

Job Number: 167; 193; 212; 230 (Corrected Certificate)

P.O. Number: N/A

This is the Certificate of Analysis for the following samples:

SDG:	W0002
Client Project ID:	Westinghouse Hanford
Date Received by Lab:	03/05/94; 03/11/94; 03/16/94; 03/18/94
Number of Samples:	Eighteen (18)
Sample Type:	Soil - fifteen (15), Trip Blank - three (3)

I. Introduction

On March 5, March 11, March 16 and March 18, 1994, fifteen (15) soil samples and three (3) trip blank samples arrived at the ITAS-Richland, Washington and were transferred to ITAS-Knoxville for chemical analysis. The list of analytical tests performed, as well as date of receipt and analysis, can be found in the attached report.

II. Analytical Results/Methodology

The analytical results for this report are presented by analytical test. Each set of data will include sample identification information and the analytical results. Please note that the data are not blank corrected.

The samples were analyzed for Target Compound List (TCL) volatiles by gas chromatography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

Reviewed and Approved:

Sheree' A. Schneider
Project Manager

II. Analytical Results/Methodology (Continued)

The samples were analyzed for Target Compound List (TCL) semivolatiles by gas chromatography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

The samples were analyzed for Target Compound List (TCL) pesticides and PCBs by gas chromatography/electron capture detection (GC/ECD) in accordance with the EPA CLP 3/90 Statement of Work.

The samples were analyzed for Target Analyte List (TAL) metals by cold vapor atomic absorption spectroscopy (CVAA), graphite furnace atomic absorption spectroscopy (GFAA), and inductively coupled plasma spectroscopy (ICP) in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for total cyanide in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for nitrate-nitrite based on EPA method 353.2.

The samples were analyzed for anions by ion chromatography using EPA method 300.0.

The samples were analyzed for total high boiling petroleum hydrocarbons as diesel range organics (DRO) with a kerosene spike by gas chromatography/flame ionization detection (GC/FID) based on method 8015.

III. Quality Control

The volatiles analyses were performed March 8, March 13, March 21, March 22 through 24, 1994 by purge and trap with a J & W DB-624 column on Hewlett-Packard 5970 and Finnigan INCOS 500 GC/MS/DS units. Sample B09WF9 was analyzed as a matrix spike and a matrix spike duplicate set. Matrix effects were confirmed as the cause of low internal standard recoveries in sample BO9WJ0 in a reanalysis. Surrogate 1,2-dichloroethane-d4 recovery fell outside of QC limits in sample BO9WJ0 due to internal standard problems. Sample BO9WJ6 was also analyzed as a matrix spike and a matrix spike duplicate set.

The semivolatiles analyses were performed March 15-16, March 27, March 29-30 and April 5-6, 1994 by direct injection of sample extract on a Restek XTI-5 capillary column on a Finnigan INCOS XL and 4500 GC/MS/DS unit. Sample B09WF9 was analyzed as a matrix spike and a matrix spike duplicate set. Sample BO9WH0 was also analyzed as a matrix spike and a matrix spike duplicate set in which the recoveries of phenol and 4-chloro-3-methylphenol fell outside of QC limits.

III. Quality Control (Continued)

Data were reported with qualifiers as follows:

U - Compound analyzed for but not detected; value given is quantitation limit.
E - Compound exceeded calibration range.
D - Compound analyzed at a secondary dilution factor.
J - Compound detected but below quantitation limit; value estimated.
S - Spiked compound.
B - Compound found in method blank.
A - Suspected aldol condensation product.
Y - Indistinguishable isomer in tentatively identified compounds.
N - Presumptive evidence of compound presence.

The samples were analyzed for Pesticides/PCBs using DB-608 and DB-1701 0.53mm ID megabore capillary columns. 1.0 μl was injected for each column. Two blank spikes (LCS's) were analyzed with acceptable recoveries. A matrix spike and matrix spike duplicate were analyzed and reported for sample BO9WJ3 with acceptable results. Sample chromatograms that were manually integrated will be denoted by an M+ and an M-. The performance evaluation mixture which ran at 1752 on 5890C on March 25, 1994, PEMKD, had methoxychlor greater than 25 RPD (25.1 RPD). There were no positives for methoxychlor in the affected samples and the PEM on the confirmation column met all criteria.

Data were reported using qualifiers as follows:

U - Compound analyzed for but not detected; value given is the quantitation limit.
D - Compound analyzed at a secondary dilution; DL was appended to the sample number.
X - A flag that FORMASTER III inserts when the data were entered manually.
Z - Compound's response was such that it exceeded the established linearity range. The value is estimated.
J - Compound detected but below the quantitation limit; value estimated.
P - The percent difference for the calculated values from the two analytical columns differed by 25.0% or more.

The samples were digested on March 25 and April 1, 1994 for ICP and March 25 and March 31, 1994 for GFAA. The samples for mercury analysis were prepared just prior to analysis. The CVAA analysis for mercury was performed on March 24 and April 1, 1994; the GFAA analysis for arsenic, lead, selenium and thallium were performed from March 25 through April 2, 1994; the remaining metals were analyzed by ICP on March 29, April 2 and April 11, 1994. All run QC was acceptable. A duplicate/spike pair was prepared using sample number B09WF9. Spike recovery (accuracy) results

III. Quality Control (Continued)

were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for arsenic by GFAA analysis. As the titanium concentration was greater than four times (4X) the spike added spiking criteria are not applicable for this analyte. Duplicate RPD (precision) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for vanadium and titanium by ICP analysis. MSAs were performed as required by CLP protocol.

Data were reported with qualifiers as follows:

"C" Qualifiers

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
B - Value greater than instrument detection limit, but less than contract required quantitation limit.

"Q" Qualifiers

* - Duplicate analysis outside control limits.
N - Spiked sample recovery outside control limits.
W - Post-digestion spike for GFAA was out of control limits (85-115%), while sample absorbance was less than 50% of spike absorbance.
S - The reported value was determined by method of standard additions.

"M" Qualifiers

P - Analysis performed by ICP.
V - Analysis performed by CVAA.
F - Analysis performed by GFAA.
C - Cyanide analysis by manual distillation/colorimetric determination.

Miscellaneous

D - Duplicate.
S - Spike.
NR - Not required.
G - Native analyte > 4 times spike added, therefore, acceptance criteria do not apply.
X - Detection limits higher than normal due to sample matrix interferences.

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

III. Quality Control (Continued)

The samples were analyzed for total high boiling petroleum hydrocarbons as kerosene by gas chromatography/flame ionization detection using an SPB-1 column on a Hewlett Packard GC. Matrix spike/matrix spike analyses were performed using sample B09WF9 with acceptable results. Surrogates were not spiked into the matrix spike and duplicate due to operator error. This error is believed not to effect the data integrity since the matrix spikes were present in place of the surrogates. Spikes were injected with kerosene standard and reported out in terms of diesel range organics. All matrix spikes and laboratory control samples (LCS) had acceptable recoveries.

On March 29, 1994, the samples were analyzed for nitrate-nitrite by cadmium reduction followed by colorimetric determination using the LACHAT QuikChem automated flow injection analyzer (QuikChem Method No. 10-107-04-1-C). Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

The samples were analyzed for anions on March 26 and April 2, 1994. Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

III. Quality Control (Continued)

Table I is a cross reference between client IDs and abbreviated client IDs.

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA3163	BO9WF9	SOIL	METALS
AA3164	BO9WF9	SOIL	VOC
AA3165	BO9WF9	SOIL	SVOC
AA3166	BO9WF9	SOIL	ANIONS
AA3167	BO9WF9	SOIL	NO3NO2
AA3168	BO9WF9	SOIL	CN
AA3169	BO9WF9	SOIL	TPH
AA3170	BO9WG2	WATER	VOC
AA3586	BO9WG0	SOIL	METALS
AA3598	BO9WG0	SOIL	VOC
AA3599	BO9WG0	SOIL	SVOC
AA3600	BO9WG0	SOIL	ANIONS
AA3625	BO9WG0	SOIL	NO3NO2
AA3626	BO9WG0	SOIL	CN
AA3627	BO9WG0	SOIL	TPH
AA3628	BO9WG2	SOIL	VOC
AA3919	BO9WI9	SOIL	METALS
AA3920	BO9WI9	SOIL	VOC
AA3921	BO9WI9	SOIL	SVOC
AA3922	BO9WI9	SOIL	ANIONS
AA3923	BO9WI9	SOIL	NO3NO2
AA3924	BO9WI9	SOIL	PEST/PCB
AA3925	BO9WI9	SOIL	CN
AA3926	BO9WI9	SOIL	TPH
AA3928	BO9WJ0	SOIL	METALS
AA3929	BO9WJ0	SOIL	VOC
AA3930	BO9WJ0	SOIL	SVOC
AA3931	BO9WJ0	SOIL	ANIONS
AA3932	BO9WJ0	SOIL	NO3NO2
AA3933	BO9WJ0	SOIL	PEST/PCB
AA3934	BO9WJ0	SOIL	CN
AA3935	BO9WJ0	SOIL	TPH

III. Quality Control (Continued)

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA3948	BO9WG7	SOIL	METALS
AA3949	BO9WG7	SOIL	VOC
AA3950	BO9WG7	SOIL	SVOC
AA3951	BO9WG7	SOIL	ANIONS
AA3952	BO9WG7	SOIL	NO3NO2
AA3953	BO9WG7	SOIL	CN
AA3954	BO9WG7	SOIL	TPH
AA3960	BO9WJ2	SOIL	VOC
AA3961	TRIP BLANK	WATER	VOC
AA4170	BO9WH0	SOIL	METALS
AA4171	BO9WH0	SOIL	VOC
AA4172	BO9WH0	SOIL	SVOC
AA4173	BO9WH0	SOIL	ANIONS
AA4174	BO9WH0	SOIL	NO3NO2
AA4175	BO9WH0	SOIL	CN
AA4176	BO9WH0	SOIL	TPH
AA4181	BO9WH1	SOIL	METALS
AA4182	BO9WH1	SOIL	VOC
AA4183	BO9WH1	SOIL	SVOC
AA4184	BO9WH1	SOIL	ANIONS
AA4185	BO9WH1	SOIL	NO3NO2
AA4186	BO9WH1	SOIL	CN
AA4187	BO9WH1	SOIL	TPH
AA4221	BO9WJ8	SOIL	VOA
AA4188	BO9WJ3	SOIL	METALS
AA4189	BO9WJ3	SOIL	VOC
AA4190	BO9WJ3	SOIL	SVOC
AA4191	BO9WJ3	SOIL	ANIONS
AA4192	BO9WJ3	SOIL	NO3NO2
AA4193	BO9WJ3	SOIL	PEST/PCB
AA4194	BO9WJ3	SOIL	CN
AA4195	BO9WJ3	SOIL	TPH

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

III. **Quality Control** (Continued)

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA4197	BO9WJ4	SOIL	METALS
AA4198	BO9WJ4	SOIL	VOC
AA4199	BO9WJ4	SOIL	SVOC
AA4200	BO9WJ4	SOIL	ANIONS
AA4201	BO9WJ4	SOIL	NO3NO2
AA4202	BO9WJ4	SOIL	PEST/PCB
AA4203	BO9WJ4	SOIL	CN
AA4204	BO9WJ4	SOIL	TPH
AA4205	BO9WJ5	SOIL	METALS
AA4206	BO9WJ5	SOIL	VOC
AA4207	BO9WJ5	SOIL	SVOC
AA4208	BO9WJ5	SOIL	ANIONS
AA4209	BO9WJ5	SOIL	NO3NO2
AA4210	BO9WJ5	SOIL	PEST/PCB
AA4211	BO9WJ5	SOIL	CN
AA4212	BO9WJ5	SOIL	TPH
AA4222	BO9WJ6	SOIL	VOC
AA4213	BO9WJ7	SOIL	METALS
AA4214	BO9WJ7	SOIL	VOC
AA4215	BO9WJ7	SOIL	SVOC
AA4216	BO9WJ7	SOIL	ANIONS
AA4217	BO9WJ7	SOIL	NO3NO2
AA4218	BO9WJ7	SOIL	PEST/PCB
AA4219	BO9WJ7	SOIL	CN
AA4220	BO9WJ7	SOIL	TPH
AA4223	TRIP BLANK	WATER	VOC

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

IV. Certification

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature:

Reviewed and Approved:

Sheree' A. Schneider

Sheree' A. Schneider
Project Manager

9613474.3021

0000041

SDG W0002 W0212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-10-94

Ice Chest No.: GW 5028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.: WA-0-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

B09W19 CAT I

403207 01

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
I 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

403207 01

2)

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), ~~Gamma Spec~~ to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

3-10-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	R. Boyd FT CWD	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

