START 9713502.0002 0045877 B09082 -TMA-627

OFFICE OF SAMPLE MANAGEMENT

RECORD OF DISPOSITION

ROD-93-0260
Record of Disposition No.

DATE: 12/1/93	LABORATORY: TMA
PROJECT TITLE/NO.: 100-FR-3/93-319	NCR NO.: 051923

SAMPLE IDENTIFICATION NUMBERS:

B09DG2, B09D82

DESCRIPTION OF EVENT:

The holding time for alkalinity analysis was missed for the above referenced samples.

NOV 1996 RECEIVED LSMC

DISPOSITION OF SAMPLES:

With concurrence from J. W. Roberts, project engineer, cancel alkalinity analysis for samples B09D82 and B09DG2.

APPROVAL SIGNATURES:

R. C. Smith/ R. C. Smith
OSM Project Coordinator (Print/Sign Name) — Date

J. W. Roberts/ J. W. Roberts — 12/1/93
Technical Representative (Print/Sign Name) — Date

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

9715507.0005

Westinghouse Hanford Company

NONCONFORMANCE REPORT

1. Page 1 of 1

2. Preprinted No. 051923

QA Log No. EQA-93-116

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	RI/FS	SAMPLE	809 D82, 809 D62	N/A

8. Program/Project/Other	9. Safety Class	10. ASME Code Items
100-HR-3 / 93-319	N/A	☐ Yes ☒ No (If yes, notify authorized inspector)

11. Supplier Name/Address	12. Notification of Potential Occurence Required
THERMO ANALYTICAL, INC.	☐ Yes ☒ No

13. Code: Lot/Heat/Serial	14. Lot Size	15. Sample	16. Qty. Acc.	17. Inspection Criteria
N/A	2	2	0	☐ Dwg. ☐ Spec. ☐ Insp. Plan ☒ Other ~~SOW~~ SAF 93-319 RCS 12/1/93

18. Item	19. Description of Nonconformance (list serial no. where applicable)	22. Disposition, Justification, and Instructions
	AS STATED IN SAF 93-319, THE HOLDING TIME FOR ALKALINITY ANALYSIS IS 14 DAYS. CONTRARY TO THE ABOVE, THE ALKALINITY ANALYSIS FOR THE ABOVE REFERENCED SAMPLES WAS NOT PERFORMED WITHIN 14 DAYS.	REJECT THE ANALYSIS WAS CANCELED.

20. Originator's Signature	Date	23. Design Document Change Required?
RC SMITH RClayton Smith	12/1/93	☐ Yes, Doc. No. ☒ No

21. Cognizant QA Manager's Signature	Date	24. Corrective Action Required?
TL Bennington	12-7-93	☐ Yes, No. ☒ No

Disp. App.

25. Cognizent Engineer	Date	26. Technical Rep.	Date	Signature/Org.	Date
JR 12-6-93, ~~JW Roberts~~ S.E. Vukelich	1/4/94	NA		NA	

QA Engineer	Date	Signature/Org.	Date	Signature/Org.	Date
GS Corrigan Gary Corrigan	1-4-94				

Close

27. Accept 0 Reject 2 Follow on NCR NA

Gary Corrigan 1-4-94
QA/C Personnel Date

A-7310-104 (10/91)

9213507.0004

DON'T SAY IT --- *Write It!*

DATE: 2/9/98

TO: B09D82-TMA-627
B09DC8-TMA-635
B09D70-TMA-633
B09D82-TMA-639
B09DJ2-TMA-638
B09DC4-TMA-632
B09D78-TMA-637
cc:

FROM: Pat Reich

Telephone: 372-2785

SUBJECT: DATA VALIDATION FOR THE 100-FR-3 PROJECT 4TH QUARTER

THE VALIDATION SUMMARY REPORT FOR THIS DATA PACKAGE IS FILED IN B09D93-DAT-255:

PAT REICH
CLERK

54-3000-101 (12/92) GEF014

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 10-067

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : October 28, 1993

1.0 DESCRIPTION OF CASE :

Four water samples were analyzed for TCL Organics- Volatiles, Semivolatiles, and Pesticides/PCBs according to the USEPA Contract Laboratory Program (CLP) Statement of Work for Organic Analysis, Revision OLM01.8.

2.0 SAMPLE LIST :

WESTINGHOUSE ID	LAB ID	ANALYSIS REQUESTED	MATRIX	pH
B09D82	A3-10-067-01A	V	WATER	0
B09D82	A3-10-067-01B	SV	WATER	
B09D82 MS	A3-10-067-01C	SV	WATER	
B09D82 MSD	A3-10-067-01D	SV	WATER	
B09D82	A3-10-067-01E	P	WATER	
B09D82 MS	A3-10-067-01F	P	WATER	
B09D82 MSD	A3-10-067-01G	P	WATER	
B09DG2	A3-10-067-02A	V	WATER	0
B09DG2 MS	A3-10-067-02B	V	WATER	0
B09DG2 MSD	A3-10-067-02C	V	WATER	0
B09DG2	A3-10-067-02D	SV	WATER	
B09DG2	A3-10-067-02E	P	WATER	
B09D84	A3-10-067-04A	V	WATER	0
B09DG4	A3-10-067-05A	V	WATER	0

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

All of the samples were received unbroken and properly documented.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were analyzed within the CLP SOW holding times.

All of the QC results were within the limits specified by the EPA CLP SOW.

TUNES :

All BFB tunes are injected directly into the GC/MS instrument.

3.2.2 SEMIVOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times.

All of the QC results were within the limits specified by the EPA CLP SOW.

3.2.3 PESTICIDE/PCB ANALYSIS COMMENTS :

SEQUENCE NOTES :

The sequence was started on 11/15/93 and was analyzed according to the USEPA CLP SOW. The sequence was analyzed by single injection into a dual column system.

On the DB-608 column, the %RSD for all of the analytes were within the QC limits. However, on the DB-1701 column the %RSD for alpha-BHC and delta-BHC exceeded 20%, but were less than the 30% limit.

All of the other QC criteria were within the limits specified by the EPA CLP SOW.

The chromatograms are presented in the manner consistent with the capabilities of the Nelson 2700 Turbochrome Data System which normalizes the largest peak to scale.

SAMPLE NOTES :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times. The TCX and DCB surrogate recoveries in all of the samples were within the advisory QC limits. No TCL analytes were detected in the samples.

All of the QC results were within the limits specified by CLP SOW.

We 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 in this hardcopy data package and in the computer-readable data submitted on diskette is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Nicole Roth

Nicole Roth 12/14/93
CLP Program Manager

Maureen Parrish

Maureen Parrish 12/14/93
Program Manager

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D82

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 10067 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A310067-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31102M04

Level: (low/med) LOW Date Received: 10/28/93

% Moisture: not dec. ____ Date Analyzed: 11/02/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09D82

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 10067 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A310067-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31102M04

Level: (low/med) LOW Date Received: 10/28/93

% Moisture: not dec. ____ Date Analyzed: 11/02/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9715507.0010

000118

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D84

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 10067 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A310067-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31102M07

Level: (low/med) LOW Date Received: 10/28/93

% Moisture: not dec. ____ Date Analyzed: 11/02/93

GC Column: CAP 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	1	J
67-64-1	Acetone	10	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	Xylene (total)	10	U

9713507.0011

000119

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B09D84

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 10067 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A310067-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31102M07

Level: (low/med) LOW Date Received: 10/28/93

% Moisture: not dec. ____ Date Analyzed: 11/02/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713507.0012

000120

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DG2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 10067 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A310067-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31102M03

Level: (low/med) LOW Date Received: 10/28/93

% Moisture: not dec. ____ Date Analyzed: 11/02/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

9713507.0013
1E

~~000161~~
C00121 SF
12/14/9

EPA SAMPLE NO.

B09DG2

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 10067 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A310067-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31102M03

Level: (low/med) LOW Date Received: 10/28/93

% Moisture: not dec. ____ Date Analyzed: 11/02/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713507.0014

000122

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DG4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 10067 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A310067-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31102M08

Level: (low/med) LOW Date Received: 10/28/93

% Moisture: not dec. ____ Date Analyzed: 11/02/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

9713507.0015

1E

000123

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B09DG4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 10067 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A310067-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31102M08

Level: (low/med) LOW Date Received: 10/28/93

% Moisture: not dec. ____ Date Analyzed: 11/02/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713507.0016
1B

000124
EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B09D82

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 10067 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A310067-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31108I04

Level: (low/med) LOW Date Received: 10/28/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/01/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/08/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

EPA SAMPLE NO.

B09D82

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 10067 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A310067-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31108I04

Level: (low/med) LOW Date Received: 10/28/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/01/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/08/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

9713507.0018

1F

000126

EPA SAMPLE NO.

B09D82

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 10067 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A310067-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31108I04

Level: (low/med) LOW Date Received: 10/28/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/01/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/08/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713507.0019

1B

000127

EPA SAMPLE NO.

B09DG2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 10067 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A310067-02D

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31108I07

Level: (low/med) LOW Date Received: 10/28/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/01/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/08/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

EPA SAMPLE NO.

B09DG2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 10067 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A310067-02D

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31108I07

Level: (low/med) LOW Date Received: 10/28/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/01/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/08/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

EPA SAMPLE NO.

B09DG2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 10067 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A310067-02D

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31108I07

Level: (low/med) LOW Date Received: 10/28/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/01/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/08/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D82

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 10067 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A310067-01E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 10/28/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/01/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/16/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

EPA SAMPLE NO.

B09DG2

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 10067 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A310067-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 10/28/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/01/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/16/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

9713507.0024

TMA

RECORD COPY

WESTINGHOUSE HANFORD COMPANY

DEC 1993
RECEIVED
SDLA

Results of Analyses For:

ORGANICS & GENERAL CHEMISTRY
Case No. 10-067
(TMA/ARLI Work Order # A3-10-067)

METALS & NITRATE/NITRITE
Case No. N3-10-150
(TMA/Skinner & Sherman W.O. # S3-10-370, S3-10-371 & S3-10-372)

TOTAL ORGANIC CARBON/TOTAL ORGANIC HALOGENS
Case No. N3-10-150
(TMA/ERG W.O. # E3-10-265)

December 15, 1993

TMA Master Work Order # N3-10-150

2-9-96
MC

 9713507.0025 TMA/NorCal CHAIN OF CUSTODY ORD # N3-10-150 000002

RCVD: 10/28/93 DUE: 12/02/93 10/28/93 13:19:51 KEEP: 12/02/94 DISP: S

DASH	SAMPLE IDENTIFICATION		STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY						
01A-W	B09D82	UNFILTERED	ARLI	WH018	WH019	WH020	WH043	WH114	WH121	WH122
				WH128	WH131	WH132	WH140			
02A-W	B09DG2	UNFILTERED	ARLI	WH018	WH019	WH020	WH043	WH114	WH121	WH122
				WH128	WH131	WH132	WH140			
02D-W	B09DG2 MS	UNFILTERED	ARLI	WH018	WH019	WH020	WH043	WH114	WH140	
02E-W	B09DG2 MSD	UNFILTERED	ARLI	WH018	WH019	WH020				
02F-W	B09DG2 DUP	UNFILTERED	ARLI	WH043	WH114	WH121	WH122	WH128	WH131	WH132
				WH140						
05A-W	B09D84		ARLI	WH018						
06A-W	B09DG4		ARLI	WH018						

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
[illegible]	10-28-93	ARLI	10-28-93	C. Harris	10/29/93

9213507.0026 0000021

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/26/93

Ice Chest No. 682.

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010186

Offsite Property No. ~~W93-~~ W94-0-0001-24 LCS 10/27/93

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09D82

3, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
1, 2L & 1, 1L, aG; WATER; CLP-SEMI VOA
1, 2L & 1, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
1, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
1, 250ml, ~~P~~, WATER; ALKALINITY Glass - KD
1, 500ml, P, WATER; TDS
1, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
1, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
1, 1L, P, WATER; Cn(NaOH to pH 12.0)
1, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
1, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
1, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
1, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
1, 250ml, Gs, WATER; TRITIUM/C-14

B09D83

1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09D84

3, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
Kathy B. Lee K.D. Lee	10/26/93	1336	L. Sweeney L. Sweeney	10/27/93	0800 LCS ~~0700~~ 10/27/93
L. Sweeney L. Sweeney	10/27/93	1000	Kermit Blum K. Blum	10-28-93	1145

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. # 313 by K.D. Lee 10/26/93 1336

A-6000-407 (12/92) WEF061

9213507.0027 0000028

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/26/93 Time 1030 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*		Analysis Requested
B09D82	3; 40ml; Gs*;	WATER	✓✓✓	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	✓✓	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	✓✓	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	✓	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	✓	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	✓	ALKALINITY
	1; 500ml; G;	WATER	✓	TDS
	1; 500ml; G;	WATER	✓	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	✓	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	✓	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER		ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	✓	Cn(NaOH to pH<2.0)
	1; 4L; G/P;	WATER	✓	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
				U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	✓	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	✓	TRITIUM, C14
	1; 125mL; aGs	WATER	✓	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	✓	TOX (HNO3 to pH<2.0)
B09D83	1; 1L; P	WATER	✓	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D84	3; 40mL; Gs	WATER	✓✓✓	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2519010186 OPC #: W94-0-0001-24

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9713507.0028 000002C

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/26/93

Ice Chest No. GN5011

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010186

Offsite Property No. ~~W93-~~ W94-0-0001-24

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DG2

3, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
1, 2L & 1, 1L, aG; WATER; CLP-SEMI VOA
1, 2L & 1, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
1, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
1, 250ml, ~~P~~, WATER; ALKALINITY GLASS - KB
1, 500ml, P, WATER; TDS
1, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
1, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
1, 1L, P, WATER; Cn(NaOH to pH 12.0)
1, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
1, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
1, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
1, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
1, 250ml, Gs, WATER; TRITIUM/C-14

B09DG3

1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DG4

3, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
Kirby D. Lee K.D. Lee	10/26/93	1336	L Sweeney L Sweeney	10/27/93	0800
L Sweeney L Sweeney	10/27/93	1000	Kermit Blum K. Blum	10-28-93	1145

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. # 3B by K.D. Lee 10/26/93 1336

A-6000-407 (12/92) WEF061

9213507.0029 0000025

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/26/93 Time 1030 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D G2	3; 40ml; Gs*; ✓✓✓	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG; ✓	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG; ✓	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P ✓	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P; ✓	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P; ✓	WATER	ALKALINITY
	1; 500ml; G; ✓	WATER	TDS
	1; 500ml; G; ✓	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G; ✓	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P; ✓	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P; ✓	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; ✓	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P; ✓	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs ✓	WATER	TRITIUM, C14
	1; 125mL; aGs ✓	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs ✓	WATER	TOX (HNO3 to pH<2.0)
B09D G3	1; 1L; P ✓	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D G4	3; 40mL; Gs ✓✓✓	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2515010186 OPC #: W294-0-0001-24

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARLI PAGE : ____ OF ____

RECEIVED BY (PRINT NAME): PAYAM SHADI LOG-IN-DATE : 10-29-93

RECEIVED BY (SIGNATURE): payam shadi

ICE CHEST NO. 682

REMARKS:

1. Custody Seal(s) Present / Absent* Intact / Broken
2. Custody Seal Nos: ____
3. Chain of Custody Records Present / Absent*
4. Traffic Reports or Packing List Present / Absent*
5. Airbill Airbill / Sticker Present / Absent*
6. Airbill No.: 7289153410
7. Sample Tags Present / Absent*
8. Sample Tag Numbers Listed / Not Listed on Chain of Custody
9. Sample Condition: Intact / Broken* / Leaking
10. Does information on custody records, traffic reports, and sample tags agree? Yes / No*
11. Date Recieved at Lab: 10-29-93
12. Temp of ice chest 3 °c
13. Time Recieved: 10:00AM

SAMPLE TRANSFER

Fraction: ____ ____

Area #: ____ ____

By: ____ ____

On: ____ ____

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B09D82	A310067	
	B09DK5	A310064	
	B08NT5	A310063	
	B08NT6	A310063	
	B08NT7	A310063	
	B08NT8	A310063	
	B09D82	A310067	

* Contact SMO and attach record of resolution

Reviewed By: ____ Logbook No.: ____

Date: ____ Logbook Page No.: ____

FORM DC-1

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARLI PAGE : ____ OF ____

RECEIVED BY (PRINT NAME): PAYAM SHARI LOG-IN-DATE : 10-29-93

RECEIVED BY (SIGNATURE): Payam Shari

ICE CHEST NO. 3ML399

	EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT,ETC
REMARKS:				
1. Custody Seal(s) Present / Absent* Intact / Broken				
		B09D63		
2. Custody Seal Nos:		B09D64		
3. Chain of Custody Records Present / Absent*				
4. Traffic Reports or Packing List Present / Absent*				
5. Airbill Airbill / Sticker Present / Absent*				
6. Airbill No.: 7289153410				
7. Sample Tags Present / Absent*				
8. Sample Tag Numbers Listed / Not Listed on Chain of Custody				
9. Sample Condition: Intact / Broken* / Leaking				
10. Does information on custody records, traffic reports, and sample tags agree? Yes / No*				
11. Date Recieved at Lab: 10-29-93				
12. Temp of ice chest 4 °C				
13. Time Recieved: 10:30				
SAMPLE TRANSFER				
Fraction:				
Area #:				
By:				
On:				

* Contact SMO and attach record of resolution

Reviewed By: ____ Logbook No.: ____

Date: ____ Logbook Page No.: ____

FORM DC-1

000005

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

PACKAGE TRACKING NUMBER

7289153410

RECIPIENT'S COPY

1 Date 10-28-93

From (Your Name) Please Print: SAMPLE CONTROL

Your Phone Number (Very Important): (213-)235-24

Company

Department/Floor No.

Street Address

City: LA State: CA ZIP Required: 9 0 0 3 4

2 To (Recipient's Name) Please Print: CAROLE HARRIS

Recipient's Phone Number (Very Important): (818) 357-3247

Company: TMA/ARLI

Department/Floor No.

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 160 TAYLOR STREET

City: MONROVIA, State: CA. ZIP Required: 91016

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): 2340-6406

H IF HOLD FOR PICK-UP, Print FEDEX Address Here

Street Address

City State ZIP Required

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card 5 [ ] Cash/Check

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning†)
- 11 [X] OTHER PACKAGING
- 16 [ ] FEDEX LETTER*
- 12 [ ] FEDEX PAK*
- 13 [ ] FEDEX BOX
- 14 [ ] FEDEX TUBE

Standard Overnight (Delivery by next business afternoon. No Saturday delivery†)
- 51 [ ] OTHER PACKAGING
- 56 [ ] FEDEX LETTER*
- 52 [ ] FEDEX PAK*
- 53 [ ] FEDEX BOX
- 54 [ ] FEDEX TUBE

Economy Two-Day (Delivery by second business day †)
- 30 [ ] ECONOMY**

* Economy Letter rate not available. Minimum charge. One pound economy rate.

Government Overnight (Restricted for authorized users only)
- 46 [ ] GOVT LETTER
- 41 [ ] GOVT PACKAGE

Freight Service (for packages over 150 lbs.)
- 70 [ ] OVERNIGHT FREIGHT** (Confirmed reservation required)
- 80 [ ] TWO-DAY FREIGHT**

† Delivery commitment may be later in some areas

*Declared Value Limit $500. **Call for delivery schedule

5 DELIVERY AND SPECIAL HANDLING (Check services required)
- 1 [ ] HOLD FOR PICK-UP (Fill in Box H)
- 2 [X] DELIVER WEEKDAY
- 3 DELIVER SATURDAY (Extra charge) (Not available to all locations) [ ]
- 4 [ ] DANGEROUS GOODS (Extra charge)
- 5 [ ]
- 6 [ ] DRY ICE Dangerous Goods Shipper's Declaration not required

Dry Ice, 9, UN 1845, ____ X ____ kg. 904 18

- 7 [ ] OTHER SPECIAL SERVICE
- 8 [ ]
- 9 [ ] SATURDAY PICK-UP (Extra charge)
- [ ]
- 12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See right)
3		
Total 3	Total	Total

DIM SHIPMENT (Chargeable Weight) [ ] lbs x x

Received At: 1 [ ] Regular Stop 3 [ ] Drop Box 4 [ ] BSC 2 [ ] On Call Stop 5 [ ] Station

Emp. No. Date

[ ] Cash Received

[ ] Return Shipment

[ ] Third Party [ ] Chg. To Del. [ ] Chg. To Hold

Street Address

City State Zip

Received By: X

Date/Time Received FedEx Employee Number

7 Release Signature

Federal Express Use

Base Charges

Declared Value Charge

Other 1

Other 2

Total Charges

REVISION DATE 11/92 PART #137204 FXEM 3/93 FORMAT #155

155

1992 FEDEX PRINTED IN U.S.A.

97 3407 0042

9713507.0033

TMA/ARU
The new Analytical Inc.

000006

11/30/93

7289153410

RADIATION DOSE RATE SURVEY FORM

Date 10/29/93 COMPANY TMA NORCAL OTHER ORD # ~~989 3825 207~~ MDM

Surveyor's Name MARK S. McCRAY

Model No. HP-210 / ESP-1 Model No. AC-2-7 / ESP-1

Serial No. 110289 / 02619 Serial No. 107706 / 02628

Calibration Date 4/26/93 Calibration Date 9/16/93

Instrument Calibration Factor 0.280 Instrument Calibration Factor 0.192

Sample	Location	HP-210 CPM	HP-210 Factor	HP-210 DPM	AC-2-7 CPM	AC-2-7 Factor	AC-2-7 DPM	Source of Exceedance?	Activity pCi/g or pCi/L
Background		31.0			1.0				
Consistency		7,340	0.2833		4,096	0.1505			
Smear SML 399		48.0			3.0			NONE	
Reported RICHLAND SAF,									
(21) Samples each >50pCi/gra									

Comments

All OK ✓ Approved MSM

Not OK Date 10/29/93

9713507.0034

TMA/ARLI
The new Analytical Inc.

000007

RADIATION DOSE RATE SURVEY FORM

Date 10/29/93 COMPANY TMA/NORCAL OTHER ORD # 728915341O

Surveyor's Name MARK S. McCRAY

Model No. HP-210 / ESP-1 Model No. AC-2-7 / ESP-1

Serial No. 110289 / 02619 Serial No. 407726 / 02678

Calibration Date 4/26/93 Calibration Date 9/16/93

Instrument Calibration Factor 0.280 Instrument Calibration Factor 0.192

Sample	Location	HP-210 CPM	HP-210 Factor	HP-210 DPM	AC-2-7 CPM	AC-2-7 Factor	AC-2-7 DPM	Surface or Smear?	Activity pCi/g or pCi/100 cm²
Background		31.0			1.0				
Consistency		7,340	0.2833		4,096	0.1505			
Smear 682		69.0			14.0			NONE	
LAB 19		34.0			2.0			NONE	
Reported Riverland SAF,									
	(21)	samples each			~~>25~~	>50		pCi/gram	

Comments

All OK ✓ Approved MSM

Not OK Date 10/29/93

GENERAL CHEMISTRY RESULTS

CASE NO. 10-067

Water Sample #:

B09D82 B09DG2

CASE NARRATIVE

The holding time for the pH analysis was exceeded. Careful review of the QC analysis indicates that the data is reliable.

The holding time for alkalinity was missed for B09D82 and B09DG2. In accordance with ROD 93-0260 the analysis for alkalinity was cancelled.

No other problems were encountered during sample analysis. All QC results were acceptable.

Maureen Parrish 12-13-93

Maureen Parrish

9713507.0036

000009

TMA Inc. REPORT Work Order # A3-10-067

Received: 10/28/93 12/13/93 09:50:41

REPORT TO: Westinghouse Hanford Company
345 Hills
Richland, WA 99352

ATTEN: Jeanette Duncan

CLIENT: WHC SAMPLES: 5
COMPANY: Westinghouse Hanford Company
FACILITY:

WORK ID: 100-FR-3 SAF# 93-319
TAKEN: By Westinghouse STaff
TRANS: Federal Express
TYPE: Liquid
P.O. #: N3-10-150-SU-AR
INVOICE: under separate cover

PREPARED BY: Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016

ATTEN: Ms. Carole Harris
PHONE: 818-357-3247

Maureen Parrish
CERTIFIED BY

CONTACT: MKP CIH

This report is for the sole and exclusive use of the client to whom it is addressed and represents only those samples herein described. Samples not destroyed in testing are retained a maximum of 30 days unless otherwise requested.

SAMPLE IDENTIFICATION

01	B09D82
01	B09D82 MS
01	B09D82 MSD
01	B09D82
01	B09D82 MS
01	B09D82 MSD
01	B09D82
01	B09D82 MS
01	B09D82
01	B09D82 MS
01	B09D82
01	B09D82 MS
02	B09DG2
02	B09DG2 MS
02	B09DG2 MSD
02	B09DG2
02	B09DG2 Duplicate
02	B09DG2
02	B09DG2 Duplicate
02	B09DG2
02	B09DG2 Duplicate
02	B09DG2
02	B09DG2 Duplicate
02	B09DG2
02	B09DG2 Duplicate
03	Lab Blank

TEST CODES and NAMES used on this workorder

BNCLPW	CLP Semivol. Water
CANCEL	Analysis Cancelled
PECLPL	CLP Pesticides Liq.
WCCLPL	Anions & Wet Chem.
WCLCS	Lab Control Sample Summary
WCL L	Chloride - WH120
WCQCD	Quality Control Summary
WCQCS	Quality Control Summary
WF L	Fluoride in Water
WNH3 L	Ammonia in Water
WPH L	pH of Liquid
WPO4 L	Phosphate in Liquids
WSO4 L	Sulfate (in Waters)
WSULFI	Sulfide
W ALK	Alkalinity
W COD	COD Water
W COND	Conductivity-Water
W TDS	Dissolved Solids

TMA Inc. REPORT Work Order # A3-10-067

Received: 10/28/93 12/13/93 09:50:41

SAMPLE IDENTIFICATION

03 LCS

04 B09D84

05 B09DG4

TMA Inc. REPORT Work Order # A3-10-067

Received: 10/28/93

Results by Sample

SAMPLE ID B09D82 FRACTION 01H TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/26/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	10.8	mg/L	1.0
Fluoride	300.0	0.2	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.5	pH	0.1
Sulfate	300.0	48	mg/L	5
Elect. Conductivity	9050	376	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-10-067

Received: 10/28/93

Results by Sample

SAMPLE ID B09D82 FRACTION 01K TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/26/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solid	160.1	257	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-10-067

Received: 10/28/93

Results by Sample

SAMPLE ID B09D82 FRACTION 01L TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/26/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-10-067

Received: 10/28/93

Results by Sample

SAMPLE ID B09D82 FRACTION 01N TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/26/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

TMA Inc. REPORT Work Order # A3-10-067

Received: 10/28/93

Results by Sample

SAMPLE ID B09DG2 FRACTION 02F TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/26/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	11.3	mg/L	1.0
Fluoride	300.0	0.1	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.6	pH	0.1
Sulfate	300.0	48	mg/L	5
Elect. Conductivity	9050	385	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-10-067

Received: 10/28/93

Results by Sample

SAMPLE ID B09DG2 FRACTION 02J TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/26/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solid	160.1	243	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-10-067

Received: 10/28/93

Results by Sample

SAMPLE ID B09DG2 FRACTION 02L TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/26/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

9713507.0045

000019

TMA Inc. REPORT Work Order # A3-10-067

Received: 10/28/93

Results by Sample

SAMPLE ID B09DG2 FRACTION 02M TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/26/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

9313507.0046

 Skinner&Sherman REPORT Work Order # S3-10-371

Received: 10/29/93 12/10/93 13:53:48

REPORT TMA/NORCAL
TO 2030 Wright Avenue
Richmond, CA 94804

ATTEN Dan Steurmer

PREPARED TMA / Skinner & Sherman Labs.
BY 300 Second Avenue
P.O. Box 521
Waltham, MA 02254

ATTEN Client Services
PHONE (617) 890-7200

CERTIFIED BY

CONTACT DP

CLIENT HANFORD NOR SAMPLES 3
COMPANY TMA/NORCAL Hanford
FACILITY Richmond, CA

WORK ID N3-10-150
TAKEN By Client
TRANS Fedex
TYPE 2 Waters NO3NO2
P.O. # N3-10-150
INVOICE under separate cover

SAMPLE IDENTIFICATION	TEST CODES and NAMES used on this workorder
01 B09D82	NO3NO2 Nitrate/Nitrite
02 B09DG2	
02 B09DG2D	
02 B09DG2S	
03 LCSW	

TMA
Thermo Analytical Inc.

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

Skinner & Sherman Laboratories Inc. 300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

9313507.0047

 Skinner&Sherman REPORT Work Order # S3-10-371

Received: 10/29/93 Results by Sample

SAMPLE ID B09D82 SAMPLE # 01 FRACTIONS: A
Date & Time Collected 10/26/93 Category WATER

NO3NO2 5.13
mg N/L

SAMPLE ID B09DG2 SAMPLE # 02 FRACTIONS: A
Date & Time Collected 10/26/93 Category WATER

NO3NO2 5.24
mg N/L

SAMPLE ID B09DG2D SAMPLE # 02 FRACTIONS: B
Date & Time Collected 10/26/93 Category WATER

NO3NO2 5.70
mg N/L

SAMPLE ID B09DG2S SAMPLE # 02 FRACTIONS: C
Date & Time Collected 10/26/93 Category WATER

NO3NO2 9.88
mg N/L

SAMPLE ID LCSW SAMPLE # 03 FRACTIONS: A
Date & Time Collected not specified Category WATER

NO3NO2 2.06
mg N/L

TMA
Thermo Analytical Inc.

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

Skinner & Sherman Laboratories Inc. 300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

9713507.0048

TMA
Thermo Analytical Inc.

TMA
525 Avis Drive, Suite 7
Ann Arbor, MI 48108

(313) 662-3104
(313) 662-3344 (Fax)

RECORD COPY

DEC 1993
RECEIVED
SDLA

Federal Express : 7289154924

November 16, 1993

Quality Control Narrative

Scope

This report contains one Delivery Order. Two water samples were received by TMA/ERG from TMA/NORCAL on October 29,1993. These samples were analyzed for Total Organic Halogens and Total Organic Carbon based on USEPA methods. Samples received with Work Order N3-10-150 are enclosed in this package.The TMA/ERG WO# is E3-10-265.

Methodology:

The samples were prepared, analyzed and reported in accordance with the Westinghouse Hanford Program Statement of Work MBH-SVV-069262 March 5, 1992.
The following is a list of methodologies used:

Analyte	Method/Description
TOC	415.1 Total Organic Carbon (TMA/ERG SOP WC022)
TOX	9022 Total Organic Halides by Neutron Activation (TMA/ERG SOP NUC03)

Instrument ID Numbers	Serial Numbers
OI Model 700 TOC Analyzer	H224069
NA Multi Channel Analyzer	Not Applicable

Discussion

The TOX samples were prepared according to protocol. The quality control requirements have been met for these analyses without exception. If there are any questions concerning this package please do not hesitate to call.

Respectfully submitted,

TMA/Environmental Research Group

Mark B. Ruwe

Mark B. Ruwe
QA Officer

2-9-96
MC

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME:	Thermo Analytical ERG Inc.	LAB SAMPLE ID:	B09D82
CASE NO.:	N3-10-150	Work ID:	100-FR-3
Matrix:	WATER		
Receipt Date:	29-Oct-93		
Units:	MG/L	% Solids:	NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	<1	1	02-Nov-93
ORGANIC BROMIDE	<0.01	0.01	04-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	04-Nov-93
ORGANIC IODIDE	<0.01	0.01	04-Nov-93

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME: Thermo Analytical ERG Inc.

LAB SAMPLE ID: B09D02

CASE NO.: N3-10-150

Work ID: 100-FR-3

Matrix: WATER

Receipt Date: 29-Oct-93

% Solids: NA

Units: MG/L

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	<1	1	02-Nov-93
ORGANIC BROMIDE	<0.01	0.01	04-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	04-Nov-93
ORGANIC IODIDE	<0.01	0.01	04-Nov-93

9713507.0051

TMA
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

RECORD COPY

DEC 1993
RECEIVED
SDLA

December 14, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Two (2) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on October 29, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S310372.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with no exceptions.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

2-9-96
MC

9713507.0052

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER:

B09D83

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-150SAS No.: SDG No.: B09D83

Matrix (soil/water): WATER Lab Sample ID: 10372-01S

Level (low/med): LOW Date Received: 10/29/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12.7	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	31.4	B		P
7440-41-7	Beryllium	0.21	B		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	56800			P
7440-47-3	Chromium	48.3			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	6.0	B		P
7439-89-6	Iron	44.8	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	8930			P
7439-96-5	Manganese	5.2	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	2660	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	7910			P
7440-28-0	Thallium	3.7	B		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	5.5	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9713507.0053

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DG3

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-150SAS No.: SDG No.: B09D83

Matrix (soil/water): WATER Lab Sample ID: 10372-02S

Level (low/med): LOW Date Received: 10/29/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	24.4	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	31.6	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	58300			P
7440-47-3	Chromium	49.7			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	3.2	B		P
7439-89-6	Iron	30.3	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	9110			P
7439-96-5	Manganese	5.4	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	2730	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	8090			P
7440-28-0	Thallium	2.5	B		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

9713507.0054

TMA
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

RECORD COPY

DEC 1993
RECEIVED
SDLA

December 14, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Two (2) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on October 29, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals and cyanide. The analysis was performed under TMA/Skinner and Sherman work order S310370.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with the following exceptions:

The laboratory duplicate for selenium exceeded the control limit requirement.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

2-9-96
MC

9713507.0055

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER:

B09D82

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-150SAS No.: SDG No.: B09D82

Matrix (soil/water): WATER Lab Sample ID: 10370-01S

Level (low/med): LOW Date Received: 10/29/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	49.0	B		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	30.8	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	54900			P
7440-47-3	Chromium	53.2			P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	10.4	B		P
7439-89-6	Iron	312			P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	8680			P
7439-96-5	Manganese	9.2	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	2570	B		P
7782-49-2	Selenium	2.8	U	*	P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	7670			P
7440-28-0	Thallium	2.6	B		P
7440-62-2	Vanadium	3.0	B		P
7440-66-6	Zinc	12.3	B		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

Comments:

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DG2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-150SAS No.: SDG No.: B09D82

Matrix (soil/water): WATER Lab Sample ID: 10370-02S

Level (low/med): LOW Date Received: 10/29/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	123	B		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	34.7	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	54500			P
7440-47-3	Chromium	61.1			P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	55.8			P
7439-89-6	Iron	1180			P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	8650			P
7439-96-5	Manganese	16.3			P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	2520	B		P
7782-49-2	Selenium	2.8	U	*	P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	7640			P
7440-28-0	Thallium	1.9	B		P
7440-62-2	Vanadium	2.7	B		P
7440-66-6	Zinc	21.2			P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

Comments:

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 11-003

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : October 29, 1993

1.0 DESCRIPTION OF CASE :

Two water samples were analyzed for TCL Organics- Volatiles, Semivolatiles, and Pesticides/PCBs according to the USEPA Contract Laboratory Program (CLP) Statement of Work for Organic Analysis, Revision OLM01.8.

2.0 SAMPLE LIST :

WESTINGHOUSE ID	LAB ID	ANALYSIS REQUESTED	MATRIX	pH
B09DC8	A3-11-003-01A	V	WATER	0
B09DC8	A3-11-003-01B	SV	WATER	
B09DC8 MS	A3-11-003-01C	SV	WATER	
B09DC8 MSD	A3-11-003-01D	SV	WATER	
B09DC8	A3-11-003-01E	P	WATER	
B09DC8 MS	A3-11-003-01F	P	WATER	
B09DC8 MSD	A3-11-003-01G	P	WATER	
B09DD0	A3-11-003-02A	V	WATER	0
B09DD0 MS	A3-11-003-02B	V	WATER	0
B09DD0 MSD	A3-11-003-02C	V	WATER	0

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

All of the samples were received unbroken and properly documented.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were analyzed within the CLP SOW holding times.

In samples B09DC8 and B09DD0, Trichloroethene was detected at 21 ug/L, in addition to low levels of Methylene Chloride.

All of the QC results were within the limits specified by the EPA CLP SOW.

TUNES :

All BFB tunes are injected directly into the GC/MS instrument.

3.2.2 SEMIVOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times.

All of the QC results were within the limits specified by the EPA CLP SOW.

3.2.3 PESTICIDE/PCB ANALYSIS COMMENTS :

SEQUENCE NOTES :

The sequence was started on 11/25/93 and was analyzed according to the USEPA CLP SOW. The sequence was analyzed by single injection into a dual column system.

On the DB-608 column, the %RSD for all of the analytes were within the QC limits. However, on the DB-1701 column the %RSD for alpha-BHC and gamma-BHC exceeded 20% but were less than the 30% limit.

All of the other QC criteria were within the the limits specified by the EPA CLP SOW for this case.

The chromatograms are presented in the manner consistent with the capabilities of the Nelson 2700 Turbochrome Data System which normalizes the largest peak to scale.

SAMPLE NOTES :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times. No TCL analytes were detected in the samples. In sample B09DC8MS, the surrogate recovery for TCX on the DB-1701 column was higher than the recovery on the DB-608 column, therefore the %D for TCX exceeded the 25% limit.

All of the other QC results were within the limits specified by CLP SOW.

We 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 in this hardcopy data package and in the computer-readable data submitted on diskette is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Nicole Roth 12/17/93
Nicole Roth
CLP Program Manager

Maureen Parrish 12/17/93
Maureen Parrish
Program Manager

9713507.0060

000113

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DC8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11003 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311003-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31102M10

Level: (low/med) LOW Date Received: 10/29/93

% Moisture: not dec. ____ Date Analyzed: 11/02/93

GC Column: CAP 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
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	J
67-64-1	Acetone	10	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	21	
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	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: B09DC8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11003 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311003-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31102M10

Level: (low/med) LOW Date Received: 10/29/93

% Moisture: not dec. ____ Date Analyzed: 11/02/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DD0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11003 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311003-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31102M09

Level: (low/med) LOW Date Received: 10/29/93

% Moisture: not dec. ____ Date Analyzed: 11/02/93

GC Column: CAP 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
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	J
67-64-1	Acetone	10	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	21	
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	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DD0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11003 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311003-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31102M09

Level: (low/med) LOW Date Received: 10/29/93

% Moisture: not dec. ____ Date Analyzed: 11/02/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DC8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11003 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311003-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31108I09

Level: (low/med) LOW Date Received: 10/29/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/08/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

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000118

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DC8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11003 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311003-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31108I09

Level: (low/med) LOW Date Received: 10/29/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/08/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	2	J
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

B09DC8

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11003 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311003-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31108I09

Level: (low/med) LOW Date Received: 10/29/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/08/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	19.63	3	J
2.	UNKNOWN HYDROCARBON	21.73	5	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DC8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11003 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311003-01E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 10/29/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/03/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/26/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

9713507.0068

TMA

DEC 1993
RECEIVED
SDLA

WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

ORGANICS & GENERAL CHEMISTRY
Case No. 11-003
(TMA/ARLI W.O. # A3-11-003)

METALS & NITRATE/NITRITE
Case No. N3-10-165
(TMA/Skinner & Sherman W.O. Nos. S3-11-014, S3-11-015 & S3-11-016)

TOTAL ORGANIC CARBON/TOTAL ORGANIC HALOGEN
Case No. N3-10-165
(TMA/ERG W.O. # E3-11-002)

December 22, 1993

TMA Master Work Order N3-10-165

2-9-96
MC

9713507.0069

000002

TMA/Norcal CHAIN OF CUSTODY ORD # N3-10-165

RCVD: 10/29/93 DUE: 12/03/93 10/29/93 13:50:17 KEEP: 12/03/94 DISP: S

DASH	SAMPLE IDENTIFICATION		STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY						
01A-W	B09DC8	UNFILTERED	ARLI	WH018	WH019	WH020	WH043	WH114	WH121	WH122
				WH128	WH131	WH132	WH140			
01D-W	B09DC8 MS	UNFILTERED	ARLI	WH018	WH019	WH020	WH043	WH114	WH140	
01E-W	B09DC8 MSD	UNFILTERED	ARLI	WH018	WH019	WH020				
01F-W	B09DC8 DUP	UNFILTERED	ARLI	WH043	WH114	WH121	WH122	WH128	WH131	WH132
				WH140						
03A-W	B09DD0		ARLI	WH018						

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
eyamamoto	10/29/93	ARLI	10/29/93	[illegible]	11-1-93

Sample was recieved Saturday 30 and opened on Monday 11/1/93 [illegible]

9213507.0070 0000021

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10-27-93

Ice Chest No. GWS004

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. D97425913

Offsite Property No. ~~W93~~ LCS 10/28/93 W74-0-0001-06

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DC9

3, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
1, 2L & 1, 1L, aG; WATER; CLP-SEMI VOA
1, 2L & 1, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
1, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
1, 250ml, P, WATER; ALKALINITY
1, 500ml, P, WATER; TDS
1, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
1, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
1, 1L, P, WATER; Cn(NaOH to pH 12.0)
1, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
1, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
1, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
1, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
1, 250ml, Gs, WATER; TRITIUM/C-14

B09DC9

1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DD0

3, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
[signature] B WHITEN	10/27/93	1205	L Sweeney L Sweeney	10/28/93	0800
L Sweeney L Sweeney	10/28/93	1000	Kermit Blum K. Blum	10-29-93	1200

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: reling. to frig. # 1205 by [signature] 10/27/93

A-6000-407 (12/92) WEF061

9713507.0071 0000028

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/27/93 Time 1055 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DC9	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P;	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09DC9	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DD0	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 5947425913 OPC #: 1W94-0-00001-26

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Title Date

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/

9713507.0072

SAMPLE LOG-IN SHEET

000004

LAB NAME : TMA/ARLI

PAGE : 1 OF 1

RECEIVED BY (PRINT NAME): D. WHITAKER

LOG-IN-DATE : 11-1-93

RECEIVED BY (SIGNATURE): D Whitaker

ICE CHEST NO. SML-349

REMARKS:

1. Custody Seal(s) Present / Absent* Intact / Broken
2. Custody Seal Nos:
3. Chain of Custody Records Present / Absent*
4. Traffic Reports or Packing List Present / Absent*
5. Airbill Airbill / Sticker Present / Absent*
6. Airbill No.: 7289155145
7. Sample Tags Present / Absent*
8. Sample Tag Numbers Listed / Not Listed on Chain of Custody
9. Sample Condition: Intact / Broken* / Leaking
10. Does information on custody records, traffic reports, and sample tags agree? Yes / No*
11. Date Recieved at Lab: 10-30-93
12. Temp of ice chest 4 °C
13. Time Recieved: 10:00 Am

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B09D00	A3[illegible]1-003	
	B09DC8	A311003	

SAMPLE TRANSFER

Fraction:

Area #:

By:

On:

* Contact SMO and attach record of resolution

Reviewed By:

Date:

Logbook No.:

Logbook Page No.:

FORM DC-1

000000

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 7289155145

7289155145

RECIPIENT'S COPY

1 Date 10-29-93

From (Your Name) Please Print: SAMPLE CONTROL

Your Phone Number (Very Important): (10-)35-

Company

Department/Floor No.

Street Address

City

State

ZIP Required

2 To (Recipient's Name) Please Print: CAROLE HARRIS

Recipient's Phone Number (Very Important): (818)357-

Company: JMA/ARL

Department/Floor No.

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 160 TAYLOR STREET

City: MONROVIA

State: CA

ZIP Required: 91016

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): 2340-6466

H IF HOLD FOR PICK-UP, Print FEDEX Address Here

Street Address

City

State

ZIP Required

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card 5 [ ] Cash/Check

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning†)
- 11 [X] OTHER PACKAGING
- 16 [ ] FEDEX LETTER*
- 12 [ ] FEDEX PAK*
- 13 [ ] FEDEX BOX
- 14 [ ] FEDEX TUBE

Standard Overnight (Delivery by next business afternoon, No Saturday delivery†)
- 51 [ ] OTHER PACKAGING
- 56 [ ] FEDEX LETTER*
- 52 [ ] FEDEX PAK*
- 53 [ ] FEDEX BOX
- 54 [ ] FEDEX TUBE

Economy Two-Day (Delivery by second business day †)
- 30 [ ] ECONOMY*

* Economy Letter rate not available. Minimum charge One pound economy rate.

Government Overnight (Restricted for au horized users only)
- 46 [ ] GOV'T LETTER
- 41 [ ] GOV'T PACKAGE

Freight Service (for packages over 150 lbs.)
- 70 [ ] OVERNIGHT FREIGHT** (Confirmed reservation required)
- 80 [ ] TWO-DAY FREIGHT**

† Delivery commitment may be later in some areas

*Declared Value Limit $500
**Call for delivery schedule

5 DELIVERY AND SPECIAL HANDLING (Check services required)
- 1 [ ] HOLD FOR PICK-UP (Fill in Box H)
- 2 [ ] DELIVER WEEKDAY
- 3 DELIVER SATURDAY (Extra charge) (Not available to all locations) [X]
- 4 [ ] DANGEROUS GOODS (Extra charge)
- 5 [ ]
- 6 [ ] DRY ICE Dangerous Goods Shipper's Declaration not required

Dry Ice, 9, UN 1845 x kg 904 III

- 7 [ ] OTHER SPECIAL SERVICE
- 8 [ ]
- 9 [ ] SATURDAY PICK-UP
- [ ]
- 12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See right)
1	74	
	44	
Total 2	Total 118	Total

DIM SHIPMENT (Chargeable Weight) [ ] lbs. x x

Received At: Drop Box / Drop Off Stop / On Call Stop

Emp. No. Date

[ ] Cash Received
[ ] Return Shipment
[ ] Third Party [ ] Chg. To Del. [ ] Chg. To Hold

Street Address

City State Zip

Received By: X

Date/Time Received FedEx Employee Number

7 Release Signature:

Federal Express Use

Base Charges

Declared Value Charge

Other 1

Other 2

Total Charges

REVISION DATE 11/92
PART #137204 FXEM 300
FORMAT #155

155

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7289155145

CAT 1 CAT 2 CAT 3

9713507.0074

TMA/ARI
The new Analytical Inc.

000007

RADIATION DOSE RATE SURVEY FORM

Date 11/01/93 COMPANY TMA/MOCAL OTHER ORD # 7289155145

Surveyor's Name MARK S. McCRAY

Model No. HP-210 / ESP-1 Model No. AC-2-7 / ESP-1

Serial No. 110289 / 02619 Serial No. 407726 / 02628

Calibration Date 4/26/93 Calibration Date 9/16/93

Instrument Calibration Factor 0.280 Instrument Calibration Factor 0.192

Sample	Location	HP-210 CPM	HP-210 Factor	HP-210 DPM	AC-2-7 CPM	AC-2-7 Factor	AC-2-7 DPM	Source of Background	Activity pCi/g or pCi/L
Background		36.0			0				
Consistency		7,350	0.2837		4,092	0.1504			
Smear SML 349		32.0			1.0			None	
Kent		30.0			3.0			None	
Reported WHC:									
	Sample ID#			TOTAL	ACTIVITY				
	B097B9			3.99	E+2	pCi/gram			
	B097C0			3.99	E+2	pCi/gram			

Comments VICTOREEN 450P Shows NO µR MSM 11/01/93

All OK ✓ Approved [signature]

Not OK Date 12/16/93

GENERAL CHEMISTRY RESULTS

CASE NO. 11-003

Water Sample #:

B09DC8

CASE NARRATIVE

The holding time for the pH analysis was exceeded. Careful review of the QC analysis indicates that the data is reliable.

An excess of twenty samples were run between the Initial Calibration Verification and the Continuing Calibration Verification. The results for both the calibrations were within +/- 10% of the true concentration. The results are considered acceptable based on the data from the calibrations and the LCS.

No other problems were encountered during sample analysis. All QC results were acceptable.

Maureen Parrish 12-17-93

Maureen Parrish

9713507.0076

000009

TMA Inc. REPORT Work Order # A3-11-003

Received: 10/29/93 12/16/93 17:09:42

REPORT TO: Westinghouse Hanford Company
345 Hills
Richland, WA 99352

ATTEN: Jeanette Duncan

CLIENT: WHC SAMPLES: 3
COMPANY: Westinghouse Hanford Company
FACILITY:

WORK ID: SAF# 93-319
TAKEN: By Westinghouse Staff
TRANS: Federal Express
TYPE: Water
P.O. #: N3-10-165-SU-AR
INVOICE: under separate cover

PREPARED BY: Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016

ATTEN: Ms. Carole Harris
PHONE: 818-357-3247

Maureen Parrish
CERTIFIED BY

CONTACT: MKP CIH

This report is for the sole and exclusive use of the client to whom it is addressed and represents only those samples herein described. Samples not destroyed in testing are retained a maximum of 30 days unless otherwise requested.

SAMPLE IDENTIFICATION

01	B09DC8
01	B09DC8 MS
01	B09DC8 MSD
01	B09DC8
01	B09DC8 MS
01	B09DC8 MSD
01	B09DC8
01	B09DC8 MS
01	B09DC8 Duplicate
01	B09DC8
01	B09DC8 Duplicate
01	B09DC8
01	B09DC8 Duplicate
01	B09DC8
01	B09DC8 MS
01	B09DC8 Duplicate
01	B09DC8
01	B09DC8 MS
01	B09DC8 Duplicate
02	B09DD0
02	B09DD0 MS
02	B09DD0 MSD
03	LAB Blank
03	LCS

TEST CODES and NAMES used on this workorder

BNCLPW	CLP Semivol. Water
PECLPL	CLP Pesticides Liq.
WCCLPL	Anions & Wet Chem.
WCLCS	Lab Control Sample Summary
WCL L	Chloride - WH120
WCQCD	Quality Control Summary
WCQCS	Quality Control Summary
WF L	Fluoride in Water
WNH3 L	Ammonia in Water
WPH L	pH of Liquid
WPO4 L	Phosphate in Liquids
WSO4 L	Sulfate (in Waters)
WSULFI	Sulfide
W ALK	Alkalinity
W COD	COD Water
W COND	Conductivity-Water
W TDS	Dissolved Solids

TMA Inc. REPORT Work Order # A3-11-003

Received: 10/29/93

Results by Sample

SAMPLE ID B09DC8 FRACTION 01H TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/27/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	15.1	mg/L	1.0
Fluoride	300.0	0.7	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.6	pH	0.1
Sulfate	300.0	67	mg/L	5
Elect. Conductivity	9050	679	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-11-003

Received: 10/29/93

Results by Sample

SAMPLE ID B09DC8 FRACTION 01K TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/27/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	187	mg/L	2

FORM I

TMA Inc. REPORT Work Order # A3-11-003

Received: 10/29/93

Results by Sample

SAMPLE ID B09DC8 FRACTION 01M TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/27/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solids	160.1	466	mg/kg	5

FORM I

TMA Inc. REPORT Work Order # A3-11-003

Received: 10/29/93

Results by Sample

SAMPLE ID B09DC8 FRACTION 010 TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/27/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/l	1

FORM I

TMA Inc. REPORT Work Order # A3-11-003

Received: 10/29/93

Results by Sample

SAMPLE ID B09DC8 FRACTION 01R TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/27/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

9213507.0082

TMA
Thermo Analytical Inc.

TMA
525 Avis Drive, Suite 7
Ann Arbor, MI 48108

(313) 662-3104
(313) 662-3344 (Fax)

DEC 1993
RECEIVED
SDLA

Federal Express : 7289155156

November 18, 1993

Quality Control Narrative

Scope
This report contains one Delivery Order. One water sample was received by TMA/ERG from TMA/NORCAL on October 30, 1993. The sample cooler temperature was 4 deg.C. This sample was analyzed for Total Organic Halogens and Total Organic Carbon based on USEPA methods. Samples received with Work Order N3-10-165 are enclosed in this package. The TMA/ERG WO# is E3-11-002.

Methodology:
The samples were prepared, analyzed and reported in accordance with the Westinghouse Hanford Program Statement of Work MBH-SVV-069262 March 5, 1992.
The following is a list of methodologies used:

Analyte	Method/Description
TOC	415.1 Total Organic Carbon (TMA/ERG SOP WC022)
TOX	9022 Total Organic Halides by Neutron Activation (TMA/ERG SOP NUC03)

Instrument ID Numbers	Serial Numbers
OI Model 700 TOC Analyzer	H224069
NA Multi Channel Analyzer	Not Applicable

Discussion
The TOX samples were prepared according to protocol. The quality control requirements have been met for these analyses without exception. If there are any questions concerning this package please do not hesitate to call.

Respectfully submitted,

TMA/Environmental Research Group

Mark B. Ruwe

Mark B. Ruwe
QA Officer

2-9-96
MC

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME:	Thermo Analytical ERG Inc.	LAB SAMPLE ID:	B09DC8
CASE NO.:	N3-10-165	Work ID:	100-FR-3
Matrix:	WATER		
Receipt Date:	30-Oct-93		
Units:	MG/L	% Solids:	NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	1.3	1	03-Nov-93
ORGANIC BROMIDE	<0.01	0.01	04-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	04-Nov-93
ORGANIC IODIDE	<0.01	0.01	04-Nov-93

COMMENTS:

PAGE 1 TMA/Norcal 0213507.0084 CHAIN OF CUSTODY ORD # N3-10-165

RCVD: 10/29/93 DUE: 12/03/93 10/29/93 13:50:31 KEEP: 12/03/94 DISP: S

DASH	SAMPLE IDENTIFICATION	STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY	
01C-W	B09DC8	UNFILTERED ERG	WH113	WH116
01J-W	B09DC8 MS	UNFILTERED ERG	WH113	WH116
01K-W	B09DC8 DUP	UNFILTERED ERG	WH113	WH116

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Eyamamoto	10/29/93	ERG	10/29/93	Christine Paul	10-29-93

30 cP

Cooler at 4°C

9713507.0085

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 7289155156

7289155156

Date 10-29-93

RECIPIENT'S COPY

From (Your Name) Please Print: SAMPLE CONTROL

Your Phone Number (Very Important): (310-)735-2633

Company: [illegible]

Department/Floor No.

Street Address: 203[illegible] BRIGHT AVE

City: RICHMOND State: [illegible] ZIP Required: 94804

2 To (Recipient's Name) Please Print: SAMPLE CONTROL

Recipient's Phone Number (Very Important): 313X62-2164

Company: THERMO ANALYTICAL/ERG

Department/Floor No.

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 525 AVIS DRIVE, SUITE 7

City: ANN ARBOR State: MT ZIP Required: 48108

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional, first 24 characters will appear on invoice.) [illegible] - Limited Quantity of material 2340-6406

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address
City State ZIP Required

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card 5 [ ] Cash/Check

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning†)
11 [X] OTHER PACKAGING
16 [ ] FEDEX LETTER*
12 [ ] FEDEX PAK*
13 [ ] FEDEX BOX
14 [ ] FEDEX TUBE

Standard Overnight (Delivery by next business afternoon. No Saturday delivery†)
51 [ ] OTHER PACKAGING
56 [ ] FEDEX LETTER*
52 [ ] FEDEX PAK*
53 [ ] FEDEX BOX
54 [ ] FEDEX TUBE

Economy Two-Day (Delivery by second business day †)
30 [ ] ECONOMY*
* Economy Letter rate not available. Minimum charge. One pound economy rate.

Government Overnight (Restricted for authorized users only)
46 [ ] GOV'T LETTER
41 [ ] GOV'T PACKAGE

Freight Service (for packages over 150 lbs.)
70 [ ] OVERNIGHT FREIGHT** (Confirmed reservation required)
80 [ ] TWO-DAY FREIGHT**
† Delivery commitment may be later in some areas
*Declared Value Limit $500.
**Call for delivery schedule.

5 DELIVERY AND SPECIAL HANDLING (Check services required)
1 [ ] HOLD FOR PICK-UP (Fill in Box H)
2 [ ] DELIVER WEEKDAY
3 DELIVER SATURDAY (Extra charge) (Not available to all locations) [X]
4 [ ] DANGEROUS GOODS (Extra charge)
5 [ ]
6 [ ] DRY ICE Dangerous Goods Shipper's Declaration not required
Dry Ice, 9, UN 1845 ____ X ____ kg. 904 III
7 [ ] OTHER SPECIAL SERVICE
8 [ ]
9 [ ] SATURDAY PICK-UP (Extra charge)
[ ]
12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See right)
1	41	
Total	Total 41	Total

DIM SHIPMENT (Chargeable Weight) [ ] ____ lbs.
L x W x H

Received At: [ ] Regular Stop 2 [ ] On-Call Stop 3 [ ] Drop Box 4 [ ] B.S.C. 5 [ ] Station

7 Release Signature:

Emp. No. Date
[ ] Cash Received
[ ] Return Shipment
[ ] Third Party [ ] Chg. To Del. [ ] Chg. To Hold
Street Address
City State Zip
Received By: X
Date/Time Received FedEx Employee Number

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

REVISION DATE 11.92
PART #137204 FXEM 3/93
FORMAT #155
155
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019

9713507.0086

 Skinner&Sherman REPORT Work Order # S3-11-016

Received: 10/30/93 12/10/93 13:37:23

REPORT TMA/NORCAL
TO 2030 Wright Avenue
Richmond, CA 94804

ATTEN Dan Steurmer

CLIENT HANFORD NOR SAMPLES 2
COMPANY TMA/NORCAL Hanford
FACILITY Richmond, CA

PREPARED TMA / Skinner & Sherman Labs.
BY 300 Second Avenue
P.O. Box 521
Waltham, MA 02254

ATTEN Client Services
PHONE (617) 890-7200

CERTIFIED BY

CONTACT DP

WORK ID N3-10-165
TAKEN By Client
TRANS Fedex
TYPE 1 Water NO3NO2
P.O. # N3-10-165
INVOICE under separate cover

SAMPLE IDENTIFICATION		TEST CODES and NAMES used on this workorder	
01	B09DC8	NO3NO2	Nitrate/Nitrite
01	B09DC8D		
01	B09DC8S		
02	LCSW		

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

9713507.0087

 Skinner&Sherman REPORT Work Order # S3-11-016

Received: 10/30/93 Results by Sample

SAMPLE ID B09DC8 SAMPLE # 01 FRACTIONS: A
Date & Time Collected 10/27/93 Category WATER

NO3NO2 22.5
mg N/L

SAMPLE ID B09DC8D SAMPLE # 01 FRACTIONS: B
Date & Time Collected 10/27/93 Category WATER

NO3NO2 22.9
mg N/L

SAMPLE ID B09DC8S SAMPLE # 01 FRACTIONS: C
Date & Time Collected 10/27/93 Category WATER

NO3NO2 44.1
mg N/L

SAMPLE ID LCSW SAMPLE # 02 FRACTIONS: A
Date & Time Collected not specified Category WATER

NO3NO2 2.06
mg N/L

TMA
Thermo Analytical Inc.

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

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Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

9713507.0088

RECORD COPY

DEC 1993
RECEIVED
SDLA

December 15, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
One (1) water sample was submitted to TMA/Skinner & Sherman Laboratories, Inc. on October 30, 1993 from TMA/Norcal. The sample was analyzed for the USEPA CLP metals and cyanide. The analysis was performed under TMA/Skinner and Sherman work order S311014.

Methodology
The sample was prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program ILMO2.

Discussion
All quality control requirements were met for the samples with following exception:

The matrix spike recovery for cyanide exceeded the control limit requirement.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

2-9-96
MC

9713507.0089

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DC8

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-165SAS No.: SDG No.: B09DC8

Matrix (soil/water): WATER Lab Sample ID: 11014-01S

Level (low/med): LOW Date Received: 10/30/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.9	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	9.3	B		P
7440-39-3	Barium	45.0	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	58700			P
7440-47-3	Chromium	4.1	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	6.8	B		P
7439-89-6	Iron	9.7	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	18100			P
7439-96-5	Manganese	1.3	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	7680			P
7782-49-2	Selenium	3.6	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	55900			P
7440-28-0	Thallium	2.5	B		P
7440-62-2	Vanadium	17.4	B		P
7440-66-6	Zinc	12.5	B		P
	Cyanide	10.0	U	N	CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9213507.0090

TMA
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

RECORD COPY

DEC 1993
RECEIVED
SDLA

December 15, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
One (1) water sample was submitted to TMA/Skinner & Sherman Laboratories, Inc. on October 30, 1993. The sample was analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S311015.

Methodology
The sample was prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with no exceptions.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

2-9-96
MC

9713507.0091

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DC9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-10-165SAS No.: SDG No.: B09DC9

Matrix (soil/water): WATER Lab Sample ID: 11015-01S

Level (low/med): LOW Date Received: 10/30/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	26.4	B		P
7440-36-0	Antimony	14.0	B		P
7440-38-2	Arsenic	10.1			P
7440-39-3	Barium	46.2	B		P
7440-41-7	Beryllium	0.24	B		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	59200			P
7440-47-3	Chromium	5.5	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	25.5	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	18200			P
7439-96-5	Manganese	1.4	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	7540			P
7782-49-2	Selenium	3.3	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	55400			P
7440-28-0	Thallium	2.4	B		P
7440-62-2	Vanadium	17.7	B		P
7440-66-6	Zinc	5.0	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9713507.0092

~~B09D70~~
B09D82-TMA-627

000113

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 11-004

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : November 1, 1993

1.0 DESCRIPTION OF CASE :

Five water samples were analyzed for TCL Organics- Volatiles, Semivolatiles, and Pesticides/PCBs according to the USEPA Contract Laboratory Program (CLP) Statement of Work for Organic Analysis, Revision OLM01.8.

2.0 SAMPLE LIST :

WESTINGHOUSE ID	LAB ID	ANALYSIS REQUESTED	MATRIX	pH
B09D70	A3-11-004-01A	V	WATER	0
B09D70	A3-11-004-01B	SV	WATER	
B09D70 MS	A3-11-004-01C	SV	WATER	
B09D70 MSD	A3-11-004-01D	SV	WATER	
B09D70	A3-11-004-01E	P	WATER	
B09D70 MS	A3-11-004-01F	P	WATER	
B09D70 MSD	A3-11-004-01G	P	WATER	
B09D72	A3-11-004-02A	V	WATER	0
B09D72 MS	A3-11-004-02B	V	WATER	0
B09D72 MSD	A3-11-004-02C	V	WATER	0
B09DJ6	A3-11-004-03A	V	WATER	0
B09DH8	A3-11-004-04A	V	WATER	0
B09DH8	A3-11-004-04B	SV	WATER	
B09DH8	A3-11-004-04C	P	WATER	
B09DJ0	A3-11-004-05A	V	WATER	0

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

All of the samples were received unbroken and properly documented.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were analyzed within the CLP SOW holding times.

All of the QC results were within the limits specified by the EPA CLP SOW.

TUNES :

All BFB tunes are injected directly into the GC/MS instrument.

3.2.2 SEMIVOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times.

All of the QC results were within the limits specified by the EPA CLP SOW.

3.2.3 PESTICIDE/PCB ANALYSIS COMMENTS :

SEQUENCE NOTES :

The sequence was started on 11/25/93 and was analyzed according to the USEPA CLP SOW. The sequence was analyzed by single injection into a dual column system.

On the DB-608 column, the %RSD for all of the analytes were within the QC limits. However, on the DB-1701 column the %RSD for alpha-BHC and gamma-BHC exceeded 20% but were less than the 30% limit.

All of the other QC criteria were within the the limits specified by the EPA CLP SOW for this case.

The chromatograms are presented in the manner consistent with the capabilities of the Nelson 2700 Turbochrome Data System which normalizes the largest peak to scale.

SAMPLE NOTES :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times. No TCL analytes were detected in the samples.

Samples B09D70MS and B09D70MSD had percent differences (%D) between the two GC columns that exceeded the 25% limit for Endrin. Therefore, Endrin was "P" qualified. It appears that Endrin coeluted within an interference peak on the DB-1701 column. In accordance with the protocol, no further action was required.

All of the QC results were within the limits specified by CLP SOW.

We 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 in this hardcopy data package and in the computer-readable data submitted on diskette is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Nicole Roth

Nicole Roth 12/21/93
CLP Program Manager

Maureen Parrish

Maureen Parrish 12/21/93
Project Manager

9715507.0095

000116

EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

B09D70

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11004 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311004-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31103M08

Level: (low/med) LOW Date Received: 11/01/93

% Moisture: not dec. ____ Date Analyzed: 11/03/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

9213507.0096

000117

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B09D70

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11004 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311004-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31103M08

Level: (low/med) LOW Date Received: 11/01/93

% Moisture: not dec. ____ Date Analyzed: 11/03/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D72

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11004 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311004-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31103M04

Level: (low/med) LOW Date Received: 11/01/93

% Moisture: not dec. ____ Date Analyzed: 11/03/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09D72

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11004 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311004-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31103M04

Level: (low/med) LOW Date Received: 11/01/93

% Moisture: not dec. ____ Date Analyzed: 11/03/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DH8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11004 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311004-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31103M13

Level: (low/med) LOW Date Received: 11/01/93

% Moisture: not dec. ____ Date Analyzed: 11/03/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

EPA SAMPLE NO.

B09DH8

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11004 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311004-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31103M13

Level: (low/med) LOW Date Received: 11/01/93

% Moisture: not dec. ____ Date Analyzed: 11/03/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DJ0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11004 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311004-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31103M12

Level: (low/med) LOW Date Received: 11/01/93

% Moisture: not dec. ____ Date Analyzed: 11/03/93

GC Column: CAP 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
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	1	J
67-64-1	Acetone	10	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	Xylene (total)	10	U

9213507.0102

000123

EPA SAMPLE NO.

B09DJ0

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11004 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311004-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31103M12

Level: (low/med) LOW Date Received: 11/01/93

% Moisture: not dec. ____ Date Analyzed: 11/03/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DJ6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11004 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311004-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31103M10

Level: (low/med) LOW Date Received: 11/01/93

% Moisture: not dec. ____ Date Analyzed: 11/03/93

GC Column: CAP 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
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	1	J
67-64-1	Acetone	10	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	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DJ6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11004 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311004-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31103M10

Level: (low/med) LOW Date Received: 11/01/93

% Moisture: not dec. ____ Date Analyzed: 11/03/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9715507.0105

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

000126

EPA SAMPLE NO.

B09D70

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11004 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311004-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31108I13

Level: (low/med) LOW Date Received: 11/01/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/08/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D70

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11004 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311004-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31108I13

Level: (low/med) LOW Date Received: 11/01/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/08/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	47	
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

9715507.0107

000128
EPA SAMPLE NO.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B09D70

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11004 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311004-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31108I13

Level: (low/med) LOW Date Received: 11/01/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/08/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	20.80	8	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DH8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11004 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311004-04B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31108I16

Level: (low/med) LOW Date Received: 11/01/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/08/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DH8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11004 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311004-04B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31108I16

Level: (low/med) LOW Date Received: 11/01/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/08/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	3	J
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

9713507.0110

000131

EPA SAMPLE NO.

B09DH8

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11004 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311004-04B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31108I16

Level: (low/med) LOW Date Received: 11/01/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/08/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9213507.0111

000132

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D70

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11004 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311004-01E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/01/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/03/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/26/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

9713507.0112

000133

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DH8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11004 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311004-04C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/01/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/03/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/26/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

9213507.0115

TMA

DEC 1993
RECEIVED
SDLA

WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

ORGANICS & GENERAL CHEMISTRY
Case No. 11-004
(TMA/ARLI Work Order # A3-11-004)

METALS & NITRATE/NITRITE
Case No. N3-11-005
(TMA/Skinner & Sherman W.O. # S3-11-025, S3-11-026 & S3-11-027)

TOTAL ORGANIC CARBON/TOTAL ORGANIC HALOGENS
Case No. N3-11-005
(TMA/ERG W.O. # E3-11-026)

December 23, 1993

TMA Master Work Order # N3-11-005

2-7-96
MC

E 1 TMA/Norcal CHAIN OF CUSTODY ORD # M3-11-005
CVD: 11/01/93 DUE: 12/06/93 11/01/93 15:00:18 KEEP: 12/06/94 DISP: S

DASH	SAMPLE IDENTIFICATION	STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY
01A-W	B09D70 UNFILTERED	ARLI	WH018 WH019 WH020 WH043 WH114 WH121 WH122 WH128 WH131 WH132 WH140
02A-W	B09DH8 UNFILTERED	ARLI	WH018 WH019 WH020 WH043 WH114 WH121 WH122 WH128 WH131 WH132 WH140
02D-W	B09DH8 MS UNFILTERED	ARLI	WH018 WH019 WH020 WH043 WH114 WH140
02E-W	B09DH8 MSD UNFILTERED	ARLI	WH018 WH019 WH020
02F-W	B09DH8 DUP UNFILTERED	ARLI	WH043 WH114 WH121 WH122 WH128 WH131 WH132 WH140
05A-W	B09D72	ARLI	WH018
06A-W	B09DJ0	ARLI	WH018
07A-W	B09DJ6	ARLI	WH018

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Egamamoto	11/01/93	ARLI	11/01/93	C. Harris	11/2/93

9213507.0115 000002A

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10-28-93

Ice Chest No. GWS028

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010241

Offsite Property No. ~~W93~~- AJS 10/29/93 W94-0-0001-27

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09D70

- ~~2~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~, 250ml, P, WATER; ALKALINITY
- ~~1~~, 500ml, P, WATER; TDS
- ~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- 1, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09D71

- 1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09D72

- ~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0) B09DJ6, ~~3~~ 40mL; GS* water CLP-VOA (HCL to pH<2.0

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

Relinquished By	Date	Time	Received By	Date	Time
Bill Whitten	10/28/93	1306	C.J. Simpson AJ SIMPSON	10/29/93	~~0830~~ AJS 10/29/93 0831
C.J. Simpson AJ SIMPSON	10/29/93	0831	[illegible] / H. NARCISO	11-1-93	8:30

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: RELING to FRIG # 3A BY Bill WHITTEN 1306

Rec'd SATURDAY 10-30-93 BUT opened 11-01-93

A-6000-407 (12/92) WEF061

9213507.0116 0000026

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/28/93 Time 0928 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D70	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P;	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D71	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D72	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 251901 0241 OPC #: 2W94-0-0001-27

* NOTE: B09D56 3; 40mL; GS*, water CLP-VOA (HCL to pH <2.0)

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-01-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9413507.0117 000002C

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/28/93

Ice Chest No. GWS005

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010241

Offsite Property No. ~~W93-AJS~~ 10/29/93 W94-0-0001-27

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DH9

- ~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~, 250ml, P, WATER; ALKALINITY
- ~~1~~, 500ml, P, WATER; TDS
- ~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09DH9

- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DJ0

- ~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee K.D. Lee	10/28/93	1306	AJ Simpson AJ SIMPSON	10/29/93	0828
AJ Simpson AJ SIMPSON	10/29/93	0829	[illegible] / H. NARCISO	11-01-93	8:34

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

reling. to frig. #3A by K.D. Lee 10/28/93 1306

Rec'd SATURDAY 10-30-93 BUT OPENED 11-01-93

A-6000-407 (12/92) WEF061

9213507.0118 0000028

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/28/93 Time 1120 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DH8	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P;	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09DH9	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DG0	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2S19010241 OPC #: W94-0-0001-27

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [illegible] Title SAMPLE CONTROL TECHNICIAN Date 11-01-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9715507.0119

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARLI

PAGE : 000003 OF 1

RECEIVED BY (PRINT NAME): PAYAM SAADI

LOG-IN-DATE : 11-2-93

RECEIVED BY (SIGNATURE): [signature]

ICE CHEST NO. 447

REMARKS:

1. Custody Seal(s) Present / Absent* Intact / Broken
2. Custody Seal Nos:
3. Chain of Custody Records Present / Absent*
4. Traffic Reports or Packing List Present / Absent*
5. Airbill Airbill / Sticker Present / Absent*
6. Airbill No.: 7289153465
7. Sample Tags Present / Absent*
8. Sample Tag Numbers Listed / Not Listed on Chain of Custody
9. Sample Condition: Intact / Broken* / Leaking
10. Does information on custody records, traffic reports, and sample tags agree? Yes / No*
11. Date Recieved at Lab: 11/2/93
12. Temp of ice chest 2 °C
13. Time Recieved: 10:00

SAMPLE TRANSFER

Fraction:

Area #:

By:

On:

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B09D70	A311004	
	B09D72	A311004	
	B09D56	A311004	

* Contact SMO and attach record of resolution

Reviewed By: _____ Logbook No.: _____

Date: _____ Logbook Page No.: _____

FORM DC-1

9713507.0120

000004

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARLI

PAGE : 1 OF 1

RECEIVED BY (PRINT NAME): PAYAM SHADI

LOG-IN-DATE : 11/2/93

RECEIVED BY (SIGNATURE): Payam Shadi

ICE CHEST NO. GW25005

REMARKS:

1. Custody Seal(s) — Present / Absent* — Intact / Broken
2. Custody Seal Nos: _____
3. Chain of Custody Records — Present / Absent*
4. Traffic Reports or Packing List — Present / Absent*
5. Airbill — Airbill / Sticker Present / Absent*
6. Airbill No.: 9893825304
7. Sample Tags — Present / Absent*
8. Sample Tag Numbers — Listed / Not Listed on Chain of Custody
9. Sample Condition: Intact / Broken* / Leaking
10. Does information on custody records, traffic reports, and sample tags agree? — Yes / No*
11. Date Recieved at Lab: 11/2/93
12. Temp of ice chest 3 °C
13. Time Recieved: 10:00

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B09DJ0	A311004	
	B09DH8	A311004	

SAMPLE TRANSFER

Fraction: _____

Area #: _____

By: _____

On: _____

* Contact SMO and attach record of resolution

Reviewed By: _____ Logbook No.: _____

Date: _____ Logbook Page No.: _____

FORM DC-1

9713507.0121

000005

TMA/NRCL
Thermo Analytical Inc

RADIATION DOSE RATE SURVEY FORM

Date 11/02/93 COMPANY TMA/NORCAL OTHER ORD # 7289/534/5

Surveyor's Name MARK S. McCrory

Model No. HP-210 / ESP-1 Model No. AC-2-7 / ESP-1

Serial No. 110289 / 02619 Serial No. 407726 / 02628

Calibration Date 4/26/93 Calibration Date 9/16/93

Instrument Calibration Factor 0.280 Instrument Calibration Factor 0.192

Sample	Location	HP-210 CPM	HP-210 Factor	HP-210 DPM	AC-2-7 CPM	AC-2-7 Factor	AC-2-7 DPM	Spillage or Breakage?	Activity pCi/g or pCi/L
Background		33.0			0				
Consistency		7,520	0.2903		4,097	0.1506			
Smear SML 447		39.0			1.0			None	
SML 175		35.0			2.0			None	
GWS005		41.0			2.0			None	
Reported WHC (12) samples each <50 pCi/gram									

Comments

All OK ✓ Approved MSM

Not OK Date 11/2/93

300000

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

7289153465

AIRBILL
PACKAGE
TRACKING NUMBER 7289153465

RECIPIENT'S COPY

1 Date 11-01-93

From (Your Name) Please Print: SAMPLE CONTROL
Your Phone Number (Very Important): ( )
Company:
Department/Floor No.:
Street Address:
City: FILLMORE State: CA ZIP Required:

2 To (Recipient's Name) Please Print: CAROLE HARRIS
Recipient's Phone Number (Very Important): (818) 357 3247
Company: TMA/ARLI
Department/Floor No.:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 160 TAYLOR STREET
City: MONROVIA, State: CA. ZIP Required: 91016

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): 2340-6406

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address:
City: State: ZIP Required:

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card 5 [ ] Cash/Check

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning†)
- 11 [X] OTHER PACKAGING
- 16 [ ] FEDEX LETTER*
- 12 [ ] FEDEX PAK*
- 13 [ ] FEDEX BOX
- 14 [ ] FEDEX TUBE

Standard Overnight (Delivery by next business afternoon No Saturday delivery†)
- 51 [ ] OTHER PACKAGING
- 56 [ ] FEDEX LETTER*
- 52 [ ] FEDEX PAK*
- 53 [ ] FEDEX BOX
- 54 [ ] FEDEX TUBE

Economy Two-Day (Delivery by second business day †)
- 30 [ ] ECONOMY*

* Economy Letter rate not available. Minimum charge: One pound economy rate.