WO #212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-11-93

Ice Chest No.: GW 5028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.: W94-0-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09W50

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
I 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2)

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

3-11-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	R. Boyd JT CNO	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.3023

0000053

WO#230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-14-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09W53

10334464

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

10334504

B09W54

2)

10334465

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

10334505

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Lorad E. Rogers	Received by: J.D. Fankhauser	Date/Time: 3/17/94 1018
Relinquished by: J.D. Fankhauser	Received by: Heidelberg	Date/Time: 3/17 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.3024

0000055

WO#236

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-15-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) BORWJ5

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4C334506

~~2)~~

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

KOR 3-15-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Lorne E. Rogers / Lorne E. Rogers	J.D. Fankhr / J.D. Fankhr	3/17/94 1015
J.D. Fankhr / J.D. Fankhr	Heidelberg	3/17 1330

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.3025

0000057

WO# 230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS

Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2

Collection Date: 3-16-94

Ice Chest No.: SML-448

Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.:

Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) BC9WJ6

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~

4C334407

1,250ml Gs:VOA CLP

~~1,250ml aG:Semi-VOA CLP~~

~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~

~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~

~~1,250ml aGs:PCB/Pest (8080)~~

~~1,125ml G:Cyanide CLP~~

~~1,125ml Gw:Kerosene (8015M)~~

~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

JPN 3-16-94

2) BC9WJ7

A 1,250ml P:CLP;TAL Metals,Hg,Ti

B 1,250ml Gs:VOA CLP

C 1,250ml aG:Semi-VOA CLP

D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)

E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)

F 1,250ml aGs:PCB/Pest (8080)

G 1,125ml G:Cyanide CLP

H 1,125ml Gw:Kerosene (8015M)

4C334408

1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4C334507

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Loren E. Rogers	Received by: J.D. Fowler	Date/Time: 3/17/94 1015
Relinquished by: J.D. Fowler	Received by: [illegible]	Date/Time: 3/17 1332
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.3026

ATTACHMENT 5

DATA VALIDATION SUPPORTING DOCUMENTATION

PESTICIDE/PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E

PROJECT: 200-UP-2		DATA PACKAGE: W0002 - ITC - 007
VALIDATOR: C Jensen	LAB: ITC	DATE: 6/16/94 is worked
CASE:		SDG:

ANALYSES PERFORMED

☒ CLP3/90	☐ SW-846 8080	☐ SW-846 8081	☐	☐	☐

SAMPLES/MATRIX Soils

B09WJ9, B09WJ0, B09WJ3, B09WJ4, B09WJ5, B09WJ7

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Is a case narrative present? . . . . . (Yes) No N/A

Comments: Verification performed by WHC

2. HOLDING TIMES

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

Comments:

3. INSTRUMENT PERFORMANCE AND CALIBRATIONS

3.1 INSTRUMENT PERFORMANCE (METHOD 8080 AND 8081)

Are DDT retention times acceptable . . . . . Yes No (N/A)

Are calibration standard retention times acceptable? . . . . . Yes No (N/A)

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

revised page
cj 6/24/94

031

PESTICIDE/PCB DATA VALIDATION CHECKLIST

Are DBC retention times acceptable? . . . . . Yes No N/A

Is the GC/MS tuning/performance check acceptable? . . . . . Yes No N/A

Comments:

3.2 CALIBRATIONS (METHOD 8080 AND 8081)

Are EVAL standard calibration factors and %RSD values acceptable? . . . . . Yes No N/A

Are quantitation column calibration factor %RSD values acceptable? . . . . . Yes No N/A

Were the analytical sequence requirements met? . . . . . Yes No N/A

Are continuing calibration %D values acceptable? . . . . . Yes No N/A

Comments:

3.3 INSTRUMENT PERFORMANCE AND INITIAL CALIBRATION (3/90 SOW)

Was the initial calibration sequence performed? . . . . . (1) . . Yes No N/A

Was the resolution acceptable in the resolution check mix? . . Yes No N/A

Is resolution acceptable in the PEM, INDA and INDB? . . . . . Yes No N/A

Are DDT and Endrin breakdowns acceptable? . . . . . Yes No N/A

Are retention times in PEMs and calibration mixes acceptable? . Yes No N/A

Are RPD values in the PEMs acceptable? . . . . . Yes No N/A

Are %RSD values acceptable? . . . . . Yes No N/A

Comments: ICAL %RSD for 4,4' DDT and endrin aldehyde were 22.1 and 26.4%, respectively for 3/23/94 secondary column.

3.4 CALIBRATION VERIFICATION (3/90 SOW)

Were the analytical sequence requirements met? . . . . . Yes No N/A

Is resolution acceptable in the PEMs? . . . . . Yes No N/A

Are initial calibrations acceptable? . . . . . Yes No N/A

PESTICIDE/PCB DATA VALIDATION CHECKLIST

Are retention times acceptable in the PEMs, INDA and INDB mixes? . . . . . Yes No N/A

Are RPD values in the PEMs acceptable? . . . . . Yes No N/A

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

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

Is the GPC calibration check acceptable? . . . . . Yes No N/A

Was Florisil cleanup performed? . . . . . Yes No N/A

Is the Florisil performance check acceptable? . . . . . Yes No N/A

Comments:

4. BLANKS

Were laboratory blanks analyzed? . . . . . Yes No N/A

Are laboratory blank results acceptable? . . . . . Yes No N/A

Were field/trip blanks analyzed? . . . . . Yes No N/A

Are field/trip blank results acceptable? . . . . . Yes No N/A

Comments:

5. ACCURACY

Were surrogates analyzed? . . . . . Yes No N/A

Are surrogate recoveries acceptable? . . . . . Yes No N/A

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

Are MS/MSD results acceptable? . . . . . Yes No N/A

Were LCS samples analyzed? . . . . . Yes No N/A

Are LCS results acceptable? . . . . . Yes No N/A

Comments: LCS samples were analyzed but not required for CLP 90. Recoveries were ~~64-92~~ 69-104% and 68-99%. No qualification is made based on LCS recoveries. MS/MSD recoveries were acceptable.

PESTICIDE/PCB DATA VALIDATION CHECKLIST

6. PRECISION

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

Are laboratory duplicate results acceptable? . . . . . Yes No N/A

Are field duplicate RPD values acceptable? . . . . . Yes No N/A

Are field split RPD values acceptable? . . . . . Yes No N/A

Comments:

7. SYSTEM PERFORMANCE

Is chromatographic performance acceptable? . . . . . Yes No N/A

Are positive results resolved acceptably? . . . . . Yes No N/A

Comments:

8. COMPOUND IDENTIFICATION AND QUANTITATION

Is compound identification acceptable? . . . . . Yes No N/A

Is compound quantitation acceptable? . . . . . Yes No N/A

Comments:

9. REPORTED RESULTS AND QUANTITATION LIMITS

Are results reported for all requested analyses? . . . . . Yes No N/A

Are all results supported in the raw data? . . . . . Yes No N/A

Do results meet the CRQLs? . . . . . Yes No N/A

Comments:

9613474.3031

HOLDING TIME SUMMARY

SDG:	VALIDATOR: C. Jensen	DATE: 10/16/94	PAGE 1 OF 1
COMMENTS: Pest/PCBs W0002-FIC-007			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09WI9	Pest/PCB	3/10/94	3/17/94	3/24/94	7	7	none
B09WJ0		3/11/94	3/17/94	3/24/94	6	7	
~~B09WG7~~		~~3/10/94~~	~~3/23~~	~~3/25~~ 10/16/94			
B09WJ3		3/14/94	3/23/94	3/25/94	14	2	
B09WJ4		3/14/94	3/23/94	3/25/94	14	2	
B09WJ5		3/15/94	3/23/94	3/25/94	13	2	
B09WJ7		3/16/94	3/23/94	3/25/94	12	2	

9613474.3032

MEMORANDUM

JUN 1994 RECEIVED TQO

TO: 200 UP-2 Project QA Record

June 15, 1994

FR: Thomas Stapp, Golder Associates Inc.

RE: INORGANIC DATA VALIDATION SUMMARY FOR DATA PACKAGE W0002-ITC-007 (923-E418 W0002M.UP2)

INTRODUCTION

This memo presents the results of data validation on data package W0002-ITC-007 prepared by International Technology (ITC) laboratory, Knoxville. A list of samples validated along with the analyses reported and the methods of analysis is provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA	ANALYSES
B09WF9	3/03/94	SOIL	SEE NOTE 1
B09WG0	3/04/94	SOIL	
B09WI9	3/10/94	SOIL	
B09WJ0	3/11/94	SOIL	
B09WG7	3/10/94	SOIL	
B09WH0	3/16/94	SOIL	
B09WH1	3/16/94	SOIL	
B09WJ3	3/14/94	SOIL	
B09WJ4	3/14/94	SOIL	
B09WJ5	3/15/94	SOIL	
B09WJ7	3/16/94	SOIL	

RECEIVED JUN 21 1994 VALIDATION DOCUMENTATION SDLA

Notes:

1. Indicates the samples were analyzed for CLP TAL metals, titanium, and cyanide.

Data validation was conducted in accordance with the WHC statement of work (WHC 1993a) and validation procedures (WHC 1993b). Attachments 1 through 5 provide the following information as indicated below:

Attachment 1. Glossary of Data Reporting Qualifiers
Attachment 2. Summary of Data Qualifications
Attachment 3. Qualified Data Summary and Annotated Laboratory Reports
Attachment 4. Laboratory Narrative and Chain-of-Custody Documentation
Attachment 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

The following section presents a summary of the data quality in terms of the referenced validation criteria.

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met with the exception of the matrix spike and analytical spike recoveries as indicated below.

Sample Result Verification. All sample results were supported in the raw data with the exception of results for sample B09WG7 which were recalculated and corrected on the laboratory report form 1.

Detection Limits. Detection limit goals were met for all sample results.

Completeness. The data package was complete for all requested analyses. A total of eleven (11) samples were validated in this data package with a total of 275 determinations reported, all of which were deemed valid. This results in a completeness of 100 percent which meets the work plan completeness objective of 90 percent.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

The following minor deficiencies were identified during data validation which required qualification of data.

Holding Times

- Cyanide was analyzed out of holding time for samples B09WI9 and B09WG7, therefore associated results have been qualified as estimated (UJ).

Laboratory Blanks

- Cyanide was detected at a negative concentration in the calibration and preparation blanks. Attachments 2 and 5 provide a summary of the samples affected, data qualification applied and supporting documentation.

Matrix Spike Recoveries

- The matrix spike recovery for arsenic was unacceptable. Attachments 2 and 5 provide a summary of the samples affected, data qualification applied, and supporting documentation.

- Analytical spikes for selenium, thallium, and arsenic were unacceptable. Attachments 2 and 5 provide a summary of the samples affected, data qualification applied and supporting documentation.

REFERENCES

WHC, 1993a, Validation of 200 UP-2 Data, Statement of Work, Analytical Laboratory Data Validation, Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC, 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993. Westinghouse Hanford Company, Richland, Washington.

9613474.3035

ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF INORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected. The concentration reported is less than the contract required detection limit (CRDL) but greater than the instrument detection limit (IDL). The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample detection limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration may not accurately reflect the sample detection limit. The associated data have been qualified as estimated but should be considered usable for decision making purposes.

BJ - Indicates the constituent was analyzed for and detected at a concentration less than the contract required detection limit (CRDL) but greater than the instrument detection limit (IDL). Due to a minor quality control deficiency identified during data validation the associated data have been qualified as estimated, but should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. Due to a minor quality control deficiency identified during data validation the associated data have been qualified as estimated, but should be considered usable for decision making purposes.

UR - Indicates the constituent was analyzed for and not detected. Due to a major quality control deficiency identified during data validation, the associated data have been qualified as unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. Due to a major quality control deficiency identified during data validation, the associated data have been qualified as unusable for decision making purposes.