Government Overnight (Restricted for authorized users only)
- 46 [ ] GOVT LETTER
- 41 [ ] GOVT PACKAGE

Freight Service (for packages over 150 lbs.)
- 70 [ ] OVERNIGHT FREIGHT** (Confirmed reservation required)
- 80 [ ] TWO-DAY FREIGHT**

†Delivery commitment may vary in some areas. *Declared Value Limit $500. **Call for delivery schedule.

5 DELIVERY AND SPECIAL HANDLING (Check services required)
- 1 [ ] HOLD FOR PICK-UP (Fill in Box H)
- 2 [X] DELIVER WEEKDAY
- 3 DELIVER SATURDAY (Extra charge) (Not available to all locations) [ ]
- 4 [ ] DANGEROUS GOODS (Extra charge)
- 5 [ ]
- 6 [ ] DRY ICE Dangerous Goods Shipper's Declaration not required
  Dry Ice: 9, UN 1845 X kg 904 III
- 7 [ ] OTHER SPECIAL SERVICE
- 8 [ ]
- 9 [ ] SATURDAY PICK-UP (Extra charge)
- [ ]
- 12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See right)
3	1 5	
Total 3	Total 1 5	Total

DIM SHIPMENT (Chargeable Weight) [ ] lbs
X X

Received At: [X] 1 Regular Stop [ ] 3 Drop Box [ ] 4 IBSC [ ] 2 On-Call Stop [ ] 5 Station

Emp. No. Date
[ ] Cash Received
[ ] Return Shipment
[ ] Third Party [ ] Chg. To Del. [ ] Chg. To Hold
Street Address
City State Zip
Received By: X
Date/Time Received FedEx Employee Number

7 Release Signature:

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

REVISION DATE 11/92
PART #137204 FXEM 3/93
FORMAT #155
155
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PRINTED IN U.S.A.

97 NOV 02

GENERAL CHEMISTRY RESULTS

CASE NO. 11-004

Water Sample #:

B09D70 B09DH8

CASE NARRATIVE

The holding time for the pH analysis was exceeded. Careful review of the QC analysis indicates that the data is reliable.

An excess of twenty samples were run between the Initial Calibration Verification and the Continuing Calibration Verification. The results for both the calibrations were within +/- 10% of the true concentration. The results are considered acceptable based on the data from the calibrations and the LCS.

No other problems were encountered during sample analysis. All QC results were acceptable.

Maureen Parrish 12-21-93

Maureen Parrish

9713507.0124

000009

TMA Inc. REPORT Work Order # A3-11-004

Received: 11/01/93 12/21/93 15:25:08

REPORT TO: Westinghouse Hanford Company
345 Hills
Richland, WA 99352

PREPARED BY: Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016

Maureen Parrish
CERTIFIED BY

ATTEN: Jeanette Duncan

ATTEN: Ms. Carole Harris
PHONE: 818-357-3247

CONTACT: MKP CIH

CLIENT: WHC SAMPLES: 6
COMPANY: Westinghouse Hanford Company
FACILITY:

This report is for the sole and exclusive use of the client to whom it is addressed and represents only those samples herein described. Samples not destroyed in testing are retained a maximum of 30 days unless otherwise requested.

WORK ID: SAF# 93-319
TAKEN: By Westinghouse Staff
TRANS: Federal Express
TYPE: Water
P.O. #: N3-11-005-SU-AR
INVOICE: under separate cover

SAMPLE IDENTIFICATION

01 B09D70
01 B09D70 MS
01 B09D70 MSD
01 B09D70
01 B09D70 MS
01 B09D70 MSD
01 B09D70
01 B09D70 Duplicate
01 B09D70
01 B09D70 Duplicate
01 B09D70
01 B09D70 MS
01 B09D70
01 B09D70 MS
01 B09D70
01 B09D70 MS
02 B09D72
02 B09D72 MS
02 B09D72 MSD
03 B09D76
04 B09DH8
04 B09DH8 Duplicate
04 B09DH8
04 B09DH8 Duplicate
04 B09DH8
04 B09DH8 Duplicate

TEST CODES and NAMES used on this workorder

BNCLPW	CLP Semivol. Water
PECLPL	CLP Pesticides Liq.
WCCLPL	Anions & Wet Chem.
WCLCS	Lab Control Sample Summary
WCL_L	Chloride - WH120
WCQCD	Quality Control Summary
WCQCS	Quality Control Summary
WF_L	Fluoride in Water
WNH3_L	Ammonia in Water
WPH_L	pH of Liquid
WPO4_L	Phosphate in Liquids
WSO4_L	Sulfate (in Waters)
WSULFI	Sulfide
W_ALK	Alkalinity
W_COD	COD Water
W_COND	Conductivity-Water
W_TDS	Dissolved Solids

TMA Inc. REPORT Work Order # A3-11-004

Received: 11/01/93 12/21/93 15:25:08

	SAMPLE IDENTIFICATION
05	B09DJ0
06	LAB Blank
06	LCS

TMA Inc. REPORT Work Order # A3-11-004

Received: 11/01/93

Results by Sample

SAMPLE ID B09D70 FRACTION 01H TEST CODE VCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/28/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	101	mg/L	2

FORM I

9713507.0127

000013

TMA Inc. REPORT Work Order # A3-11-004

Received: 11/01/93

Results by Sample

SAMPLE ID B09D70 FRACTION 01J TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/28/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot.Dissolved Solids	160.1	196	mg/L	5

FORM I

9713507.0128

000014

TMA Inc. REPORT Work Order # A3-11-004

Received: 11/01/93

Results by Sample

SAMPLE ID B09D70 FRACTION 01W TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/28/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

TMA Inc. REPORT Work Order # A3-11-004

Received: 11/01/93

Results by Sample

SAMPLE ID B09D70 FRACTION 01P TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/28/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	2.9	mg/L	0.2
Fluoride	300.0	0.1	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.7	pH	0.1
Sulfate	300.0	37	mg/L	5
Elect. Conductivity	9050	299	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-11-004

Received: 11/01/93 Results by Sample

SAMPLE ID B09D70 FRACTION 01R TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/28/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

9713507.0131

000017

TMA Inc. REPORT Work Order # A3-11-004

Received: 11/01/93

Results by Sample

SAMPLE ID B09DH8 FRACTION 04D TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/28/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	0.3	mg/L	0.2
Fluoride	300.0	<0.1	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	5.3	pH	0.1
Sulfate	300.0	<1	mg/L	1
Elect. Conductivity	9050	<6	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-11-004

Received: 11/01/93 Results by Sample

SAMPLE ID B09DM8 FRACTION 04F TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/28/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	8	mg/L	2

FORM I

TMA Inc. REPORT Work Order # A3-11-004

Received: 11/01/93 Results by Sample

SAMPLE ID B09DH8 FRACTION 04G TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/28/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot.Dissolved Solids	160.1	<5	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-004

Received: 11/01/93 Results by Sample

SAMPLE ID B09DH8 FRACTION 04H TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/28/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-11-004

Received: 11/01/93 Results by Sample

SAMPLE ID B09DH8 FRACTION 04J TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/28/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

9713507.0136

 Skinner&Sherman REPORT Work Order # S3-11-027

Received: 11/02/93 12/10/93 13:43:08

REPORT TMA/NORCAL
TO 2030 Wright Avenue
Richmond, CA 94804

ATTEN Dan Steurmer

PREPARED TMA / Skinner & Sherman Labs.
BY 300 Second Avenue
P.O. Box 521
Waltham, MA 02254

ATTEN Client Services
PHONE (617) 890-7200

CERTIFIED BY

CONTACT DP

CLIENT HANFORD NOR SAMPLES 3
COMPANY TMA/NORCAL Hanford
FACILITY Richmond, CA

WORK ID N3-11-005
TAKEN By Client
TRANS Fedex
TYPE 2 Waters NO3NO2
P.O. # N3-11-005
INVOICE under separate cover

SAMPLE IDENTIFICATION

01 B09D70
02 B09DH8
02 B09DH8D
02 B09DH8S
03 LCSW

TEST CODES and NAMES used on this workorder

NO3NO2 Nitrate/Nitrite

TMA
Thermo Analytical Inc.

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

Skinner & Sherman Laboratories Inc. 300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

9713507.0137

 Skinner&Sherman REPORT Work Order # S3-11-027

Received: 11/02/93 Results by Sample

SAMPLE ID B09D70 SAMPLE # 01 FRACTIONS: A
Date & Time Collected 10/28/93 Category WATER

NO3NO2 3.04
mg N/L

SAMPLE ID B09DH8 SAMPLE # 02 FRACTIONS: A
Date & Time Collected 10/28/93 Category WATER

NO3NO2 <0.25
mg N/L

SAMPLE ID B09DH8D SAMPLE # 02 FRACTIONS: B
Date & Time Collected 10/28/93 Category WATER

NO3NO2 <0.25
mg N/L

SAMPLE ID B09DH8S SAMPLE # 02 FRACTIONS: C
Date & Time Collected 10/28/93 Category WATER

NO3NO2 2.24
mg N/L

SAMPLE ID LCSW SAMPLE # 03 FRACTIONS: A
Date & Time Collected not specified Category WATER

NO3NO2 2.06
mg N/L

TMA
Thermo Analytical Inc.

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

Skinner & Sherman Laboratories Inc.
300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

9413507.0138

TMA
Thermo Analytical Inc.

TMA
525 Avis Drive, Suite 7
Ann Arbor, MI 48108

(313) 662-3104
(313) 662-3344 (Fax)

DEC 1993
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November 24, 1993

Quality Control Narrative

Scope

This report contains one Delivery Order. Two water samples were received by TMA/ERG from TMA/NORCAL on November 2, 1993. The sample cooler temperature was 4 deg.C. This sample was analyzed for Total Organic Halogens and Total Organic Carbon based on USEPA methods. Samples received with Work Order N3-11-005 are enclosed in this package.The TMA/ERG WO# is E3-11-026.

Methodology:

The samples were prepared, analyzed and reported in accordance with the Westinghouse Hanford Program Statement of Work MBH-SVV-069262 March 5, 1992.

The following is a list of methodologies used:

Analyte	Method/Description
TOC	415.1 Total Organic Carbon (TMA/ERG SOP WC022)
TOX	9022 Total Organic Halides by Neutron Activation (TMA/ERG SOP NUC03)

Instrument ID Numbers	Serial Numbers
OI Model 700 TOC Analyzer	H224069
NA Multi Channel Analyzer	Not Applicable

Discussion

The TOX samples were prepared according to protocol. The quality control requirements have been met for these analyses except that the matrix spike duplicate for the TOX analysis was low because the sample leaked from the Dohrman absorption modulator during preparation. This should not affect the validity of the data, however.

If there are any questions concerning this package please do not hesitate to call.

Respectfully submitted,

TMA/Environmental Research Group

Mark B Ruwe

Mark B. Ruwe
QA Officer

COVER PAGE - CLASSICALS ANALYSIS DATA PACKAGE

Lab Name: TMA/ERG #WO No. E3-11-026

Episode No. N3-11-005 SOW No. MBH-SVV-069262 SOW /Rev. Date March 5, 1992

TMA Sample No.	Lab Sample ID
B09D70	E3-11-026-01A,B
B09DH8	E3-11-026-02A.D
B09DH8MS	E3-11-026-02B,E
B09DH8DUP	E3-11-026-02C,F

COMMENTS: Narrative Report is attached. Yes X No

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 in the narrative report. Release of the data contained in this hardcopy data package(and in the data submitted on magnetic media, if data is submitted on magnetic media), has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Mark B Ruwe Name: Mark B. Ruwe

Date: November 24, 1993 Title: QA Officer

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME:	Thermo Analytical ERG Inc.	LAB SAMPLE ID:	B09D70
CASE NO.:	N3-11-005	Work ID:	100-FR-3
Matrix:	WATER		
Receipt Date:	02-Nov-93		
Units:	MG/L	% Solids:	NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	<1	1	03-Nov-93
ORGANIC BROMIDE	<0.01	0.01	04-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	04-Nov-93
ORGANIC IODIDE	<0.01	0.01	04-Nov-93

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME: Thermo Analytical ERG Inc.

LAB SAMPLE ID: B09DH8

CASE NO.: N3-11-005

Work ID: 100-FR-3

Matrix: WATER

Receipt Date: 02-Nov-93

% Solids: NA

Units: MG/L

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	<1	1	03-Nov-93
ORGANIC BROMIDE	<0.01	0.01	04-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	04-Nov-93
ORGANIC IODIDE	<0.01	0.01	04-Nov-93

COMMENTS:

9213507.0142

TMA
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

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Response

December 15, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Two (2) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on November 2, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S311026.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with no exceptions.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven R. Provencal
Lead Chemist

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2-7-96
MC

9713507.0143

WESTINGHOUSE/HANFORD

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-005 SAS No.: SDG No.: B09D71

SOW No.: ILM02.1

SAMPLE NUMBER:	Lab Sample ID.
B09D71	11026-01S
B09DH9	11026-02S
B09DH9D	11026-02S2
B09DH9S	11026-02DS

Were ICP interelement corrections applied? Yes/No YES
Were ICP background corrections applied? Yes/No YES
If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

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 and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Steven Provencal Name: Steven R. Provencal

Date: 12/15/93 Title: Lead Chemist

9713507.0144

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B09D71

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-005SAS No.: SDG_No.: B09D71

Matrix (soil/water): WATER Lab Sample ID: 11026-01S

Level (low/med): LOW Date Received: 11/02/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10.6	U		P
7440-36-0	Antimony	14.3	B		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	47.3	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	46300			P
7440-47-3	Chromium	2.2	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	15.5	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	6870			P
7439-96-5	Manganese	1.2	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	2800	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	4520	B		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B09DH9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-005SAS No.: SDG No.: B09D71

Matrix (soil/water): WATER Lab Sample ID: 11026-02S

Level (low/med): LOW Date Received: 11/02/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13.1	B		P
7440-36-0	Antimony	21.4	B		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	1.2	U		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	59.0	U		P
7440-47-3	Chromium	3.0	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	4.3	B		P
7439-89-6	Iron	5.3	U		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	40.2	B		P
7439-96-5	Manganese	1.6	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.7	B		P
7440-09-7	Potassium	308	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	138	B		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	6.2	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9713507.0146

TMA
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

RECORD COPY

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December 15, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Two (2) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on November 2, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals and cyanide. The analysis was performed under TMA/Skinner and Sherman work order S311025.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with the following exceptions:

The matrix spike recovery for cyanide exceeded the control limit requirement.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

2-7-96
MC

9713507.0147

WESTINGHOUSE/HANFORD

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-005 SAS No.: SDG No.: B09D70

SOW No.: ILM02.1

SAMPLE NUMBER:	Lab Sample ID.
B09D70	11025-01S
B09DH8	11025-02S
B09DH8D	11025-02S2
B09DH8S	11025-02DS

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

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 and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Steven Provencal Name: Steven R. Provencal

Date: 12/15/93 Title: Lead Chemist

9713507.0148

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09D70

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-005SAS No.: SDG No.: B09D70

Matrix (soil/water): WATER Lab Sample ID: 11025-01S

Level (low/med): LOW Date Received: 11/02/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19.1	B		P
7440-36-0	Antimony	16.0	B		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	46.7	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	46000			P
7440-47-3	Chromium	6.0	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	8.3	B		P
7439-89-6	Iron	342			P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	6800			P
7439-96-5	Manganese	4.7	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	7.6	B		P
7440-09-7	Potassium	2880	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	4400	B		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	13.3	B		P
	Cyanide	10.0	U	N	CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN ILM02.1

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B09DH8

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-005SAS No.: SDG No.: B09D70

Matrix (soil/water): WATER Lab Sample ID: 11025-02S

Level (low/med): LOW Date Received: 11/02/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	1.2	U		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	59.0	U		P
7440-47-3	Chromium	2.4	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	5.2	B		P
7439-89-6	Iron	10.0	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	22.9	U		P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	4.4	B		P
7440-09-7	Potassium	186	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	114	U		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide	10.0	U	N	CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 11-057

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : November 11, 1993

1.0 DESCRIPTION OF CASE :

Four water samples were analyzed for TCL Organics- Volatiles, Semivolatiles, and Pesticides/PCBs according to the USEPA Contract Laboratory Program (CLP) Statement of Work for Organic Analysis, Revision OLM01.8.

2.0 SAMPLE LIST :

WESTINGHOUSE ID	LAB ID	ANALYSIS REQUESTED	MATRIX	pH
B09DB2	A3-11-057-01A	V	WATER	0
B09DB2	A3-11-057-01B	SV	WATER	
B09DB2 MS	A3-11-057-01C	SV	WATER	
B09DB2 MSD	A3-11-057-01D	SV	WATER	
B09DB2	A3-11-057-01E	P	WATER	
B09DB4	A3-11-057-02A	V	WATER	0
B09DB4 MS	A3-11-057-02B	V	WATER	0
B09DB4 MSD	A3-11-057-02C	V	WATER	0
B09DD6	A3-11-057-03A	V	WATER	0
B09DD6	A3-11-057-03B	SV	WATER	
B09DD6	A3-11-057-03C	P	WATER	
B09DD6	A3-11-057-03D	P	WATER	
B09DD6	A3-11-057-03E	P	WATER	
B09DD8	A3-11-057-04A	V	WATER	0

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

All of the samples were received properly documented. One of the three VOA vials for sample B09DB2 was received at TMA/ARLI with a broken lid.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were analyzed within the CLP SOW holding times.

In samples B09DB2 and B09DD6, low levels of Chloroform, Trichloroethene, and Methylene Chloride were detected, whereas only Methylene Chloride was detected in the method blank, VBLK1115M and several of the other samples.

All of the QC results were within the limits specified by the EPA CLP SOW.

TUNES :

All BFB tunes are injected directly into the GC/MS instrument.

3.2.2 SEMIVOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times.

Bis(2-ethylhexyl) phthalate was detected in samples B09DB2, B09DB2MS and B09DB2MSD at concentrations ranging from 3 to 10 ug/L. No other TCL analytes were detected in the samples.

Samples B09DB2MS and B09DB2MSD had matrix spike recoveries for 4-Nitrophenol above the QC limit. In accordance with the protocol, no further action was required.

All of the QC results were within the limits specified by the EPA CLP SOW.

3.2.3 PESTICIDE/PCB ANALYSIS COMMENTS :

SEQUENCE NOTES :

The sequence was started on 11/25/93 and was analyzed according to the USEPA CLP SOW. The sequence was analyzed by single injection into a dual column system.

On the DB-608 column, the %RSD for all of the analytes were within the QC limits. However, on the DB-1701 column the %RSD for alpha-BHC and gamma-BHC exceeded 20% but were less than the 30% limit.

All of the QC criteria were within the limits specified by the EPA CLP SOW for this case.

The chromatograms are presented in the manner consistent with the capabilities of the Nelson 2700 Turbochrome Data System which normalizes the largest peak to scale.

SAMPLE NOTES :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times.

No TCL analytes were detected in the samples.

All of the QC results were within the advisory limits specified by CLP SOW.

We 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 in this hardcopy data package and in the computer-readable data submitted on diskette is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Nicole Roth

Nicole Roth 12/22/93
CLP Program Manager

Maureen Parrish

Maureen Parrish 12/22/93
Project Manager

9213507.0153

000106
EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

B09DB2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11057 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311057-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31115M08

Level: (low/med) LOW Date Received: 11/11/93

% Moisture: not dec. ____ Date Analyzed: 11/15/93

GC Column: CAP 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	5	BJ
67-64-1	Acetone	10	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	3	J
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	4	J
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	Xylene (total)	10	U

9213507.0154

000107

EPA SAMPLE NO.

B09DB2

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11057 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311057-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31115M08

Level: (low/med) LOW Date Received: 11/11/93

% Moisture: not dec. ____ Date Analyzed: 11/15/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713507.0155

000108
EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

B09DB4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11057 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311057-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31115M07

Level: (low/med) LOW Date Received: 11/11/93

% Moisture: not dec. ____ Date Analyzed: 11/15/93

GC Column: CAP 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
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	6	BJ
67-64-1	Acetone	10	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	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DB4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11057 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311057-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31115M07

Level: (low/med) LOW Date Received: 11/11/93

% Moisture: not dec. ____ Date Analyzed: 11/15/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713507.0157

000110

EPA SAMPLE NO.

B09DD6

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11057 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311057-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31115M11

Level: (low/med) LOW Date Received: 11/11/93

% Moisture: not dec. ____ Date Analyzed: 11/15/93

GC Column: CAP 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
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	10	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	2	J
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	Xylene (total)	10	U

9213507.0158

000111
EPA SAMPLE NO.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B09DD6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11057 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311057-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31115M11

Level: (low/med) LOW Date Received: 11/11/93

% Moisture: not dec. ____ Date Analyzed: 11/15/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713507.0159

000112
EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

B09DD8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11057 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311057-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31115M12

Level: (low/med) LOW Date Received: 11/11/93

% Moisture: not dec. ____ Date Analyzed: 11/15/93

GC Column: CAP 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
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	6	BJ
67-64-1	Acetone	10	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	Xylene (total)	10	U

9713507.0160

000113
EPA SAMPLE NO.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B09DD8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11057 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311057-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31115M12

Level: (low/med) LOW Date Received: 11/11/93

% Moisture: not dec. ____ Date Analyzed: 11/15/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DB2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11057 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311057-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31117I11

Level: (low/med) LOW Date Received: 11/11/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/17/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DB2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11057 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311057-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31117I11

Level: (low/med) LOW Date Received: 11/11/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/17/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

EPA SAMPLE NO.

B09DB2

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11057 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311057-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31117I11

Level: (low/med) LOW Date Received: 11/11/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/17/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DD6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11057 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311057-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31117I14

Level: (low/med) LOW Date Received: 11/11/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/18/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DD6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11057 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311057-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31117I14

Level: (low/med) LOW Date Received: 11/11/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/18/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DD6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11057 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311057-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31117I14

Level: (low/med) LOW Date Received: 11/11/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/18/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DB2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11057 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311057-01E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/11/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/12/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/29/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DD6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11057 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311057-03C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/11/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/12/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/29/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

9713507.0169

RECORD COPY

JAN 1994
RECEIVED
SDLA

WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

ORGANICS & GENERAL CHEMISTRY
Case No. 11-057
(TMA/ARLI W.O. No. A3-11-057)

METALS & NITRATE/NITRITE
Case No. N3-11-081
(TMA/Skinner & Sherman W.O. Nos. S3-11-169,
S3-11-170 & S3-11-171)

TOTAL ORGANIC CARBON/TOTAL ORGANIC HALOGENS
Case No. N3-11-081
(TMA/ERG W.O. No. E3-11-180)

January 4, 1994

TMA Master Work Order N3-11-081

9713507.0170

000002

PAGE 1 TMA/Norcal CHAIN OF CUSTODY ORD # M3-11-081

RCVD: 11/11/93 DUE: 12/16/93 11/11/93 15:55:14 KEEP: 12/16/94 DISP: S

DASH	SAMPLE IDENTIFICATION		STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY
01A-W B09DB2		UNFILTERED	ARLI	WH018 WH019 WH020 WH043 WH114 WH121 WH122 WH128 WH131 WH132 WH140
01D-W B09DB2	MS	UNFILTERED	ARLI	WH018 WH019 WH020 WH043 WH114 WH140
01E-W B09DB2	MSD	UNFILTERED	ARLI	WH018 WH019 WH020
01F-W B09DB2	DUP	UNFILTERED	ARLI	WH043 WH114 WH121 WH122 WH128 WH131 WH132 WH140
02A-W B09DD6		UNFILTERED	ARLI	WH018 WH019 WH020 WH043 WH114 WH121 WH122 WH128 WH131 WH132 WH140
05A-W B09DB4			ARLI	WH018
06A-W B09DD8			ARLI	WH018

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
[illegible]	11-11-93	ARLI	11-11-93	C Harris	11/12/93

9713507.0171 ODDDD2A

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 11/6/93

Ice Chest No. SNL-385

Field Logbook No. EAFL-1054

Bill of Lading/Airbill No. 2519010428

Offsite Property No. ~~W93-~~ KD 11-10-93 W94-0-0001-40

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DB2

~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
~~1, 2L &~~ ~~1, 4~~L, aG; WATER; CLP-SEMI VOA
KD 11/6/93 ~~1, 2L &~~ ~~1, 4~~L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
~~1~~, 250ml, P, WATER; ALKALINITY
~~1~~, 500ml, P, WATER; TDS
~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
~~1~~, 250ml, Gs, WATER; TRITIUM/C-14
~~1~~, 2L, P, WATER; Gross Alpha, Beta Gamma Spec. (U 235/238) (HNO3 to ph<2.0 PU 239/240, Am 241, Sr 90

B09DB3

~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DB4

~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
Kirby Lee K.D. Lee	11/6/93	1500	KW Hamilton / Karl F. Donnelson	11-10-93	0830
Karl F. Donnelson	11/10/93	0900	[illegible] / H. Narciso	11-11-93	12:45

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. # 2C by K.D. Lee 11/6/93 1500

A-6000-407 (12/92) WEF061

9213507.0172 DDD002B

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 11/6/93 Time 0964 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DB2	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	~~1; 2L &~~ 1;~~4~~L; aG;	WATER	CLP-SEMI VOA
	~~1; 2L &~~ 1;~~4~~L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P;	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09DB3	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DB4	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2519010428 OPC #: W94-0-0001-40

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-11-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(02/...

9213507.0173 000002C

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 11/6/93

Ice Chest No. SML 423

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010428

Offsite Property No. ~~W93-~~ KD LEE-93 W94-0-0001-40

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DD6

~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
~~1~~, 2L & ~~1~~, 4L, aG; WATER; CLP-SEMI VOA
ICOC 11/6/93 ~~1, 2L & 1, 4L~~, aG; WATER; CLP-PCB's/PEST(pH 5-9)
~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
~~1~~, 250ml, P, WATER; ALKALINITY
~~1~~, 500ml, P, WATER; TDS
~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
T, 2L and ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09DD7

~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DD8

~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
Kathy Phen KD Lee	11/6/93	1580	Karl F. Hamilton / Karl F. Donnelson	11-10-93	0830
Karl F. Hamilton	11-10-93	0900	[illegible] / H. NARUSO	11-11-93	12:45

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: reling. to frig. #2B by KD Lee 11/6/93 1500

A-6000-407 (12/92) WEF061

9213507.0174

DOOOO20

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 11/6/93 Time 1255 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D06	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	~~1; 2L &~~ 1; 4L; aG;	WATER	CLP-SEMI VOA
11/6/93	~~1; 2L &~~ 1; 4L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; and 1; 2L	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D07	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D08	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BQL #: 2519010428 OPC #: W94-0-0001-40

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECH. Date 11-11-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-

9713507.0175

000003

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARLI

PAGE : 1 OF 1

RECEIVED BY (PRINT NAME): PAYAM SHAIDI

LOG-IN-DATE : 11/12/93

RECEIVED BY (SIGNATURE): Payam Shaidi

ICE CHEST NO. SML 465

REMARKS: B09DB2 Broken Vial

1. Custody Seal(s) — Present / Absent* — Intact / Broken
2. Custody Seal Nos:
3. Chain of Custody Records — Present / Absent*
4. Traffic Reports or Packing List — Present / Absent*
5. Airbill — Airbill / Sticker Present / Absent*
6. Airbill No.: 7289153620
7. Sample Tags — Present / Absent*
8. Sample Tag Numbers — Listed / Not Listed on Chain of Custody
9. Sample Condition: Intact / Broken* / Leaking
10. Does information on custody records, traffic reports, and sample tags agree? — Yes / No*
11. Date Recieved at Lab: 11/12/93
12. Temp of ice chest 3 °c
13. Time Recieved: 9:30

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B09DB4	A311057	
	B09DB2	A311057	
	B09DD6	A311057	
	B09DD8	A311057	

SAMPLE TRANSFER

Fraction:

Area #:

By:

On:

* Contact SMO and attach record of resolution

Reviewed By:

Date:

Logbook No.:

Logbook Page No.:

FORM DC-1

000004

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

3095M 7289153620

AIRBILL PACKAGE TRACKING NUMBER 7289153620

RECIPIENT'S COPY

1 Date 11-11-92

From (Your Name) Please Print: SAMPLE CONTROL

Your Phone Number (Very Important): (310-233-2633

Company: [illegible] CAL

Department/Floor No.

Street Address: 2[illegible] HT AVE

City: [illegible] State: CA ZIP Required: [illegible]

2 To (Recipient's Name) Please Print: CAROLE HARRIS

Recipient's Phone Number (Very Important): 818 357-3207

Company: TMA/ARLI

Department/Floor No.

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 160 TAYLOR STREET

City: MONROVIA, State: CA. ZIP Required: 91016

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): 2340-6406

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address
City State ZIP Required

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card 5 [ ] Cash/Check

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning†)
11 [X] OTHER PACKAGING
16 [ ] FEDEX LETTER*
12 [ ] FEDEX PAK*
13 [ ] FEDEX BOX
14 [ ] FEDEX TUBE

Standard Overnight (Delivery by next business afternoon No Saturday delivery†)
51 [ ] OTHER PACKAGING
56 [ ] FEDEX LETTER*
52 [ ] FEDEX PAK*
53 [ ] FEDEX BOX
54 [ ] FEDEX TUBE

Economy Two-Day (Delivery by second business day †)
30 [ ] ECONOMY*
* Economy Letter rate not available. Minimum charge. One pound economy rate.

Government Overnight (Restricted for authorized users only)
46 [ ] GOVT LETTER
41 [ ] GOVT PACKAGE

Freight Service (for packages over 150 lbs.)
70 [ ] OVERNIGHT FREIGHT** (Confirmed reservation required)
80 [ ] TWO-DAY FREIGHT**
† Delivery commitment may be later in some areas.
*Declared Value Limit $500.
**Call for delivery schedule

5 DELIVERY AND SPECIAL HANDLING (Check services required)
1 [ ] HOLD FOR PICK-UP (Fill in Box H)
2 [X] DELIVER WEEKDAY
3 DELIVER SATURDAY (Extra charge) (Not available to all locations) [ ]
4 [ ] DANGEROUS GOODS (Extra charge)
5 [ ]
6 [ ] DRY ICE Dangerous Goods Shipper's Declaration not required
Dry Ice, 9, UN 1845 X kg 904 (9)
7 [ ] OTHER SPECIAL SERVICE
8 [ ]
9 [ ] SATURDAY PICK-UP (Extra charge)
[ ]
12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6 PACKAGES 1 | WEIGHT (in Pounds Only) | YOUR DECLARED VALUE (See right)
Total | Total 4.25 | Total

DIM SHIPMENT (Chargeable Weight) [ ] lbs.
L x W x H

Received At
1 [X] Regular Stop 3 [ ] Drop Box
2 [ ] On-Call Stop 4 [ ] B.S.C. 5 [ ] Station

Emp. No. Date
[ ] Cash Received
[ ] Return Shipment
[ ] Third Party [ ] Chg. To Del [ ] Chg. To Hold
Street Address
City State Zip
Received By: X
Date/Time Received FedEx Employee Number

7 Release Signature:

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

REVISION DATE 11/92
PART #112781 EXEM 1993
FORMAT #155
155
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9/4/0 4/0 4/0

9713507.0177

000005

TMA/NRU
Thermo Analytical Inc.

RADIATION DOSE RATE SURVEY FORM

Date 11/12/93 COMPANY WHC TMA/NORCAL OTHER ORD # 7289153620

Surveyor's Name MARK S. McCraig

Model No. HP-210 / ESP-1 Model No. AC-2-7 / ESP-1

Serial No. 110289 / 02619 Serial No. 407726 / 02628

Calibration Date 4/26/93 Calibration Date 9/16/93

Instrument Calibration Factor 0.280 Instrument Calibration Factor 0.192

Sample	Location	HP-210 CPM	HP-210 Factor	HP-210 DPM	AC-2-7 CPM	AC-2-7 Factor	AC-2-7 DPM	Surface or Envelope?	Activity Sent to NOVA
Background		33.0			2.0				
Consistency		7,300	0.2818		4,093	0.1504			
Smear SML H60		57.0			7.0			None	
SML H65		41.0			4.0			None	
SML 385		51.0			4.0			None	
SML H23		42.0			6.0			None	
SML H27		39.0			1.0			None	
Reported WHC (13) samples each <50 pCi/gram									

Comments

All OK ✓ Approved MSM

Not OK Date 11/12/93

GENERAL CHEMISTRY RESULTS

CASE NO. 11-057

Water Sample #:

B09DB2 B09DD6

CASE NARRATIVE

The holding time for the pH analysis was exceeded. Careful review of the QC analysis indicates that the data is reliable.

The data from the Calibration Verification and the samples, run on November 20, 1993, was reprocessed on December 16, 1993. The calculated data was originally from a five point calibration forced through the zero point. The data has been reprocessed without forcing the calibration through the zero point.

The final Calibration Verification was outside the 10% control criteria. The sample results are considered acceptable based on the final LCS.

No other problems were encountered during sample analysis. All QC results were acceptable.

Maureen Parrish 12-22-93

Maureen Parrish

9713507.0179

000007

TMA Inc. REPORT Work Order # A3-11-057

Received: 11/11/93 12/22/93 16:03:44

REPORT TO: Westinghouse Hanford Company
345 Hills
Richland, WA 99352

ATTEN: Jeanette Duncan

CLIENT: WHC SAMPLES: 5
COMPANY: Westinghouse Hanford Company
FACILITY:

WORK ID: SAF #93-319
TAKEN: By Westinghouse Staff
TRANS: Federal Express
TYPE: Liquid
P.O. #: N3-11-081-SU-AR
INVOICE: under separate cover

PREPARED BY: Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016

ATTEN: Ms. Carole Harris
PHONE: 818-357-3247

Maureen Parrish
CERTIFIED BY

CONTACT: MKP CIH

This report is for the sole and exclusive use of the client to whom it is addressed and represents only those samples herein described. Samples not destroyed in testing are retained a maximum of 30 days unless otherwise requested.