9613474.3037

ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: W0002-ITC-007	REVIEWER: T. STAPP	DATE: 6-14-94	PAGE 1 OF 1
COMMENTS: INORGANIC ANALYSIS			
COMPOUND/ANALYTE	QUALIFIER	SAMPLES AFFECTED	REASON
CYANIDE	J/UJ	ALL EXCEPT B09WF9	ABSOLUTE VALUE OF NEGATIVE PREPARATION BLANK EXCEEDS IDL
ARSENIC	J/BJ	ALL	MATRIX SPIKE RECOVERY IS <75% BUT >30%
ARSENIC	J/BJ	B09WF9 B09WJ0	ANALYTICAL SPIKE RECOVERIES <85% BUT >40%
SELENIUM	J/UJ	B09WH0,B09WJ3 B09WJ4,B09WJ7	ANALYTICAL SPIKE RECOVERIES <85% BUT >40%
THALLIUM	J/UJ	B09WG7	ANALYTICAL SPIKE RECOVERIES <85% BUT >40%
CYANIDE	J/UJ	B09WI9 B09WG7	HOLDING TIME EXCEEDED

9613974.3059

ATTACHMENT 3

QUALIFIED DATA SUMMARY and ANNOTATED LABORATORY REPORTS

Validated Data Summary, Data Package: W0002-ITC-007

	Samp#	B09WF9		B09WG0		B09WG7		B09WH0		B09WH1		B09WI9	
	Date	3-3-94		3-4-94		3-10-94		3-16-94		3-16-94		3-10-94	
	Location	---		---		---		---		---		---	
	Depth	---		---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
ALUMINUM	MG/KG	3790.000		7120.000		4850.000		6230.000		7000.000		5170.000	
ANTIMONY	MG/KG	10.400	U	11.300	U	10.200	U	10.300	U	10.400	U	10.400	U
ARSENIC	MG/KG	0.860	BJ	4.400	J	2.600	J	2.200	J	4.100	J	4.800	J
BARIUM	MG/KG	61.800		148.000		61.300		53.500		60.500		69.300	
BERYLLIUM	MG/KG	0.430	B	0.520	B	0.380	B	0.400	B	0.400	B	0.480	B
CADMIUM	MG/KG	1.000	U	1.100	U	1.000	U	1.000	U	1.000	U	1.000	U
CALCIUM	MG/KG	5340.000		10400.000		7180.000		8310.000		9090.000		9130.000	
CHROMIUM	MG/KG	6.400		7.900		9.500		11.000		15.200		8.100	
COBALT	MG/KG	12.000		16.800		7.300	B	7.000	B	8.500	B	15.200	
COPPER	MG/KG	13.300		14.900		9.000		10.700		12.200		13.100	
IRON	MG/KG	20300.000		28700.000		12600.000		16500.000		17600.000		22800.000	
LEAD	MG/KG	2.100		5.800		4.000		3.300		5.100		4.800	
MAGNESIUM	MG/KG	3430.000		5960.000		4090.000		4820.000		5430.000		4750.000	
MANGANESE	MG/KG	261.000		453.000		298.000		260.000		299.000		360.000	
MERCURY	MG/KG	0.100	U	0.110	U	0.090	U	0.100	U	0.090	U	0.100	U
NICKEL	MG/KG	7.300	B	10.100		7.800	B	10.200		15.000		8.200	B
POTASSIUM	MG/KG	457.000	B	1390.000		920.000	B	1250.000		1380.000		938.000	B
SELENIUM	MG/KG	0.410	U	0.450	U	0.400	U	0.430	UJ	0.420	U	0.420	U
SILVER	MG/KG	1.000	U	1.100	U	1.000	U	1.000	U	1.000	U	1.000	U
SODIUM	MG/KG	152.000	B	142.000	B	95.100	B	116.000	B	130.000	B	155.000	B
THALLIUM	MG/KG	0.410	U	0.450	U	0.400	UJ	0.430	U	0.420	U	0.430	B
VANADIUM	MG/KG	43.100		56.600		21.000		28.500		31.700		56.000	
ZINC	MG/KG	28.800		43.300		24.500		28.800		32.300		37.300	
CYANIDE	MG/KG	1.000	U	1.100	UJ	1.000	UJ	1.100	UJ	1.100	UJ	1.000	UJ
TITANIUM	MG/KG	1460.000		1780.000		499.000		637.000		649.000		1790.000	

Verified 6-15-94

9613474.3040

009

Validated Data Summary, Data Package: W0002-ITC-007

	Samp#	B09WJ0		B09WJ3		B09WJ4		B09WJ5		B09WJ7	
	Date	3-11-94		3-14-94		3-14-94		3-15-94		3-16-94	
	Location	---		---		---		---		---	
	Depth	---		---		---		---		---	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL	
	Comments	---		---		---		---		---	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
ALUMINUM	MG/KG	4350.000		4010.000		7280.000		7830.000		8750.000	
ANTIMONY	MG/KG	10.400	U	10.300	U	10.700	U	10.300	U	10.800	U
ARSENIC	MG/KG	1.400	BJ	0.680	BJ	1.800	BJ	1.500	BJ	2.700	J
BARIUM	MG/KG	75.700		58.500		112.000		102.000		104.000	
BERYLLIUM	MG/KG	0.400	B	0.500	B	0.640	B	0.610	B	0.590	B
CADMIUM	MG/KG	1.000	U	1.000	U	1.100	U	1.000	U	1.100	U
CALCIUM	MG/KG	3710.000		5890.000		9220.000		9130.000		10500.000	
CHROMIUM	MG/KG	5.100		7.200		7.400		9.400		12.600	
COBALT	MG/KG	11.000		11.400		16.200		16.500		11.400	
COPPER	MG/KG	12.100		11.800		12.600		13.000		13.000	
IRON	MG/KG	18400.000		22300.000		28900.000		28700.000		21800.000	
LEAD	MG/KG	3.000		2.000		3.100		3.200		5.700	
MAGNESIUM	MG/KG	2790.000		3310.000		4600.000		5220.000		5670.000	
MANGANESE	MG/KG	281.000		235.000		458.000		453.000		384.000	
MERCURY	MG/KG	0.090	U	0.090	U	0.100	U	0.110	U	0.110	U
NICKEL	MG/KG	5.900	B	6.600	B	7.900	B	10.100		12.400	
POTASSIUM	MG/KG	442.000	B	552.000	B	1110.000		1350.000		1830.000	
SELENIUM	MG/KG	0.410	U	0.400	UJ	0.410	UJ	0.420	U	0.420	UJ
SILVER	MG/KG	1.000	U	1.100	B	1.100	B	1.000	B	1.100	B
SODIUM	MG/KG	142.000	B	171.000	B	148.000	B	135.000	B	127.000	B
THALLIUM	MG/KG	0.410	U	0.400	U	0.410	U	0.420	U	0.420	U
VANADIUM	MG/KG	39.800		57.100		73.100		68.000		44.500	
ZINC	MG/KG	26.800		31.000		34.300		35.200		38.500	
CYANIDE	MG/KG	1.000	UJ	1.000	UJ	1.100	UJ	1.100	UJ	1.100	UJ
TITANIUM	MG/KG	1380.000		1910.000		1960.000		1990.000		1140.000	

Verified RS 6-15-94

96134741.3011

SDG : W0002 - ~~I TC~~ - 007 9613474 3042

~~0001861~~

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WF9

Lab Name: ITAS KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002
Matrix (soil/water): SOIL Lab Sample ID: AA3163
Level (low/med): LOW Date Received: 03/05/94
% Solids: 95.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	3790			P	
7440-36-0	Antimony	10.4	U		P	
7440-38-2	Arsenic	0.86	~~B~~	WN	F	BJ
7440-39-3	Barium	61.8			P	
7440-41-7	Beryllium	0.43	B		P	
7440-43-9	Cadmium	1.0	U		P	
7440-70-2	Calcium	5340			P	
7440-47-3	Chromium	6.4			P	
7440-48-4	Cobalt	12.0			P	
7440-50-8	Copper	13.3			P	
7439-89-6	Iron	20300			P	
7439-92-1	Lead	2.1			F	
7439-95-4	Magnesium	3430			P	
7439-96-5	Manganese	261			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	7.3	B		P	
7440-09-7	Potassium	457	B		P	
7782-49-2	Selenium	0.41	U		F	
7440-22-4	Silver	1.0	U		P	
7440-23-5	Sodium	152	B		P	
7440-28-0	Thallium	0.41	U		F	
7440-62-2	Vanadium	43.1		*	P	
7440-66-6	Zinc	28.8			P	
	Titanium	1460		*	P	
5955-70-0	Cyanide				NR	

Color Before: BROWN Clarity Before: N/A Texture: COARSE
Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

Verified 6-14-94

ILM02.1 9/12/94

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BO9WF9

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA3168

Level (low/med): LOW Date Received: 03/05/94

% Solids: 95.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic				NR
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium				NR
7440-70-2	Calcium				NR
7440-47-3	Chromium				NR
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead				NR
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Titanium				NR
5955-70-0	Cyanide	1.0	U	*	AS

Q

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE ONLY.

FORM I - IN

Verified 6-14-94

ILM02.1 8 4/12/94

SDG: W0002-ITC-007 8613474.3044

~~0001863~~

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09W60 ~~WH03208~~ 6/7/94 6

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA3586

Level (low/med): LOW Date Received: 03/11/94

% Solids: 88.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	7120			P	
7440-36-0	Antimony	11.3	U		P	
7440-38-2	Arsenic	4.4		SN	F	J
7440-39-3	Barium	148			P	
7440-41-7	Beryllium	0.52	B		P	
7440-43-9	Cadmium	1.1	U		P	
7440-70-2	Calcium	10400			P	
7440-47-3	Chromium	7.9			P	
7440-48-4	Cobalt	16.8			P	
7440-50-8	Copper	14.9			P	
7439-89-6	Iron	28700			P	
7439-92-1	Lead	5.8			F	
7439-95-4	Magnesium	5960			P	
7439-96-5	Manganese	453			P	
7439-97-6	Mercury	0.11	U		CV	
7440-02-0	Nickel	10.1			P	
7440-09-7	Potassium	1390			P	
7782-49-2	Selenium	0.45	U		F	
7440-22-4	Silver	1.1	U		P	
7440-23-5	Sodium	142	B		P	
7440-28-0	Thallium	0.45	U		F	
7440-62-2	Vanadium	56.6		*	P	
7440-66-6	Zinc	43.3			P	
	Titanium	1780		*	P	
5955-70-0	Cyanide				NR	

Color Before: GRAY Clarity Before: N/A Texture: FINE

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

Verified TS 6-14-94

ILM02.1

4/12/94

9613474.3045

~~0001862~~

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

309W60 ~~WH03208~~ 6/7/96

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA3626

Level (low/med): LOW Date Received: 03/11/94

% Solids: 88.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum				NR	
7440-36-0	Antimony				NR	
7440-38-2	Arsenic				NR	
7440-39-3	Barium				NR	
7440-41-7	Beryllium				NR	
7440-43-9	Cadmium				NR	
7440-70-2	Calcium				NR	
7440-47-3	Chromium				NR	
7440-48-4	Cobalt				NR	
7440-50-8	Copper				NR	
7439-89-6	Iron				NR	
7439-92-1	Lead				NR	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese				NR	
7439-97-6	Mercury				NR	
7440-02-0	Nickel				NR	
7440-09-7	Potassium				NR	
7782-49-2	Selenium				NR	
7440-22-4	Silver				NR	
7440-23-5	Sodium				NR	
7440-28-0	Thallium				NR	
7440-62-2	Vanadium				NR	
7440-66-6	Zinc				NR	
	Titanium				NR	
5955-70-0	Cyanide	1.1	B	*	AS	UJ

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE_ONLY.

FORM I - IN

Verified 6-14-94

ILM02.1

4/4/94

014

SDG: W0002-ITC-007 9613474 3046

~~0001864~~

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOGWJ7
-0326601 JDR 8/1/94

Lab Name: ITAS KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002
Matrix (soil/water): SOIL Lab Sample ID: AA3919
Level (low/med): LOW Date Received: 03/16/94
% Solids: 96.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	5170			P	
7440-36-0	Antimony	10.4	U		P	
7440-38-2	Arsenic	4.8		SN	F	J
7440-39-3	Barium	69.3			P	
7440-41-7	Beryllium	0.48	B		P	
7440-43-9	Cadmium	1.0	U		P	
7440-70-2	Calcium	9130			P	
7440-47-3	Chromium	8.1			P	
7440-48-4	Cobalt	15.2			P	
7440-50-8	Copper	13.1			P	
7439-89-6	Iron	22800			P	
7439-92-1	Lead	4.8			F	
7439-95-4	Magnesium	4750			P	
7439-96-5	Manganese	360			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	8.2	B		P	
7440-09-7	Potassium	938	B		P	
7782-49-2	Selenium	0.42	U		F	
7440-22-4	Silver	1.0	U		P	
7440-23-5	Sodium	155	B		P	
7440-28-0	Thallium	0.43	B		F	
7440-62-2	Vanadium	56.0		*	P	
7440-66-6	Zinc	37.3			P	
	Titanium	1790		*	P	
5955-70-0	Cyanide				NR	

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM
Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

Verified 6-14-94

ILM02.1 4/12/94

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BC9WJ9 ~~0326601~~ JDL 6/1/94

Lab Name: ITAS KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002
Matrix (soil/water): SOIL Lab Sample ID: AA3925
Level (low/med): LOW Date Received: 03/16/94
% Solids: 96.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum				NR	
7440-36-0	Antimony				NR	
7440-38-2	Arsenic				NR	
7440-39-3	Barium				NR	
7440-41-7	Beryllium				NR	
7440-43-9	Cadmium				NR	
7440-70-2	Calcium				NR	
7440-47-3	Chromium				NR	
7440-48-4	Cobalt				NR	
7440-50-8	Copper				NR	
7439-89-6	Iron				NR	
7439-92-1	Lead				NR	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese				NR	
7439-97-6	Mercury				NR	
7440-02-0	Nickel				NR	
7440-09-7	Potassium				NR	
7782-49-2	Selenium				NR	
7440-22-4	Silver				NR	
7440-23-5	Sodium				NR	
7440-28-0	Thallium				NR	
7440-62-2	Vanadium				NR	
7440-66-6	Zinc				NR	
	Titanium				NR	
5955-70-0	Cyanide	1.0	~~B~~	*	AS	UJ

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:
CYANIDE_ONLY.