SAMPLE IDENTIFICATION

01	B09DB2
01	B09DB2 MS
01	B09DB2 MSD
01	B09DB2
01	B09DB2 MS
01	B09DB2 MSD
01	B09DB2
01	B09DB2 MS
01	B09DB2
01	B09DB2 Duplicate
01	B09DB2
01	B09DB2 Duplicate
01	B09DB2
01	B09DB2 MS
01	B09DB2
01	B09DB2 MS
02	B09DB4
02	B09DB4 MS
02	B09DB4 MSD
03	B09DD6
03	B09DD6 MS
03	B09DD6 MSD
03	B09DD6
03	B09DD6 Duplicate
03	B09DD6
03	B09DD6 Duplicate

TEST CODES and NAMES used on this workorder

BNCLPW	CLP Semivol. Water
CANCEL	Analysis Cancelled
PECLPL	CLP Pesticides Liq.
WCCLPL	Anions & Wet Chem.
WCLCS	Lab Control Sample Summary
WCL_L	Chloride - WH120
WCQCD	Quality Control Summary
WCQCS	Quality Control Summary
WF_L	Fluoride in Water
WNH3_L	Ammonia in Water
WPH_L	pH of Liquid
WPO4_L	Phosphate in Liquids
WSO4_L	Sulfate (in Waters)
WSULFI	Sulfide
W_ALK	Alkalinity
W_COD	COD Water
W_COND	Conductivity-Water
W_TDS	Dissolved Solids

TMA Inc. REPORT Work Order # A3-11-057

Received: 11/11/93 12/22/93 16:03:44

SAMPLE IDENTIFICATION

03 B09DD6
03 B09DD6 Duplicate
04 B09DD8
05 Lab Blank
05 LCS

9713507.0181

000010

TMA Inc. REPORT Work Order # A3-11-057

Received: 11/11/93

Results by Sample

SAMPLE ID B09DB2 FRACTION 01H TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	13.6	mg/L	2.0
Fluoride	300.0	0.2	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.7	pH	0.1
Sulfate	300.0	52	mg/L	10
Elect. Conductivity	9050	550	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-11-057

Received: 11/11/93

Results by Sample

SAMPLE ID B09DB2 FRACTION 01J TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	174	mg/L	2

FORM I

TMA Inc. REPORT Work Order # A3-11-057

Received: 11/11/93

Results by Sample

SAMPLE ID B09DB2 FRACTION 01L TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solids	160.1	358	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-057

Received: 11/11/93

Results by Sample

SAMPLE ID B09DB2 FRACTION 01N TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-11-057

Received: 11/11/93

Results by Sample

SAMPLE ID B09DB2 FRACTION 01P TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

TMA Inc. REPORT Work Order # A3-11-057

Received: 11/11/93

Results by Sample

SAMPLE ID B09DD6 FRACTION 03F TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	28.2	mg/L	2.0
Fluoride	300.0	0.5	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.5	pH	0.1
Sulfate	300.0	92	mg/L	10
Elect. Conductivity	9050	872	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-11-057

Received: 11/11/93

Results by Sample

SAMPLE ID B09DD6 FRACTION 03H TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	202	mg/L	2

FORM I

TMA Inc. REPORT Work Order # A3-11-057

Received: 11/11/93

Results by Sample

SAMPLE ID B09DD6 FRACTION 03I TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solids	160.1	565	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-057

Received: 11/11/93 Results by Sample

SAMPLE ID B09DD6 FRACTION 03J TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-11-057

Received: 11/11/93 Results by Sample

SAMPLE ID B09DD6 FRACTION 03L TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

9713507.0191

TMA
Thermo Analytical Inc.

TMA
525 Avis Drive, Suite 7
Ann Arbor, MI 48108

(313) 662-3104
(313) 662-3344 (Fax)

JAN 1994
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REPRODUCIBLE COPY

Federal Express : 7289156350

December 9, 1993

Quality Control Narrative

Scope

This report contains one Delivery Order. Two water samples were received by TMA/ERG from TMA/NORCAL on November 12, 1993. The cooler temperature when received was 4 deg. C. The sample was analyzed for Total Organic Halogens and Total Organic Carbon based on USEPA methods. Samples received with Work Order N3-11-081 are enclosed in this package.The TMA/ERG WO# is E3-11-180.

Methodology:

The samples were prepared, analyzed and reported in accordance with the Westinghouse Hanford Program Statement of Work MBH-SVV-069262 March 5, 1992.

The following is a list of methodologies used:

Analyte	Method/Description
TOC	415.1 Total Organic Carbon (TMA/ERG SOP WC022)
TOX	9022 Total Organic Halides by Neutron Activation (TMA/ERG SOP NUC03)

Instrument ID Numbers	Serial Numbers
OI Model 700 TOC Analyzer	H224069
NA Multi Channel Analyzer	Not Applicable

Discussion

The samples were prepared according to protocol. The quality control requirements have been met for these analyses without exception. If there are any questions concerning this package please do not hesitate to call.

Respectfully submitted,

TMA/Environmental Research Group

Mark B. Ruwe

Mark B. Ruwe
QA Officer

2-7-96
MC

COVER PAGE - CLASSICALS ANALYSIS DATA PACKAGE

Lab Name: TMA/ERG #WO No. E3-11-180

Episode No. N3-11-081 SOW No. MBH-SVV-069262 SOW /Rev.Date March 5, 1992

TMA Sample No.	Lab Sample ID
B09DB2	E3-11-180-01A.D
B09DB2MS	E3-11-180-01B.E
B09DB2DUP	E3-11-180-01C.F
B09DD6	E3-11-180-02A.B

COMMENTS: Narrative Report is attached. Yes X No

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 in the narrative report. Release of the data contained in this hardcopy data package(and in the data submitted on magnetic media, if data is submitted on magnetic media), has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Mark B. Ruwe Name: Mark B. Ruwe

Date: December 9, 1993 Title: QA Officer

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME: Thermo Analytical ERG Inc.
LAB SAMPLE ID: B09DB2

CASE NO.: N3-11-081
Work ID: 100-FR-3

Matrix: WATER

Receipt Date: 12-Nov-93

Units: MG/L
% Solids: NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	1.2	1	20-Nov-93
ORGANIC BROMIDE	<0.01	0.01	23-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	23-Nov-93
ORGANIC IODIDE	<0.01	0.01	23-Nov-93

COMMENTS:

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME:	Thermo Analytical ERG Inc.	LAB SAMPLE ID:	B09DD6
CASE NO.:	N3-11-081	Work ID:	100-FR-3
Matrix:	WATER		
Receipt Date:	12-Nov-93		
Units:	MG/L	% Solids:	NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	2.3	1	20-Nov-93
ORGANIC BROMIDE	<0.01	0.01	23-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	23-Nov-93
ORGANIC IODIDE	<0.01	0.01	23-Nov-93

TMA
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

9713507.0195

RECORD COPY

JAN 1994
RECEIVED
SDLA

December 23, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Two (2) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on November 13, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S311170.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with the following exceptions:

The ICP serial dilution for manganese exceeded control limit requirements.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

2-7-96
MC

9713507.0196

WESTINGHOUSE/HANFORD

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-081 SAS No.: SDG No.: B09DB3

SOW No.: ILM02.1

SAMPLE NUMBER:	Lab Sample ID.
B09DB3	11170-01S
B09DD7	11170-02S
B09DD7D	11170-02S2
B09DD7S	11170-02DS

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

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 and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Steven Provencal Name: Steven R. Provencal

Date: 12/23/93 Title: Lead Chemist

01

9713507.0197

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DB3

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-081SAS No.: SDG No.: B09DB3

Matrix (soil/water): WATER Lab Sample ID: 11170-01S

Level (low/med): LOW Date Received: 11/13/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	25.3	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	6.2	B		P
7440-39-3	Barium	40.1	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	76500			P
7440-47-3	Chromium	70.2			P
7440-48-4	Cobalt	2.8	B		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	5.3	U		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	10300			P
7439-96-5	Manganese	0.80	U	E	P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	4500	B		P
7782-49-2	Selenium	3.1	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	21000			P
7440-28-0	Thallium	2.4	B		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

02

9713507.0198

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

809DD7

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-081SAS No.: SDG No.: 809DB3

Matrix (soil/water): WATER Lab Sample ID: 11170-02S

Level (low/med): LOW Date Received: 11/13/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18.2	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	9.3	B		P
7440-39-3	Barium	46.1	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	66800			P
7440-47-3	Chromium	3.5	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	5.3	U		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	20400			P
7439-96-5	Manganese	43.1		E	P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	8020			P
7782-49-2	Selenium	4.0	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	72900			P
7440-28-0	Thallium	2.5	B		P
7440-62-2	Vanadium	7.9	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

12/23/93 SPP ~~04~~ 03

9713507.0199

 Skinner&Sherman REPORT Work Order # S3-11-171

Received: 11/13/93 12/22/93 14:40:56

REPORT TO: TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804

ATTEN: Dan Steurmer

PREPARED BY: TMA / Skinner & Sherman Labs.
300 Second Avenue
P.O. Box 521
Waltham, MA 02254

ATTEN: Client Services
PHONE: (617) 890-7200

CERTIFIED BY

CONTACT: DP

CLIENT: HANFORD NOR SAMPLES: 3
COMPANY: TMA/NORCAL Hanford
FACILITY: Richmond, CA

WORK ID: N3-11-081
TAKEN: By Client
TRANS: Fedex
TYPE: 2 Waters NO3NO2
P.O. #: N3-11-081
INVOICE: under separate cover

SAMPLE IDENTIFICATION	TEST CODES and NAMES used on this workorder	
01 B09DB2	NO3NO2	Nitrate/Nitrite
02 B09DD6		
02 B09DD6D		
02 B09DD6S		
03 LCSW		

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

9713507.0200

 Skinner&Sherman REPORT Work Order # S3-11-171

Received: 11/13/93 Results by Sample

SAMPLE ID B09DB2 SAMPLE # 01 FRACTIONS: A
Date & Time Collected 11/06/93 Category WATER

NO3NO2 8.31
mg N/L

SAMPLE ID B09DD6 SAMPLE # 02 FRACTIONS: A
Date & Time Collected 11/06/93 Category WATER

NO3NO2 27.9
mg N/L

SAMPLE ID B09DD6D SAMPLE # 02 FRACTIONS: B
Date & Time Collected 11/06/93 Category WATER

NO3NO2 28.6
mg N/L

SAMPLE ID B09DD6S SAMPLE # 02 FRACTIONS: C
Date & Time Collected 11/06/93 Category WATER

NO3NO2 48.0
mg N/L

SAMPLE ID LCSW SAMPLE # 03 FRACTIONS: A
Date & Time Collected not specified Category WATER

NO3NO2 1.99
mg N/L

TMA
Thermo Analytical Inc.

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

Skinner & Sherman Laboratories Inc.
300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

TMA 971350.0201
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

RECORD COPY

JAN 1994
RECEIVED
SDLA

December 22, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Two (2) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on November 13, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals and cyanide. The analysis was performed under TMA/Skinner and Sherman work order S311169.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with the following exceptions:

The matrix spike recovery for aluminum exceeded the control limit requirement.

The laboratory duplicate for aluminum and manganese exceeded the control limit requirements.

The ICP serial dilution for manganese exceeded the control limit requirement.

The holding times for cyanide were exceeded. The samples were distilled before the holding time but were analyzed after expiration of the holding time.

Please feel free to call if there are any questions concerning the data package.
Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

2-7-96
MC

9213607.0202

WESTINGHOUSE/HANFORD

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-081 SAS No.: SDG No.: B09D82

SOW No.: ILM02.1

SAMPLE NUMBER:	Lab Sample ID.
B09D82	11169-01S
B09DD6	11169-02S
B09DD6D	11169-02S2
B09DD6S	11169-02DS

Were ICP interelement corrections applied? Yes/No YES
Were ICP background corrections applied? Yes/No YES
If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

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 and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Steven Provencal Name: Steven R. Provencal

Date: 12/22/93 Title: Lead Chemist

001

9715507.0203

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DB2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-081SAS No.: SDG No.: B09DB2

Matrix (soil/water): WATER Lab Sample ID: 11169-01S

Level (low/med): LOW Date Received: 11/13/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	122	B	N*	P
7440-36-0	Antimony	13.0	B		P
7440-38-2	Arsenic	6.2	B		P
7440-39-3	Barium	40.4	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	75600			P
7440-47-3	Chromium	75.1			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	26.5	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	10300			P
7439-96-5	Manganese	3.5	B	*E	P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	5.3	B		P
7440-09-7	Potassium	4500	B		P
7782-49-2	Selenium	3.4	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	21000			P
7440-28-0	Thallium	2.5	B		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

002

9713507.0204

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DD6

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-081SAS No.: SDG No.: B09DB2

Matrix (soil/water): WATER Lab Sample ID: 11169-02S

Level (low/med): LOW Date Received: 11/13/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	310		N*	P
7440-36-0	Antimony	14.9	B		P
7440-38-2	Arsenic	7.3	B		P
7440-39-3	Barium	47.6	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	67800			P
7440-47-3	Chromium	8.0	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	3.1	B		P
7439-89-6	Iron	26.6	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	20600			P
7439-96-5	Manganese	49.9		E*	P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	7.0	B		P
7440-09-7	Potassium	8360			P
7782-49-2	Selenium	3.9	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	74500			P
7440-28-0	Thallium	2.2	B		P
7440-62-2	Vanadium	9.9	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

003

~~B09DJ2~~
B09D82-TMA-627

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 11-029

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : November 5, 1993

1.0 DESCRIPTION OF CASE :

Two water samples were analyzed for TCL Organics- Volatiles, Semivolatiles, and Pesticides/PCBs according to the USEPA Contract Laboratory Program (CLP) Statement of Work for Organic Analysis, Revision OLM01.8.

2.0 SAMPLE LIST :

WESTINGHOUSE ID	LAB ID	ANALYSIS REQUESTED	MATRIX	pH
B09DJ2	A3-11-029-01A	V	WATER	0
B09DJ2	A3-11-029-01B	SV	WATER	
B09DJ2 MS	A3-11-029-01C	SV	WATER	
B09DJ2 MSD	A3-11-029-01D	SV	WATER	
B09DJ2	A3-11-029-01E	P	WATER	
B09DJ2 MS	A3-11-029-01F	P	WATER	
B09DJ2 MSD	A3-11-029-01G	P	WATER	
B09DJ4	A3-11-029-02A	V	WATER	0
B09DJ4 MS	A3-11-029-02B	V	WATER	0
B09DJ4 MSD	A3-11-029-02C	V	WATER	0

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

All of the samples were received unbroken and properly documented.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were analyzed within the CLP SOW holding times.

A trace amount of Methylene Chloride was detected in sample B09DJ2. In the method blank, VBLK1109B, trace amounts of Methylene Chloride were detected amongst low levels of Toluene and m,p-Xylene. The concentration of the contaminants found in the method blank were below the CRQL, and therefore within the QC criteria.

All of the QC results were within the limits specified by the EPA CLP SOW.

TUNES :

All BFB tunes are injected directly into the GC/MS instrument.

3.2.2 SEMIVOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times.

All of the QC results were within the limits specified by the EPA CLP SOW.

3.2.3 PESTICIDE/PCB ANALYSIS COMMENTS :

SEQUENCE NOTES :

The sequence was started on 11/25/93 and was analyzed according to the USEPA CLP SOW. The sequence was analyzed by single injection into a dual column system.

On the DB-608 column, the %RSD for all of the analytes were within the QC limits. However, on the DB-1701 column the %RSD for alpha-BHC and gamma-BHC exceeded 20% but were less than the 30% limit.

All of the other QC criteria were within the the limits specified by the EPA CLP SOW for this case.

The chromatograms are presented in the manner consistent with the capabilities of the Nelson 2700 Turbochrome Data System which normalizes the largest peak to scale.

SAMPLE NOTES :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times.

The method blank, PBLK1109C, and sample B09DJ2 were originally injected on 11/28/93 at 04:21 and 04:59, respectively, and followed with the injection of spiked samples. Due to the carryover from previous sample analyses (cycles #93 and 94), only TCX could be reported, whereas DCB coeluted with the background interference peaks. Both of the samples were reinjected on 11/30/93 at 21:59 and 22:37, respectively, in the same sequence at cycle #171 and 172, and the TCX and DCB

surrogate recoveries were reported. Only the second analyses of these samples have been reported. There were no TCL analytes detected in the samples.

All of the QC results were within the advisory limits specified by CLP SOW.

We 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 in this hardcopy data package and in the computer-readable data submitted on diskette is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Nicole Roth

Nicole Roth 12/22/93
CLP Program Manager

Maureen Parrish

Maureen Parrish 12-22-93
Project Manager

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000107

EPA SAMPLE NO.

B09DJ2

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B18

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP 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
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	10	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	Xylene (total)	10	U

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000108

EPA SAMPLE NO.

B09DJ2

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B18

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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000109
EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

B09DJ4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B14

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

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000110

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DJ4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B14

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31117I03

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/17/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

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000112

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31117I03

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/17/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31117I03

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/17/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/05/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/08/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/30/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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TMA

RECORD COPY

JAN 1994
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SDLA

WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

ORGANICS & GENERAL CHEMISTRY
Case No. 11-029
(TMA/ARLI W.O. # A3-11-029)

METALS & NITRATE/NITRITE
Case No. N3-11-046
(TMA/Skinner & Sherman W.O. No. S3-11-115, S3-11-116 & S3-11-118)

TOTAL ORGANIC CARBON/TOTAL ORGANIC HALOGEN
Case No. N3-11-046
(TMA/ERG W.O. No. E3-11-115)

January 4, 1994

TMA Master Work Order N3-11-046

2-9-96
MC

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000002

PAGE 1 TMA/Norcal CHAIN OF CUSTODY ORD # N3-11-046

RCVD: 11/05/93 DUE: 12/10/93 11/05/93 14:38:58 KEEP: 12/10/94 DISP: S

DASH	SAMPLE IDENTIFICATION			STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY						
01A-W	B09DJ2		UNFILTERED	ARLI	WH018	WH019	WH020	WH043	WH114	WH121	WH122
					WH128	WH131	WH132	WH140			
01D-W	B09DJ2	MS	UNFILTERED	ARLI	WH018	WH019	WH020	WH043	WH114	WH140	
01E-W	B09DJ2	MSD	UNFILTERED	ARLI	WH018	WH019	WH020				
01F-W	B09DJ2	DUP	UNFILTERED	ARLI	WH043	WH114	WH121	WH122	WH128	WH131	WH132
					WH140						
03A-W	B09DJ4			ARLI	WH018						

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
eyamamoto	11/5/93	ARLI	11/5/93	C. Harris	11/8/93

Samples were received on Saturday 11/6/93 and not opened until Monday 11/8/93. CH

9713507.0218 000002A

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 11/3/93

Ice Chest No. RM # 110

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010337

Offsite Property No. ~~W93-~~ W94-0-0001-36 LCS 11-4-93

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DJ2

3, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
1, 2L & 1, 1L, aG; WATER; CLP-SEMI VOA
1, 2L & 1, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
1, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
1, 250ml, P, WATER; ALKALINITY
1, 500ml, P, WATER; TDS
1, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
1, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
1, 1L, P, WATER; Cn(NaOH to pH 12.0)
1, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
1, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
1, 2L 1, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
1, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
1, 250ml, Gs, WATER; TRITIUM/C-14

B09DJ3

1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DJ4

3, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee	11/3/93	1015	L Sweeney	11-4-93	0840
L Sweeney	11-4-93	1030	Kermit Blum K. Blum	11-5-93	1145

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: reling. to frig. # 3C by K.D. Lee 11/3/93

A-6000-407 (12/92) WEF061

9713507.0219 000002E

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 11/3/93 Time 1015 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DJ2	3; 40ml; Gs*; ✓✓✓	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG; ✓	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG; ✓	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P ✓	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P; ✓	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P; ✓	WATER	ALKALINITY
	1; 500ml; ~~G~~; P ✓	WATER	TDS
	1; 500ml; G; ✓	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G; ✓	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P; ✓	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P; ✓	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; ; 1;2L ✓	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P; ✓	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs ✓	WATER	TRITIUM, C14
	1; 125mL; aGs ✓	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs ✓	WATER	TOX (HNO3 to pH<2.0)
B09DJ3	1; 1L; P ✓	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DJ4	3; 40mL; Gs ✓✓✓	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2579016331 OPC #: W94-0-0001-36

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Title Date

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05

9715507.0220

000004

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARU

PAGE : 1 OF 1

RECEIVED BY (PRINT NAME): Bryan Shuti

LOG-IN-DATE : ~~11/5/93~~ 11/8/93 (P.S) 12/13/93

RECEIVED BY (SIGNATURE): BAYAM BHAIDI

ICE CHEST NO. SML 0440 MKT 12/27/97

REMARKS:

1. Custody Seal(s) Present / Absent* Intact / Broken

2. Custody Seal Nos:

3. Chain of Custody Records Present / Absent*

4. Traffic Reports or Packing List Present / Absent*

5. Airbill Airbill / Sticker Present / Absent*

6. Airbill No.: 7289156280

7. Sample Tags Present / Absent*

8. Sample Tag Numbers Listed / Not Listed on Chain of Custody

9. Sample Condition: Intact / Broken* / Leaking

10. Does information on custody records, traffic reports, and sample tags agree? Yes / No*

11. Date Recieved at Lab: ~~11/5/93~~ 11/8/93 (P.S) 12/13/93

12. Temp of ice chest 4 °C

13. Time Recieved: 10:00

SAMPLE TRANSFER

Fraction:

Area #:

By:

On:

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B09DJ2	A311029	
	B09DJ4	A311029	
	B09DV4	A311028	
	B09DV3	A311028	

Contact SMO and attach record of resolution

Reviewed By: Logbook No.:

Date: Logbook Page No.:

FORM DC-1

000005

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

7289156280

AIRBILL PACKAGE TRACKING NUMBER 7289156280

RECIPIENT'S COPY

1 Date 11-05-93

From (Your Name) Please Print: SAMPLE CENTRAL

Your Phone Number (Very Important): (30-935-2...

Company

Department/Floor No.

Street Address

City

State

ZIP Required: 9 4 5 0 -

2 To (Recipient's Name) Please Print: CAROLE HARRIS

Recipient's Phone Number (Very Important): (818) 357-3247

Company: TMA/AKLI

Department/Floor No.

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 160 TAYLOR STREET

City: MONROVIA,

State: CA.

ZIP Required: 91016

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): 2340-6406

H IF HOLD FOR PICK-UP, Print FEDEX Address Here

Street Address

City

State

ZIP Required

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card 5 [ ] Cash/Check

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning†)
- 11 [X] OTHER PACKAGING
- 16 [ ] FEDEX LETTER*
- 12 [ ] FEDEX PAK*
- 13 [ ] FEDEX BOX
- 14 [ ] FEDEX TUBE

Standard Overnight (Delivery by next business afternoon, by Saturday delivery†)
- 51 [ ] OTHER PACKAGING
- 56 [ ] FEDEX LETTER*
- 52 [ ] FEDEX PAK*
- 53 [ ] FEDEX BOX
- 54 [ ] FEDEX TUBE

Economy Two-Day (Delivery by second business day †)
- 30 [ ] ECONOMY*

* Economy Letter rate not available. Minimum charge: One pound economy rate.

Government Overnight (Restricted for authorized users only)
- 46 [ ] GOV'T LETTER
- 41 [ ] GOV'T PACKAGE

Freight Service (for packages over 150 lbs.)
- 70 [ ] OVERNIGHT FREIGHT** (Confirmed reservation required)
- 80 [ ] TWO-DAY FREIGHT**

† Delivery commitment may be later in some areas

*Declared Value Limit $500. **Call for delivery schedule.

5 DELIVERY AND SPECIAL HANDLING (Check services required)
- 1 [ ] HOLD FOR PICK-UP (Fill in Box H)
- 2 [ ] DELIVER WEEKDAY
- 3 DELIVER SATURDAY (Extra charge) (Not available to all locations) [X]
- 4 [ ] DANGEROUS GOODS (Extra charge)*
- 5 [ ]
- 6 [ ] DRY ICE Dangerous Goods Shipper's Declaration not required. Dry Ice: 9, UN 1845, X kg. 904 W
- 7 [ ] OTHER SPECIAL SERVICE
- 8 [ ]
- 9 [ ] SATURDAY PICK-UP (Extra charge)
- [ ]
- 12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See right)
8		
Total 8	Total 766	Total

DIM SHIPMENT (Chargeable Weight) [ ] lbs. L x W x H

Received At: 1 [X] Regular Stop 2 [ ] On-Call Stop 3 [ ] Drop Box 4 [ ] B S C 5 [ ] Station

7 Release Signature:

Emp. No. Date

[ ] Cash Received
[ ] Return Shipment
[ ] Third Party [ ] Chg. To Del. [ ] Chg. To Hold

Street Address

City State Zip

Received By: X

Date/Time Received FedEx Employee Number

Federal Express Use

Base Charges

Declared Value Charge

Other 1

Other 2

Total Charges

REVISION DATE 11/92 PART #137204 FXEM 293 FORMAT #155

155

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9713507.0222

TMA/NRCL
Thermo Analytical Inc.

000006

RADIATION DOSE RATE SURVEY FORM

Date 11/08/93 COMPANY WHC TMA/NORCAL OTHER ORD # 728915628 0

Surveyor's Name MARK S. McCray

Model No. HP-210 / ESP-1 Model No. AC-2-7 / ESP-1

Serial No. 110289 / 07619 Serial No. 407726 / 07628

Calibration Date 4/26/93 Calibration Date 9/16/93

Instrument Calibration Factor 0.280 Instrument Calibration Factor 0.192

Sample	Location	HP-210 CPM	HP-210 Factor	HP-210 DPM	AC-2-7 CPM	AC-2-7 Factor	AC-2-7 DPM	Source of Exceedance	Activity per 100 cm²
Background		40.0			0				
Consistency		7,410	0.2861		4,750	0.1746			
Smear SML 440		37.0			1.0			None	
SML 404		46.0			1.0			None	
SML 441		28.0			2.0			None	
SML 414		33.0			4.0			None	
SML 443		36.0			3.0			None	
SML 444		46.0			3.0			None	
SML 426		36.0			1.0			None	
SML 342		30.0			0			None	
Reported WHC (18) samples each <50 pCi/gram									

Comments

All OK ✓ Approved MSM

Not OK Date 11/08/93

GENERAL CHEMISTRY RESULTS

CASE NO. 11-029

Water Sample #:

B09DJ2 B09DJ4

CASE NARRATIVE

The holding time for the pH analysis was exceeded. Careful review of the QC analysis indicates that the data is reliable.

No problems were encountered during sample analysis. All QC results were acceptable.

Maureen Parrish 12-22-93

Maureen Parrish

9713507.0224

000008

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93 12/22/93 13:35:22

REPORT TO: Westinghouse Hanford Company
345 Hills
Richland, WA 99352

ATTEN: Jeanette Duncan

CLIENT: WHC SAMPLES: 3
COMPANY: Westinghouse Hanford Company
FACILITY:

WORK ID: SAF# 93-319 CLP
TAKEN: By Westinghouse Staff
TRANS: Federal Express
TYPE: Liquid
P.O. #: N3-11-046-SU-AR
INVOICE: under separate cover

PREPARED BY: Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016

ATTEN: Ms. Carole Harris
PHONE: 818-357-3247

Maureen Parrish
CERTIFIED BY

CONTACT: MKP CIH

This report is for the sole and exclusive use of the client to whom it is addressed and represents only those samples herein described. Samples not destroyed in testing are retained a maximum of 30 days unless otherwise requested.

SAMPLE IDENTIFICATION

01	B09DJ2
01	B09DJ2 MS
01	B09DJ2 MSD
01	B09DJ2
01	B09DJ2 MS
01	B09DJ2 MSD
01	B09DJ2
01	B09DJ2 MS
01	B09DJ2 Duplicate
01	B09DJ2
01	B09DJ2 Duplicate
01	B09DJ2
01	B09DJ2 Duplicate
01	B09DJ2
01	B09DJ2 MS
01	B09DJ2 Duplicate
01	B09DJ2
01	B09DJ2 MS
01	B09DJ2 Duplicate
02	B09DJ4
02	B09DJ4 MS
02	B09DJ4 MSD
03	Lab Blank
03	LCS

TEST CODES and NAMES used on this workorder

BNCLPW	CLP Semivol. Water
PECLPL	CLP Pesticides Liq.
WCCLPL	Anions & Wet Chem.
WCLCS	Lab Control Sample Summary
WCL_L	Chloride - WH120
WCQCD	Quality Control Summary
WCQCS	Quality Control Summary
WF_L	Fluoride in Water
WNH3_L	Ammonia in Water
WPH_L	pH of Liquid
WPO4_L	Phosphate in Liquids
WSO4_L	Sulfate (in Waters)
WSULFI	Sulfide
W_ALK	Alkalinity
W_COD	COD Water
W_COND	Conductivity-Water
W_TDS	Dissolved Solids

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93 Results by Sample

SAMPLE ID B09DJ2 FRACTION 01H TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	<0.2	mg/L	0.2
Fluoride	300.0	<0.1	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	6.1	pH	0.1
Sulfate	300.0	<1	mg/L	1
Elect. Conductivity	9050	<6	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93

Results by Sample

SAMPLE ID B09DJ2 FRACTION 01K TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	<2	mg/L	2

FORM I

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93 Results by Sample

SAMPLE ID B09DJ2 FRACTION 01M TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solid	160.1	<5	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93

Results by Sample

SAMPLE ID B09DJ2 FRACTION 010 TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93 Results by Sample

SAMPLE ID B09DJ2 FRACTION 01R TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

9713507.0230

 Skinner&Sherman REPORT Work Order # S3-11-116

Received: 11/06/93 12/22/93 14:54:58

REPORT TMA/NORCAL
TO 2030 Wright Avenue
Richmond, CA 94804

ATTEN Dan Steurmer

CLIENT HANFORD NOR SAMPLES 2
COMPANY TMA/NORCAL Hanford
FACILITY Richmond, CA

PREPARED TMA / Skinner & Sherman Labs.
BY 300 Second Avenue
P.O. Box 521
Waltham, MA 02254

ATTEN Client Services
PHONE (617) 890-7200

CERTIFIED BY

CONTACT DP

WORK ID N3-11-046
TAKEN By Client
TRANS Fedex
TYPE 1 Water NO3NO2
P.O. # N3-11-046
INVOICE under separate cover

SAMPLE IDENTIFICATION		TEST CODES and NAMES used on this workorder	
01	B09DJ2	NO3NO2	Nitrate/Nitrite
01	B09DJ2D		
01	B09DJ2S		
02	LCSW		

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.
300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

9713507.0231

 Skinner&Sherman REPORT Work Order # S3-11-116

Received: 11/06/93 Results by Sample

SAMPLE ID B09DJ2 SAMPLE # 01 FRACTIONS: A
Date & Time Collected 11/03/93 Category WATER

NO3NO2 <0.25
mg N/L

SAMPLE ID B09DJ2D SAMPLE # 01 FRACTIONS: B
Date & Time Collected 11/03/93 Category WATER

NO3NO2 <0.25
mg N/L

SAMPLE ID B09DJ2S SAMPLE # 01 FRACTIONS: C
Date & Time Collected 11/03/93 Category WATER

NO3NO2 2.31
mg N/L

SAMPLE ID LCSW SAMPLE # 02 FRACTIONS: A
Date & Time Collected not specified Category WATER

NO3NO2 2.05
mg N/L

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

9713507.0232

TMA
Thermo Analytical Inc.

TMA
525 Avis Drive, Suite 7
Ann Arbor, MI 48108

(313) 662-3104
(313) 662-3344 (Fax)

JAN 1994
RECEIVED
SDLA

Federal Express : 728156265

December 7, 1993

Quality Control Narrative

Scope

This report contains one Delivery Order. One water sample was received by TMA/ERG from TMA/NORCAL on November 8, 1993. The cooler temperature when received was 2 deg. C. The sample was analyzed for Total Organic Halogens and Total Organic Carbon based on USEPA methods. Samples received with Work Order N3-11-046 are enclosed in this package.The TMA/ERG WO# is E3-11-115.

Methodology:

The samples were prepared, analyzed and reported in accordance with the Westinghouse Hanford Program Statement of Work MBH-SVV-069262 March 5, 1992.

The following is a list of methodologies used:

Analyte	Method/Description
TOC	415.1 Total Organic Carbon (TMA/ERG SOP WC022)
TOX	9022 Total Organic Halides by Neutron Activation (TMA/ERG SOP NUC03)

Instrument ID Numbers	Serial Numbers
OI Model 700 TOC Analyzer	H224069
NA Multi Channel Analyzer	Not Applicable

Discussion

The TOX samples were prepared according to protocol. The quality control requirements have been met for these analyses without exception. If there are any questions concerning this package please do not hesitate to call.

Respectfully submitted,

TMA/Environmental Research Group

Mark B. Ruwe

Mark B. Ruwe
QA Officer

9713507.0233

COVER PAGE - CLASSICALS ANALYSIS DATA PACKAGE

Lab Name: TMA/ERG #WO No. E3-11-115

Episode No. N3-11-046 SOW No. MBH-SVV-069262 SOW /Rev.Date March 5, 1992

TMA Sample No.	Lab Sample ID
B09DJ2	E3-11-115-01A,D
B09DJ2MS	E3-11-115-01B,E
B09DJ2DUP	E3-11-115-01C,F

COMMENTS: Narrative Report is attached. Yes X No

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 in the narrative report. Release of the data contained in this hardcopy data package(and in the data submitted on magnetic media, if data is submitted on magnetic media), has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Mark Ruwe Name: Mark B. Ruwe

Date: December 7, 1993 Title: QA Officer

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME:	Thermo Analytical ERG Inc.	LAB SAMPLE ID:	B09DJ2
CASE NO.:	N3-11-046	Work ID:	100-FR-3
Matrix:	WATER		
Receipt Date:	08-Nov-93		
Units:	MG/L	% Solids:	NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	<1	1	11-Nov-93
ORGANIC BROMIDE	<0.01	0.01	20-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	20-Nov-93
ORGANIC IODIDE	<0.01	0.01	20-Nov-93

COMMENTS:

TMA
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

9713507.0235

RECORD COPY

JAN 1994
RECEIVED
SDLA

December 22, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
One (1) water sample was submitted to TMA/Skinner & Sherman Laboratories, Inc. on November 6, 1993 from TMA/Norcal. The sample was analyzed for the USEPA CLP metals and cyanide. The analysis was performed under TMA/Skinner and Sherman work order S311115.

Methodology
The sample was prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program ILMO2.

Discussion
All quality control requirements were met for the samples with following exception:

The laboratory duplicate for aluminum exceeded the control limit requirement.

The holding times for cyanide were exceeded. The sample was distilled before the holding expired and was analyzed after expiration of the holding time.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

2-9-96
MC

9713507.0236

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DJ2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-046SAS No.: SDG No.: B09DJ2

Matrix (soil/water): WATER Lab Sample ID: 11115-01S

Level (low/med): LOW Date Received: 11/06/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19.5	B	*	P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	1.2	U		P
7440-41-7	Beryllium	0.31	B		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	59.0	U		P
7440-47-3	Chromium	6.3	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	37.7	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	22.9	U		P
7439-96-5	Manganese	0.86	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.6	B		P
7440-09-7	Potassium	101	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	114	U		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

002

FORM I_- IN ILM02.1

TMA 9713507.0257
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

RECORD COPY

JAN 1994
RECEIVED
SDLA

December 22, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
One (1) water sample was submitted to TMA/Skinner & Sherman Laboratories, Inc. on November 6, 1993. The sample was analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S311118.

Methodology
The sample was prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with the following exceptions:

The laboratory duplicate exceeded the control limit requirement for aluminum and manganese.

The ICP serial dilution exceeded the control limit requirements for aluminum.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

9713507.0238

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

809DJ3

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-046SAS No.: SDG No.: 809DJ3

Matrix (soil/water): WATER Lab Sample ID: 11118-01S

Level (low/med): LOW Date Received: 11/06/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1230		E*	P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	5.1	B		P
7440-41-7	Beryllium	0.23	B		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	1230	B		P
7440-47-3	Chromium	2.9	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.6	B		P
7439-89-6	Iron	85.9	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	130	B		P
7439-96-5	Manganese	35.6		*	P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	166	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	262	B		P
7440-28-0	Thallium	1.7	B		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	8.6	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

002

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 11-011

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : November 2, 1993

1.0 DESCRIPTION OF CASE :

Sixteen water samples were analyzed for TCL Organics- Volatiles, Semivolatiles, and Pesticide/PCBs according to the USEPA Contract Laboratory Program (CLP) Statement of Work for Organic Analysis, Revision OLM01.8.

2.0 SAMPLE LIST :

WESTINGHOUSE ID	LAB ID	ANALYSIS REQUESTED	MATRIX	pH
B09DC4	A3-11-011-01A	V	WATER	0
B09DC4	A3-11-011-01B	SV	WATER	
B09DC4 MS	A3-11-011-01C	SV	WATER	
B09DC4 MSD	A3-11-011-01D	SV	WATER	
B09DC4	A3-11-011-01E	P	WATER	
B09DD2	A3-11-011-02A	V	WATER	0
B09DD2	A3-11-011-02B	SV	WATER	
B09DD2	A3-11-011-02C	P	WATER	
B09DD2 MS	A3-11-011-02D	P	WATER	
B09DD2 MSD	A3-11-011-02E	P	WATER	
B09DF4	A3-11-011-03A	V	WATER	4
B09DF4	A3-11-011-03B	SV	WATER	
B09DF4	A3-11-011-03C	P	WATER	
B09DF8	A3-11-011-04A	V	WATER	0
B09DF8	A3-11-011-04B	SV	WATER	
B09DF8	A3-11-011-04C	P	WATER	
B09D66	A3-11-011-05A	V	WATER	0
B09D66	A3-11-011-05B	SV	WATER	
B09D66	A3-11-011-05C	P	WATER	
B09D86	A3-11-011-06A	V	WATER	0
B09D86	A3-11-011-06B	SV	WATER	
B09D86	A3-11-011-06C	P	WATER	
B09D90	A3-11-011-07A	V	WATER	0
B09D90	A3-11-011-07B	SV	WATER	
B09D90	A3-11-011-07C	P	WATER	
B09D94	A3-11-011-08A	V	WATER	0
B09D94	A3-11-011-08B	SV	WATER	
B09394	A3-11-011-08C	P	WATER	
B093C6	A3-11-011-09A	V	WATER	0
B093C6 MS	A3-11-011-09B	V	WATER	0
B093C6 MSD	A3-11-011-09C	V	WATER	0
B09DD4	A3-11-011-10A	V	WATER	0
B09DF6	A3-11-011-11A	V	WATER	0

2.0 SAMPLE LIST (cont.) :

WESTINGHOUSE ID	LAB ID	ANALYSIS REQUESTED	MATRIX	pH
B09DG0	A3-11-011-12A	V	WATER	0
B09D68	A3-11-011-13A	V	WATER	0
B09D88	A3-11-011-14A	V	WATER	0
B09D92	A3-11-011-15A	V	WATER	0
B09D96	A3-11-011-16A	V	WATER	0

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

All of the samples were received intact and properly documented.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were analyzed within the CLP SOW holding times.

All of the QC results were within the limits specified by the EPA CLP SOW.

TUNES :

All BFB tunes were injected directly into the GC/MS instrument.

3.2.2 SEMIVOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were extracted and analyzed within the contract required holding times.

The matrix spike duplicate recovery for 4-Nitrophenol was slightly above the QC limit. In accordance with the protocol, no further action was required.

All of the other QC results were within the limits specified by the EPA CLP SOW.

3.2.3 PESTICIDE/PCB ANALYSIS COMMENTS :

SEQUENCE NOTES :

The sequence was started on November 25, 1993 and was analyzed according to the USEPA CLP SOW. The sequence was analyzed by single injection into a dual column system.

On the DB-608 column, the %RSD for all of the analytes were within the QC limits. However, on the DB-1701 column the %RSD for alpha-BHC and gamma-BHC exceeded the 20%, but were less than the 30% limit.

All of the other QC criteria were within the limits specified by the EPA CLP SOW for this case.

The chromatograms are presented in the manner consistent with the capabilities of the Nelson 2700 Turbochrome Data System which normalizes the largest peak to scale.

SAMPLE NOTES :

LOW LEVEL WATER:

The samples were extracted and anlayzed within the CLP SOW holding times.

Heptachlor Epoxide was detected in sample B09DF4 at 0.90 ug/L. The concentration detected was below the GCMS detection limit, therefore the Heptachlor Epoxide could not be confirmed by GCMS.

All of the QC results were within the limits specified by CLP SOW.

We 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 in this hardcopy data package and in the computer-readable data submitted on diskette is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Nicole Roth 12/22/93
Nicole Roth
CLP Program Manager

Maureen Parrish 12/22/93
Maureen Parrish
Project Manager

9715907.5242

000152
EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

B09D66

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31104M22

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/04/93

GC Column: CAP 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
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	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	1	J
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	Xylene (total)	10	U

EPA SAMPLE NO.

B09D66

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31104M22

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/04/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9213507.0244

000154
EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

B09D68

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-13A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31105M27

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/05/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

9713507.0245

000155

EPA SAMPLE NO.

B09D68

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-13A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31105M27

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/05/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

EPA SAMPLE NO.

B09D86

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-06A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31104M23

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/04/93

GC Column: CAP 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
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	1	J
67-64-1	Acetone	10	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	Xylene (total)	10	U

9713907.0247

000157
EPA SAMPLE NO.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B09D86

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-06A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31104M23

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/04/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D88

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-14A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31105M28

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/05/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09D88

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-14A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31105M28

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/05/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D90

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-07A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31104M24

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/04/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

9215507.0251

000161

EPA SAMPLE NO.

B09D90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-07A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31104M24

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/04/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D92

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-15A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31105M29

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/06/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

EPA SAMPLE NO.

B09D92

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-15A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31105M29

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/06/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D94

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-08A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31104M25

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/04/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09D94

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-08A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31104M25

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/04/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D96

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-16A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31108M28

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/08/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09D96

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-16A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31108M28

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/08/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DC4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31104M10

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/04/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

9713507.0259

000169
EPA SAMPLE NO.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B09DC4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31104M10

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/04/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DC6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-09A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31105M23

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/05/93

GC Column: CAP 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	2	BJ
67-64-1	Acetone	10	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	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DC6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-09A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31105M23

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/05/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DD2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31108M25

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/08/93

GC Column: CAP 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
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	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	3	J
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	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DD2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31108M25

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/08/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DD4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-10A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31105M24

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/05/93

GC Column: CAP 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
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	10	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	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DD4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-10A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31105M24

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/05/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DF4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31108M26

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/08/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DF4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31108M26

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/08/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DF6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-11A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31105M25

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/05/93

GC Column: CAP 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
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	1	BJ
67-64-1	Acetone	10	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	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DF6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-11A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31105M25

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/05/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9213507.0270

000180
EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

B09DF8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31108M27

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/08/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DF8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31108M27

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/08/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DG0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-12A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31105M26

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/05/93

GC Column: CAP 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
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	1	BJ
67-64-1	Acetone	10	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	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DG0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-12A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31105M26

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: not dec. ____ Date Analyzed: 11/05/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D66

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-05B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I09

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

9213507.0275

000185

EPA SAMPLE NO.

B09D66

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-05B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I09

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	2	J
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09D66

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-05B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I09

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ALCOHOL	21.48	2	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D86

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-06B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I10

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

9713507.0278

000188

EPA SAMPLE NO.

B09D86

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-06B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I10

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09D86

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-06B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I10

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9213507.0280

000190

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D90

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-07B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I11

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

9213507.0281

000191

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D90

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-07B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I11

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

9713507.0282

000192

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09D90

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-07B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I11

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D94

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-08B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I12

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D94

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-08B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I12

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09D94

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-08B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I12

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DC4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I03

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DC4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I03

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DC4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I03

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DD2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-02B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I06

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DD2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-02B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I06

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DD2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-02B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I06

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DF4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I07

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DF4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I07

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DF4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I07

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	20.50	93	J
2.	UNKNOWN HYDROCARBON	22.42	2	J
3.	UNKNOWN HYDROCARBON	17.58	30	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DF8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-04B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I08

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DF8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-04B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I08

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B09DF8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-04B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I08

Level: (low/med) LOW Date Received: 11/02/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/03/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	20.33	20	J

9213507.0298

000208

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D66

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-05C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/02/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/03/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/26/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D86

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-06C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/02/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/03/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/26/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

9715507.0300

000210

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D90

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-07C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/02/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/03/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/26/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

9713507.0501

000211

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09D94

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-08C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/02/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/03/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/26/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DC4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-01E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/02/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/03/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/26/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DD2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-02C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/02/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/03/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/26/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DF4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-03C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/02/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/03/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/26/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.90	
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DF8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11011 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311011-04C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/02/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/03/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/26/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

9715507.0506

TMA
Thermo Analytical Inc.

TMA
525 Avis Drive, Suite 7
Ann Arbor, MI 48108

(313) 662-3104
(313) 662-3344 (Fax)

DEC 1993
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Federal Express Airbill 7289156151

December 1, 1993

Quality Control Narrative

Scope
This report contains one Delivery Order. Eight water samples were received by TMA/ERG from TMA/NORCAL on November 3, 1993. The sample cooler temperature was 4 deg.C. This sample was analyzed for Total Organic Halogens and Total Organic Carbon based on USEPA methods. Samples received with Work Order N3-11-013 are enclosed in this package.The TMA/ERG WO# is E3-11-046.

Methodology:
The samples were prepared, analyzed and reported in accordance with the Westinghouse Hanford Program Statement of Work MBH-SVV-069262 March 5, 1992.
The following is a list of methodologies used:

Analyte	Method/Description
TOC	415.1 Total Organic Carbon (TMA/ERG SOP WC022)
TOX	9022 Total Organic Halides by Neutron Activation (TMA/ERG SOP NUC03)

Instrument ID Numbers	Serial Numbers
OI Model 700 TOC Analyzer	H224069
NA Multi Channel Analyzer	Not Applicable

Discussion
The TOX and TOC samples were prepared according to protocol. The quality control requirements have been met for these analyses except that the relative percent differnce for the organic bromide analysis was high. This should not affect the validity of the data, however. If there are any questions concerning this package please do not hesitate to call.

Respectfully submitted,

TMA/Environmental Research Group

Mark B. Ruwe

Mark B. Ruwe
QA Officer

FORM I
INORGANIC ANALYSIS DATA SHEET

LAB NAME:	Thermo Analytical ERG Inc.	LAB SAMPLE ID:	B09DC4
CASE NO.:	N3-11-013	Work ID:	100-FR-3
Matrix:	WATER		
Receipt Date:	03-Nov-93		
Units:	MG/L	% Solids:	NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	<1	1	05-Nov-93
ORGANIC BROMIDE	<0.01	0.01	05-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	05-Nov-93
ORGANIC IODIDE	<0.01	0.01	05-Nov-93

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME: Thermo Analytical ERG Inc.

LAB SAMPLE ID: B09DD2

CASE NO.: N3-11-013

Work ID: 100-FR-3

Matrix: WATER

Receipt Date: 03-Nov-93

% Solids: NA

Units: MG/L

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	1.4	1	05-Nov-93
ORGANIC BROMIDE	<0.01	0.01	05-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	05-Nov-93
ORGANIC IODIDE	<0.01	0.01	05-Nov-93

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME:	Thermo Analytical ERG Inc.	LAB SAMPLE ID:	B09DF4
CASE NO.:	N3-11-013	Work ID:	100-FR-3
Matrix:	WATER		
Receipt Date:	03-Nov-93		
Units:	MG/L	% Solids:	NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	4.0	1	05-Nov-93
ORGANIC BROMIDE	0.06	0.01	05-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	05-Nov-93
ORGANIC IODIDE	0.01	0.01	05-Nov-93

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME: Thermo Analytical ERG Inc.
LAB SAMPLE ID: B09DF8

CASE NO.: N3-11-013
Work ID: 100-FR-3

Matrix: WATER

Receipt Date: 03-Nov-93

Units: MG/L
% Solids: NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	1.6	1	05-Nov-93
ORGANIC BROMIDE	0.03	0.01	05-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	05-Nov-93
ORGANIC IODIDE	<0.01	0.01	05-Nov-93

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME: Thermo Analytical ERG Inc.
LAB SAMPLE ID: B09066

CASE NO.: N3-11-013
Work ID: 100-FR-3

Matrix: WATER

Receipt Date: 03-Nov-93

Units: MG/L
% Solids: NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	<1	1	05-Nov-93
ORGANIC BROMIDE	<0.01	0.01	05-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	05-Nov-93
ORGANIC IODIDE	<0.01	0.01	05-Nov-93

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME: Thermo Analytical ERG Inc.
LAB SAMPLE ID: B09D66

CASE NO.: N3-11-013
Work ID: 100-FR-3

Matrix: WATER

Receipt Date: 03-Nov-93

Units: MG/L
% Solids: NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	<1	1	05-Nov-93
ORGANIC BROMIDE	<0.01	0.01	05-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	05-Nov-93
ORGANIC IODIDE	<0.01	0.01	05-Nov-93

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME: Thermo Analytical ERG Inc.

LAB SAMPLE ID: B09D86

CASE NO.: N3-11-013

Work ID: 100-FR-3

Matrix: WATER

Receipt Date: 03-Nov-93

Units: MG/L

% Solids: NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	<1	1	05-Nov-93
ORGANIC BROMIDE	<0.01	0.01	05-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	05-Nov-93
ORGANIC IODIDE	<0.01	0.01	05-Nov-93

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME:	Thermo Analytical ERG Inc.	LAB SAMPLE ID:	B09D90
CASE NO.:	N3-11-013	Work ID:	100-FR-3
Matrix:	WATER		
Receipt Date:	03-Nov-93		
Units:	MG/L	% Solids:	NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	<1	1	05-Nov-93
ORGANIC BROMIDE	<0.01	0.01	05-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	05-Nov-93
ORGANIC IODIDE	<0.01	0.01	05-Nov-93

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME:	Thermo Analytical ERG Inc.	LAB SAMPLE ID:	B09D94
CASE NO.:	N3-11-013	Work ID:	100-FR-3
Matrix:	WATER		
Receipt Date:	03-Nov-93		
Units:	MG/L	% Solids:	NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	<1	1	05-Nov-93
ORGANIC BROMIDE	<0.01	0.01	05-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	05-Nov-93
ORGANIC IODIDE	<0.01	0.01	05-Nov-93

PAGE 1 THA/NGHS/97.0516 CHAIN OF CUSTODY ORD # N3-11-013

RCVD: 11/02/93 DUE: 12/07/93 11/02/93 14:04:35 KEEP: 12/07/94 DISP: S

DASH	SAMPLE IDENTIFICATION		STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY	
01C-W	B09D04	UNFILTERED	ERG	WH113	WH116
02C-W	B09DD2	UNFILTERED	ERG	WH113	WH116
03C-W	B09DF4	UNFILTERED	ERG	WH113	WH116
04C-W	B09DFB	UNFILTERED	ERG	WH113	WH116
05C-W	B09D66	UNFILTERED	ERG	WH113	WH116
06C-W	B09D86	UNFILTERED	ERG	WH113	WH116
07C-W	B09D90	UNFILTERED	ERG	WH113	WH116
08C-W	B09D94	UNFILTERED	ERG	WH113	WH116
08J-W	B09D94 MS	UNFILTERED	ERG	WH113	WH116
08K-W	B09D94 DUP	UNFILTERED	ERG	WH113	WH116

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Tgarramoto	11/2/93	ERG	11/2/93	Christine Pardo	11-3-93

Cooler at 4°C

97 15507 0517

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 7289156131

7289156131

RECIPIENT'S COPY

1 Date 11-02-92

From (Your Name) Please Print: SAMPLE CONTROL
Your Phone Number (Very Important): (310-)23E-25
Company:
Department/Floor No.:
Street Address:
City: State: ZIP Required:

2 To (Recipient's Name) Please Print: SAMPLE CONTROL
Recipient's Phone Number (Very Important): (313)662-3164
Company: THERMO ANALYTICAL / ERG
Department/Floor No.:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 525 AVIS DRIVE, SUITE 7
City: ANN ARBOR State: MI ZIP Required: 48108

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): 2340-6406

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address:
City: State: ZIP Required:

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card 5 [ ] Cash/Check

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning†)
11 [X] OTHER PACKAGING
16 [ ] FEDEX LETTER
12 [ ] FEDEX PAK
13 [ ] FEDEX BOX
14 [ ] FEDEX TUBE

Standard Overnight (Delivery by next business afternoon. No Saturday pick-up/drop-off)
51 [ ] OTHER PACKAGING
56 [ ] FEDEX LETTER
52 [ ] FEDEX PAK
53 [ ] FEDEX BOX
54 [ ] FEDEX TUBE

Economy Two-Day (Delivery by second business day †)
30 [ ] ECONOMY*
* Economy Letter rate not available. Minimum charge: One pound economy rate.

Government Overnight (Restricted for authorized users only)*
46 [ ] GOV'T LETTER
41 [ ] GOV'T PACKAGE

Freight Service (for packages over 150 lbs.)
70 [ ] OVERNIGHT FREIGHT** (Confirmed reservation required)
80 [ ] TWO-DAY FREIGHT**
† Delivery commitment may be later in some areas.
*Declared Value Limit $500.
**Call for delivery schedule.

5 DELIVERY AND SPECIAL HANDLING (Check services required)
1 [ ] HOLD FOR PICK-UP (Fill in Box H)
2 [X] DELIVER WEEKDAY
3 DELIVER SATURDAY (Extra charge) (Not available to all locations) [ ]
4 [ ] DANGEROUS GOODS (Extra charge)
5 [ ]
6 [ ] DRY ICE Dangerous Goods Shipper's Declaration not required
Dry Ice ____ lbs. x ____ kg. per pkg.
7 [ ] OTHER SPECIAL SERVICE
8 [ ]
9 [ ] SATURDAY PICK-UP (Extra charge)
12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See right)
1		
Total	Total	Total
	CE	

DIM SHIPMENT (Chargeable Weight) [ ] ____ lbs.
L x W x H

Received At
1 [ ] Regular Stop 3 [ ] Drop Box 4 [ ] B.S.C. 2 [ ] On-Call Stop 5 [ ] Station

Emp. No.: Date:
[ ] Cash Received
[ ] Return Shipment
[ ] Third Party [ ] Chg. To Del. [ ] Chg. To Hold
Street Address:
City: State: Zip:
Received By: X
Date/Time Received: FedEx Employee Number:

7 Release Signature:

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

REVISION DATE 11.92
PART #137204 FXEM 3/93
FORMAT #155
155
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027

9713507.0318

 Skinner&Sherman REPORT Work Order # S3-11-035

Received: 11/03/93 12/15/93 14:39:28

REPORT TMA/NORCAL
TO 2030 Wright Avenue
Richmond, CA 94804

ATTEN Dan Steurmer

PREPARED TMA / Skinner & Sherman Labs.
BY 300 Second Avenue
P.O. Box 521
Waltham, MA 02254

ATTEN Client Services
PHONE (617) 890-7200

CERTIFIED BY

CONTACT DP

CLIENT HANFORD NOR SAMPLES 9
COMPANY TMA/NORCAL Hanford
FACILITY Richmond, CA

WORK ID N3-11-013
TAKEN By Client
TRANS Fedex
TYPE 8 Water NO3NO2
P.O. # N3-11-013
INVOICE under separate cover

SAMPLE IDENTIFICATION	TEST CODES and NAMES used on this workorder
01 B09DC4	NO3NO2 Nitrate/Nitrite
02 B09DD2	
03 B09DF4	
04 B09DF8	
05 B09D66	
06 B09D86	
07 B09D90	
08 B09D94	
08 B09D94D	
08 B09D94S	
09 LCSW	

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

9713507.0319

 Skinner&Sherman REPORT Work Order # S3-11-035

Received: 11/03/93 Results by Sample

SAMPLE ID B09DC4 SAMPLE # 01 FRACTIONS: A
Date & Time Collected 10/30/93 Category WATER

NO3NO2 0.57
mg N/L

SAMPLE ID B09DD2 SAMPLE # 02 FRACTIONS: A
Date & Time Collected 10/30/93 Category WATER

NO3NO2 16.0
mg N/L

SAMPLE ID B09DF4 SAMPLE # 03 FRACTIONS: A
Date & Time Collected 10/29/93 Category WATER

NO3NO2 25.8
mg N/L

SAMPLE ID B09DF8 SAMPLE # 04 FRACTIONS: A
Date & Time Collected 10/29/93 Category WATER

NO3NO2 24.4
mg N/L

SAMPLE ID B09D66 SAMPLE # 05 FRACTIONS: A
Date & Time Collected 10/29/93 Category WATER

NO3NO2 4.95
mg N/L

SAMPLE ID B09D86 SAMPLE # 06 FRACTIONS: A
Date & Time Collected 10/30/93 Category WATER

NO3NO2 0.38
mg N/L

SAMPLE ID B09D90 SAMPLE # 07 FRACTIONS: A
Date & Time Collected 10/30/93 Category WATER

NO3NO2 0.76
mg N/L

TMA
Thermo Analytical Inc.

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

Skinner & Sherman Laboratories Inc. 300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

Received: 11/03/93 Results by Sample

SAMPLE ID B09D96 SAMPLE # 08 FRACTIONS: A
Date & Time Collected 10/30/93 Category WATER

NO3NO2 2.32
mg N/L

SAMPLE ID B09D96D SAMPLE # 08 FRACTIONS: B
Date & Time Collected 10/30/93 Category WATER

NO3NO2 2.32
mg N/L

SAMPLE ID B09D96S SAMPLE # 08 FRACTIONS: C
Date & Time Collected 10/30/93 Category WATER

NO3NO2 4.50
mg N/L

SAMPLE ID LCSW SAMPLE # 09 FRACTIONS: A
Date & Time Collected not specified Category WATER

NO3NO2 2.06
mg N/L

TMA
Thermo Analytical Inc.

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

Skinner & Sherman Laboratories Inc.
300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

TMA 9213507.0521
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

RECORD COPY

DEC 1993 RECEIVED SDLA

December 17, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Eight (8) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on November 3, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals and cyanide. The analysis was performed under TMA/Skinner and Sherman work order S311034.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with no exceptions.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal
Steven R. Provencal
Lead Chemist

2-7-96
MC

SAMPLE NUMBER:

B09D66

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-013SAS No.: SDG No.: B09D66

Matrix (soil/water): WATER Lab Sample ID: 11034-05S

Level (low/med): LOW Date Received: 11/03/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	24.2	B		P
7440-36-0	Antimony	13.0	B		P
7440-38-2	Arsenic	12.1			P
7440-39-3	Barium	32.7	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	36500			P
7440-47-3	Chromium	4.1	U		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	32.1	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	11900			P
7439-96-5	Manganese	1.3	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	5.3	B		P
7440-09-7	Potassium	4680	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	50700			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	23.9	B		P
7440-66-6	Zinc	19.6	B		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

2

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09D86

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-013SAS No.: SDG No.: B09D66

Matrix (soil/water): WATER Lab Sample ID: 11034-06S

Level (low/med): LOW Date Received: 11/03/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	30.9	B		P
7440-36-0	Antimony	19.6	B		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	32.7	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.1	B		P
7440-70-2	Calcium	29400			P
7440-47-3	Chromium	8.4	B		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	36.8	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	5270			P
7439-96-5	Manganese	2.8	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	7.5	B		P
7440-09-7	Potassium	2300	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	2780	B		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	4.7	B		P
7440-66-6	Zinc	15.6	B		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09D90

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-013SAS No.: SDG No.: B09D66

Matrix (soil/water): WATER Lab Sample ID: 11034-07S

Level (low/med): LOW Date Received: 11/03/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	36.9	B		P
7440-36-0	Antimony	14.5	B		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	28.6	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	28400			P
7440-47-3	Chromium	10.9			P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	74.0	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	4240	B		P
7439-96-5	Manganese	4.3	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	6.8	B		P
7440-09-7	Potassium	1810	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	2820	B		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.3	B		P
7440-66-6	Zinc	18.5	B		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

4

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09D94

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-013SAS No.: SDG_No.: B09D66

Matrix (soil/water): WATER Lab Sample ID: 11034-08S

Level (low/med): LOW Date Received: 11/03/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	30.9	B		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	20.4	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	31600			P
7440-47-3	Chromium	21.0			P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	4.0	B		P
7439-89-6	Iron	65.8	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	5510			P
7439-96-5	Manganese	2.3	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	8.3	B		P
7440-09-7	Potassium	1870	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	4140	B		P
7440-28-0	Thallium	2.0	B		P
7440-62-2	Vanadium	5.9	B		P
7440-66-6	Zinc	17.6	B		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

5

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DC4

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-013SAS No.: SDG No.: B09D66

Matrix (soil/water): WATER Lab Sample ID: 11034-01S

Level (low/med): LOW Date Received: 11/03/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15.5	U		P
7440-36-0	Antimony	14.0	B		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	24.5	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	30100			P
7440-47-3	Chromium	11.8			P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	31.8	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	3990	B		P
7439-96-5	Manganese	1.5	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	8.3	B		P
7440-09-7	Potassium	2880	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	3730	B		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	3.0	B		P
7440-66-6	Zinc	8.5	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

6

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DD2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-013SAS No.: SDG No.: B09D66

Matrix (soil/water): WATER Lab Sample ID: 11034-02S

Level (low/med): LOW Date Received: 11/03/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.7	B		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	5.9	B		P
7440-39-3	Barium	25.9	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	58700			P
7440-47-3	Chromium	14.3			P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	53.0	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	17500			P
7439-96-5	Manganese	1.3	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	15.1	B		P
7440-09-7	Potassium	6730			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	52600			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	17.6	B		P
7440-66-6	Zinc	8.5	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

7

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DF4

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-013SAS No.: SDG No.: B09D66

Matrix (soil/water): WATER Lab Sample ID: 11034-03S

Level (low/med): LOW Date Received: 11/03/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20.1	B		P
7440-36-0	Antimony	12.8	B		P
7440-38-2	Arsenic	2.3	B		P
7440-39-3	Barium	129	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	143000			P
7440-47-3	Chromium	14.3			P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	24.8	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	36300			P
7439-96-5	Manganese	1.5	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	4.5	B		P
7440-09-7	Potassium	8030			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	61800			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	10.0	B		P
7440-66-6	Zinc	8.5	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

8

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DF8

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-013SAS No.: SDG No.: B09D66

Matrix (soil/water): WATER Lab Sample ID: 11034-04S

Level (low/med): LOW Date Received: 11/03/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	322			P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	5.1	B		P
7440-39-3	Barium	40.9	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	69500			P
7440-47-3	Chromium	14.3			P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	414			P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	17200			P
7439-96-5	Manganese	10.7	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	4.2	B		P
7440-09-7	Potassium	6170			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	47900			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	13.0	B		P
7440-66-6	Zinc	17.9	B		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

Comments:

9

9213507.0550

TMA

WESTINGHOUSE HANFORD COMPANY

JAN 1994
RECEIVED
SDLA

Results of Analyses For:

ORGANICS & GENERAL CHEMISTRY
Case No. 11-011
(TMA/ARLI Work Order Nos. A3-11-010 & A3-11-011)

METALS & NITRATE/NITRITE
Case No. N3-11-013
(TMA/Skinner & Sherman W.O. Nos. S3-11-034,
S3-11-035 & S3-11-036)

TOTAL ORGANIC CARBON/TOTAL ORGANIC HALOGENS
Case No. N3-11-013
(TMA/ERG W.O. # E3-11-046)

January 4, 1993
(Revised)

TMA Master Work Order # N3-11-013

2-7-96
MC

9313507_0351

TMA/Norcal CHAIN OF CUSTODY ORD # N3-11-013 000002

RCVD: 11/02/93 DUE: 12/07/93 11/02/93 14:03:21 KEEP: 12/07/94 DISP: S

DASH	SAMPLE IDENTIFICATION	STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY
01A-W B09DC4	UNFILTERED	ARLI	WH018 WH019 WH020 WH043 WH114 WH121 WH122 WH128 WH131 WH132 WH140
02A-W B09DD2	UNFILTERED	ARLI	WH018 WH019 WH020 WH043 WH114 WH121 WH122 WH128 WH131 WH132 WH140
03A-W B09DF4	UNFILTERED	ARLI	WH018 WH019 WH020 WH043 WH114 WH121 WH122 WH128 WH131 WH132 WH140
04A-W B09DF8	UNFILTERED	ARLI	WH018 WH019 WH020 WH043 WH114 WH121 WH122 WH128 WH131 WH132 WH140
05A-W B09D66	UNFILTERED	ARLI	WH018 WH019 WH020 WH043 WH114 WH121 WH122 WH128 WH131 WH132 WH140
06A-W B09D86	UNFILTERED	ARLI	WH018 WH019 WH020 WH043 WH114 WH121 WH122 WH128 WH131 WH132 WH140
07A-W B09D90	UNFILTERED	ARLI	WH018 WH019 WH020 WH043 WH114 WH121 WH122 WH128 WH131 WH132 WH140
08A-W B09D94	UNFILTERED	ARLI	WH018 WH019 WH020 WH043 WH114 WH121 WH122 WH128 WH131 WH132 WH140
08D-W B09D94 MS	UNFILTERED	ARLI	WH018 WH019 WH020 WH043 WH114 WH140
08E-W B09D94 MSD	UNFILTERED	ARLI	WH018 WH019 WH020
08F-W B09D94 DUP	UNFILTERED	ARLI	WH043 WH114 WH121 WH122 WH128 WH131 WH132 WH140
17A-W B09DC6		ARLI	WH018
18A-W B09DD4		ARLI	WH018
19A-W B09DF6		ARLI	WH018
20A-W B09DG0		ARLI	WH018
21A-W B09D68		ARLI	WH018
22A-W B09D88		ARLI	WH018
23A-W B09D92		ARLI	WH018
24A-W B09D96		ARLI	WH018

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Eyamamoto	11/2/93	ARLI	11/2/93	C Harris	11/3/93

9715507.0332

DDDDD2A

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/30/93

Ice Chest No. 422

Field Logbook No. FEFL-1054

Bill of Lading/Airbill No. 2519010252

Offsite Property No. ~~W93~~ W94-0-0001-30 LCS 11-1-93

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DC4

- ~~1~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~, 250ml, P, WATER; ALKALINITY
- ~~1~~, 500ml, P, WATER; TDS
- ~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- T; 2L & ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09DC5

- 1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DC6

- ~~1~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
Kathy Nhee K.D. Lee	10/30/93	1400	L Sweeney L Sweeney	11-1-93	0730
L Sweeney L Sweeney	11-1-93	1100	[illegible]/H. NARCISO	11-2-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq to frig. #28 C.C. by K.D. Lee 10/30/93 1400

A-6000-407 (12/92) WEF061

9213507.0555

000002B

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/30/93 Time 1106 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DC4	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; & 1; 2L	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09DC5	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DC6	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2519010252 OPC #: W94-0-0001-30

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-02-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05

9715507.0334

000002C

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/30/93

Ice Chest No. SML-232

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010252

Offsite Property No. ~~W93-~~ W94-0-0001-31

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DD2

- ~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~, 250ml, P, WATER; ALKALINITY
- ~~1~~, 500ml, P, WATER; TDS
- ~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- T, 2L; ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09DD3

- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DD4

- ~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee	10/30/93	1400	L Sweeney	11-1-93	0730
L Sweeney	11-1-93	1100	H. Narciso	11-2-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. # 2B by K.D. Lee 10/30/93 1400

A-6000-407 (12/92) WEF061

9318307.0335

0000020

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/30/93 Time 1204 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D D2	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; 1; 2L	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D D3	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D D4	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2519010252 OPC #: W94-0-0001-31

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-02-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location

A-6000-406(0

9715507.0536

000002E

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10-29-93

Ice Chest No. GWS005

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010258

Offsite Property No. ~~W93-~~ W94-0-0001-28

Method of Shipment EMERY

Shipped to TMA

LCS 11-1-93

Possible Sample Hazards/Remarks None

Sample Identification

B09DF4

- ~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~, 250ml, P, WATER; ALKALINITY
- ~~1~~, 500ml, P, WATER; TDS
- ~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- 1; ~~2L~~ & ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09DF5

- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DF6

- ~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
[signature]	10/29/93	1240	L Sweeney / L Sweeney	11-1-93	0730
L Sweeney / L Sweeney	11-1-93	1100	[signature] / H. NARCISO	11-2-93	11:15 A

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Relinq to Freig # 3C by [signature] 1240

A-6000-407 (12/92) WEF061

9215507.0357

0000022F

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/29/93 Time 1013 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DF4	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; & 1; 2L P	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09DF5	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DF6	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2519010252 OPC #: W94-0-0001-28

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-02-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(0

9715507.0558

DDDDD26

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10-29-93

Ice Chest No. GWS013

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010252

Offsite Property No. ~~W93~~ W94-0-0001-30 LCS 11-1-93

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DF8

- ~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~, 250ml, P, WATER; ALKALINITY
- ~~1~~, 500ml, P, WATER; TDS
- ~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- 1; 2L & ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09DF9

- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DG0

- ~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
[signature] B. WHITMEN	10/29/93	1240	[signature] L Sweeney	11-1-93	0730
[signature] L Sweeney	11-1-93	1100	[signature] / H. NARCISO	11-2-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Reling to Frig #3A Dr [signature] 1240

A-6000-407 (12/92) WEF061

9213507.0339

00000H

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/29/93 Time 0920 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DF8	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; & 1; 2L P	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09DF9	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DG0	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2519010252 OPC #: W941-0-0001-30

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-02-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05

9713507.0340

000002I

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10-29-93

Ice Chest No. SML-407

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010252

Offsite Property No. ~~W93-~~ W94-0-0001-31 LCS 11-1-93

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09D66

- ~~1~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~, 250ml, P, WATER; ALKALINITY
- ~~1~~, 500ml, P, WATER; TDS
- ~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- 1, 2L & ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09D67

- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09D68

- ~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
[signature] D. WHITTEN	10/29/93	1240	L Sweeney L Sweeney	11-1-93	0736
L Sweeney L Sweeney	11-1-93	1100	[signature] / H. NARCISO	11-02-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Relinq to Frig #3A By [signature] 1240

A-6000-407 (12/92) WEF061

9213507.0341

000002J

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/29/93 Time 1107 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D66	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; & 1; 2L P	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D67	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D68	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2519010252 OPC #: 1094-0-0001-31

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-02-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(0:

9213507.0342

000002K

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/30/93

Ice Chest No. SMC-350

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2571901025 2

Offsite Property No. ~~W93-~~ W94-0-0001-2

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09D86

- ~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~, 250ml, P, WATER; ALKALINITY
- ~~1~~, 500ml, P, WATER; TDS
- ~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- 1; 2L & ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09D87

- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09D88

- ~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
Kathy D. Lee K.D. Lee	10/30/93	1400	L Sweeney L Sweeney	11-1-93	0730
L Sweeney L Sweeney	11-1-93		Narciso / H. NARCISO	11-2-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: reling. to frig. # 3A by K.D. Lee 10/30/93 1400

A-6000-407 (12/92) WEF061

9215607.0343

0000021

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/30/93 Time 0832 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D86	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; & 1; 2L; P	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235,
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D87	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D88	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2519010252 OPC #: W94-0-0001-29

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-02-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(0

9215497.0544 000002M

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/30/93

Ice Chest No. 357

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010252

Offsite Property No. ~~W93-~~ W94-0-0001-28

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

KCS 11-1-93

Sample Identification

B09D90

- ~~5~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~, 250ml, P, WATER; ALKALINITY
- ~~1~~, 500ml, P, WATER; TDS
- ~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- 1,2C; ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09D91

- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09D92

- ~~5~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
Kathy D. Lee K.D. Lee	10/30/93	1400	L Sweeney L Sweeney	11-1-93	11-1-93
L Sweeney L Sweeney	11-1-93	1102	[illegible] / H. NARCISO	11-2-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. # 2C by K.D. Lee 10/30/93 1400

A-6000-407 (12/92) WEF061

9713507.0345 000002N

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/30/93 Time 0927 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D90	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; 1/2L	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235.
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D91	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D92	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2519010252 OPC #: W94-0-0001-28

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-02-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05

9213507.0346

0000020

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/30/93

Ice Chest No. ~~GS~~ GWS023 LCS 11-1-93

Field Logbook No. EFC-1054

Bill of Lading/Airbill No. 2519010252

Offsite Property No. ~~W93~~ W94-0-0001-29

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09D94

- ~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~, 250ml, P, WATER; ALKALINITY
- ~~1~~, 500ml, P, WATER; TDS
- ~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- 1/2L ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09D95

- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09D96

- ~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
Kathy D. Lee K.D. Lee	10/30/93	1400	L Sweeney L Sweeney	11-1-93	0730
L Sweeney L Sweeney	11/1/93	1100	[illegible] / H. Narciso	11-2-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. # 3B by K.D. Lee 10/30/93 1400

A-6000-407 (12/92) WEF061

9716907.0547

DDD002P

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/30/93 Time 1016 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D94	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; 2/, 2L	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D95	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D96	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2579010252 OPC #: W94-0-0001-29

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-02-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(0

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARLI

PAGE : 1 OF 1

RECEIVED BY (PRINT NAME): PAYAM SHADI

LOG-IN-DATE : 11/3/93

RECEIVED BY (SIGNATURE): Payam Shadi

ICE CHECT NO. #ML 35C

REMARKS:

1. Custody Seal(s) — Present / Absent* — Intact / Broken
2. Custody Seal Nos: _____
3. Chain of Custody Records — Present / Absent*
4. Traffic Reports or Packing List — Present / Absent*
5. Airbill — Airbill / Sticker Present / Absent*
6. Airbill No.: 7289153454
7. Sample Tags — Present / Absent*
8. Sample Tag Numbers — Listed / Not Listed on Chain of Custody
9. Sample Condition: — Intact / Broken* / Leaking
10. Does information on custody records, traffic reports, and sample tags agree? — Yes / No*
11. Date Recieved at Lab: 11/3/93
12. Temp of ice chest 5 °C
13. Time Recieved: 10:00

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B09DF8	A311011 &	A311010
	B09D90	A311011 &	A311010
	B09DG0	A311011	
	B09D92	A311011	

SAMPLE TRANSFER

Fraction: _____

Area #: _____

By: _____

On: _____

Contact SMO and attach record of resolution

Reviewed By: _____ Logbook No.: _____

Date: _____ Logbook Page No.: _____

FORM DC-1

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARL

PAGE : 1 OF 1

RECEIVED BY (PRINT NAME): PAYAM SHAHJI

LOG-IN-DATE : 11/3/93

RECEIVED BY (SIGNATURE): Payam Shahji

ICE CHEST NO. #422

REMARKS:

Custody Seal(s) Present / Absent* Intact / Broken

Custody Seal Nos:

Chain of Custody Records Present / Absent*

Traffic Reports or Packing List Present / Absent*

Airbill Airbill / Sticker Present / Absent*

Airbill No.: 9893825401

Sample Tags Present / Absent*

Sample Tag Numbers Listed / Not Listed on Chain of Custody

Sample Condition: Intact / Broken* / Leaking

Does information on custody records, traffic reports, and sample tags agree? Yes / No*

Date Recieved at Lab: 11/3/93

Temp of ice chest 5 °C

Time Recieved: 10:00

SAMPLE TRANSFER

ction:

a #:

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B091D94	A311011 &	A311010
	B09D66	A311011 &	A311010
	B091D96	A311011	
	~~B091D94~~		
	B09D68	A311011	

tact SMO and attach record of resolution

ved By:

Logbook No.:

Logbook Page No.:

FORM OC-1

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARLI

PAGE : 1 OF 1

RECEIVED BY (PRINT NAME): PAYAM SHADI

LOG-IN-DATE : 11/3/93

RECEIVED BY (SIGNATURE):

ICE CHEST NO. SML-232

REMARKS:

1. Custody Seal(s) Present / Absent* Intact / Broken
2. Custody Seal Nos:
3. Chain of Custody Records Present / Absent*
4. Traffic Reports or Packing List Present / Absent*
5. Airbill Airbill / Sticker Present / Absent*
6. Airbill No.: 9893825417
7. Sample Tags Present / Absent*
8. Sample Tag Numbers Listed / Not Listed on Chain of Custody
9. Sample Condition: Intact / Broken* / Leaking
10. Does information on custody records, traffic reports, and sample tags agree? Yes / No*
11. Date Recieved at Lab: 11/3/93
12. Temp of ice chest 4 °C
13. Time Recieved: 10:00

SAMPLE TRANSFER

Fraction:

Area #:

By:

On:

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B09D86	A311011 & A311010	
	B09D88	A311011	
	B09DF6	A311011	
	B09DF4	A311011 & A311010	

* Contact SMO and attach record of resolution

Reviewed By:

Date:

Logbook No.:

Logbook Page No.:

FORM DC-1

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARLI

PAGE : 1 OF 1

RECEIVED BY (PRINT NAME): KAYAM SHARI

LOG-IN-DATE : 11/3/93

RECEIVED BY (SIGNATURE): [signature]

ICE CHEST NO. SML

REMARKS:

1. Custody Seal(s) — Present / Absent* — Intact / Broken
2. Custody Seal Nos: _____
3. Chain of Custody Records — Present / Absent*
4. Traffic Reports or Packing List — Present / Absent*
5. Airbill — Airbill / Sticker Present / Absent*
6. Airbill No.: 9893625426
7. Sample Tags — Present / Absent*
8. Sample Tag Numbers — Listed / Not Listed on Chain of Custody
9. Sample Condition: — Intact / Broken* / Leaking
10. Does information on custody records, traffic reports, and sample tags agree? — Yes / No*
11. Date Recieved at Lab: 11/3/93
12. Temp of Ice chest 6 °C
13. Time Recieved: 10:15 AM

SAMPLE TRANSFER

Fraction: _____

Area #: _____

By: _____

On: _____

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B09DC4	A311011	
	B09DC6	A311011	
	B09DD2	A311011 & A311010	
	B09DD4	A311011 & A311010	

Contact SMO and attach record of resolution

Reviewed By: _____ Logbook No.: _____

Date: _____ Logbook Page No.: _____

FORM DC-1

000007

EXPRESS

USE THIS AIRBILL FOR SHIPMENTS WITHIN THE 50 UNITED STATES, ALASKA AND HAWAII
USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO AND ALL NON U.S. LOCATIONS
QUESTIONS? CALL 800-238-5355 TOLL FREE.