FORM I - IN

ILM02.1
6
4/12/94

Revised: Signed 6/24/94

SDG: W0002 - IC-007 9613474.3048

~~0001866~~

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WJT0
~~0326602~~ UDR 6/1/97

Lab Name: ITAS KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002
Matrix (soil/water): SOIL Lab Sample ID: AA3928
Level (low/med): LOW Date Received: 03/16/94
% Solids: 96.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	4350			P	
7440-36-0	Antimony	10.4	U		P	
7440-38-2	Arsenic	1.4	~~B~~	WN	F	BJ
7440-39-3	Barium	75.7			P	
7440-41-7	Beryllium	0.40	B		P	
7440-43-9	Cadmium	1.0	U		P	
7440-70-2	Calcium	3710			P	
7440-47-3	Chromium	5.1			P	
7440-48-4	Cobalt	11.0			P	
7440-50-8	Copper	12.1			P	
7439-89-6	Iron	18400			P	
7439-92-1	Lead	3.0			F	
7439-95-4	Magnesium	2790			P	
7439-96-5	Manganese	281			P	
7439-97-6	Mercury	0.09	U		CV	
7440-02-0	Nickel	5.9	B		P	
7440-09-7	Potassium	442	B		P	
7782-49-2	Selenium	0.41	U		F	
7440-22-4	Silver	1.0	U		P	
7440-23-5	Sodium	142	B		P	
7440-28-0	Thallium	0.41	U		F	
7440-62-2	Vanadium	39.8		*	P	
7440-66-6	Zinc	26.8			P	
	Titanium	1380		*	P	
5955-70-0	Cyanide				NR	

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM
Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN Verified 6-14-94 ILM02.1

9613474.3049

~~0001867~~

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

0326602

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA3934

Level (low/med): LOW Date Received: 03/16/94

% Solids: 96.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum				NR	
7440-36-0	Antimony				NR	
7440-38-2	Arsenic				NR	
7440-39-3	Barium				NR	
7440-41-7	Beryllium				NR	
7440-43-9	Cadmium				NR	
7440-70-2	Calcium				NR	
7440-47-3	Chromium				NR	
7440-48-4	Cobalt				NR	
7440-50-8	Copper				NR	
7439-89-6	Iron				NR	
7439-92-1	Lead				NR	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese				NR	
7439-97-6	Mercury				NR	
7440-02-0	Nickel				NR	
7440-09-7	Potassium				NR	
7782-49-2	Selenium				NR	
7440-22-4	Silver				NR	
7440-23-5	Sodium				NR	
7440-28-0	Thallium				NR	
7440-62-2	Vanadium				NR	
7440-66-6	Zinc				NR	
	Titanium				NR	
5955-70-0	Cyanide	1.0	U	*	AS	UJ

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE ONLY.

FORM I - IN

Verified fs 6-14-94

ILM02.1 4/12/94

SDG: W0002-ITC-007 ~~0001868~~

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

~~0326603~~ 3090067 JDL 6/1/97

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA3948

Level (low/med): LOW Date Received: 03/16/94

% Solids: 96.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	4850 ~~4760~~			P	
7440-36-0	Antimony	10.2	U		P	
7440-38-2	Arsenic	2.6		SN	F	J
7440-39-3	Barium	61.3 ~~60.2~~			P	
7440-41-7	Beryllium	0.38 ~~0.37~~	B		P	
7440-43-9	Cadmium	1.0	U		P	
7440-70-2	Calcium	7180 ~~7040~~			P	
7440-47-3	Chromium	9.5 ~~9.4~~			P	
7440-48-4	Cobalt	7.3 ~~7.2~~	B		P	
7440-50-8	Copper	9.0 ~~8.8~~			P	
7439-89-6	Iron	12600 ~~12400~~			P	
7439-92-1	Lead	4.0 ~~3.9~~			F	
7439-95-4	Magnesium	4090 ~~4010~~			P	
7439-96-5	Manganese	298 ~~292~~			P	
7439-97-6	Mercury	0.09	U		CV	
7440-02-0	Nickel	7.8 ~~7.6~~	B		P	
7440-09-7	Potassium	920 ~~900~~	B		P	
7782-49-2	Selenium	0.40	U		F	
7440-22-4	Silver	1.0	U		P	
7440-23-5	Sodium	95.1 ~~93.3~~	B		P	
7440-28-0	Thallium	0.40	U		F	UJ
7440-62-2	Vanadium	21.0 ~~20.6~~		*	P	
7440-66-6	Zinc	24.5 ~~24.0~~			P	
	Titanium	499 ~~489~~		*	P	
5955-70-0	Cyanide				NR	

Color Before: TAN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

Verified TB 6-14-94

ILM02.1 8 4/12/94

9613474.3051

~~0001869~~

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

809W67 0326603 JDR 6/1/94

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA3953

Level (low/med): LOW Date Received: 03/16/94

% Solids: 96.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum				NR	
7440-36-0	Antimony				NR	
7440-38-2	Arsenic				NR	
7440-39-3	Barium				NR	
7440-41-7	Beryllium				NR	
7440-43-9	Cadmium				NR	
7440-70-2	Calcium				NR	
7440-47-3	Chromium				NR	
7440-48-4	Cobalt				NR	
7440-50-8	Copper				NR	
7439-89-6	Iron				NR	
7439-92-1	Lead				NR	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese				NR	
7439-97-6	Mercury				NR	
7440-02-0	Nickel				NR	
7440-09-7	Potassium				NR	
7782-49-2	Selenium				NR	
7440-22-4	Silver				NR	
7440-23-5	Sodium				NR	
7440-28-0	Thallium				NR	
7440-62-2	Vanadium				NR	
7440-66-6	Zinc				NR	
	Titanium				NR	
5955-70-0	Cyanide	1.0	U	*	AS	UJ

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE_ONLY.

FORM I - IN

Verified 6-14-94

ILM02.1 4/12/94

SDG: W0002 ~~ITC4.007~~

~~0001870~~

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09W40 ~~0334401~~ JDR 5/1/97

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4170

Level (low/med): LOW Date Received: 04/22/94

% Solids: 94.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	6230			P	
7440-36-0	Antimony	10.3	U		P	
7440-38-2	Arsenic	2.2		N	F	J
7440-39-3	Barium	53.5			P	
7440-41-7	Beryllium	0.40	B		P	
7440-43-9	Cadmium	1.0	U		P	
7440-70-2	Calcium	8310			P	
7440-47-3	Chromium	11.0			P	
7440-48-4	Cobalt	7.0	B		P	
7440-50-8	Copper	10.7			P	
7439-89-6	Iron	16500			P	
7439-92-1	Lead	3.3			F	
7439-95-4	Magnesium	4820			P	
7439-96-5	Manganese	260			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	10.2			P	
7440-09-7	Potassium	1250			P	
7782-49-2	Selenium	0.43	U	W	F	UJ
7440-22-4	Silver	1.0	U		P	
7440-23-5	Sodium	116	B		P	
7440-28-0	Thallium	0.43	U		F	
7440-62-2	Vanadium	28.5		*	P	
7440-66-6	Zinc	28.8			P	
	Titanium	637		*	P	
5955-70-0	Cyanide				NR	

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

Verified 6-14-94

ILM02.1 8 4/12/94

9613474.3053

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BCG W-HO
0334401 JDR 5/1/94

Lab Name: ITAS KNOXVILLE Contract: HANFORD
Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002
Matrix (soil/water): SOIL Lab Sample ID: AA4175
Level (low/med): LOW Date Received: 04/22/94
% Solids: 94.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum				NR	
7440-36-0	Antimony				NR	
7440-38-2	Arsenic				NR	
7440-39-3	Barium				NR	
7440-41-7	Beryllium				NR	
7440-43-9	Cadmium				NR	
7440-70-2	Calcium				NR	
7440-47-3	Chromium				NR	
7440-48-4	Cobalt				NR	
7440-50-8	Copper				NR	
7439-89-6	Iron				NR	
7439-92-1	Lead				NR	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese				NR	
7439-97-6	Mercury				NR	
7440-02-0	Nickel				NR	
7440-09-7	Potassium				NR	
7782-49-2	Selenium				NR	
7440-22-4	Silver				NR	
7440-23-5	Sodium				NR	
7440-28-0	Thallium				NR	
7440-62-2	Vanadium				NR	
7440-66-6	Zinc				NR	
	Titanium				NR	
5955-70-0	Cyanide	1.1	U	*	AS	UJ

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:
CYANIDE ONLY.

FORM I - IN

Verified
RS 6/14/94

ILM02.1
8
4/12/94

SDG: W0002-ITC-007 9613474.3054

~~0001872~~

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BD7W-H1
-0334402 JDR 4/1/97

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4181

Level (low/med): LOW Date Received: 04/22/94

% Solids: 92.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	7000			P	
7440-36-0	Antimony	10.4	U		P	
7440-38-2	Arsenic	4.1		N	F	J
7440-39-3	Barium	60.5			P	
7440-41-7	Beryllium	0.40	B		P	
7440-43-9	Cadmium	1.0	U		P	
7440-70-2	Calcium	9090			P	
7440-47-3	Chromium	15.2			P	
7440-48-4	Cobalt	8.5	B		P	
7440-50-8	Copper	12.2			P	
7439-89-6	Iron	17600			P	
7439-92-1	Lead	5.1			F	
7439-95-4	Magnesium	5430			P	
7439-96-5	Manganese	299			P	
7439-97-6	Mercury	0.09	U		CV	
7440-02-0	Nickel	15.0			P	
7440-09-7	Potassium	1380			P	
7782-49-2	Selenium	0.42	U		F	
7440-22-4	Silver	1.0	U		P	
7440-23-5	Sodium	130	B		P	
7440-28-0	Thallium	0.42	U		F	
7440-62-2	Vanadium	31.7		*	P	
7440-66-6	Zinc	32.3			P	
	Titanium	649		*	P	
5955-70-0	Cyanide				NR	

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

Verified 6-14-94

ILM02.1 4/12/94

9613474.3055

~~0001873~~

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BCGW41 ~~0334402~~ JDR 4/1/94

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4186

Level (low/med): LOW Date Received: 04/22/94

% Solids: 92.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum				NR	
7440-36-0	Antimony				NR	
7440-38-2	Arsenic				NR	
7440-39-3	Barium				NR	
7440-41-7	Beryllium				NR	
7440-43-9	Cadmium				NR	
7440-70-2	Calcium				NR	
7440-47-3	Chromium				NR	
7440-48-4	Cobalt				NR	
7440-50-8	Copper				NR	
7439-89-6	Iron				NR	
7439-92-1	Lead				NR	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese				NR	
7439-97-6	Mercury				NR	
7440-02-0	Nickel				NR	
7440-09-7	Potassium				NR	
7782-49-2	Selenium				NR	
7440-22-4	Silver				NR	
7440-23-5	Sodium				NR	
7440-28-0	Thallium				NR	
7440-62-2	Vanadium				NR	
7440-66-6	Zinc				NR	
	Titanium				NR	
5955-70-0	Cyanide	1.1	U	*	AS	UJ

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE_ONLY.