PACKAGE TRACKING NUMBER

3095M 7289153454

4 2 8 9 1 5 3 4 5 4

1 SENDER'S FEDERAL EXPRESS ACCOUNT NUMBER: 0941-5760-9

Date: 11-02-93

From (Your Name Please Print): SAMPLE CONTROL

Your Phone Number (Very Important): 510-235-2633

Company: T M A /NORCAL

Department/Floor No:

Street Address: 2030 WRIGHT AVE

City: RICHMOND State: CA ZIP Required: 94804

2 To (Recipient's Name) Please Print: CAROLE HARRIS

Recipient's Phone Number (Very Important): (818) 357-3247

Company: TMA/ARLI

Department/Floor No:

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 160 TAYLOR STREET

City: MONROVIA, State: CA. ZIP Required: 91016

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): 2340-6406

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address
City State ZIP Required

3 PAYMENT
1 [X] Bill Sender Acct. No. Req'd
2 [ ] Bill Recipient's FedEx Acct. No. Fill in Account Number below
3 [ ] Bill 3rd Party FedEx Acct. No. Fill in Account Number below (req'd)
4 [ ] Bill Credit Card Fill in Credit Card No. below (req'd)
5 [ ] Cash/Check
Acct./Credit Card No. Exp Date

4 SERVICES (Check only one box)

Priority Overnight
11 [X] OTHER PACKAGING
16 [ ] FEDEX LETTER*
12 [ ] FEDEX PAK*
13 [ ] FEDEX BOX
14 [ ] FEDEX TUBE

Standard Overnight
51 [ ] OTHER PACKAGING
56 [ ] FEDEX LETTER*
52 [ ] FEDEX PAK*
53 [ ] FEDEX BOX
54 [ ] FEDEX TUBE

Economy Two-Day
[ ] ECONOMY*

Government Overnight
46 [ ] GOVT LETTER
41 [ ] GOVT PACKAGE

Freight Service
[ ] OVERNIGHT FREIGHT**
80 [ ] TWO-DAY FREIGHT**
*Declared value limit $500
**Call for service schedule

5 DELIVERY AND SPECIAL HANDLING (Check services required)
1 [ ] HOLD FOR PICK-UP (Fill in Box H)
2 [X] DELIVER WEEKDAY
3 [ ] DELIVER SATURDAY (Extra charge) (Not available to all locations) [ ]
4 [ ] DANGEROUS GOODS (Extra charge)
5 [ ]
6 [ ] DRY ICE
7 [ ] OTHER SPECIAL SERVICE
8 [ ]
9 [ ] SATURDAY PICK-UP
[ ]
12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6 PACKAGES: 4 WEIGHT (in Pounds Only):
Total 4 Total 407
DIM SHIPMENT (Chargeable Weight) [ ] lbs
X X
Dropped At:
1 [X] Regular Stop 3 [ ] Drop Box
2 [ ] On-Call Stop 4 [ ] B S C
5 [ ] Station

7 Release Signature

Emp. No Date
[ ] Cash Received
[ ] Return Shipment
[ ] Third Party [ ] Chg. To Del. [ ] Chg. To Hold
Street Address
City State Zip
Received By
X
Date Time Received FedEx Employee Number

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

REVISION DATE 11/92
PART #137204 FXEM 3/93
FORMAT #155
155
©1992-93 FEDEX
PRINTED IN U.S.A.

000008

MULTIPLE PACKAGE SHIPMENT LABELS

SHIPMENT DATE	11-2-93
MASTER AIRBILL NUMBER	728415-451

2 OF 4 — 989 3825 401

DESCRIPTION _____

3 OF 4 — 989 3825 417

DESCRIPTION _____

4 OF 4 — 989 3825 426

DESCRIPTION _____

___ OF ___ — 989 3825 435

DESCRIPTION _____

___ OF ___ — 989 3825 444

DESCRIPTION _____

TERMS AND CONDITIONS

DEFINITIONS

[illegible] Federal Express [illegible] in this [illegible]

AGREEMENT TO TERMS

[illegible] your packages for all the terms [illegible] Service Guide which is available [illegible] Agreement. If there is a conflict between the current Service Guide [illegible] AIRBILL, the Service Guide will control. No one is [illegible] or modify the terms of our Agreement.

RESPONSIBILITY FOR PACKAGING AND COMPLETING AIRBILL

[illegible] be adequately packaging your goods and [illegible] AIRBILL. Omission of the number of and weight per package [illegible] the Airbill will result in a [illegible] based on our best estimate of the number of packages [illegible] estimated defaults [illegible] per package [illegible] and conditions adopted by us.

AIR TRANSPORTATION TAX INCLUDED

[illegible] tax required by Internal Code Section 4271 on the air transportation portion of [illegible]

LIMITATIONS OF OUR LIABILITY AND LIABILITIES NOT ASSUMED

[illegible] for [illegible] your package is limited to your [illegible] unless you pay for and [illegible] value. We do not provide cargo [illegible] additional charge for each $100 of declared value. If you declare a higher value [illegible] additional charge, our liability will be the lesser of [illegible] or the actual value of your package.

[illegible] liable for any damages, whether [illegible] in excess of the [illegible] but not [illegible] working or [illegible] anyone [illegible] be liable [illegible] terms of our agreement [illegible] to shipper [illegible]

[illegible] loss, damage or delay caused by events [illegible] but not limited to acts of God, perils [illegible] acts of public enemies, war, strikes, [illegible] or omissions of public authorities (including [illegible] officials) with actual or [illegible]

DECLARED VALUE LIMITS

[illegible] allow for FedEx Letter and FedEx [illegible] 100 or other shipments, the highest declared [illegible] unless your package contains items of [illegible] the highest declared value we [illegible] extraordinary value, include artwork, jewelry, furs, precious metals, negotiable instruments, and other items listed in our current Service Guide.

If you send more than one package on this Airbill, you may fill in the total declared value for all packages, not to exceed the $100, $500 or $25,000 per package limit described above. (Example: 5 packages can have a total declared value of up to $125,000.)

If more than one package is shipped on this airbill, our liability for loss or damage will be limited to the actual value of the package lost or damaged (not to exceed the lesser of the total declared value or the per package limit described above). You [illegible] the responsibility of proving the actual loss or damage.

FILING A CLAIM

ALL CLAIMS MUST BE MADE BY YOU IN WRITING. You must notify us of your claim within strict time limits. See current Service Guide.

We'll consider your claim filed if you call and notify our Customer Service Department at 800-238-5355 and notify us in writing as soon as possible.

Within 90 days after you notify us of your claim, you must send us all relevant information about it. We are not obligated to act on any claim until you have paid all transportation charges, and you may not deduct the amount of your claim from those charges.

If the recipient accepts your package without noting any damage on the delivery record, we will assume that the package was delivered in good condition. In order for us to process your claim, you must, to the extent possible, make the original shipping cartons and packing available for inspection.

RIGHT TO INSPECT

We may, at our option, open and inspect your packages prior to or after you give them to us to deliver.

NO C.O.D. SERVICES

NO C.O.D. SERVICES ON THE AIRBILL. If C.O.D. Services required, please use a Federal Express C.O.D. airbill for this [illegible]

RESPONSIBILITY FOR PAYMENT

Even if you give us different payment instructions, you will always be primarily responsible for all delivery charges, as well as any cost we may incur in either returning your package to you or warehousing it pending disposition.

RIGHT OF REJECTION

We reserve the right to reject a shipment at any time, when such shipment would be likely to cause damage or delay to other shipments, equipment or personnel, or if the transportation of which is prohibited by law or is in violation of any rules contained in this Airbill or our current Service Guide.

MONEY-BACK GUARANTEE

In the event of untimely delivery, Federal Express will at your request and with some limitations, refund or credit all transportation charges. See current Service Guide for further information.

Part # 137204/137205
Rev. 11/92

9713507.0354

TMA/NAU
Thermo Analytical Inc.

000009

RADIATION DOSE RATE SURVEY FORM

Date 11/03/93 COMPANY TMA/NORCAL OTHER ORD # 7289153454

Surveyor's Name MARK S. McCRAY

Model No. HP-210 / ESP-1 Model No. AC-3-7 / ESP-1

Serial No. 110789 / 02619 Serial No. 4011726 / 02628

Calibration Date 4/26/93 Calibration Date 9/16/93

Instrument Calibration Factor 0.280 Instrument Calibration Factor 0.172

Sample	Location	HP-210 CPM	HP-210 Factor	HP-210 DPM	AC-3-7 CPM	AC-3-7 Factor	AC-3-7 DPM	Source of Exceedance	Activity >50dpm or NO?
Background		51.0			1.0				
Consumary									
Smear SML 350		46.0			1.0			NONE	
SML 407		40.0			3.0			NONE	
SML 232		29.0			1.0			NONE	
SML 422		86.0			12.0			NONE	
Reported NHC		(31)	samples			< 50			

Comments

All OK ✓ Approved MSM

Not OK Date 11/03/93

GENERAL CHEMISTRY RESULTS

CASE NO. 11-011

Water Sample #:

B09D66	B09D86	B09D90
B09D94	B09DC4	B09DD2
B09DF4	B09DF8	

CASE NARRATIVE

The holding time for the pH analysis was exceeded. Careful review of the QC analysis indicates that the data is reliable.

No problems were encountered during sample analysis. All QC results were acceptable.

Maureen Parrish 12-22-93

Maureen Parrish

Page 1 | TMA Inc. | REPORT | Work Order # A3-11-010

Received: 11/02/93 | 12/22/93 08:54:18

REPORT TO: Westinghouse Hanford Company, 345 Hills, Richland, WA 99352

ATTEN: Jeanette Duncan

CLIENT: WHC | SAMPLES: 9

COMPANY: Westinghouse Hanford Company

FACILITY:

PREPARED BY: Thermo Analytical, Inc., 160 Taylor Street, Monrovia, CA 91016

ATTEN: Ms. Carole Harris

PHONE: 818-357-3247

Maureen Parrish

CERTIFIED BY

CONTACT: MKP CIH

This report is for the sole and exclusive use of the client to whom it is addressed and represents only those samples herein described. Samples not destroyed in testing are retained a maximum of 30 days unless otherwise requested.

WORK ID: SAF# 93-319

TAKEN: By Westinghouse Staff

TRANS: Federal Express

TYPE: Water

P.O. #: N3-11-013-SU-AR

INVOICE: under separate cover

SAMPLE IDENTIFICATION

01	B09DC4
01	B09DC4 MS
01	B09DC4
01	B09DC4 Duplicate
01	B09DC4
01	B09DC4 Duplicate
01	B09DC4
01	B09DC4 MS
01	B09DC4
01	B09DC4 MS
02	B09DD2
02	B09DD2 Duplicate
02	B09DD2
02	B09DD2 Duplicate
02	B09DD2
02	B09DD2 Duplicate
03	B09DF4
04	B09DF8
05	B09D66
06	B09D86
07	B09D90
08	B09D94
09	LAB Blank
09	LCS

TEST CODES and NAMES used on this workorder

WCCLPI	Anions & Wet Chem.
WCLCS	Lab Control Sample Summary
WCL_I	Chloride - WH120
WCQCD	Quality Control Summary
WCQCS	Quality Control Summary
WF_L	Fluoride in Water
WNH3_I	Ammonia in Water
WPH_L	pH of Liquid
WPO4_I	Phosphate in Liquids
WSO4_I	Sulfate (in Waters)
WSULFI	Sulfide
W_ALK	Alkalinity
W_COD	COD Water
W_COND	Conductivity-Water
W_TDS	Dissolved Solids

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DC4 FRACTION 01A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	1.1	mg/L	0.2
Fluoride	300.0	0.1	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.9	pH	0.1
Sulfate	300.0	15	mg/L	1
Elect. Conductivity	9050	194	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DC4 FRACTION 01C TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	81	mg/L	2

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DC4 FRACTION 01R TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solid	160.1	176	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DC4 FRACTION 01G TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

9713507.0361

000017

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DC4 FRACTION 01I TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DD2 FRACTION 02A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	14.3	mg/L	1.0
Fluoride	300.0	0.3	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.8	pH	0.1
Sulfate	300.0	59	mg/L	5
Elect. Conductivity	9050	652	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DD2 FRACTION 02C TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	210	mg/L	2

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DD2 FRACTION 02D TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solid	160.1	473	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DD2 FRACTION 02E TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DD2 FRACTION 02G TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DF4 FRACTION 03A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/29/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	7.3	mg/L	1.0
Fluoride	300.0	0.2	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.2	pH	0.1
Sulfate	300.0	55	mg/L	5
Elect. Conductivity	9050	1130	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DF4 FRACTION 03B TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/29/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	496	mg/L	2

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DF4 FRACTION 03C TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/29/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solid	160.1	797	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DF4 FRACTION 03D TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/29/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DF4 FRACTION 03E TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/29/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DF8 FRACTION 04A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/29/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	10.0	mg/L	1.0
Fluoride	300.0	0.3	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.9	pH	0.1
Sulfate	300.0	55	mg/L	5
Elect. Conductivity	9050	704	umhos/cm	6

FORM I

9713507.0373

000029

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DF8 FRACTION 04B TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/29/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	202	mg/L	2

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DF8 FRACTION 04C TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/29/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solid	160.1	519	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DF8 FRACTION 04D TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/29/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09DF8 FRACTION 04B TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/29/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09D66 FRACTION 05A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/29/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	10.9	mg/L	1.0
Fluoride	300.0	0.7	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.7	pH	0.1
Sulfate	300.0	52	mg/L	5
Elect. Conductivity	9050	490	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09D66 FRACTION 05B TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/29/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	163	mg/L	2

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09D66 FRACTION 05C TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/29/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solid	160.1	348	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09D66 FRACTION 05D TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/29/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09D66 FRACTION 05B TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/29/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09D86 FRACTION 06A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	0.9	mg/L	0.2
Fluoride	300.0	0.1	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.3	pH	0.1
Sulfate	300.0	13	mg/L	1
Elect. Conductivity	9050	197	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09D86 FRACTION 06B TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	86	mg/L	2

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09D86 FRACTION 06C TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solid	160.1	142	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09D86 FRACTION 06D TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09D86 FRACTION 06E TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09D90 FRACTION 07A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	1.2	mg/L	0.2
Fluoride	300.0	0.1	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.7	pH	0.1
Sulfate	300.0	14	mg/L	1
Elect. Conductivity	9050	187	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93 Results by Sample

SAMPLE ID B09D90 FRACTION 07B TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	83	mg/L	2

FORM I

9713507.0389

000045

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09D90 FRACTION 07C TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solid	160.1	138	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09D90 FRACTION 07D TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93 Results by Sample

SAMPLE ID B09D90 FRACTION 07E TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09D94 FRACTION 08A TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	3.0	mg/L	0.2
Fluoride	300.0	0.1	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.6	pH	0.1
Sulfate	300.0	21	mg/L	1
Elect. Conductivity	9050	224	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09D94 FRACTION 08B TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	78	mg/L	2

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93 Results by Sample

SAMPLE ID B09D94 FRACTION 08C TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solid	160.1	159	mg/L	5

FORM I

9713507.0395

000051

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09D94 FRACTION 08D TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-11-010

Received: 11/02/93

Results by Sample

SAMPLE ID B09D94 FRACTION 08E TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/30/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

TMA
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

9713507.0397

RECORD COPY

JAN 1994
RECEIVED
SDLA

December 17, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Eight (8) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on November 3, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S311036.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with no exceptions.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven R. Provencal
Lead Chemist

2-7-96
MC

9715507.0398

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

809D67

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-013SAS No.: SDG No.: 809D67

Matrix (soil/water): WATER Lab Sample ID: 11036-05S

Level (low/med): LOW Date Received: 11/03/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15.5	U		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	12.0			P
7440-39-3	Barium	29.8	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	34200			P
7440-47-3	Chromium	4.6	B		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	30.0	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	11300			P
7439-96-5	Manganese	1.3	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	4170	B		P
7782-49-2	Selenium	4.0	B		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	47400			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	22.0	B		P
7440-66-6	Zinc	8.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

2

9715507.0399

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

809087

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-013SAS No.: SDG No.: 809067

Matrix (soil/water): WATER Lab Sample ID: 11036-06S

Level (low/med): LOW Date Received: 11/03/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15.5	U		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	33.6	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	28000			P
7440-47-3	Chromium	6.9	B		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	27.5	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	5060			P
7439-96-5	Manganese	1.8	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	1910	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	2680	B		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	2.6	U		P
7440-66-6	Zinc	8.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

9713507.0400

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09D91

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-013SAS No.: SDG No.: B09D67

Matrix (soil/water): WATER Lab Sample ID: 11036-07S

Level (low/med): LOW Date Received: 11/03/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15.5	U		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	29.8	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	27500			P
7440-47-3	Chromium	6.1	B		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	16.2	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	4100	B		P
7439-96-5	Manganese	1.4	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	1580	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	2840	B		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	2.6	U		P
7440-66-6	Zinc	8.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

4

FORM I - IN ILM02.1

9213507.0401

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09D9S

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-013SAS No.: SDG No.: B09D67

Matrix (soil/water): WATER Lab Sample ID: 11036-08S

Level (low/med): LOW Date Received: 11/03/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15.5	U		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	22.4	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	29800			P
7440-47-3	Chromium	16.1			P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	24.0	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	5210			P
7439-96-5	Manganese	1.4	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	1620	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	4000	B		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	2.7	B		P
7440-66-6	Zinc	8.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

5

9213607.0402

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DC5

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-013SAS No.: SDG No.: B09D67

Matrix (soil/water): WATER Lab Sample ID: 11036-01S

Level (low/med): LOW Date Received: 11/03/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15.5	U		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	26.1	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	28300			P
7440-47-3	Chromium	6.1	B		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	13.4	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	3790	B		P
7439-96-5	Manganese	1.4	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	2690	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	3550	B		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	3.7	B		P
7440-66-6	Zinc	12.9	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

6

9713507.0403

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

809003

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-02-0039

Lab Code: SKINER Case No.: N3-11-013SAS No.: SDG No.: 809067

Matrix (soil/water): WATER Lab Sample ID: 11036-02S

Level (low/med): LOW Date Received: 11/03/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15.5	U		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	5.5	B		P
7440-39-3	Barium	29.8	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	56600			P
7440-47-3	Chromium	10.0	B		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	B		P
7439-89-6	Iron	23.3	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	16900			P
7439-96-5	Manganese	1.4	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	6380			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	50800			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	14.2	B		P
7440-66-6	Zinc	8.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

7

9213507.0404

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DF5

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-013SAS No.: SDG No.: B09D67

Matrix (soil/water): WATER Lab Sample ID: 11036-03S

Level (low/med): LOW Date Received: 11/03/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15.5	U		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	2.6	B		P
7440-39-3	Barium	114	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	136000			P
7440-47-3	Chromium	7.7	B		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	4.4	B		P
7439-89-6	Iron	23.3	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	34700			P
7439-96-5	Manganese	1.4	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	7680			P
7782-49-2	Selenium	3.5	B		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	59000			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	10.5	B		P
7440-66-6	Zinc	8.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

8

9713507.0405

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

809DF9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-013SAS No.: SDG No.: 809D67

Matrix (soil/water): WATER Lab Sample ID: 11036-04S

Level (low/med): LOW Date Received: 11/03/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15.5	U		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	6.0	B		P
7440-39-3	Barium	36.0	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	69200			P
7440-47-3	Chromium	11.5			P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	16.2	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	17300			P
7439-96-5	Manganese	1.3	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	5830			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	47400			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	10.5	B		P
7440-66-6	Zinc	8.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 11-018

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : November 3, 1993

1.0 DESCRIPTION OF CASE :

Eight water samples were analyzed for TCL Organics- Volatiles, Semivolatiles, and Pesticides/PCBs according to the USEPA Contract Laboratory Program (CLP) Statement of Work for Organic Analysis, Revision OLM01.8.

2.0 SAMPLE LIST :

WESTINGHOUSE ID	LAB ID	ANALYSIS REQUESTED	MATRIX	pH
B09DB6	A3-11-018-01A	V	WATER	0
B09DB6	A3-11-018-01B	SV	WATER	
B09DB6 MS	A3-11-018-01C	SV	WATER	
B09DB6 MSD	A3-11-018-01D	SV	WATER	
B09DB6	A3-11-018-01E	P	WATER	
B09DB8	A3-11-018-02A	V	WATER	0
B09DB8 MS	A3-11-018-02B	V	WATER	0
B09DB8 MSD	A3-11-018-02C	V	WATER	0
B09DC0	A3-11-018-03A	V	WATER	0
B09DC0	A3-11-018-03B	SV	WATER	
B09DC0	A3-11-018-03C	P	WATER	
B09DC0 MS	A3-11-018-03D	P	WATER	
B09DC0 MSD	A3-11-018-03E	P	WATER	
B09DC2	A3-11-018-04A	V	WATER	0
B09DF0	A3-11-018-05A	V	WATER	0
B09DF0	A3-11-018-05B	SV	WATER	
B09DF0	A3-11-018-05C	P	WATER	
B09DF2	A3-11-018-06A	V	WATER	0
B09DG6	A3-11-018-07A	V	WATER	0
B09DG6	A3-11-018-07B	SV	WATER	
B09DG6	A3-11-018-07C	P	WATER	
B09DG8	A3-11-018-08A	V	WATER	0

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

All of the samples were received unbroken and properly documented.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were analyzed within the CLP SOW holding times.

The %RPD for Benzene, between the MS and the MSD samples, was slightly above the QC limit. In accordance with the protocol, no further action was required.

All of the other QC results were within the limits specified by the EPA CLP SOW.

TUNES :

All BFB tunes are injected directly into the GC/MS instrument.

3.2.2 SEMIVOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times.

Samples B09DB6MS and B09DB6MSD both had 4-Nitrophenol matrix spike recoveries slightly above the QC limit. In accordance with the protocol, no further action was required.

All of the other QC results were within the limits specified by the EPA CLP SOW.

3.2.3 PESTICIDE/PCB ANALYSIS COMMENTS :

SEQUENCE NOTES :

The sequence was started on 11/25/93 and was analyzed according to the USEPA CLP SOW. The sequence was analyzed by single injection into a dual column system.

On the DB-608 column, the %RSD for all of the analytes were within the QC limits. However, on the DB-1701 column the %RSD for alpha-BHC and gamma-BHC exceeded 20% but were less than the 30% limit.

INDBM03 analyzed on 11/27/93 at 11:09 had a %RPD above 25% on the DB-1701 column for TCX and DCB. However, since TCX and DCB were quantitated against the INDA mix, which met the %RPD, the sequence was continued. On the DB-608 column, INDBM03 exceeded the 25% RPD limit for alpha-Chlordane. Since there were no alpha-Chlordane peaks detected, the sequence was

continued and met the remaining requirements.

All of the other QC criteria were within the the limits specified by the EPA CLP SOW for this case.

The chromatograms are presented in the manner consistent with the capabilities of the Nelson 2700 Turbochrome Data System which normalizes the largest peak to scale.

SAMPLE NOTES :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times. Heptachlor Epoxide was detected in sample B09DF0 at approximately 0.027 ug/L. GCMS confirmation could not be performed since the detected concentration was below the GCMS detection limit.

Sample B09DC0MS had a percent difference for the quantitation of Endrin between the two GC columns that exceeded the 25% limit. Hence, Endrin was "P" qualified. No further action was required.

All of the other QC results were within the limits specified by CLP SOW.

We 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 in this hardcopy data package and in the computer-readable data submitted on diskette is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Nicole Roth 12/21/93
Nicole Roth
CLP Program Manager

Maureen Parrish 12/21/93
Maureen Parrish
Project Manager

9713507.0409

000126

EPA SAMPLE NO.

B09DB6

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B03

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

9713507.0410

000127

EPA SAMPLE NO.

B09DB6

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B03

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9213507.0411

000128
EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

B09DB8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31110B04

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/10/93

GC Column: CAP 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	U
67-64-1	Acetone	10	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	Xylene (total)	10	U

9213507.0412

000129
EPA SAMPLE NO.

B09DB8

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31110B04

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/10/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9715507.0415

000130

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DC0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B07

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP 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
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	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	2	J
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	Xylene (total)	10	U

9713507.0414

000131

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DC0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B07

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DC2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B10

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

9213507.0416

000133

EPA SAMPLE NO.

B09DC2

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B10

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9215507.0417

UUU134

000134/01

12/21/93

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DF0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B17

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP 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	U
67-64-1	Acetone	10	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	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DF0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B17

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713507.0419

000136

EPA SAMPLE NO.

B09DF2

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-06A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31110B07

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/10/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

9213507.0420

000137

EPA SAMPLE NO.

B09DF2

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-06A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31110B07

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/10/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713507.0421

000138

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DG6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-07A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31110B08

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/10/93

GC Column: CAP 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
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	9	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	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DG6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-07A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31110B08

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/10/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DG8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-08A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31110B09

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/10/93

GC Column: CAP 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	U
67-64-1	Acetone	23	
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	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DG8

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-08A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31110B09

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/10/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DB6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31112I03

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/05/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DB6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31112I03

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 11/05/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

9713507.0427

000144

EPA SAMPLE NO.

B09DB6

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31112I03

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/05/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	20.27	6	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DC0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31112I06

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/05/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DC0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31112I06

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/05/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

9713507.0430

~~000147~~
OCCHF 6/1/93

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: B09DC0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31112I06

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/05/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	9.52	2	J
2.	UNKNOWN HYDROCARBON	20.27	3	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DF0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-05B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31112I07

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/05/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

9213507.0452

000149

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DF0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-05B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31112I07

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/05/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

9213507.0455

000150

EPA SAMPLE NO.

B09DF0

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-05B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31112I07

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/05/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	20.40	46	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DG6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-07B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31112I08

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/05/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DG6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-07B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31112I08

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/05/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DG6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-07B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31112I08

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/05/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	20.23	7	J

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DB6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-01E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/03/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/05/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/27/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DC0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-03C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/03/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/05/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/27/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DF0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-05C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/03/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/05/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/27/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.027	J
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

9713507.0440

000157

EPA SAMPLE NO.

B09DG6

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11018 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311018-07C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/03/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/05/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/27/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

9713507.0441

TMA

RECORD COPY

JAN 1994
RECEIVED
SDLA

WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

ORGANICS & GENERAL CHEMISTRY
Case No. 11-018
(TMA/ARLI W.O. # A3-11-018)

METALS & NITRATE/NITRITE
Case No. N3-11-028
(TMA/Skinner & Sherman W.O. No. S3-11-068 & S3-11-069)

TOTAL ORGANIC CARBON/TOTAL ORGANIC HALOGEN
Case No. N3-11-028
(TMA/ERG W.O. No. E3-11-067)

January 10, 1994

TMA Master Work Order N3-11-028

9215507.0442 000002A

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/31/93

Ice Chest No. 125

Field Logbook No. EFC-1054

Bill of Lading/Airbill No. 251901030 7

Offsite Property No. ~~W93-~~ AJS 11/2/93 WG4-0-0001-34

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DB6

3, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
1, 2L & 1, 1L, aG; WATER; CLP-SEMI VOA
1, 2L & 1, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
1, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
1, 250ml, P, WATER; ALKALINITY
1, 500ml, P, WATER; TDS
1, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
1, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
1, 1L, P, WATER; Cn(NaOH to pH 12.0)
1, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
1, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
1, 2LS 1, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
1, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
1, 250ml, Gs, WATER; TRITIUM/C-14

B09DB7

1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DB8

3, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee KD Lee	10/31/93	1400	AJ Simpson AJ SIMPSON	11/2/93	0852
AJ Simpson AJ SIMPSON	11/2/93	0852	N. M. McEldrath N. M. McELDRATH	11-3-93	1440

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. # 2B by K.D. Lee 10/31/93 1400

A-6000-407 (12/92) WEF061

9213502.0443 000002B

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/31/93 Time 1017 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DB6	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; 1/2L	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09DB7	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DB8	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 251901030J OPC #: WA4-0-0001-34

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/9

9213507 0444

000002C

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/31/93

Ice Chest No. 698

Field Logbook No. FEFL-1054

Bill of Lading/Airbill No. 2519010307

Offsite Property No. ~~W93~~ AJS 11/2/93 WCH-0-0001-33

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DC0

✓✓✓ 3, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
✓✓ 1, 2L & 1, 1L, aG; WATER; CLP-SEMI VOA
✓✓ 1, 2L & 1, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
✓ 1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
✓ 1, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
✓ 1, 250ml, P, WATER; ALKALINITY
✓ 1, 500ml, P, WATER; TDS
✓ 1, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
✓ 1, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
✓ 1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
✓ 1, 1L, P, WATER; Cn(NaOH to pH 12.0)
✓ 1, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
✓ 1, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
✓✓ 1;2L; 1, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
✓ 1, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
✓ 1, 250ml, Gs, WATER; TRITIUM/C-14

B09DC1

✓ 1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DC2

✓✓✓ 3, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
Kathy D. Lee K.D. Lee	10/31/93	1400	AJ Simpson AJ SIMPSON	11/2/93	0900
AJ Simpson AJ SIMPSON	11/2/93	0900	Mary M Hawk M. ELRIM	11-3-93	1444

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig # 2C by K.D. Lee 10/31/93 1400

A-6000-407 (12/92) WEF061

9213507.0445

0000028

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/31/93 Time 0757 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DC0	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; & 1,2L	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09DC1	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DC2	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 251901030T OPC #: W94-0-0001-33

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Title Date

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9213502.0946 000002E

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/31/93

Ice Chest No. ~~SML-91~~ AJS 11/2/93 #9

Field Logbook No. EFC-1054

Bill of Lading/Airbill No. 2591010307

Offsite Property No. ~~W93-~~ AJS 11/2/93 W94-0-00973

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DF0

3, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
1, 2L & 1, 1L, aG; WATER; CLP-SEMI VOA
1, 2L & 1, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
1, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
1, 250ml, P, WATER; ALKALINITY
1, 500ml, P, WATER; TDS
1, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
1, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
1, 1L, P, WATER; Cn(NaOH to pH 12.0)
1, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
1, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
1, 2L & 1, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
1, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
1, 250ml, Gs, WATER; TRITIUM/C-14

B09DF1

1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DF2

3, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee	10/31/93	1400	AJ SIMPSON	11/2/93	0857
AJ SIMPSON	11/2/93	0857	N. McELRATH	11-3-93	1450

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. # 3C by K.D. Lee 10/31/93 1400

A-6000-407 (12/92) WEF061

9213602.0447

000002F

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/31/93 Time 0924 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DF0	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; ; 1; 2L	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09DF1	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DF2	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 251904 0307 OPC #: W94-0-0001-33

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Title Date

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9213592.0448

00000 2G

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/31/93

Ice Chest No. RUSTY DUSTY

Field Logbook No. EFC-1054

Bill of Lading/Airbill No. 2519010307

Offsite Property No. ~~W93-~~ AJS 11/2/93 WC4-0-0001-34

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DG6

3, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
1, 2L & 1, 1L, aG; WATER; CLP-SEMI VOA
1, 2L & 1, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
1, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
1, 250ml, P, WATER; ALKALINITY
1, 500ml, P, WATER; TDS
1, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
1, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
1, 1L, P, WATER; Cn(NaOH to pH 12.0)
1, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
1, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
1, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
1, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
1, 250ml, Gs, WATER; TRITIUM/C-14

B09DG7

1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DG8

3, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
[signature] KD Lee	10/31/93	1400	[signature] AJ SIMPSON	11/2/93	0850
[signature] AJ SIMPSON	11/2/93	0850	[signature] M:CLRATH	11-3-93	1447

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to Frig. #2A by KD Lee 10/31/93 1400

A-6000-407 (12/92) WEF061

9213507.0449

000002N

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/31/93 Time 1017 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DG6	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; 2 1L 2L	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09DG7	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DG8	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 251901030 7 OPC #: WA-0-0001-34

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Title Date

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARL

PAGE : 1 OF 1

RECEIVED BY (PRINT NAME): PAYAM SHADI

LOG-IN-DATE : 11/4/93

RECEIVED BY (SIGNATURE): Payam Shadi

ICE CHEST NO. B3TA4

REMARKS:

1. Custody Seal(s) — Present / Absent* — Intact / Broken
2. Custody Seal Nos: _____
3. Chain of Custody Records — Present / Absent*
4. Traffic Reports or Packing List — Present / Absent*
5. Airbill — Airbill / Sticker Present / Absent*
6. Airbill No.: 72 8915340 6
7. Sample Tags — Present / Absent*
8. Sample Tag Numbers — Listed / Not Listed on Chain of Custody
9. Sample Condition: — Intact / Broken* / Leaking
10. Does information on custody records, traffic reports, and sample tags agree? — Yes / No*
11. Date Recieved at Lab: 11/4/93
12. Temp of ice chest 4 °C
13. Time Recieved: 10:00

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT,ETC
	B09DW3	A311017	
	B09DB6	A311018	
	B09DB8	A311018	

SAMPLE TRANSFER

Fraction: _____

Area #: _____

By: _____

On: _____

Contact SMO and attach record of resolution

Reviewed By: _____ Logbook No.: _____

Date: _____ Logbook Page No.: _____

FORM DC-1

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARLI

PAGE : 1 OF 1

RECEIVED BY (PRINT NAME): PAYAM SHAIDI

LOG-IN-DATE : 11/4/93

RECEIVED BY (SIGNATURE): Payam Shaidi

ICE CHEST NO. SML 319

REMARKS:

1. Custody Seal(s) — Present / Absent* — Intact / Broken
2. Custody Seal Nos:
3. Chain of Custody Records — Present / Absent*
4. Traffic Reports or Packing List — Present / Absent*
5. Airbill — Airbill / Sticker Present / Absent*
6. Airbill No.: 7289153406
7. Sample Tags — Present / Absent*
8. Sample Tag Numbers — Listed / Not Listed on Chain of Custody
9. Sample Condition: — Intact / Broken* / Leaking
10. Does information on custody records, traffic reports, and sample tags agree? — Yes / No*
11. Date Recieved at Lab: 11/4/93
12. Temp of ice chest 6 °c
13. Time Recieved: 10:00

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B09DC2	A311018	
	B09DC0	A311018	
	93353-02	A311020	
	93353-01	A311020	
	~~93353~~		

SAMPLE TRANSFER

Fraction:

Area #:

By:

On:

* Contact SMO and attach record of resolution

Reviewed By:

Date:

Logbook No.:

Logbook Page No.:

FORM DC-1

9713507.0452

000005

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARLI

PAGE : 1 OF 1

RECEIVED BY (PRINT NAME): PAYAM SHADI

LOG-IN-DATE : 11/4/93

RECEIVED BY (SIGNATURE):

ICE CHEST NO. SML 449

REMARKS: BROKEN B09DF0 NOT A GOOD

1. Custody Seal(s) Present / Absent* Intact / Broken

2. Custody Seal Nos: _____

3. Chain of Custody Records Present / Absent*

4. Traffic Reports or Packing List Present / Absent*

5. Airbill Airbill / Sticker Present / Absent*

6. Airbill No.: 7289153406

7. Sample Tags Present / Absent*

8. Sample Tag Numbers Listed / Not Listed on Chain of Custody

9. Sample Condition: Intact / Broken* / Leaking

10. Does information on custody records, traffic reports, and sample tags agree? Yes / No*

11. Date Recieved at Lab: 11/4/93

12. Temp of ice chest 3°C

13. Time Recieved: 10:00

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B09DF2	A311018	
	B09DF0	A311018	

SAMPLE TRANSFER

Fraction: _____

Area #: _____

By: _____

On: _____

* Contact SMO and attach record of resolution

Reviewed By: _____ Logbook No.: _____

Date: _____ Logbook Page No.: _____

FORM DC-1

9213507.0453

000006

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARU

PAGE : 1 OF 1

RECEIVED BY (PRINT NAME): PAYAM SHADI

LOG-IN-DATE : 11/4/93

RECEIVED BY (SIGNATURE): Payam Shadi

ICE CHEST NO. RUSTY DUSTY

REMARKS:

1. Custody Seal(s) Present / Absent* Intact / Broken
2. Custody Seal Nos: _____
3. Chain of Custody Records Present / Absent*
4. Traffic Reports or Packing List Present / Absent*
5. Airbill Airbill / Sticker Present / Absent*
6. Airbill No.: 7289153406
7. Sample Tags Present / Absent*
8. Sample Tag Numbers Listed / Not Listed on Chain of Custody
9. Sample Condition: Intact / Broken* / Leaking
10. Does information on custody records, traffic reports, and sample tags agree? Yes / No*
11. Date Recieved at Lab: 11/4/93
12. Temp of ice chest 5 °C
13. Time Recieved: 10:00

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B097D6	A311019	
	B09DG8	A311019	
	B09DG6	A311019	
	B09DV1	A311021	
	B09DV2	A311021	

SAMPLE TRANSFER

Fraction: _____

Area #: _____

By: _____

On: _____

* Contact SMO and attach record of resolution

Reviewed By: _____ Logbook No.: _____

Date: _____ Logbook Page No.: _____

FORM DC-1

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

PACKAGE TRACKING NUMBER [illegible]

7289153406

RECIPIENT'S COPY

1 Date 11-03-93

From (Your Name) Please Print: SAMPBEECONTROL

Your Phone Number (Very Important): 010-235-2633

Company: NORMAL

Department/Floor No.:

Street Address: RIGHT AVE

City: [illegible] State: CA ZIP Required: 9 4 8 0 4

2 To (Recipient's Name) Please Print: CAROLE HARRIS

Recipient's Phone Number (Very Important): (818) 357-3247

Company: TMA/ARLI

Department/Floor No.:

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 160 TAYLOR STREET

City: MONROVIA, State: CA. ZIP Required: 91016

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): 2340-6406

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address:
City: State: ZIP Required:

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card 5 [ ] Cash/Check

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning)
- 11 [X] OTHER PACKAGING
- 16 [ ] FEDEX LETTER*
- 12 [ ] FEDEX PAK*
- 13 [ ] FEDEX BOX
- 14 [ ] FEDEX TUBE

Standard Overnight (Delivery by next business afternoon. No Saturday delivery)
- 51 [ ] OTHER PACKAGING
- 56 [ ] FEDEX LETTER*
- 52 [ ] FEDEX PAK*
- 53 [ ] FEDEX BOX
- 54 [ ] FEDEX TUBE

Economy Two-Day (Delivery by second business day †)
- 30 [ ] ECONOMY*

* Economy Letter rate not available. Minimum charge: One pound economy rate.