FORM I - IN

Verified 6-14-94

ILM02.1 4/12/94

SDG: W0002 - ~~ITC-007~~ 9413434 7056

~~0001874~~

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WJ3
0334404 - UDL
01/19

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4188

Level (low/med): LOW Date Received: 04/22/94

% Solids: 97.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	4010			P	
7440-36-0	Antimony	10.3	U		P	
7440-38-2	Arsenic	0.68	~~B~~	N	F	BJ
7440-39-3	Barium	58.5			P	
7440-41-7	Beryllium	0.50	B		P	
7440-43-9	Cadmium	1.0	U		P	
7440-70-2	Calcium	5890			P	
7440-47-3	Chromium	7.2			P	
7440-48-4	Cobalt	11.4			P	
7440-50-8	Copper	11.8			P	
7439-89-6	Iron	22300			P	
7439-92-1	Lead	2.0			F	
7439-95-4	Magnesium	3310			P	
7439-96-5	Manganese	235			P	
7439-97-6	Mercury	0.09	U		CV	
7440-02-0	Nickel	6.6	B		P	
7440-09-7	Potassium	552	B		P	
7782-49-2	Selenium	0.40	~~U~~	W	F	UJ
7440-22-4	Silver	1.1	B		P	
7440-23-5	Sodium	171	B		P	
7440-28-0	Thallium	0.40	U		F	
7440-62-2	Vanadium	57.1		*	P	
7440-66-6	Zinc	31.0			P	
	Titanium	1910		*	P	
5955-70-0	Cyanide				NR	

Color Before: BROWN Clarity Before: N/A Texture: COARSE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

Verified
6-14-94 4/12/94

ILM02.1

9613474.3057

~~0001875~~

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

~~0334404~~ JDR 6/1/97

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4194

Level (low/med): LOW Date Received: 04/22/94

% Solids: 97.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum				NR	
7440-36-0	Antimony				NR	
7440-38-2	Arsenic				NR	
7440-39-3	Barium				NR	
7440-41-7	Beryllium				NR	
7440-43-9	Cadmium				NR	
7440-70-2	Calcium				NR	
7440-47-3	Chromium				NR	
7440-48-4	Cobalt				NR	
7440-50-8	Copper				NR	
7439-89-6	Iron				NR	
7439-92-1	Lead				NR	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese				NR	
7439-97-6	Mercury				NR	
7440-02-0	Nickel				NR	
7440-09-7	Potassium				NR	
7782-49-2	Selenium				NR	
7440-22-4	Silver				NR	
7440-23-5	Sodium				NR	
7440-28-0	Thallium				NR	
7440-62-2	Vanadium				NR	
7440-66-6	Zinc				NR	
	Titanium				NR	
5955-70-0	Cyanide	1.0	U	*	AS	UJ

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE_ONLY.

FORM I - IN

Verified FS 6-14-94

ILM02.1 8 4/12/94

SDG: W0002-ITG-007 ~~0001876~~

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WJY ~~0334405~~ JDR 6/1/94

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4197

Level (low/med): LOW Date Received: 04/22/94

% Solids: 93.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	7280			P	
7440-36-0	Antimony	10.7	U		P	
7440-38-2	Arsenic	1.8	~~B~~	N	F	BJ
7440-39-3	Barium	112			P	
7440-41-7	Beryllium	0.64	B		P	
7440-43-9	Cadmium	1.1	U		P	
7440-70-2	Calcium	9220			P	
7440-47-3	Chromium	7.4			P	
7440-48-4	Cobalt	16.2			P	
7440-50-8	Copper	12.6			P	
7439-89-6	Iron	28900			P	
7439-92-1	Lead	3.1			F	
7439-95-4	Magnesium	4600			P	
7439-96-5	Manganese	458			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	7.9	B		P	
7440-09-7	Potassium	1110			P	
7782-49-2	Selenium	0.41	~~U~~	W	F	UJ
7440-22-4	Silver	1.1	B		P	
7440-23-5	Sodium	148	B		P	
7440-28-0	Thallium	0.41	U		F	
7440-62-2	Vanadium	73.1		*	P	
7440-66-6	Zinc	34.3			P	
	Titanium	1960		*	P	
5955-70-0	Cyanide				NR	

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

Verified 6-14-94 4/12/94

ILM02.1

9613474.3059

~~0001877~~

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOGWJY
-0334405 JOR
4/11/94

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4203

Level (low/med): LOW Date Received: 04/22/94

% Solids: 93.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum				NR	
7440-36-0	Antimony				NR	
7440-38-2	Arsenic				NR	
7440-39-3	Barium				NR	
7440-41-7	Beryllium				NR	
7440-43-9	Cadmium				NR	
7440-70-2	Calcium				NR	
7440-47-3	Chromium				NR	
7440-48-4	Cobalt				NR	
7440-50-8	Copper				NR	
7439-89-6	Iron				NR	
7439-92-1	Lead				NR	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese				NR	
7439-97-6	Mercury				NR	
7440-02-0	Nickel				NR	
7440-09-7	Potassium				NR	
7782-49-2	Selenium				NR	
7440-22-4	Silver				NR	
7440-23-5	Sodium				NR	
7440-28-0	Thallium				NR	
7440-62-2	Vanadium				NR	
7440-66-6	Zinc				NR	
	Titanium				NR	
5955-70-0	Cyanide	1.1	~~U~~	*	AS	UJ

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE ONLY.

FORM I - IN

Verified
~~RB~~ 6-14-94

ILM02.1
8
4/12/94

SDG: W0002-IT0-007

6-14-94

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BOGWJS 0334406 JDR 6/1/97

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4205

Level (low/med): LOW Date Received: 04/22/94

% Solids: 94.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	7830			P	
7440-36-0	Antimony	10.3	U		P	
7440-38-2	Arsenic	1.5	B	N	F	BJ
7440-39-3	Barium	102			P	
7440-41-7	Beryllium	0.61	B		P	
7440-43-9	Cadmium	1.0	U		P	
7440-70-2	Calcium	9130			P	
7440-47-3	Chromium	9.4			P	
7440-48-4	Cobalt	16.5			P	
7440-50-8	Copper	13.0			P	
7439-89-6	Iron	28700			P	
7439-92-1	Lead	3.2			F	
7439-95-4	Magnesium	5220			P	
7439-96-5	Manganese	453			P	
7439-97-6	Mercury	0.11	U		CV	
7440-02-0	Nickel	10.1			P	
7440-09-7	Potassium	1350			P	
7782-49-2	Selenium	0.42	U		F	
7440-22-4	Silver	1.0	B		P	
7440-23-5	Sodium	135	B		P	
7440-28-0	Thallium	0.42	U		F	
7440-62-2	Vanadium	68.0		*	P	
7440-66-6	Zinc	35.2			P	
	Titanium	1990		*	P	
5955-70-0	Cyanide				NR	

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

Verified 6-14-94

ILM02.1 4/12/94

9613474.3061

~~0001879~~

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WJS
0334406 WDR 8/1/94

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4211

Level (low/med): LOW Date Received: 04/22/94

% Solids: 94.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum				NR	
7440-36-0	Antimony				NR	
7440-38-2	Arsenic				NR	
7440-39-3	Barium				NR	
7440-41-7	Beryllium				NR	
7440-43-9	Cadmium				NR	
7440-70-2	Calcium				NR	
7440-47-3	Chromium				NR	
7440-48-4	Cobalt				NR	
7440-50-8	Copper				NR	
7439-89-6	Iron				NR	
7439-92-1	Lead				NR	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese				NR	
7439-97-6	Mercury				NR	
7440-02-0	Nickel				NR	
7440-09-7	Potassium				NR	
7782-49-2	Selenium				NR	
7440-22-4	Silver				NR	
7440-23-5	Sodium				NR	
7440-28-0	Thallium				NR	
7440-62-2	Vanadium				NR	
7440-66-6	Zinc				NR	
	Titanium				NR	
5955-70-0	Cyanide	1.1	~~B~~	*	AS	UJ

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE_ONLY.

FORM I - IN

Verified 6-14-94

ILM02.1 8 4/12/94

SDG: W0002-ITC-007 9613474 3062

~~0001880~~

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BGA WJ7 0334408 JDR 6/1/94

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4213

Level (low/med): LOW Date Received: 04/22/94

% Solids: 92.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	8750			P	
7440-36-0	Antimony	10.8	U		P	
7440-38-2	Arsenic	2.7		N	F	J
7440-39-3	Barium	104			P	
7440-41-7	Beryllium	0.59	B		P	
7440-43-9	Cadmium	1.1	U		P	
7440-70-2	Calcium	10500			P	
7440-47-3	Chromium	12.6			P	
7440-48-4	Cobalt	11.4			P	
7440-50-8	Copper	13.0			P	
7439-89-6	Iron	21800			P	
7439-92-1	Lead	5.7		S	F	
7439-95-4	Magnesium	5670			P	
7439-96-5	Manganese	384			P	
7439-97-6	Mercury	0.11	U		CV	
7440-02-0	Nickel	12.4			P	
7440-09-7	Potassium	1830			P	
7782-49-2	Selenium	0.42	U	W	F	UJ
7440-22-4	Silver	1.1	B		P	
7440-23-5	Sodium	127	B		P	
7440-28-0	Thallium	0.42	U		F	
7440-62-2	Vanadium	44.5		*	P	
7440-66-6	Zinc	38.5			P	
	Titanium	1140		*	P	
5955-70-0	Cyanide				NR	

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

Verified JS 6-14-94

ILM02.1 8 4/1/94

9613474.3063

~~0001881~~

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

B09WJ7 VDR
~~0334408~~ 6/1/94

Lab Name: ITAS KNOXVILLE Contract: HANFORD

Lab Code: ITSTU Case No.: W0002 SAS No.: SDG No.: W0002

Matrix (soil/water): SOIL Lab Sample ID: AA4219

Level (low/med): LOW Date Received: 04/22/94

% Solids: 92.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum				NR	
7440-36-0	Antimony				NR	
7440-38-2	Arsenic				NR	
7440-39-3	Barium				NR	
7440-41-7	Beryllium				NR	
7440-43-9	Cadmium				NR	
7440-70-2	Calcium				NR	
7440-47-3	Chromium				NR	
7440-48-4	Cobalt				NR	
7440-50-8	Copper				NR	
7439-89-6	Iron				NR	
7439-92-1	Lead				NR	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese				NR	
7439-97-6	Mercury				NR	
7440-02-0	Nickel				NR	
7440-09-7	Potassium				NR	
7782-49-2	Selenium				NR	
7440-22-4	Silver				NR	
7440-23-5	Sodium				NR	
7440-28-0	Thallium				NR	
7440-62-2	Vanadium				NR	
7440-66-6	Zinc				NR	
	Titanium				NR	
5955-70-0	Cyanide	1.1	~~B~~	*	AS	UJ

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CYANIDE_ONLY.

FORM I - IN

ILM02.1

Verified 6-14-94 4/12/94

9613474.3064

ATTACHMENT 4

LABORATORY NARRATIVE and CHAIN-OF-CUSTODY DOCUMENTATION

9613474.3065

~~0001848~~

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352
Attn: J.A. Lerch

June 3, 1994

Job Number: 167; 193; 212; 230 (Corrected Certificate)

P.O. Number: N/A

This is the Certificate of Analysis for the following samples:

SDG:	W0002
Client Project ID:	Westinghouse Hanford
Date Received by Lab:	03/05/94; 03/11/94; 03/16/94; 03/18/94
Number of Samples:	Eighteen (18)
Sample Type:	Soil - fifteen (15), Trip Blank - three (3)

I. Introduction

On March 5, March 11, March 16 and March 18, 1994, fifteen (15) soil samples and three (3) trip blank samples arrived at the ITAS-Richland, Washington and were transferred to ITAS-Knoxville for chemical analysis. The list of analytical tests performed, as well as date of receipt and analysis, can be found in the attached report.

II. Analytical Results/Methodology

The analytical results for this report are presented by analytical test. Each set of data will include sample identification information and the analytical results. Please note that the data are not blank corrected.

The samples were analyzed for Target Compound List (TCL) volatiles by gas chromatography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

Reviewed and Approved:

Sheree' A. Schneider
Project Manager

American Council of Independent Laboratories
International Association of Environmental Testing Laboratories
American Association for Laboratory Accreditation

IT Analytical Services, 5815 Middlebrook Pike, Knoxville, TN 37921

681-1-89

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

II. Analytical Results/Methodology (Continued)

The samples were analyzed for Target Compound List (TCL) semivolatiles by gas chromatography/mass spectroscopy (GC/MS) in accordance with the EPA CLP 3/90 Statement of Work.

The samples were analyzed for Target Compound List (TCL) pesticides and PCBs by gas chromatography/electron capture detection (GC/ECD) in accordance with the EPA CLP 3/90 Statement of Work.

The samples were analyzed for Target Analyte List (TAL) metals by cold vapor atomic absorption spectroscopy (CVAA), graphite furnace atomic absorption spectroscopy (GFAA), and inductively coupled plasma spectroscopy (ICP) in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for total cyanide in accordance with the EPA CLP ILM03 Statement of Work.

The samples were analyzed for nitrate-nitrite based on EPA method 353.2.

The samples were analyzed for anions by ion chromatography using EPA method 300.0.