Government Overnight (Restricted for authorized users only)
- 46 [ ] GOVT LETTER
- 41 [ ] GOVT PACKAGE

Freight Service (for packages over 150 lbs.)
- 70 [ ] OVERNIGHT FREIGHT** (Continued reservation required)
- 80 [ ] TWO-DAY FREIGHT**

† Delivery commitment may be later in some areas

*Declared Value Limit $500. **Call for delivery schedule.

5 DELIVERY AND SPECIAL HANDLING (Check services required)
- 1 [ ] HOLD FOR PICK-UP (Fill in Box H)
- 2 [X] DELIVER WEEKDAY
- 3 DELIVER SATURDAY (Extra charge) (Not available to all locations) [ ]
- 4 [ ] DANGEROUS GOODS (Extra charge)
- 5 [ ]
- 6 [ ] DRY ICE — Dangerous Goods Shipper's Declaration not required. Dry Ice, 9, UN 1845, ___ x ___ kg. 904 III
- 7 [ ] OTHER SPECIAL SERVICE
- 8 [ ]
- 9 [ ] SATURDAY PICK-UP (Extra charge)
- [ ]
- 12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See right)
13		
Total 13	Total 1149	Total

DIM SHIPMENT (Chargeable Weight) [ ] lbs.

L x W x H

Received At: 1 [X] Regular Stop 2 [ ] On-Call Stop 3 [ ] Drop Box 4 [ ] B.S.C 5 [ ] Station

Emp. No. Date

[ ] Cash Received
[ ] Return Shipment
[ ] Third Party [ ] Chg. To Del. [ ] Chg. To Hold

Street Address

City State Zip

Received By: X

Date/Time Received FedEx Employee Number

7 Release Signature:

Federal Express Use
- Base Charges
- Declared Value Charge
- Other 1
- Other 2
- Total Charges

REVISION DATE 11/92
PART #137204 FXEM 3/93
FORMAT #155

155

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PRINTED IN U.S.A.

000007

9/30/93 10:52 AM

9213507.0455

PAGE ONE OF TWO

TMA/ARU
Thermo Analytical Inc

000008

RADIATION DOSE RATE SURVEY FORM

Date 11/04/93 COMPANY WHC TMA/NORCAL OTHER ORD # 7289153406

Surveyor's Name MARK S. McCray

Model No. HP-210 / ESP-1 Model No. AC-2-7 / ESP-1

Serial No. 310289 / 02619 Serial No. 407726 / 02628

Calibration Date 4/26/93 Calibration Date 9/16/93

Instrument Calibration Factor 0.280 Instrument Calibration Factor 0.192

Sample	Location	HP-210 CPM	HP-210 Factor	HP-210 DPM	AC-2-7 CPM	AC-2-7 Factor	AC-2-7 DPM	Source of Ionization	Activity dpm/100 cm²
Background		38.0			3.0				
Container		7,390	0.2853		5,060	0.1860			
Smear SML 417		39.0			0			None	
SML 341		43.0			2.0			None	
RUSTY		40.0			5.0			None	
BETA 4		49.0			5.0			None	
698		62.0			2.0			None	
125		56.0			4.0			None	
SML 406		50.0			2.0			None	
SML 326		53.0			9.0			None	
SML 446		55.0			1.0			None	
SML 421		91.0			7.0			None	
SML 420		43.0			5.0			None	

Comments

All OK ✓ Approved MSM

Not OK Date 11/04/93

9713507.0456

PAGE 2 OF 2

PACE/ARI
The new Analytical Inc.

000009

RADIATION DOSE RATE SURVEY FORM

Date 11/04/93 COMPANY WHC TMA/NORCAL OTHER ORD # 7289153406

Surveyor's Name MARK S. McCray

Model No. HP-210 / ESP-1 Model No. AC-2-7 / ESP-1

Serial No. 110289 / 02619 Serial No. 407726 / 02628

Calibration Date 4/26/93 Calibration Date 9/16/93

Instrument Calibration Factor 0.280 Instrument Calibration Factor 0.192

Sample	Location	HP-210 CPM	HP-210 Factor	HP-210 DPM	AC-2-7 CPM	AC-2-7 Factor	AC-2-7 DPM	Surface or Breathing?	Activity Pci/g or Pci/L
Background		38.0			3.0				
Consumery		7,390	0.2853		5,060	0.1860			
Smear ~~#~~ 1-27									
449		30.0			4.0			Wipe	
Reported	WHC	(52)	samples each						
		50 pCi/gram							

Comments

All OK ✓ Approved MSM

Not OK Date 11/04/93

GENERAL CHEMISTRY RESULTS

CASE NO. 11-018

Water Sample #:

B09DB6	B09DC0
B09DF0	B09DG6

CASE NARRATIVE

The holding time for the pH analysis was exceeded. Careful review of the QC analysis indicates that the data is reliable.

No problems were encountered during sample analysis. All QC results were acceptable.

Maureen Parrish 12-21-93

Maureen Parrish

9215607.0458

000012

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93 12/21/93 12:30:59

REPORT TO: Westinghouse Hanford Company, 345 Hills, Richland, WA 99352

ATTEN: Jeanette Duncan

PREPARED BY: Thermo Analytical, Inc., 160 Taylor Street, Monrovia, CA 91016

ATTEN: Ms. Carole Harris

PHONE: 818-357-3247

Maureen Parrish

CERTIFIED BY

CONTACT: MKP CIH

CLIENT: WHC SAMPLES: 9

COMPANY: Westinghouse Hanford Company

FACILITY:

This report is for the sole and exclusive use of the client to whom it is addressed and represents only those samples herein described. Samples not destroyed in testing are retained a maximum of 30 days unless otherwise requested.

WORK ID: SAF# 93-319

TAKEN: By Westinghouse Staff

TRANS: Federal Express

TYPE: Water

P.O. #: N3-11-028-SU-AR

INVOICE: under separate cover

SAMPLE IDENTIFICATION

01	B09DB6
01	B09DB6 MS
01	B09DB6 MSD
01	B09DB6
01	B09DB6 MS
01	B09DB6
01	B09DB6 Duplicate
01	B09DB6
01	B09DB6 Duplicate
01	B09DB6
01	B09DB6 MS
01	B09DB6
01	B09DB6 MS
02	B09DB8
02	B09DB8 MS
02	B09DB8 MSD
03	B09DC0
03	B09DC0 MS
03	B09DC0 MSD
03	B09DC0
03	B09DC0 Duplicate
03	B09DC0
03	B09DC0 Duplicate
03	B09DC0
03	B09DC0 Duplicate
04	B09DC2

TEST CODES and NAMES used on this workorder

BNCLPW	CLP Semivol. Water
PECLPL	CLP Pesticides Liq.
WCCLPL	Anions & Wet Chem.
WCLCS	Lab Control Sample Summary
WCL L	Chloride - WH120
WCQCD	Quality Control Summary
WCQCS	Quality Control Summary
WF L	Fluoride in Water
WNH3 L	Ammonia in Water
WPH L	pH of Liquid
WPO4 L	Phosphate in Liquids
WSO4 L	Sulfate (in Waters)
WSULFI	Sulfide
W ALK	Alkalinity
W COD	COD Water
W COND	Conductivity-Water
W TDS	Dissolved Solids

9715607.0459

000013

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93 12/21/93 12:30:59

	SAMPLE IDENTIFICATION
05	B09DF0
06	B09DF2
07	B09DG6
08	B09DG8
09	LAB Blank
09	LCS

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93

Results by Sample

SAMPLE ID B09DB6 FRACTION 01F TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/31/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	33.7	mg/L	2.0
Fluoride	300.0	0.2	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.7	pH	0.1
Sulfate	300.0	95	mg/L	10
Elect. Conductivity	9050	810	umhos/cm	6

FORM I

9316907.0461

000015

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93

Results by Sample

SAMPLE ID B09DB6 FRACTION 01H TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/31/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	210	mg/L	2

FORM I

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93

Results by Sample

SAMPLE ID B09DB6 FRACTION 01J TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/31/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solid	160.1	590	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93 Results by Sample

SAMPLE ID B09DB6 FRACTION 01L TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/31/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93

Results by Sample

SAMPLE ID B09DB6 FRACTION 01N TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/31/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93 Results by Sample

SAMPLE ID B09DC0 FRACTION 03F TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/31/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	22.8	mg/L	2.0
Fluoride	300.0	0.2	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.8	pH	0.1
Sulfate	300.0	69	mg/L	10
Elect. Conductivity	9050	660	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93 Results by Sample

SAMPLE ID B09DC0 FRACTION 03H TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/31/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	195	mg/L	2

FORM I

9713507.0467

000021

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93

Results by Sample

SAMPLE ID B09DC0 FRACTION 03I TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/31/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solid	160.1	496	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93

Results by Sample

SAMPLE ID B09DC0 FRACTION 03J TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/31/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93

Results by Sample

SAMPLE ID B09DC0 FRACTION 03L TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/31/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93 Results by Sample

SAMPLE ID B09DF0 FRACTION 05D TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/05/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	14.5	mg/L	2.0
Fluoride	300.0	0.2	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.9	pH	0.1
Sulfate	300.0	81	mg/L	10
Elect. Conductivity	9050	785	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93 Results by Sample

SAMPLE ID B09DF0 FRACTION 05E TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/05/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	257	mg/L	2

FORM I

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93

Results by Sample

SAMPLE ID B09DF0 FRACTION 05F TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/31/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solid	160.1	578	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93 Results by Sample

SAMPLE ID B09DF0 FRACTION 05G TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/31/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93

Results by Sample

SAMPLE ID B09DF0 FRACTION 05H TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/05/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93

Results by Sample

SAMPLE ID B09DG6 FRACTION 07D TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/31/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	33.5	mg/L	2.0
Fluoride	300.0	0.2	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.8	pH	0.1
Sulfate	300.0	96	mg/L	10
Elect. Conductivity	9050	808	umhos/cm	6

FORM I

9713607.0476

000030

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93

Results by Sample

SAMPLE ID B09DG6 FRACTION 07E TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/31/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	211	mg/L	2

FORM I

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93

Results by Sample

SAMPLE ID B09DG6 FRACTION 07F TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/31/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solid	160.1	576	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93 Results by Sample

SAMPLE ID B09DG6 FRACTION 07G TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/31/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-11-018

Received: 11/03/93

Results by Sample

SAMPLE ID B09DG6 FRACTION 07H TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 10/31/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

TMA
Thermo Analytical Inc.

TMA
525 Avis Drive, Suite 7
Ann Arbor, MI 48108

(313) 662-3104
(313) 662-3344 (Fax)

RECORD COPY

JAN 1994
RECEIVED
SDLA

Federal Express Airbill 7289154935

December 2, 1993

Quality Control Narrative

Scope
This report contains one Delivery Order. Four water samples were received by TMA/ERG from TMA/NORCAL on November 4, 1993. The sample cooler temperature was 3 deg.C. This sample was analyzed for Total Organic Halogens and Total Organic Carbon based on USEPA methods. Samples received with Work Order N3-11-028 are enclosed in this package.The TMA/ERG WO# is E3-11-067.

Methodology:
The samples were prepared, analyzed and reported in accordance with the Westinghouse Hanford Program Statement of Work MBH-SVV-069262 March 5, 1992.
The following is a list of methodologies used:

Analyte	Method/Description
TOC	415.1 Total Organic Carbon (TMA/ERG SOP WC022)
TOX	9022 Total Organic Halides by Neutron Activation (TMA/ERG SOP NUC03)

Instrument ID Numbers	Serial Numbers
OI Model 700 TOC Analyzer	H224069
NA Multi Channel Analyzer	Not Applicable

Discussion
The TOX and TOC samples were prepared according to protocol. The quality control requirements have been met for these analyses without exception. If there are any questions concerning this package please do not hesitate to call.

Respectfully submitted,

TMA/Environmental Research Group

Mark B. Ruwe

Mark B. Ruwe
QA Officer

COVER PAGE - CLASSICALS ANALYSIS DATA PACKAGE

Lab Name: TMA/ERG #WO No. E3-11-067

Episode No. N3-11-028 SOW No. MBH-SVV-069262 SOW /Rev. Date March 5, 1992

TMA Sample No.	Lab Sample ID
B09DB6	E3-11-067-01A,B
B09DC0	E3-11-067-02A,B
B09DF0	E3-11-067-03A,B
B09DG6	E3-11-067-04A,D
B09DG6MS	E3-11-067-04B,E
B09DG6DUP	E3-11-067-04C,F

COMMENTS: Narrative Report is attached. Yes X No

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 in the narrative report. Release of the data contained in this hardcopy data package(and in the data submitted on magnetic media, if data is submitted on magnetic media), has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Mark B. Ruwe Name: Mark B. Ruwe

Date: December 2, 1993 Title: QA Officer

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME:	Thermo Analytical ERG Inc.	LAB SAMPLE ID:	R090B6
CASE NO.:	N3-11-028	Work ID:	100-FR-3
Matrix:	WATER		
Receipt Date:	04-Nov-93		
Units:	MG/L	% Solids:	NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	2.2	1	05-Nov-93
ORGANIC BROMIDE	0.01	0.01	15-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	15-Nov-93
ORGANIC IODIDE	<0.01	0.01	15-Nov-93

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME:	Thermo Analytical ERG Inc.	LAB SAMPLE ID:	B09DC0
CASE NO.:	N3-11-028	Work ID:	100-FR-3
Matrix:	WATER		
Receipt Date:	04-Nov-93		
		% Solids:	NA
Units:	MG/L		

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	2.3	1	05-Nov-93
ORGANIC BROMIDE	0.01	0.01	15-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	15-Nov-93
ORGANIC IODIDE	<0.01	0.01	15-Nov-93

COMMENTS:

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME:	Thermo Analytical ERG Inc.	LAB SAMPLE ID:	B09DF0
CASE NO.:	N3-11-028	Work ID:	100-FR-3
Matrix:	WATER		
Receipt Date:	04-Nov-93		
Units:	MG/L	% Solids:	NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	2.3	1	05-Nov-93
ORGANIC BROMIDE	0.05	0.01	15-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	15-Nov-93
ORGANIC IODIDE	<0.01	0.01	15-Nov-93

COMMENTS:

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME:	Thermo Analytical ERG Inc.	LAB SAMPLE ID:	B09DG6
CASE NO.:	N3-11-028	Work ID:	100-FR-3
Matrix:	WATER		
Receipt Date:	04-Nov-93		
Units:	MG/L	% Solids:	NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	2.0	1	05-Nov-93
ORGANIC BROMIDE	0.01	0.01	15-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	15-Nov-93
ORGANIC IODIDE	<0.01	0.01	15-Nov-93

COMMENTS:

9716107.0486

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

7289154935

AIRBILL PACKAGE TRACKING NUMBER 7289154935

RECIPIENT'S COPY

1 Date 11-03-93

From (Your Name) Please Print: SAMPLE CONTROL — Your Phone Number (Very Important): (10-)35-2633

Company: [illegible] ANALYTICAL

Department/Floor No.

Street Address: 20[illegible] [illegible]HT AVE

City: [illegible] State: CA ZIP Required: [illegible]

2 To (Recipient's Name) Please Print: SAMPLE CONTROL — Recipient's Phone Number (Very Important): 313 462-3104

Company: THERMO ANALYTICAL/EXCT

Department/Floor No.

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes): 525 AVIS DRIVE, SUITE 7

City: ANN ARBOR, MI State: ZIP Required: 48108

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): 7241 - 6406

H IF HOLD FOR PICK-UP, Print FEDEX Address Here: Street Address

City State ZIP Required

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card 5 [ ] Cash/Check

4 SERVICES (Check only one box)

Priority Overmight (Delivery by next business morning†)
- 11 [X] OTHER PACKAGING
- 16 [ ] FEDEX LETTER*
- 12 [ ] FEDEX PAK*
- 13 [ ] FEDEX BOX
- 14 [ ] FEDEX TUBE

Standard Overnight (Delivery by next business afternoon. No Saturday delivery†)
- 51 [ ] OTHER PACKAGING
- 56 [ ] FEDEX LETTER*
- 52 [ ] FEDEX PAK*
- 53 [ ] FEDEX BOX
- 54 [ ] FEDEX TUBE

Economy Two-Day (Delivery by second business day †)
- 30 [ ] ECONOMY*

Government Overnight (Restricted for authorized users only)
- 46 [ ] GOVT LETTER
- 41 [ ] GOVT PACKAGE

* Economy Letter rate not available. Minimum charge. One pound economy rate

Freight Service (for packages over 150 lbs.)
- 70 [ ] OVERNIGHT FREIGHT** (Confirmed reservation required)
- 80 [ ] TWO-DAY FREIGHT**

† Delivery commitment may be later in some areas.

*Declared Value Limit $500. **Call for delivery schedule.

5 DELIVERY AND SPECIAL HANDLING (Check services required)
- 1 [ ] HOLD FOR PICK-UP (Fill in Box H)
- 2 [X] DELIVER WEEKDAY
- 3 DELIVER SATURDAY (Extra charge) (Not available to all locations) [ ]
- 4 [ ] DANGEROUS GOODS (Extra charge)
- 5 [ ]
- 6 [ ] DRY ICE Dangerous Goods Shipper's Declaration not required. Dry Ice: 9 UN 1845 ____ x ____ kg. 904 III
- 7 [ ] OTHER SPECIAL SERVICE
- 8 [ ]
- 9 [ ] SATURDAY PICK-UP (Extra charge)
- [ ]
- 12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See right)
Total	Total 4	Total

DIM SHIPMENT (Chargeable Weight) [ ] ____ lbs.

L x W x H

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7 Release Signature:

Emp. No. Date

[ ] Cash Received
[ ] Return Shipment
[ ] Third Party [ ] Chg. To Del. [ ] Chg. To Hold

Street Address

City State Zip

Received By: X

Date/Time Received FedEx Employee Number

Federal Express Use
- Base Charges
- Declared Value Charge
- Other 1
- Other 2
- Total Charges

REVISION DATE 11.92 PART #137204 FXEM 3/93 FORMAT #155

155

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023

9713507.0487

 Skinner&Sherman REPORT Work Order # S3-11-069

Received: 11/04/93 12/22/93 15:50:03

REPORT TMA/NORCAL
TO 2030 Wright Avenue
Richmond, CA 94804

ATTEN Dan Steurmer

PREPARED TMA / Skinner & Sherman Labs.
BY 300 Second Avenue
P.O. Box 521
Waltham, MA 02254

ATTEN Client Services
PHONE (617) 890-7200

CERTIFIED BY

CONTACT DP

CLIENT HANFORD NOR SAMPLES 5
COMPANY TMA/NORCAL Hanford
FACILITY Richmond, CA

WORK ID N3-11-028
TAKEN By Client
TRANS Fedex
TYPE Water NO3NO2
P.O. # N3-11-028
INVOICE under separate cover

SAMPLE IDENTIFICATION	
01	B09DB6
02	B09DC0
03	B09DF0
04	B09DG6
04	B09DG6D
04	B09DG6S
05	LCSW

TEST CODES and NAMES used on this workorder

NO3NO2 Nitrate/Nitrite

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

9713507.0488

 Skinner&Sherman REPORT Work Order # S3-11-069

Received: 11/04/93 Results by Sample

SAMPLE ID B09DB6 SAMPLE # 01 FRACTIONS: A
Date & Time Collected 10/31/93 Category WATER

NO3NO2 20.5
mg N/L

SAMPLE ID B09DC0 SAMPLE # 02 FRACTIONS: A
Date & Time Collected 10/31/93 Category WATER

NO3NO2 15.5
mg N/L

SAMPLE ID B09DF0 SAMPLE # 03 FRACTIONS: A
Date & Time Collected 10/31/93 Category WATER

NO3NO2 19.6
mg N/L

SAMPLE ID B09DG6 SAMPLE # 04 FRACTIONS: A
Date & Time Collected 10/31/93 Category WATER

NO3NO2 20.7
mg N/L

SAMPLE ID B09DG6D SAMPLE # 04 FRACTIONS: B
Date & Time Collected 10/31/93 Category WATER

NO3NO2 21.0
mg N/L

SAMPLE ID B09DG6S SAMPLE # 04 FRACTIONS: C
Date & Time Collected 10/31/93 Category WATER

NO3NO2 42.2
mg N/L

SAMPLE ID LCSW SAMPLE # 05 FRACTIONS: A
Date & Time Collected not specified Category WATER

NO3NO2 2.04
mg N/L

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

TMA
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

9715507.0489

RECORD COPY

JAN 1994
RECEIVED
SDLA

December 17, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Four (4) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on November 4, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals and cyanide. The analysis was performed under TMA/Skinner and Sherman work order S311068.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with the following exceptions:

The matrix spike recovery for iron and mercury exceeded the control limit requirements.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal
Steven R. Provencal
Lead Chemist

2-6-96
MC

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DB6

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-028SAS No.: SDG_No.: B09DB6

Matrix (soil/water): WATER Lab Sample ID: 11068-01S

Level (low/med): LOW Date Received: 11/04/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	30.9	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	3.0	B		P
7440-39-3	Barium	53.5	B		P
7440-41-7	Beryllium	0.22	B		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	102000			P
7440-47-3	Chromium	15.4			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	64.5	B	N	P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	23300			P
7439-96-5	Manganese	2.8	B		P
7439-97-6	Mercury	0.20	U	N	AV
7440-02-0	Nickel	27.2	B		P
7440-09-7	Potassium	6120			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	32900			P
7440-28-0	Thallium	2.6	B		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

2

9213502.0491

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DC0

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-028SAS No.: SDG No.: B09DB6

Matrix (soil/water): WATER Lab Sample ID: 11068-02S

Level (low/med): LOW Date Received: 11/04/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	116	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	38.2	B		P
7440-41-7	Beryllium	0.30	B		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	82200			P
7440-47-3	Chromium	19.6			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	60.3	B	N	P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	19300			P
7439-96-5	Manganese	4.1	B		P
7439-97-6	Mercury	0.20	U	N	AV
7440-02-0	Nickel	7.4	B		P
7440-09-7	Potassium	6390			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	22800			P
7440-28-0	Thallium	2.2	B		P
7440-62-2	Vanadium	6.0	B		P
7440-66-6	Zinc	6.6	B		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DF0

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-028SAS No.: SDG No.: B09DB6

Matrix (soil/water): WATER Lab Sample ID: 11068-03S

Level (low/med): LOW Date Received: 11/04/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23.6	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	3.3	B		P
7440-39-3	Barium	45.8	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	97000			P
7440-47-3	Chromium	8.1	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	173		N	P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	25200			P
7439-96-5	Manganese	4.4	B		P
7439-97-6	Mercury	0.20	U	N	AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	8130			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	32600			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

4

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DG6

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-028SAS No.: SDG No.: B09DB6

Matrix (soil/water): WATER Lab Sample ID: 11068-04S

Level (low/med): LOW Date Received: 11/04/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	27.9	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.4	B		P
7440-39-3	Barium	53.8	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	106000			P
7440-47-3	Chromium	15.4			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	48.9	B	N	P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	24100			P
7439-96-5	Manganese	2.4	B		P
7439-97-6	Mercury	0.20	U	N	AV
7440-02-0	Nickel	44.8			P
7440-09-7	Potassium	6320			P
7782-49-2	Selenium	3.4	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	34100			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

5

TMA
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

9415507.0494

RECORD COPY

JAN 1994
RECEIVED
SDLA

December 17, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Four (4) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on November 4, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S311070.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with following exceptions:

The laboratory duplicate for zinc exceeded the control limit requirement.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

2-6-96
MC

9213507.0495

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

809DB7

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-028SAS No.: SDG No.: 809DB7

Matrix (soil/water): WATER Lab Sample ID: 11070-01S

Level (low/med): LOW Date Received: 11/04/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	193	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	4.2	B		P
7440-39-3	Barium	56.8	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	106000			P
7440-47-3	Chromium	15.0			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	24.2	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	23700			P
7439-96-5	Manganese	8.1	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	14.2	B		P
7440-09-7	Potassium	6120			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	33800			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U	*	P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

002

9/15/07.0496

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DC1

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-028SAS No.: SDG No.: B09DB7

Matrix (soil/water): WATER Lab Sample ID: 11070-02S

Level (low/med): LOW Date Received: 11/04/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13.7	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.7	B		P
7440-39-3	Barium	39.9	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	87900			P
7440-47-3	Chromium	17.4			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	8.0	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	20200			P
7439-96-5	Manganese	1.3	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	6430			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	23300			P
7440-28-0	Thallium	1.9	B		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	5.6	B	*	P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

003

9213507.0497

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DF1

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-028SAS No.: SDG No.: B09D87

Matrix (soil/water): WATER Lab Sample ID: 11070-03S

Level (low/med). LOW Date Received. 11/04/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	3.1	B		P
7440-39-3	Barium	48.2	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	101000			P
7440-47-3	Chromium	4.7	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	12.3	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	25800			P
7439-96-5	Manganese	1.0	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	8430			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	33900			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U	*	P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

004

FORM I - IN ILM02.1

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

809DG7

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-028SAS No.: SDG No.: 809D87

Matrix (soil/water): WATER Lab Sample ID: 11070-04S

Level (low/med): LOW Date Received: 11/04/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	28.4	B		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.4	B		P
7440-39-3	Barium	52.5	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	102000			P
7440-47-3	Chromium	15.3			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	30.4	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	22700			P
7439-96-5	Manganese	2.4	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	15.2	B		P
7440-09-7	Potassium	5870			P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	32100			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U	*	P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

005

9713507.0499

TMA
Thermo Analytical Inc.

TMA/Norcal
2030 Wright Avenue
P. O. Box 4040
Richmond, CA 94804-0040
(510) 235-2633 Fax No. (510) 235-0438

JAN 1994
RECEIVED
SOLA

January 10, 1994

Ref: TMA/Norcal N3-10-152-7288

Ms. Briana Colley
Westinghouse Hanford Company
345 Hills Street
Richland, WA 99352

Dear Ms. Colley:

Enclosed is the data report for the seventeen water samples received October 28, 1993 through November 3, 1993 from location 100-FF-3. Results are given for gross alpha, gross beta, tritium, cabon-14, strontium-90, technetium-99, isotopic uranium, isotopic plutonium, americium-241, and gamma scan analyses. The data package is paginated 1 through 473-A, 474 through 768-A, and 769 through 1,026.

Please call if you have any questions concerning this data.

Sincerely,

Dinkar P. Kharkar, Ph.D.
Manager, Nuclear Programs

DPK/ss

Enclosure: Data Package

TMA/Norcal

Report N3-10-152-7288
Sample Delivery Group 7288

Westinghouse Hanford Company
P.O. MB-SW-092

Case Narrative

January 10, 1994

1.0 GENERAL

TMA/Norcal Sample Delivery Group 7288 is comprised of the seventeen water samples from location 100-FR-3 delivered under Field Log Book #EFL-1054. Chain-of-Custody numbers were not provided.

2.0 ANALYSIS NOTES

2.1 Gross Alpha Analyses

The results for the duplicates did not agree and they were reanalyzed.

2.2 Gross Beta Analyses

The results for the duplicates did not agree and they were reanalyzed.

2.3 Tritium Analyses

Sample BO9DF4 contained high tritium activity and was counted for 17 minutes instead of the nominal 25 minutes

2.4 Carbon-14 Analyses

Many of the carbon-14 results have negative values with errors less than 100%. This indicates an apparent negative bias, with an average being (-33 $\pm$ 44) pCi/L. The absolute value of this bias is less than the RDL of 100 pCi/L. The bias is probably a result of the counting blank having a slightly different counting efficiency than the average sample vial. We are investigating method modifications that may eliminate this as a source of bias.

2.5 Strontium-90 Analyses

The 2 σ error for the blank is larger than both the MDA and the result implying that the MDA may not be a good estimate of the "real" minimum detectable activity. Both the result and MDA are well below the RDL.

2.6 Technetium-99 Analyses

No problems were encountered by the laboratory in the analyses.

TMA/Norcal
Report N3-10-152-7288
Sample Delivery Group 7288

Westinghouse Hanford Company
P.O. MB-SW-092

Case Narrative **January 10, 1994**

ANALYSIS NOTES (cont'd)

2.7 Isotopic Uranium Analyses
The uranium-233/234 and uranium-238 MDA's of the laboratory control sample are higher than the RDL's due to interference from uranium-235. Samples BO9D82, BO9DC8, and BO9DG2 were counted for less than the nominal count time of 150 minutes. The MDA's meet the RDL's despite the slightly shortened count time.

2.8 Isotopic Plutonium Analyses
The plutonium-239/240 MDA of sample BO9D82 and its duplicate are higher than the RDL due to the higher detector backgrounds in the region of interest. Samples BO9D70, BO9DB6, and BO9DG6 initially had yields below 20%. It was suspected that there was a problem during plating. The samples were reanalyzed and satisfactory yields were obtained. There was an insufficient amount of sample BO9D70 available to meet the MDA.

2.9 Americium-241 Analyses
The americium-241 MDA's of the blank and samples BO9D86, BO9DB6, BO9DC0, and BO9DD2 are above the RDL due to the relatively low chemical yields. The americium-241 recovery of the laboratory control sample is 79% which is below the protocol limits of (80-120)% but within the 3 σ contract limits of (79-121)%.

2.10 Gamma Scan Analyses
The iron-59 MDA's for all of the samples are higher than the RDL's due to the short half-life of iron-59. Samples BO9D70 and BO9DF0 were counted for less than the nominal count time of 400 minutes. The MDA's for all analyses except iron-59 meet the RDL's despite the shorter count times.