The samples were analyzed for total high boiling petroleum hydrocarbons as diesel range organics (DRO) with a kerosene spike by gas chromatography/flame ionization detection (GC/FID) based on method 8015.

III. Quality Control

The volatiles analyses were performed March 8, March 13, March 21, March 22 through 24, 1994 by purge and trap with a J & W DB-624 column on Hewlett-Packard 5970 and Finnigan INCOS 500 GC/MS/DS units. Sample B09WF9 was analyzed as a matrix spike and a matrix spike duplicate set. Matrix effects were confirmed as the cause of low internal standard recoveries in sample BO9WJ0 in a reanalysis. Surrogate 1,2-dichloroethane-d4 recovery fell outside of QC limits in sample BO9WJ0 due to internal standard problems. Sample BO9WJ6 was also analyzed as a matrix spike and a matrix spike duplicate set.

The semivolatiles analyses were performed March 15-16, March 27, March 29-30 and April 5-6, 1994 by direct injection of sample extract on a Restek XTI-5 capillary column on a Finnigan INCOS XL and 4500 GC/MS/DS unit. Sample B09WF9 was analyzed as a matrix spike and a matrix spike duplicate set. Sample BO9WH0 was also analyzed as a matrix spike and a matrix spike duplicate set in which the recoveries of phenol and 4-chloro-3-methylphenol fell outside of QC limits.

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

III. Quality Control (Continued)

Data were reported with qualifiers as follows:

U - Compound analyzed for but not detected; value given is quantitation limit.
E - Compound exceeded calibration range.
D - Compound analyzed at a secondary dilution factor.
J - Compound detected but below quantitation limit; value estimated.
S - Spiked compound.
B - Compound found in method blank.
A - Suspected aldol condensation product.
Y - Indistinguishable isomer in tentatively identified compounds.
N - Presumptive evidence of compound presence.

The samples were analyzed for Pesticides/PCBs using DB-608 and DB-1701 0.53mm ID megabore capillary columns. 1.0 μl was injected for each column. Two blank spikes (LCS's) were analyzed with acceptable recoveries. A matrix spike and matrix spike duplicate were analyzed and reported for sample BO9WJ3 with acceptable results. Sample chromatograms that were manually integrated will be denoted by an M+ and an M-. The performance evaluation mixture which ran at 1752 on 5890C on March 25, 1994, PEMKD, had methoxychlor greater than 25 RPD (25.1 RPD). There were no positives for methoxychlor in the affected samples and the PEM on the confirmation column met all criteria.

Data were reported using qualifiers as follows:

U - Compound analyzed for but not detected; value given is the quantitation limit.
D - Compound analyzed at a secondary dilution; DL was appended to the sample number.
X - A flag that FORMASTER III inserts when the data were entered manually.
Z - Compound's response was such that it exceeded the established linearity range. The value is estimated.
J - Compound detected but below the quantitation limit; value estimated.
P - The percent difference for the calculated values from the two analytical columns differed by 25.0% or more.

The samples were digested on March 25 and April 1, 1994 for ICP and March 25 and March 31, 1994 for GFAA. The samples for mercury analysis were prepared just prior to analysis. The CVAA analysis for mercury was performed on March 24 and April 1, 1994; the GFAA analysis for arsenic, lead, selenium and thallium were performed from March 25 through April 2, 1994; the remaining metals were analyzed by ICP on March 29, April 2 and April 11, 1994. All run QC was acceptable. A duplicate/spike pair was prepared using sample number B09WF9. Spike recovery (accuracy) results

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

III. Quality Control (Continued)

were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for arsenic by GFAA analysis. As the titanium concentration was greater than four times (4X) the spike added spiking criteria are not applicable for this analyte. Duplicate RPD (precision) results were within acceptance limits for all parameters by ICP, GFAA and CVAA analyses except for vanadium and titanium by ICP analysis. MSAs were performed as required by CLP protocol.

Data were reported with qualifiers as follows:

"C" Qualifiers

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
B - Value greater than instrument detection limit, but less than contract required quantitation limit.

"Q" Qualifiers

* - Duplicate analysis outside control limits.
N - Spiked sample recovery outside control limits.
W - Post-digestion spike for GFAA was out of control limits (85-115%), while sample absorbance was less than 50% of spike absorbance.
S - The reported value was determined by method of standard additions.

"M" Qualifiers

P - Analysis performed by ICP.
V - Analysis performed by CVAA.
F - Analysis performed by GFAA.
C - Cyanide analysis by manual distillation/colorimetric determination.

Miscellaneous

D - Duplicate.
S - Spike.
NR - Not required.
G - Native analyte > 4 times spike added, therefore, acceptance criteria do not apply.
X - Detection limits higher than normal due to sample matrix interferences.

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

III. Quality Control (Continued)

The samples were analyzed for total high boiling petroleum hydrocarbons as kerosene by gas chromatography/flame ionization detection using an SPB-1 column on a Hewlett Packard GC. Matrix spike/matrix spike analyses were performed using sample B09WF9 with acceptable results. Surrogates were not spiked into the matrix spike and duplicate due to operator error. This error is believed not to effect the data integrity since the matrix spikes were present in place of the surrogates. Spikes were injected with kerosene standard and reported out in terms of diesel range organics. All matrix spikes and laboratory control samples (LCS) had acceptable recoveries.

On March 29, 1994, the samples were analyzed for nitrate-nitrite by cadmium reduction followed by colorimetric determination using the LACHAT QuikChem automated flow injection analyzer (QuikChem Method No. 10-107-04-1-C). Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

The samples were analyzed for anions on March 26 and April 2, 1994. Matrix spike/matrix spike duplicate analyses were performed using sample B09WF9. All QC results were acceptable.

III. Quality Control (Continued)

Table I is a cross reference between client IDs and abbreviated client IDs.

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA3163	BO9WF9	SOIL	METALS
AA3164	BO9WF9	SOIL	VOC
AA3165	BO9WF9	SOIL	SVOC
AA3166	BO9WF9	SOIL	ANIONS
AA3167	BO9WF9	SOIL	NO3NO2
AA3168	BO9WF9	SOIL	CN
AA3169	BO9WF9	SOIL	TPH
AA3170	BO9WG2	WATER	VOC
AA3586	BO9WG0	SOIL	METALS
AA3598	BO9WG0	SOIL	VOC
AA3599	BO9WG0	SOIL	SVOC
AA3600	BO9WG0	SOIL	ANIONS
AA3625	BO9WG0	SOIL	NO3NO2
AA3626	BO9WG0	SOIL	CN
AA3627	BO9WG0	SOIL	TPH
AA3628	BO9WG2	SOIL	VOC
AA3919	BO9WI9	SOIL	METALS
AA3920	BO9WI9	SOIL	VOC
AA3921	BO9WI9	SOIL	SVOC
AA3922	BO9WI9	SOIL	ANIONS
AA3923	BO9WI9	SOIL	NO3NO2
AA3924	BO9WI9	SOIL	PEST/PCB
AA3925	BO9WI9	SOIL	CN
AA3926	BO9WI9	SOIL	TPH
AA3928	BO9WJ0	SOIL	METALS
AA3929	BO9WJ0	SOIL	VOC
AA3930	BO9WJ0	SOIL	SVOC
AA3931	BO9WJ0	SOIL	ANIONS
AA3932	BO9WJ0	SOIL	NO3NO2
AA3933	BO9WJ0	SOIL	PEST/PCB
AA3934	BO9WJ0	SOIL	CN
AA3935	BO9WJ0	SOIL	TPH

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

III. Quality Control (Continued)

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA3948	BO9WG7	SOIL	METALS
AA3949	BO9WG7	SOIL	VOC
AA3950	BO9WG7	SOIL	SVOC
AA3951	BO9WG7	SOIL	ANIONS
AA3952	BO9WG7	SOIL	NO3NO2
AA3953	BO9WG7	SOIL	CN
AA3954	BO9WG7	SOIL	TPH
AA3960	BO9WJ2	SOIL	VOC
AA3961	TRIP BLANK	WATER	VOC
AA4170	BO9WH0	SOIL	METALS
AA4171	BO9WH0	SOIL	VOC
AA4172	BO9WH0	SOIL	SVOC
AA4173	BO9WH0	SOIL	ANIONS
AA4174	BO9WH0	SOIL	NO3NO2
AA4175	BO9WH0	SOIL	CN
AA4176	BO9WH0	SOIL	TPH
AA4181	BO9WH1	SOIL	METALS
AA4182	BO9WH1	SOIL	VOC
AA4183	BO9WH1	SOIL	SVOC
AA4184	BO9WH1	SOIL	ANIONS
AA4185	BO9WH1	SOIL	NO3NO2
AA4186	BO9WH1	SOIL	CN
AA4187	BO9WH1	SOIL	TPH
AA4221	BO9WJ8	SOIL	VOA
AA4188	BO9WJ3	SOIL	METALS
AA4189	BO9WJ3	SOIL	VOC
AA4190	BO9WJ3	SOIL	SVOC
AA4191	BO9WJ3	SOIL	ANIONS
AA4192	BO9WJ3	SOIL	NO3NO2
AA4193	BO9WJ3	SOIL	PEST/PCB
AA4194	BO9WJ3	SOIL	CN
AA4195	BO9WJ3	SOIL	TPH

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

III. Quality Control (Continued)

TABLE I

Knoxville ID	WHC ID	Matrix	Test
AA4197	BO9WJ4	SOIL	METALS
AA4198	BO9WJ4	SOIL	VOC
AA4199	BO9WJ4	SOIL	SVOC
AA4200	BO9WJ4	SOIL	ANIONS
AA4201	BO9WJ4	SOIL	NO3NO2
AA4202	BO9WJ4	SOIL	PEST/PCB
AA4203	BO9WJ4	SOIL	CN
AA4204	BO9WJ4	SOIL	TPH
AA4205	BO9WJ5	SOIL	METALS
AA4206	BO9WJ5	SOIL	VOC
AA4207	BO9WJ5	SOIL	SVOC
AA4208	BO9WJ5	SOIL	ANIONS
AA4209	BO9WJ5	SOIL	NO3NO2
AA4210	BO9WJ5	SOIL	PEST/PCB
AA4211	BO9WJ5	SOIL	CN
AA4212	BO9WJ5	SOIL	TPH
AA4222	BO9WJ6	SOIL	VOC
AA4213	BO9WJ7	SOIL	METALS
AA4214	BO9WJ7	SOIL	VOC
AA4215	BO9WJ7	SOIL	SVOC
AA4216	BO9WJ7	SOIL	ANIONS
AA4217	BO9WJ7	SOIL	NO3NO2
AA4218	BO9WJ7	SOIL	PEST/PCB
AA4219	BO9WJ7	SOIL	CN
AA4220	BO9WJ7	SOIL	TPH
AA4223	TRIP BLANK	WATER	VOC

9613474.3073

OCC1856

IT Corporation
June 3, 1994

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: Westinghouse Hanford Job Number: 167; 193; 212; 230 (Corrected Certificate)

IV. Certification

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature:

Reviewed and Approved:

Sheree A. Schneider
Project Manager

042

682-1-89

9613474.3074

0000036

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS

Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2

Collection Date:

Ice Chest No.:

Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.:

Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 RADIOACTIVE

Sample Identification

1)

1,250ml P:CLP;TAL Metals,Hg,Ti ✓ B09WF9
1,250ml ✓Gs:VOA CLP
1,250ml ✓aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0) ✓
1,125ml P/G:Anions NO2,NO3 (EPA 353.2) ✓
~~1,250ml aGs:PCB/Pest (8080)~~ LER 3-3-94
1,125ml ✓G:Cyanide CLP
1,125ml Gw:Kerosene (8015M) ✓
1,1000ml ✓P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2)

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080) LER 3-3-94
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
Loren E Rogers 3-4-94 1033	Michael Kingsley	3/4 @ 12:30
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.3075

0000037

Westinghouse Hanford Company	SAMPLE ANALYSIS REQUEST

Collector L E ROGERS — S.A.F. # 94-065 — Date 3-3-94

Company Contact L E ROGERS — Telephone (509) 376-7690

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Required
B09WF9	S	3-3-94	1225	40309801 A 1,250ml P:CLP;TAL Metals,Hg,Ti 6010 B 1,250ml Gs:VOA CLP 8240 C 1,250ml aG:Semi-VOA CLP 8270 ✓ D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) ✓ ~~1,250ml aGs:PCB/Pest (8080)~~ JER 3-3-94 F 1,125ml G:Cyanide CLP 9010 G 1,125ml Gw:Kerosene (8015M) ✓ 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253) 40309901
			JER 3-3-94	1,250ml P:CLP;TAL Metals,Hg,Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 300.0) 1,125ml P/G:Anions NO2,NO3 (EPA 353.2) 1,250ml aGs:PCB/Pest (8080) 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include, Cs-134, Cs-137, Co-60, Eu- 152, Eu-154, Eu-155, K-40, Ru-106, Na-22, I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235, U-234, U-238 (ITAS-RD-3234) Np-237, (ITAS-RD-3208) Pu-238, Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241, Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

*Type of Sample					
	A = Air	L = Liquid	SE = Sediment	T = Tissue	X = Other
	DL = Drum Liquids	O = Oil	SL = Sludge	W = Water	
	DS = Drum Solids	S = Soil	SO = Solid	WI = Wipe	

Field Information IT, Richland

Special Handling and/or Storage Maintain at 4C ; (SOIL)

Possible Sample Hazards RADIOACTIVE

Chain of custody did not have the collection date. This form date used to evaluate holding times for B09WF9.

new page 03/02/94

A-6000-406 (06/91) WEF060

043 A

9613474.3076

~~0000032~~

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.J. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-4-94

Ice Chest No.: SML #17B — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: N/A — Offsite Property No.: W94-U-0369 #13

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) 40320801 B09W60

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~ BR 3-9-94
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40320901

40320802 B09W62

2) 1,250ml aGs : CIP: VOA

2)
1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

BR 3-9-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.J. Setzer	Heidelberg	3/10/94 @ 1450
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.3077

~~0000041~~

SDG W0002 WO212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-10-94

Ice Chest No.: GW 5028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.: WP4-0-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

PB 3-15-94 40432064 01

B09W19

CAT I

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
I 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

40432 01

~~2) 1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

3-10-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	R. Boyd FT CWD	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.3078

~~0000043~~

WO #212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.W. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-11-93

Ice Chest No.: GW 5028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.: W94-0-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09W50

3244 A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
3267 I 1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

2)

1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080)
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

JAR 3-11-94

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.W. Setzer	R. Boyd JT CHOO	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.3079

~~0000045~~

WO #212

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS / W.U. SETZER

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-14-94

Ice Chest No.: GW S028 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: NA — Offsite Property No.: WWW-0-

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065

Sample Identification

1) B09WG7

403264 03

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
~~1,250ml aGs:PCB/Pest (8080)~~
F 1,125ml G:Cyanide CLP
G 1,125ml Gw:Kerosene (8015M)

403264 09 1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

~~2) B09WJ2 1,250ml aGs: CIP; VOA~~ WJS 3-14-92

2)
1,250ml P:CLP;TAL Metals,Hg,Ti
1,250ml Gs:VOA CLP
1,250ml aG:Semi-VOA CLP
1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
1,250ml aGs:PCB/Pest (8080) WJS
1,125ml G:Cyanide CLP
1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W.U. Setzer	R. Boyd IT CIBD	3/14/94 1430
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.3080

~~0000049~~

WO #230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-16-94

Ice Chest No.: GWS -127 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) ~~500ml~~ ~~FER~~ 3-17-94 B04WH0

A 1,~~250ml~~ P:CLP;TAL Metals,Hg,Ti

B 1,250ml Gs:VOA CLP

C 1,250ml aG:Semi-VOA CLP

D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)

E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)

~~1,250ml aGs:PCB/Pest (8080)~~ FER 3-16-94

F 1,125ml G:Cyanide CLP

G 1,125ml Gw:Kerosene (8015M)

1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4033450 1

FER 3-17-94 B04WH1

2)

A 1, ~~500ml~~ ~~1,250ml~~ P:CLP;TAL Metals,Hg,Ti

B 1, ~~500ml~~ ~~1,250ml~~ Gs:VOA CLP

C 1, ~~500ml~~ ~~1,250ml~~ aG:Semi-VOA CLP

D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)

E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)

~~1,250ml aGs:PCB/Pest (8080)~~ FER 3-16-94

F 1,125ml G:Cyanide CLP

G 1,~~125ml~~ Gw:Kerosene (8015M)

1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4033450 2

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Loren E Rogers Loren E. Rogers	Received by: J.D. Fowler J.D. Fowler	Date/Time: 3/17/94 1018
Relinquished by: J.D. Fowler J.D. Fowler	Received by: [illegible]	Date/Time: 3/17 @ 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.3081

~~0000053~~

WO#230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-14-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09WJ3

4033444

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4033450 4

2) B09WJ4

4033446 5

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4033450 5

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Leroy E. Rogers / Leroy E. Rogers	Received by: S.D. Sanchez / S.D. Fahy	Date/Time: 3/17/94 1018
Relinquished by: S.D. Sanchez / S.D. Fahy	Received by: Heidelberg	Date/Time: 3/17 1330
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.3082

~~0000065~~

WO#236

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-15-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) B09W55

A 1,250ml P:CLP;TAL Metals,Hg,Ti
B 1,250ml Gs:VOA CLP
C 1,250ml aG:Semi-VOA CLP
D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)
E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)
F 1,250ml aGs:PCB/Pest (8080)
G 1,125ml G:Cyanide CLP
H 1,125ml Gw:Kerosene (8015M)
1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

1163344C6

4C334506

~~2)~~

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~
~~1,250ml Gs:VOA CLP~~
~~1,250ml aG:Semi-VOA CLP~~
~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~
~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~
~~1,250ml aGs:PCB/Pest (8080)~~
~~1,125ml G:Cyanide CLP~~
~~1,125ml Gw:Kerosene (8015M)~~
~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

~~LR 3-15-94~~

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
James E. Rogers / Jerome E. Rogers	J.D. Fanher / J.D. Fanher	3/17/94 1015
J.D. Fanher / J.D. Fanher	Heidelberg	3/17 1330

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.3083

~~0000057~~

WO# 230

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: L E ROGERS

Company Contact: L E ROGERS — Telephone: 376-7690

Project Designation/Sampling Locations: 200-UP-2 — Collection Date: 3-16-94

Ice Chest No.: SML-448 — Field Logbook No.: EFL-1115

Bill of Lading/Airbill No.: — Offsite Property No.:

Method of Shipment: Government vehicle

Shipped to: IT, Richland

Possible Sample Hazards/Remarks: Keep samples at 4C (SOIL) SAF # 94-065 NONE NOTED

Sample Identification

1) BC9WJ6

4C334407

~~1,250ml P:CLP;TAL Metals,Hg,Ti~~

1,250ml Gs:VOA CLP

~~1,250ml aG:Semi-VOA CLP~~

~~1,125ml G:Anions F,Cl,SO4 (EPA 300.0)~~

~~1,125ml P/G:Anions NO2,NO3 (EPA 353.2)~~

~~1,250ml aGs:PCB/Pest (8080)~~

~~1,125ml G:Cyanide CLP~~

~~1,125ml Gw:Kerosene (8015M)~~

~~1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)~~

SCN 3-16-94

2) BC9WJ7

4C334408

A 1,250ml P:CLP;TAL Metals,Hg,Ti

B 1,250ml Gs:VOA CLP

C 1,250ml aG:Semi-VOA CLP

D 1,125ml G:Anions F,Cl,SO4 (EPA 300.0)

E 1,125ml P/G:Anions NO2,NO3 (EPA 353.2)

F 1,250ml aGs:PCB/Pest (8080)

G 1,125ml G:Cyanide CLP

H 1,125ml Gw:Kerosene (8015M)

1,1000ml P/G:Gross alpha (ITAS-RD-3322) Gross beta (ITAS-RD-3322), Gamma Spec to include,Cs-134,Cs-137,Co-60,Eu-152, Eu-154,Eu-155,K-40,Ru-106,Na-22,I-129 (ITAS-RD-3219), Total Uranium (ITAS-RD-4200, ITAS-RD-4201) U-235,U-234,U-238 (ITAS-RD-3234) Np-237,(ITAS-RD-3208) Pu-238,Pu-239/240 (ITAS-RD-3209) Sr-90 (ITAS-RD-3204) Tc-99 (ITAS-IT-RS-0001) Am-241,Cm-244 (ITAS-RD-3302) Se-79 (ITAS-RD-3253)

4C334507

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: Loren E. Rogers	Received by: J.D. Fowler	Date/Time: 3/17/94 1018
Relinquished by: J.D. Fowler	Received by: Heidelberg	Date/Time: 3/17 1332
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613474.3084

ATTACHMENT 5

DATA VALIDATION SUPPORTING DOCUMENTATION

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E

PROJECT: 200-UP-2		DATA PACKAGE: W0002-ITC-007
VALIDATOR: T. Stapp	LAB: ITC/Knoxville	DATE: 6-13-94
CASE:		SDG:

ANALYSES PERFORMED

☑ CLP/ICP	☑ CLP/GFAA	☑ CLP/Hg	☑ CLP/Cyanide	☐	☐
☐ SW-846/ICP	☐ SW-846/GFAA	☐ SW-846/Hg	☐ SW-846 Cyanide	☐	☐

SAMPLES/MATRIX B09WF9, B09WG0, B09WI9, B09WJ0, B09WG7, B09WH0, B09WH1, B09WJ3, B09WJ4, B09WJ5, B09WJ7, / SOIL

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Is technical verification documentation present? Note ① . . . . . Yes No N/A

Is a case narrative present? . . . . . Yes No N/A

Comments: ① Performed by WHC

2. HOLDING TIMES

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

Comments: Samples B09WI9 and B09WG7 exceeded the cyanide analysis holding time. See summary pages B-1.

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. INSTRUMENT PERFORMANCE AND CALIBRATIONS

Were initial calibrations performed on all instruments? . . . Yes No N/A

Are initial calibrations acceptable? . . . . . Yes No N/A

Are ICP interference checks acceptable? . . . . . Yes No N/A

Were ICV and CCV checks performed on all instruments? . . . . . Yes No N/A

Are ICV and CCV checks acceptable? . . . . . Yes No N/A

Comments:

4. BLANKS

Were ICB and CCB checks performed for all applicable analyses? Yes No N/A

Are ICB and CCB results acceptable? . Note ① . . . . . Yes ~~No~~ N/A RS 6-14-92

Were preparation blanks analyzed? . . . . . Yes No N/A

Are preparation blank results acceptable? Note ② . . . . . Yes No N/A

Were field/trip blanks analyzed? . . . . Note ③ . . . . . Yes No N/A

Are field/trip blank results acceptable? . . . . . Yes No N/A

Comments: ① ~~CCB for titanium blank detected a negative value >IDL as an absolute value. Assoc. samples are qualif. J/UJ. See blank summary.~~ 4-9-4

② Prep. blanks for cyanide detected negative values. Assoc. results <10x the absolute value are qualified J/UJ. See blank Summary.

③ Field QC was not identified, but has been requested. It will be evaluated in the final data summary.

5. ACCURACY

Were spike samples analyzed? . . . . . Yes No N/A

Are spike sample recoveries acceptable? . . . Note ① . . . . . Yes No N/A

Were laboratory control samples (LCS) analyzed? . . . . . Yes No N/A

Are LCS recoveries acceptable? . . . . . Yes No N/A

Comments: ① MS recovery for Arsenic is out of limits and assoc. Samples are qualified J/UJ.

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

6. PRECISION

Were laboratory duplicates analyzed? . . . . . Yes No N/A

Are laboratory duplicate samples RPD values acceptable? . . . . Yes No N/A

Were ICP serial dilution samples analyzed? . . . . . Yes No N/A

Are ICP serial dilution %D values acceptable? . . . . . Yes No N/A

Are field duplicate RPD values acceptable? Note ① . . . . . Yes No N/A

Are field split RPD values acceptable? . . . . . Yes No N/A

Comments: ① Field QC was not identified with this sample set, but it has been requested. Field Duplicates will be evaluated in the final data summary.

7. FURNACE AA QUALITY CONTROL

Were duplicate injections performed as required? . . . . . Yes No N/A

Are duplicate injection %RSD values acceptable? . . . . . Yes No N/A

Were analytical spikes performed as required? . . . . . Yes No N/A

Are analytical spike recoveries acceptable? . . Note ① . . . . . Yes No N/A

Was MSA performed as required? . . . . . Yes No N/A

Are MSA results acceptable? . . . . . Yes No N/A

Comments: ① Analytical Spike recoveries for selenium in samples B09WH0, B09WJ3, B09WJ4 + B09WJ7 ; Thallium in sample B09WG7 ; Arsenic in Samples B09WF9 and B09WJ0 were out of limits qualifying results as estimated. (J/UJ).

8. REPORTED RESULTS AND DETECTION LIMITS

Are results reported for all requested analyses? . . . . . Yes No N/A

Are all results supported in the raw data? . . . . . Yes No N/A

Are results calculated properly? . . . Note ① . . . . . Yes No N/A TE 6-14-93

Do results meet the CRDLs? . . . . . Yes No N/A

Comments: ① A systematic error in calculation of results for B09WG7 was found and all results have been recalculated.

W0002-ITC-007

HOLDING TIME SUMMARY - FORM B-1

SDG:	REVIEWER: T. Stapp	DATE: 6-13-94	PAGE 1 OF 5

COMMENTS:

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09WF9	ICP	3-3-94	3-25-94	3-29-94		≤180	NONE
B09WGØ		3-4-94		3-29-94			
B09WI9		3-10-94					
B09WJØ		3-11-94					
B09WG7		3-10-94					
B09WHØ		3-16-94	4-1-94	4-1-94			
B09WH1		"					
B09WJ3		3-14-94					
B09WJ4		"		+4/9 TE			
B09WJ5		3-15-94					
B09WJ7		3-16-94					

WHC-SD-EN-SPP-002, ~~Rev. 1~~ Rev. 2 6-13-94

9613474.3088

W0002-ITC-007

HOLDING TIME SUMMARY - FORM B-1

SDG:	REVIEWER: T. Stapp	DATE: 6-13-94	PAGE 2 OF 5

COMMENTS:

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09WF9	Hg	3-3-94	3-24-94	3-24-94		≤28	NONE
B09WGØ		3-4-94					
B09WI9		3-10-94					
B09WJØ		3-11-94					
B09WG7		3-10-94					
B09WHØ		3-16-94	4-1-94	4-1-94			
B09WH1		"					
B09WJ3		3-14-94					
B09WJ4		"					
B09WJ5		3-15-94					
B09WJ7		3-16-94					

WHC-SD-EN-SPP-002, ~~Rev. 1~~ Rev. 2 6-13-94

9613474.3089

W0002-ITC-007

HOLDING TIME SUMMARY - FORM B-1

SDG:	REVIEWER: T. Stapp	DATE: 6-13-94	PAGE 3 OF 5
COMMENTS:			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09WF9	CN	3-3-94	3-10-94	3-11-94		≤14	NONE
B09WGØ		3-4-94	3-16-94	3-17-94		≤14	NONE
B09WI9		3-10-94	3-24-94	3-25-94		15	J/UJ
B09WJØ		3-11-94				≤14	NONE
B09WG7		3-10-94				15	J/UJ
B09WHØ		3-16-94				≤14 ~~Q~~	NONE
B09WH1		"					
B09WJ3		3-14-94					
B09WJ4		"					
B09WJ5		3-15-94					
B09WJ7		3-16-94					

WHC-SD-EN-SPP-002, ~~Rev. 1~~ Rev. 2 6-13-94

9613474.3090

W0002-ITC-007

HOLDING TIME SUMMARY - FORM B-1

SDG:	REVIEWER: T. Stapp	DATE: 6-13-94	PAGE 4 OF 5
COMMENTS:			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	~~PREP. HOLDING TIME, DAYS~~ 6-13-94	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09WF9	As (Pb)	3-3-94	3-25-94	3-27-94	(3-25)	≤180 (≤180)	NONE
B09WGØ		3-4-94		3-29-94			
B09WI9		3-10-94		"			
B09WJØ		3-11-94		3-27-94			
B09WG7		3-10-94		3-29-94			
B09WHØ		3-16-94	3-31-94	3-31-94	(3-31)		
B09WH1		"					
B09WJ3		3-14-94					
B09WJ4		"		4-2-94			
B09WJ5		3-15-94					
B09WJ7		3-16-94			(4-1)		

WHC-SD-EN-SPP-002, ~~Rev. 1~~ Rev. 2 6-13-94

9613474.3091

W0002-ITC-007

HOLDING TIME SUMMARY - FORM B-1

SDG:	REVIEWER: T. Stapp	DATE: 6-13-94	PAGE 5 OF 5

COMMENTS:

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B09WF9	Se (Tl)	3-3-94	3-25-94	3-30-94 (3-27-94)		≤180 (≤180)	NONE
B09WGØ		3-4-94					
B09WI9		3-10-94					
B09WJØ		3-11-94					
B09WG7		3-10-94					
B09WHØ		3-16-94	3-31-94	3-31-94 (3-31-94)			
B09WH1		"					
B09WJ3		3-14-94					
B09WJ4		"					
B09WJ5		3-15-94		4-1-94			
B09WJ7		3-16-94		3-31-94			

WHC-SD-EN-SPP-002, ~~Rev. 1~~ Rev. 2 6-13-94

9613474.3092

090

W0002-ITC-007

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG:	REVIEWER: T. Stapp	DATE: June 13, 1994	PAGE 1 OF 1

COMMENTS:

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
4/1 CCB2	Titanium	-3.4			µg/L	(2x abs. Val.)			~~R~~ 6-13-94
↓	"	-0.68			mg/Kg	1.36		~~B09WJ3~~ B09WJ4	~~UJ-Nondetects~~
↓	"	"			"	"		B09WJ5 B09WJ7	~~J Detects < 1.36 mg/Kg~~
								NONE	~~R~~ 6-13-94
3/17 PB	CYANIDE	-1.6			mg/Kg		16	B09WG0	UJ-Nondetects J detects <16
3/25 PB	CYANIDE	-1.6			"		16	All except B09WF9	~~UJ-N~~ ↓ ~~R~~ 6-13

WHC-SD-EN-SPP-002, ~~Rev. 1~~ Rev. 2 ~~R~~ 6-14-94

9613474.3093

U.S. EPA - CLP

3
BLANKS

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD___

Lab Code: ITSTU_ Case No.: W0002 SAS No.: _____ SDG No.: W0002_

Preparation Blank Matrix (soil/water): SOIL_

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

GFAA

C PBS 0401A
PBS 0325A
PBS 0316 (CN)

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	40.0	U	40.0	U	40.0	U	40.0	U	8.000	U	P
Antimony	50.0	U	50.0	U	50.0	U	50.0	U	10.000	U	P
Arsenic			2.0	U	2.0	U			0.400	U	F
Barium	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Calcium	20.0	U	20.0	U	20.0	U	20.0	U	4.000	U	P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U	2.000	U	P
Cobalt	10.0	U	10.0	U	10.0	U	10.0	U	2.000	U	P
Copper	10.0	U	10.0	U	10.0	U	10.0	U	2.000	U	P
Iron	10.0	U	10.0	U	10.0	U	10.0	U	2.000	U	P
Lead			2.0	U	2.0	U	2.0	U	0.400	U	F
Magnesium	50.0	U	50.0	U	50.0	U	50.0	U	10.000	U	P
Manganese	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U	0.100	U	CV
Nickel	20.0	U	20.0	U	20.0	U	20.0	U	4.000	U	P
Potassium	1000.0	U	1000.0	U	1000.0	U	1000.0	U	200.000	U	P
Selenium	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	F
Silver	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Sodium	100.0	U	100.0	U	100.0	U	100.0	U	20.000	U	P
Thallium			2.0	U					0.400	U	F
Vanadium	10.0	U	10.0	U	10.0	U	10.0	U	2.000	U	P
Zinc	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Titanium	3.0	U	3.0	U	-3.4	B	3.0	U	0.600	U	P
Cyanide	10.0	U	-16.0						-1.600		AS

ICP

2-14-94 ICP 4-1-94 ~~ICB~~ ~~CCB1~~ CCB2 ~~CCB3~~

FORM III - IN ILM02.1

4-11-94 ~~AS 3-27-94~~ ~~CCB4~~ ~~CCB5~~ PB 4/12/94

CN 3-17-94 CCB1 PB6027

Not revised: signed 6/24/94

U.S. EPA - CLP

3
BLANKS

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD___

Lab Code: ITSTU_ Case No.: W0002 SAS No.: _____ SDG No.: W0002_

Preparation Blank Matrix (soil/water): SOIL_

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L) ★	C	Continuing Calibration Blank (ug/L) ★ 1	C	2	C	3	C	Prepa-ration Blank (CPBS0324B Hg; PBS0401A; PBS0324(CD); APBS0331A)	C	GFAA M
Aluminum	40.0	U	40.0	U	40.0	U	40.0	U	8.000	U	P
Antimony	50.0	U	50.0	U	50.0	U	50.0	U	10.000	U	P
Arsenic	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	F
Barium	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Calcium	20.0	U	20.0	U	20.0	U	20.0	U	11.506	B	P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U	2.000	U	P
Cobalt	10.0	U	10.0	U	10.0	U	10.0	U	2.000	U	P
Copper	10.0	U	10.0	U	10.0	U	10.0	U	2.000	U	P
Iron	10.0	U	10.0	U	10.0	U	10.0	U	4.496	B	P
Lead	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	F
Magnesium	50.0	U	50.0	U	50.0	U	50.0	U	10.000	U	P
Manganese	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	P
Mercury	0.2	U	0.2	U	0.2	U			0.100	U	CV
Nickel	20.0	U	20.0	U	20.0	U	20.0	U	4.000	U	P
Potassium	1000.0	U	1000.0	U	1000.0	U	1000.0	U	200.000	U	P
Selenium	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	F
Silver	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Sodium	100.0	U	100.0	U	100.0	U	100.0	U	20.000	U	P
Thallium	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	F
Vanadium	10.0	U	10.0	U	10.0	U	10.0	U	2.000	U	P
Zinc	5.0	U	5.0	U	5.0	U	5.0	U	2.612	B	P
Titanium	3.0	U	3.0	U	3.0	U	3.0	U	0.600	U	P
Cyanide	10.0	U	10.0	U					1.000	U	AS

56-14-94 ICP ~~3-29-94~~ 4-1-94 ~~ICB~~ ~~CCB1~~ ~~CCB2~~ ~~CCB3~~ PB0401

FORM III - IN ILM02.1

~~AS 3-27-94 ICB CCB3~~ 8 4/12/94

Revised: signed 6/24/94

U.S. EPA - CLP

3
BLANKS

Lab Name: ITAS_KNOXVILLE_____ Contract: HANFORD___

Lab Code: ITSTU_ Case No.: W0002 SAS No.: _____ SDG No.: W0002_

Preparation Blank Matrix (soil/water): SOIL_

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	PB30310 (CN) Prepa-ration Blank	C	M
Aluminum	40.0	U	40.0	U	40.0	U	40.0	U			P
Antimony	50.0	U	50.0	U	50.0	U	50.0	U			P
Arsenic	2.0	U	2.0	U	2.0	U	2.0	U			F
Barium	2.0	U	2.0	U	2.0	U	2.0	U			P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U			P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U			P
Calcium	20.0	U	20.0	U	20.0	U	20.0	U			P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U			P
Cobalt	10.0	U	10.0	U	10.0	U	10.0	U			P
Copper	10.0	U	10.0	U	10.0	U	10.0	U			P
Iron	10.0	U	10.0	U	10.0	U	10.0	U			P
Lead			2.0	U							F
Magnesium	50.0	U	50.0	U	50.0	U	50.0	U			P
Manganese	2.0	U	2.0	U	2.0	U	2.0	U			P
Mercury			0.2	U							CV
Nickel	20.0	U	20.0	U	20.0	U	20.0	U			P
Potassium	1000.0	U	1000.0	U	1000.0	U	1000.0	U			P
Selenium			2.0	U							F
Silver	5.0	U	5.0	U	5.0	U	5.0	U			P
Sodium	100.0	U	100.0	U	100.0	U	100.0	U			P
Thallium	2.0	U	-2.0	B	2.0	U	2.0	U			F
Vanadium	10.0	U	10.0	U	10.0	U	10.0	U			P
Zinc	5.0	U	5.0	U	5.0	U	5.0	U			P
Titanium	3.0	U	3.0	U	3.0	U	3.0	U			P
Cyanide	10.0	U	-33.0		-15.0				~~1.000~~ -1.6	U	AS

Thallium 3-31-94 ——— CCB1 Not assoc. w/ samples in this SDG.

PB 6-14-94

FORM III - IN ILM02.1

CN 3-25-94 CCB1 CCB2 PB6056 4/12/94

revised: signed 6/01/24/94

ACCURACY DATA SUMMARY - FORM B-4

W0002-ITC-007

SDG:	REVIEWER: T. Stapp	DATE: 6-14-94	PAGE 1 OF 1
COMMENTS:			

SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B09WF9 MS	Arsenic	58	All	J/UJ
B09WF9	(Analytical Spike As)	78	B09WF9	
B09WJ0	" " "	76	B09WJ0	
~~B09WH0~~	Selenium (Analytical Spike)	67	B09WH0	J/UJ
Analytical Spk.		72	B09WJ3	
		69	B09WJ4	
		54	B09WJ7	
Analytical Spike	Thallium	84	B09WG7	J/UJ

6-14-93

6-14-94

9613474.3097

WHC-SD-EN-SPP-002, Rev. 1 Rev. 2