TMA NORCAL
REPORTING GROUP 7288

DATA SHEET

N310152-10

B09D66

SDG 7288
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310152-10
Dept sample id 7288-010
Received 11/02/93
Client sample id B09D66
Location/Matrix 100-FR-3 LIQUID
Collected 10/29/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	2.6	1.2	1	3	J	80A
Gross Beta	Beta	3.7	1.3	2	4	J	80B
Tritium	10028-17-8	180	130	200	400	U	H
Carbon 14	14762-75-5	-43	31	50	100	U	C
Strontium 90	10098-97-2	0.32	0.34	0.7	2	U	Y
Technetium 99	14133-76-7	0.85	1.9	3	5	U	TC
Uranium 233/234		1.9	0.18	0.05	0.2		U
Uranium 235	15117-96-1	0.11	0.040	0.03	0.2	J	U
Uranium 238		1.6	0.15	0.04	0.2		U
Plutonium 239/240		0.025	0.033	0.05	0.05	U	PU
Americium 241	14596-10-2	0	0.016	0.04	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		200		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		40	30	U	GAM
Cobalt 58	13981-38-9	U		10	20	U	GAM
Cobalt 60	10198-40-0	U		10	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		60		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		20	40	U	GAM
Europium 155	14391-16-3	U		30	40	U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/06/94

9713507.0505

N310152-10

TMA NORCAL
REPORTING GROUP 7288

DATA SHEET, cont

B09D66

SDG	7288	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310152-10	Client sample id	B09D66
Dept sample id	7288-010	Location/Matrix	100-FR-3 LIQUID
Received	11/02/93	Collected	10/29/93
		Chain of custody id	EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Radium 226	13982-63-3	U		20		U	GAM
Radium 228	15262-20-1	U		50		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		50		U	GAM

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.28
Report date	01/06/94

9213607.0504

TMA NORCAL
REPORTING GROUP 7288

N310152-04

B09D70

DATA SHEET

SDG 7288 | Client Westinghouse Hanford
Contact Dinkar Kharkar | Contract MBH-SVV-069262

Lab sample id N310152-04 | Client sample id B09D70
Dept sample id 7288-004 | Location/Matrix 100-FR-3 LIQUID
Received 11/01/93 | Collected 10/28/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.049	1.1	1	3	U	80A
Gross Beta	Beta	59	3.0	2	4		80B
Tritium	10028-17-8	300	140	200	400	J	H
Carbon 14	14762-75-5	-8.1	21	40	100	U	C
Strontium 90	10098-97-2	27	2.8	0.7	2		Y
Technetium 99	14133-76-7	0.97	1.6	5	5	U	TC
Uranium 233/234		0.74	0.13	0.05	0.2		U
Uranium 235	15117-96-1	0.025	0.031	0.04	0.2	U	U
Uranium 238		0.64	0.12	0.04	0.2		U
Plutonium 239/240		0	0.035	0.07	0.05	U	PU
Americium 241	14596-10-2	-0.007	0.028	0.05	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		100		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		30	30	U	GAM
Cobalt 58	13981-38-9	U		20	20	U	GAM
Cobalt 60	10198-40-0	U		20	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		60		U	GAM
Europium 152	14683-23-9	U		30	40	U	GAM
Europium 154	15585-10-1	U		20	40	U	GAM
Europium 155	14391-16-3	U		40	40	U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/06/94

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TMA NORCAL
REPORTING GROUP 7288

N310152-04

DATA SHEET, cont

B09D70

SDG	7288	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310152-04	Client sample id	B09D70
Dept sample id	7288-004	Location/Matrix	100-FR-3 LIQUID
Received	11/01/93	Collected	10/28/93
		Chain of custody id	EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Radium 226	13982-63-3	U		30		U	GAM
Radium 228	15262-20-1	U		60		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		60		U	GAM

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.28
Report date	01/06/94

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N310152-01

TMA NORCAL
REPORTING GROUP 7288

DATA SHEET

B09D82

SDG 7288
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310152-01
Dept sample id 7288-001
Received 10/28/93
Client sample id B09D82
Location/Matrix 100-FR-3 LIQUID
Collected 10/26/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	5.2	1.9	1	3		80A
Gross Beta	Beta	18	1.9	2	4		80B
Tritium	10028-17-8	1800	200	200	400		H
Carbon 14	14762-75-5	-46	20	40	100	U	C
Strontium 90	10098-97-2	5.2	0.67	1	2		Y
Technetium 99	14133-76-7	1.7	1.4	4	5	U	TC
Uranium 233/234		1.1	0.36	0.2	0.2		U
Uranium 235	15117-96-1	0.085	0.11	0.2	0.2	U	U
Uranium 238		1.0	0.36	0.2	0.2		U
Plutonium 239/240		0.024	0.024	0.05	0.05	U	PU
Americium 241	14596-10-2	0.009	0.029	0.05	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		200		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		50	30	U	GAM
Cobalt 58	13981-38-9	U		20	20	U	GAM
Cobalt 60	10198-40-0	U		20	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		20		U	GAM
Cesium 137	10045-97-3	U		20	20	U	GAM
Cerium 144	14762-78-8	U		70		U	GAM
Europium 152	14683-23-9	U		30	40	U	GAM
Europium 154	15585-10-1	U		20	40	U	GAM
Europium 155	14391-16-3	U		40	40	U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
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Version 2.28
Report date 01/06/94

TMA NORCAL
REPORTING GROUP 7288

N310152-01

DATA SHEET, cont

B09D82

SDG	7288	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310152-01	Client sample id	B09D82
Dept sample id	7288-001	Location/Matrix	100-FR-3 LIQUID
Received	10/28/93	Collected	10/26/93
		Chain of custody id	EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Radium 226	13982-63-3	U		20		U	GAM
Radium 228	15262-20-1	U		60		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		60		U	GAM

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.28
Report date	01/06/94

N310152-11

TMA NORCAL
REPORTING GROUP 7288

DATA SHEET

B09D86

SDG 7288 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N310152-11 Client sample id B09D86
Dept sample id 7288-011 Location/Matrix 100-FR-3 LIQUID
Received 11/02/93 Collected 10/30/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.11	0.69	1	3	U	80A
Gross Beta	Beta	10	1.5	2	4		80B
Tritium	10028-17-8	95	120	200	400	U	H
Carbon 14	14762-75-5	-23	36	60	100	U	C
Strontium 90	10098-97-2	5.0	0.53	0.8	2		Y
Technetium 99	14133-76-7	1.2	0.89	2	5	U	TC
Uranium 233/234		0.19	0.064	0.07	0.2	J	U
Uranium 235	15117-96-1	-0.005	0.010	0.04	0.2	U	U
Uranium 238		0.22	0.064	0.04	0.2		U
Plutonium 239/240		-0.007	0.014	0.05	0.05	U	PU
Americium 241	14596-10-2	0.011	0.044	0.08	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		100		U	GAM
Manganese 54	13966-31-9	U		9		U	GAM
Iron 59	14596-12-4	U		40	30	U	GAM
Cobalt 58	13981-38-9	U		10	20	U	GAM
Cobalt 60	10198-40-0	U		10	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		50		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		10	40	U	GAM
Europium 155	14391-16-3	U		30	40	U	GAM

Lab id TMAN
Protocol WHC-HASM
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Report date 01/06/94

TMA NORCAL
REPORTING GROUP 7288

N310152-11

DATA SHEET, cont

B09D86

SDG	7288	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310152-11	Client sample id	B09D86
Dept sample id	7288-011	Location/Matrix	100-FR-3 LIQUID
Received	11/02/93	Collected	10/30/93
		Chain of custody id	EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Radium 226	13982-63-3	U		20		U	GAM
Radium 228	15262-20-1	U		50		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		50		U	GAM

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
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Version	2.28
Report date	01/06/94

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N310152-12

TMA NORCAL
REPORTING GROUP 7288

DATA SHEET

B09D90

SDG	7288	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310152-12	Client sample id	B09D90
Dept sample id	7288-012	Location/Matrix	100-FR-3 LIQUID
Received	11/02/93	Collected	10/30/93
		Chain of custody id	EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	1.1	0.99	1	3	J	80A
Gross Beta	Beta	8.8	1.5	2	4		80B
Tritium	10028-17-8	100	130	200	400	U	H
Carbon 14	14762-75-5	-33	26	40	100	U	C
Strontium 90	10098-97-2	2.1	1.0	1	2		Y
Technetium 99	14133-76-7	1.7	0.93	2	5	U	TC
Uranium 233/234		0.42	0.18	0.2	0.2		U
Uranium 235	15117-96-1	0.071	0.071	0.1	0.2	U	U
Uranium 238		0.20	0.12	0.1	0.2		U
Plutonium 239/240		0.040	0.035	0.04	0.05	J	PU
Americium 241	14596-10-2	-0.008	0.024	0.05	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		100		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		40	30	U	GAM
Cobalt 58	13981-38-9	U		20	20	U	GAM
Cobalt 60	10198-40-0	U		20	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		60		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		20	40	U	GAM
Europium 155	14391-16-3	U		30	40	U	GAM

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
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Version	2.28
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TMA NORCAL
REPORTING GROUP 7288

N310152-12

DATA SHEET, cont

B09D90

SDG 7288 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N310152-12 Client sample id B09D90
Dept sample id 7288-012 Location/Matrix 100-FR-3 LIQUID
Received 11/02/93 Collected 10/30/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Radium 226	13982-63-3	U		30		U	GAM
Radium 228	15262-20-1	U		50		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		50		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/06/94

9713507.0512

N310152-13

TMA NORCAL
REPORTING GROUP 7288

DATA SHEET

B09D94

SDG 7288
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310152-13
Dept sample id 7288-013
Received 11/02/93
Client sample id B09D94
Location/Matrix 100-FR-3 LIQUID
Collected 10/30/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	-0.022	0.66	1	3	U	80A
Gross Beta	Beta	12	1.6	2	4		80B
Tritium	10028-17-8	250	130	200	400	J	H
Carbon 14	14762-75-5	-31	26	40	100	U	C
Strontium 90	10098-97-2	6.1	0.78	1	2		Y
Technetium 99	14133-76-7	0.19	1.0	3	5	U	TC
Uranium 233/234		0.37	0.15	0.1	0.2		U
Uranium 235	15117-96-1	0.036	0.036	0.1	0.2	U	U
Uranium 238		0.52	0.19	0.1	0.2		U
Plutonium 239/240		0	0.014	0.05	0.05	U	PU
Americium 241	14596-10-2	0.003	0.021	0.04	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		200		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		40	30	U	GAM
Cobalt 58	13981-38-9	U		20	20	U	GAM
Cobalt 60	10198-40-0	U		20	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		20		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		70		U	GAM
Europium 152	14683-23-9	U		30	40	U	GAM
Europium 154	15585-10-1	U		20	40	U	GAM
Europium 155	14391-16-3	U		40	40	U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/06/94

N310152-13

TMA NORCAL
REPORTING GROUP 7288

DATA SHEET, cont

B09D94

SDG 7288 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N310152-13 Client sample id B09D94
Dept sample id 7288-013 Location/Matrix 100-FR-3 LIQUID
Received 11/02/93 Collected 10/30/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Radium 226	13982-63-3	U		30		U	GAM
Radium 228	15262-20-1	U		60		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		60		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/06/94

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N310152-14

TMA NORCAL
REPORTING GROUP 7288

DATA SHEET

B09DB6

SDG	7288	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310152-14	Client sample id	B09DB6
Dept sample id	7288-014	Location/Matrix	100-FR-3 LIQUID
Received	11/03/93	Collected	10/31/93
		Chain of custody id	EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	4.1	2.4	3	3		80A
Gross Beta	Beta	9.0	1.5	2	4		80B
Tritium	10028-17-8	9700	400	200	400		H
Carbon 14	14762-75-5	-7.5	27	50	100	U	C
Strontium 90	10098-97-2	0.40	0.91	0.9	2	U	Y
Technetium 99	14133-76-7	1.2	1.0	3	5	U	TC
Uranium 233/234		5.1	0.96	0.2	0.2		U
Uranium 235	15117-96-1	0.10	0.10	0.2	0.2	U	U
Uranium 238		4.0	0.80	0.2	0.2		U
Plutonium 239/240		-0.003	0.012	0.03	0.05	U	PU
Americium 241	14596-10-2	0.006	0.050	0.1	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		100		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		40	30	U	GAM
Cobalt 58	13981-38-9	U		20	20	U	GAM
Cobalt 60	10198-40-0	U		10	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		60		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		20	40	U	GAM
Europium 155	14391-16-3	U		30	40	U	GAM

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.28
Report date	01/06/94

TMA NORCAL
REPORTING GROUP 7288

N310152-14

DATA SHEET, cont

B09DB6

SDG	7288	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310152-14	Client sample id	B09DB6
Dept sample id	7288-014	Location/Matrix	100-FR-3 LIQUID
Received	11/03/93	Collected	10/31/93
		Chain of custody id	EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Radium 226	13982-63-3	U		30		U	GAM
Radium 228	15262-20-1	U		50		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		50		U	GAM

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.28
Report date	01/06/94

N310152-15

TMA NORCAL
REPORTING GROUP 7288

DATA SHEET

B09DC0

SDG 7288
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310152-15
Dept sample id 7288-015
Received 11/03/93
Client sample id B09DC0
Location/Matrix 100-FR-3 LIQUID
Collected 10/31/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	6.3	2.2	2	3		80A
Gross Beta	Beta	7.8	1.5	2	4		80B
Tritium	10028-17-8	9900	400	200	400		H
Carbon 14	14762-75-5	-26	29	50	100	U	C
Strontium 90	10098-97-2	0.15	0.20	0.7	2	U	Y
Technetium 99	14133-76-7	0.62	0.81	2	5	U	TC
Uranium 233/234		3.9	0.61	0.1	0.2		U
Uranium 235	15117-96-1	0.16	0.097	0.1	0.2	J	U
Uranium 238		3.2	0.55	0.1	0.2		U
Plutonium 239/240		-0.006	0.011	0.04	0.05	U	PU
Americium 241	14596-10-2	0.067	0.049	0.06	0.05		AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		200		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		40	30	U	GAM
Cobalt 58	13981-38-9	U		20	20	U	GAM
Cobalt 60	10198-40-0	U		10	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		50		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		10	40	U	GAM
Europium 155	14391-16-3	U		30	40	U	GAM

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N310152-15

DATA SHEET, cont

B09DC0

SDG	7288	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310152-15	Client sample id	B09DC0
Dept sample id	7288-015	Location/Matrix	100-FR-3 LIQUID
Received	11/03/93	Collected	10/31/93
		Chain of custody id	EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Radium 226	13982-63-3	U		30		U	GAM
Radium 228	15262-20-1	U		50		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		50		U	GAM

Lab id	TMAN
Protocol	WHC-HASM
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N310152-06

TMA NORCAL
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DATA SHEET

B09DC4

SDG 7288
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310152-06
Dept sample id 7288-006
Received 11/02/93
Client sample id B09DC4
Location/Matrix 100-FR-3 LIQUID
Collected 10/30/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.95	0.71	0.7	3	J	80A
Gross Beta	Beta	2.8	1.2	2	4	J	80B
Tritium	10028-17-8	100	120	200	400	U	H
Carbon 14	14762-75-5	-44	22	40	100	U	C
Strontium 90	10098-97-2	0.29	0.23	0.8	2	U	Y
Technetium 99	14133-76-7	1.0	0.80	2	5	U	TC
Uranium 233/234		0.45	0.087	0.07	0.2		U
Uranium 235	15117-96-1	0.016	0.023	0.04	0.2	U	U
Uranium 238		0.45	0.081	0.04	0.2		U
Plutonium 239/240		0.006	0.012	0.05	0.05	U	PU
Americium 241	14596-10-2	0	0.030	0.05	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		200		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		30	30	U	GAM
Cobalt 58	13981-38-9	U		10	20	U	GAM
Cobalt 60	10198-40-0	U		10	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		60		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		10	40	U	GAM
Europium 155	14391-16-3	U		30	40	U	GAM

Lab id TMAN
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N310152-06

DATA SHEET, cont

B09DC4

SDG	7288	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310152-06	Client sample id	B09DC4
Dept sample id	7288-006	Location/Matrix	100-FR-3 LIQUID
Received	11/02/93	Collected	10/30/93
		Chain of custody id	EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Radium 226	13982-63-3	U		30		U	GAM
Radium 228	15262-20-1	U		50		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		50		U	GAM

Lab id	TMAN
Protocol	WHC-HASM
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N310152-03

TMA NORCAL
REPORTING GROUP 7288

DATA SHEET

B09DC8

SDG 7288
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310152-03
Dept sample id 7288-003
Received 10/29/93
Client sample id B09DC8
Location/Matrix 100-FR-3 LIQUID
Collected 10/27/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	3.2	1.8	2	3		80A
Gross Beta	Beta	7.8	1.5	2	4		80B
Tritium	10028-17-8	370	140	200	400	J	H
Carbon 14	14762-75-5	12	22	40	100	U	C
Strontium 90	10098-97-2	0.070	0.22	0.8	2	U	Y
Technetium 99	14133-76-7	0.73	0.96	3	5	U	TC
Uranium 233/234		0.58	0.23	0.1	0.2		U
Uranium 235	15117-96-1	0.022	0.045	0.2	0.2	U	U
Uranium 238		0.69	0.24	0.1	0.2		U
Plutonium 239/240		-0.005	0.020	0.05	0.05	U	PU
Americium 241	14596-10-2	0	0.022	0.05	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		300		U	GAM
Manganese 54	13966-31-9	U		20		U	GAM
Iron 59	14596-12-4	U		40	30	U	GAM
Cobalt 58	13981-38-9	U		20	20	U	GAM
Cobalt 60	10198-40-0	U		20	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		20		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		70		U	GAM
Europium 152	14683-23-9	U		30	40	U	GAM
Europium 154	15585-10-1	U		20	40	U	GAM
Europium 155	14391-16-3	U		40	40	U	GAM

Lab id TMAN
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N310152-03

DATA SHEET, cont

B09DC8

SDG	7288	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310152-03	Client sample id	B09DC8
Dept sample id	7288-003	Location/Matrix	100-FR-3 LIQUID
Received	10/29/93	Collected	10/27/93
		Chain of custody id	EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Radium 226	13982-63-3	U		30		U	GAM
Radium 228	15262-20-1	U		60		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		60		U	GAM

Lab id	TMAN
Protocol	WHC-HASM
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N310152-07

TMA NORCAL
REPORTING GROUP 7288

DATA SHEET

B09DD2

SDG 7288 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N310152-07 Client sample id B09DD2
Dept sample id 7288-007 Location/Matrix 100-FR-3 LIQUID
Received 11/02/93 Collected 10/30/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	2.5	1.6	1	3	J	80A
Gross Beta	Beta	7.6	1.5	2	4		80B
Tritium	10028-17-8	470	150	200	400		H
Carbon 14	14762-75-5	-58	33	60	100	U	C
Strontium 90	10098-97-2	0.20	0.26	0.7	2	U	Y
Technetium 99	14133-76-7	1.6	0.71	1	5	J	TC
Uranium 233/234		2.7	0.23	0.06	0.2		U
Uranium 235	15117-96-1	0.15	0.052	0.03	0.2	J	U
Uranium 238		2.2	0.20	0.04	0.2		U
Plutonium 239/240		0.013	0.018	0.03	0.05	U	PU
Americium 241	14596-10-2	0.014	0.046	0.09	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		100		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		30	30	U	GAM
Cobalt 58	13981-38-9	U		10	20	U	GAM
Cobalt 60	10198-40-0	U		20	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		10		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		60		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		20	40	U	GAM
Europium 155	14391-16-3	U		30	40	U	GAM

Lab id TMAN
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N310152-07

DATA SHEET, cont

B09DD2

SDG	7288	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310152-07	Client sample id	B09DD2
Dept sample id	7288-007	Location/Matrix	100-FR-3 LIQUID
Received	11/02/93	Collected	10/30/93
		Chain of custody id	EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Radium 226	13982-63-3	U		20		U	GAM
Radium 228	15262-20-1	U		60		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		60		U	GAM

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
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N310152-16

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DATA SHEET

B09DF0

SDG	7288	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310152-16	Client sample id	B09DF0
Dept sample id	7288-016	Location/Matrix	100-FR-3 LIQUID
Received	11/03/93	Collected	10/31/93
		Chain of custody id	EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	11	3.0	2	3		80A
Gross Beta	Beta	14	1.8	2	4		80B
Tritium	10028-17-8	2000	210	200	400		H
Carbon 14	14762-75-5	-45	32	60	100	U	C
Strontium 90	10098-97-2	0.13	0.19	0.6	2	U	Y
Technetium 99	14133-76-7	0.75	0.97	2	5	U	TC
Uranium 233/234		9.3	1.2	0.1	0.2		U
Uranium 235	15117-96-1	0.31	0.13	0.1	0.2		U
Uranium 238		8.2	1.1	0.1	0.2		U
Plutonium 239/240		0	0.013	0.05	0.05	U	PU
Americium 241	14596-10-2	-0.004	0.017	0.04	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		20		U	GAM
Potassium 40	13966-00-2	U		200		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		40	30	U	GAM
Cobalt 58	13981-38-9	U		20	20	U	GAM
Cobalt 60	10198-40-0	U		20	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		70		U	GAM
Europium 152	14683-23-9	U		30	40	U	GAM
Europium 154	15585-10-1	U		20	40	U	GAM
Europium 155	14391-16-3	U		40	40	U	GAM

Lab id	TMAN
Protocol	WHC-HASM
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DATA SHEET, cont

B09DF0

SDG	7288	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310152-16	Client sample id	B09DF0
Dept sample id	7288-016	Location/Matrix	100-FR-3 LIQUID
Received	11/03/93	Collected	10/31/93
		Chain of custody id	EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Radium 226	13982-63-3	U		30		U	GAM
Radium 228	15262-20-1	U		60		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		60		U	GAM

Lab id	TMAN
Protocol	WHC-HASM
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N310152-08

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DATA SHEET

B09DF4

SDG	7288	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310152-08	Client sample id	B09DF4
Dept sample id	7288-008	Location/Matrix	100-FR-3 LIQUID
Received	11/02/93	Collected	10/29/93
		Chain of custody id	EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	7.1	3.0	2	3		80A
Gross Beta	Beta	17	2.0	2	4		80B
Tritium	10028-17-8	110000	2200	400	400		H
Carbon 14	14762-75-5	410	46	70	100		C
Strontium 90	10098-97-2	0.078	0.19	0.7	2	U	Y
Technetium 99	14133-76-7	2.0	0.75	2	5	J	TC
Uranium 233/234		3.9	0.30	0.06	0.2		U
Uranium 235	15117-96-1	0.24	0.061	0.03	0.2		U
Uranium 238		3.2	0.26	0.05	0.2		U
Plutonium 239/240		0.036	0.043	0.05	0.05	U	PU
Americium 241	14596-10-2	0.015	0.030	0.05	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		20		U	GAM
Potassium 40	13966-00-2	U		200		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		40	30	U	GAM
Cobalt 58	13981-38-9	U		10	20	U	GAM
Cobalt 60	10198-40-0	U		10	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		50		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		10	40	U	GAM
Europium 155	14391-16-3	U		30	40	U	GAM

Lab id	TMAN
Protocol	WHC-HASM
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N310152-08

DATA SHEET, cont

B09DF4

SDG	7288	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310152-08	Client sample id	B09DF4
Dept sample id	7288-008	Location/Matrix	100-FR-3 LIQUID
Received	11/02/93	Collected	10/29/93
		Chain of custody id	EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Radium 226	13982-63-3	U		30		U	GAM
Radium 228	15262-20-1	U		40		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		40		U	GAM

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
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N310152-09

TMA NORCAL
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DATA SHEET

B09DF8

SDG 7288
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310152-09
Dept sample id 7288-009
Received 11/02/93
Client sample id B09DF8
Location/Matrix 100-FR-3 LIQUID
Collected 10/29/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	7.3	2.5	2	3		80A
Gross Beta	Beta	6.6	1.5	2	4		80B
Tritium	10028-17-8	11000	430	200	400		H
Carbon 14	14762-75-5	-42	29	50	100	U	C
Strontium 90	10098-97-2	0.12	0.20	0.7	2	U	Y
Technetium 99	14133-76-7	1.3	0.80	1	5	J	TC
Uranium 233/234		4.8	0.31	0.06	0.2		U
Uranium 235	15117-96-1	0.24	0.055	0.04	0.2		U
Uranium 238		3.9	0.27	0.05	0.2		U
Plutonium 239/240		-0.006	0.013	0.05	0.05	U	PU
Americium 241	14596-10-2	0.007	0.020	0.03	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		100		U	GAM
Manganese 54	13966-31-9	U		9		U	GAM
Iron 59	14596-12-4	U		30	30	U	GAM
Cobalt 58	13981-38-9	U		10	20	U	GAM
Cobalt 60	10198-40-0	U		10	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		90		U	GAM
Tin 113	13966-06-8	U		10		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		50		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		10	40	U	GAM
Europium 155	14391-16-3	U		30	40	U	GAM

Lab id TMAN
Protocol WHC-HASM
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TMA NORCAL
REPORTING GROUP 7288

N310152-09

DATA SHEET, cont

B09DF8

SDG	7288	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310152-09	Client sample id	B09DF8
Dept sample id	7288-009	Location/Matrix	100-FR-3 LIQUID
Received	11/02/93	Collected	10/29/93
		Chain of custody id	EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Radium 226	13982-63-3	23	21				GAM
Radium 228	15262-20-1	U		50		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		50		U	GAM

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.28
Report date	01/06/94

N310152-02

TMA NORCAL
REPORTING GROUP 7288

DATA SHEET

B09DG2

SDG 7288
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310152-02
Dept sample id 7288-002
Received 10/28/93
Client sample id B09DG2
Location/Matrix 100-FR-3 LIQUID
Collected 10/26/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	3.4	1.5	1	3		80A
Gross Beta	Beta	22	2.1	2	4		80B
Tritium	10028-17-8	1600	200	200	400		H
Carbon 14	14762-75-5	-40	22	40	100	U	C
Strontium 90	10098-97-2	9.3	0.76	0.7	2		Y
Technetium 99	14133-76-7	0.52	1.5	5	5	U	TC
Uranium 233/234		3.0	0.63	0.2	0.2		U
Uranium 235	15117-96-1	0.14	0.14	0.2	0.2	U	U
Uranium 238		2.3	0.51	0.2	0.2		U
Plutonium 239/240		0.016	0.021	0.04	0.05	U	PU
Americium 241	14596-10-2	0.009	0.024	0.04	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		100		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		30	30	U	GAM
Cobalt 58	13981-38-9	U		10	20	U	GAM
Cobalt 60	10198-40-0	U		20	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		10		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		60		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		20	40	U	GAM
Europium 155	14391-16-3	U		30	40	U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/06/94

TMA NORCAL
REPORTING GROUP 7288

N310152-02

DATA SHEET, cont

B09DG2

SDG 7288
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N310152-02
Dept sample id 7288-002
Received 10/28/93
Client sample id B09DG2
Location/Matrix 100-FR-3 LIQUID
Collected 10/26/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Radium 226	13982-63-3	U		20		U	GAM
Radium 228	15262-20-1	U		50		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		50		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/06/94

9713507.0532

N310152-17

TMA NORCAL
REPORTING GROUP 7288

DATA SHEET

B09DG6

SDG 7288
Client Westinghouse Hanford
Contact Dinkar Kharkar
Contract MBH-SVV-069262

Lab sample id N310152-17
Client sample id B09DG6
Dept sample id 7288-017
Location/Matrix 100-FR-3 LIQUID
Received 11/03/93
Collected 10/31/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	6.5	2.3	2	3		80A
Gross Beta	Beta	9.3	1.6	2	4		80B
Tritium	10028-17-8	9700	400	200	400		H
Carbon 14	14762-75-5	-14	30	50	100	U	C
Strontium 90	10098-97-2	1.9	0.34	0.7	2	J	Y
Technetium 99	14133-76-7	-0.006	2.2	4	5	U	TC
Uranium 233/234		2.9	0.57	0.2	0.2		U
Uranium 235	15117-96-1	0.12	0.080	0.2	0.2	U	U
Uranium 238		2.3	0.47	0.1	0.2		U
Plutonium 239/240		0.002	0.010	0.02	0.05	U	PU
Americium 241	14596-10-2	0	0.021	0.04	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		6		U	GAM
Potassium 40	13966-00-2	U		70		U	GAM
Manganese 54	13966-31-9	U		6		U	GAM
Iron 59	14596-12-4	U		20	30	U	GAM
Cobalt 58	13981-38-9	U		7	20	U	GAM
Cobalt 60	10198-40-0	U		9	20	U	GAM
Niobium 94	14681-63-1	U		6		U	GAM
Ruthenium 103	13968-53-1	U		10		U	GAM
Ruthenium 106	13967-48-1	U		60		U	GAM
Tin 113	13966-06-8	U		8		U	GAM
Cesium 134	13967-70-9	U		7		U	GAM
Cesium 137	10045-97-3	U		7	20	U	GAM
Cerium 144	14762-78-8	U		30		U	GAM
Europium 152	14683-23-9	U		10	40	U	GAM
Europium 154	15585-10-1	U		9	40	U	GAM
Europium 155	14391-16-3	U		20	40	U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/06/94

TMA NORCAL
REPORTING GROUP 7288

N310152-17

DATA SHEET, cont

B09DG6

SDG	7288	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310152-17	Client sample id	B09DG6
Dept sample id	7288-017	Location/Matrix	100-FR-3 LIQUID
Received	11/03/93	Collected	10/31/93
		Chain of custody id	EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Radium 226	13982-63-3	U		10		U	GAM
Radium 228	15262-20-1	U		30		U	GAM
Thorium 228	14274-82-9	U		10		U	GAM
Thorium 232	7440-29-1	U		30		U	GAM

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.28
Report date	01/06/94

9213507.0534

N310152-05

TMA NORCAL
REPORTING GROUP 7288

DATA SHEET

B09DH8

SDG 7288 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N310152-05 Client sample id B09DH8
Dept sample id 7288-005 Location/Matrix 100-FR-3 LIQUID
Received 11/01/93 Collected 10/28/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.51	0.80	1	3	U	80A
Gross Beta	Beta	0.18	1.1	2	4	U	80B
Tritium	10028-17-8	130	130	200	400	U	H
Carbon 14	14762-75-5	-86	30	50	100	U	C
Strontium 90	10098-97-2	0.17	0.20	0.7	2	U	Y
Technetium 99	14133-76-7	1.3	0.59	1	5	J	TC
Uranium 233/234		0.036	0.040	0.06	0.2	U	U
Uranium 235	15117-96-1	0.010	0.019	0.04	0.2	U	U
Uranium 238		0.084	0.040	0.04	0.2	J	U
Plutonium 239/240		0.017	0.017	0.03	0.05	U	PU
Americium 241	14596-10-2	-0.009	0.018	0.04	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		20		U	GAM
Potassium 40	13966-00-2	U		200		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		40	30	U	GAM
Cobalt 58	13981-38-9	U		20	20	U	GAM
Cobalt 60	10198-40-0	U		20	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		20		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		70		U	GAM
Europium 152	14683-23-9	U		30	40	U	GAM
Europium 154	15585-10-1	U		20	40	U	GAM
Europium 155	14391-16-3	U		40	40	U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/06/94

TMA NORCAL
REPORTING GROUP 7288

N310152-05

DATA SHEET, cont

B09DH8

SDG	7288	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N310152-05	Client sample id	B09DH8
Dept sample id	7288-005	Location/Matrix	100-FR-3 LIQUID
Received	11/01/93	Collected	10/28/93
		Chain of custody id	EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Radium 226	13982-63-3	U		30		U	GAM
Radium 228	15262-20-1	U		60		U	GAM
Thorium 228	14274-82-9	U		40		U	GAM
Thorium 232	7440-29-1	U		60		U	GAM

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.28
Report date	01/06/94

9214507.0536

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/26/93

Ice Chest No. 682.

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010186

Offsite Property No. ~~W93-~~ W94-0-0001-24 LCS 10/27/93

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09D92

3, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
1, 2L & 1, 1L, aG; WATER; CLP-SEMI VOA
1, 2L & 1, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
1, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
1, 250ml, ~~P~~, WATER; ALKALINITY GLASS - KD
1, 500ml, P, WATER; TDS
1, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
1, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
1, 1L, P, WATER; Cn(NaOH to pH 12.0)
1, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
1, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
1, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
1, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
1, 250ml, Gs, WATER; TRITIUM/C-14

B09D93

1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09D94

3, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee K.D. Lee	10/26/93	1336	L. Sweeney L. Sweeney	10/27/93	0800 LCS ~~0700~~ 10/27
L. Sweeney L. Sweeney	10/27/93	1000	Kermit Blum K. Blum	10-28-93	1145

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. # 313 by K.D. Lee 10/26/93 1336

A-6000-407 (12/92) WEF061

9213507.0537

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/26/93 Time 1030 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*		Analysis Requested
B09D92	3; 40ml; Gs*;	WATER	✓✓✓	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	✓	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	✓	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	✓	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	✓	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	✓	ALKALINITY
	1; 500ml; G;	WATER	✓	TDS
	1; 500ml; G;	WATER	✓	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	✓	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	✓	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER		ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	✓	Cn(NaOH to pH<2.0)
	1; 4L; G/P;	WATER	✓	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
				U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	✓	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	✓	TRITIUM, C14
	1; 125mL; aGs	WATER	✓	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	✓	TOX (HNO3 to pH<2.0)
B09D93	1; 1L; P	WATER	✓	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D84	3; 40mL; Gs	WATER	✓✓✓	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2579010186 OPC #: W94-0-0001-24

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Title Date

Analysis Required

102

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/9

9214607.0539

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/26/93

Ice Chest No. GNS011

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010186

Offsite Property No. ~~W93-~~ W94-0-0001-24

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DG2

3, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
1, 2L & 1, 1L, aG; WATER; CLP-SEMI VOA
1, 2L & 1, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
1, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
1, 250ml, ~~P~~, WATER; ALKALINITY GLASS - KB
1, 500ml, P, WATER; TDS
1, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
1, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
1, 1L, P, WATER; Cn(NaOH to pH 12.0)
1, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
1, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
1, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
1, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
1, 250ml, Gs, WATER; TRITIUM/C-14

B09DG3

1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DG4

3, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee K.D. Lee	10/26/93	1336	L Sweeney L Sweeney	10/27/93	0800
L Sweeney L Sweeney	10/27/93	1000	Kermit Blum K. Blum	10-28-93	1145

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. # 3B by K.D. Lee 10/26/93 1336

A-6000-407 (12/92) WEF061

9216507.0530

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/26/93 Time 1030 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D G2	3; 40ml; Gs*; ✓✓✓	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG; ✓	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG; ✓	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P ✓	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P; ✓	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P; ✓	WATER	ALKALINITY
	1; 500ml; G; ✓	WATER	TDS
	1; 500ml; G; ✓	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G; ✓	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P; ✓	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P; ✓	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; ✓	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P; ✓	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs ✓	WATER	TRITIUM, C14
	1; 125mL; aGs ✓	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs ✓	WATER	TOX (HNO3 to pH<2.0)
B09DG3	1; 1L; P ✓	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DG4	3; 40mL; Gs ✓✓✓	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2519010186 OPC #: W094-0-0001-24

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Title Date

Analysis Required 104

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/9

9213507.0540

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10-27-93

Ice Chest No. GWS004

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2974255913

Offsite Property No. ~~W93~~ LCS 10/28/93 W94-0-0001-26

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DC9

- ~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~, 250ml, P, WATER; ALKALINITY
- ~~1~~, 500ml, P, WATER; TDS
- ~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09DC9

- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DD0

- ~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
[signature] B.WHITTEN	10/27/93	1205	[signature] L.Sweeney	10/28/93	0800
[signature] L.Sweeney	10/28/93	1000	[signature] Kermit Blum K.Blum	10-29-93	1200

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: reling. to trig. # 1205 by [signature] 10/27/93

A-6000-407 (12/92) WEF061

9213907.0541

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/27/93 Time 1055 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DC8	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P;	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09DC9	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DD0	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 247425913 OPC #: 1N94-A-7001-26

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Title Date

Analysis Required

106

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05

9213507.0542

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10-28-93

Ice Chest No. GWS028

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010241

Offsite Property No. ~~W93~~- AJS 10/29/93 W94-0-0001-27

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09D70

- ~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~, 250ml, P, WATER; ALKALINITY
- ~~1~~, 500ml, P, WATER; TDS
- ~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09D71

- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09D72

- ~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0) B09DJ6, ~~3~~ 40mL; GS* water CLP-VOA (HCL to pH<2.

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

Relinquished By	Date	Time	Received By	Date	Time
Bill Whitten	10/28/93	1306	CA Simpson AT SIMPSON	10/29/93	~~0830~~ AJS 10/29/93
CA Simpson AT SIMPSON	10/29/93	0831	[illegible] / H. NARCISO	11-1-93	8:30

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: RELING to FRIG #3A BY Bill WHITTEN 1306

Rec'd SATURDAY 10-30-93 BUT opened 11-01-93

A-6000-407 (12/92) WEF061

9213507.0543

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/28/93 Time 1925 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D70	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P;	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D71	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D72	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 251901 0241 OPC #: 2W94-0-0001-27

NOTE: B09D56 3; 40mL; GS water CLP-VOA (HCL to pH <2.0)

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-01-93

Analysis Required

108

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/9

9213502.0544

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/28/93

Ice Chest No. 6WS005

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010241

Offsite Property No. ~~W93~~-AJS 10/21/93 W94-0-0001-27

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DH9

- ~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~, 250ml, P, WATER; ALKALINITY
- ~~1~~, 500ml, P, WATER; TDS
- ~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09DH9

- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DJ0

- ~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee K.D. Lee	10/28/93	1306	AJ Simpson AJ SIMPSON	10/29/93	0828
AJ Simpson AJ SIMPSON	10/29/93	0829	[illegible] / H. NARCISO	11-01-93	8:34

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

relinq. to frig. #3A by K.D. Lee 10/28/93 1306

Rec'd SATURDAY 10-30-93 BUT OPENED 11-01-93

A-6000-407 (12/92) WEF061

9213507.0545

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/28/93 Time 1120 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DH8	3; 40ml; Gs**;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P;	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09DH9	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DG0	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2519010241 OPC #: 1W94-0-0001-27

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [illegible] Title SAMPLE CONTROL TECHNICIAN Date 11-01-93

Analysis Required

110

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90

9213507.0546

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/30/93

Ice Chest No. 422

Field Logbook No. FFL-1054

Bill of Lading/Airbill No. 2519010252

Offsite Property No. ~~W93~~ W94-0-0001-30 LCS 11-1-93

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DC4

- ~~1~~ 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~ 2L & ~~1~~ 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~ 2L & ~~1~~ 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~ 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~ 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~ 250ml, P, WATER; ALKALINITY
- ~~1~~ 500ml, P, WATER; TDS
- ~~1~~ 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~ 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~ 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~ 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~ 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~ 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- T; 2L; ~~1~~ 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~ 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~ 250ml, Gs, WATER; TRITIUM/C-14

B09DC5

- ~~1~~ 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DC6

- ~~3~~ 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee K.D. Lee	10/30/93	1400	L Sweeney L Sweeney	11-1-93	0730
L Sweeney L Sweeney	11-1-93	1100	H. NARCISO	11-2-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq to frig. #2B:C by K.D. Lee 10/30/93 1400

A-6000-407 (12/92) WEF061

9213507.0547

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/30/93 Time 1106 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DC4	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; 1; 2L	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09DC5	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DC6	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2519010252 OPC #: W94-0-0001-30

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-02-93

Analysis Required

112

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90

9213507.0548

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/30/93

Ice Chest No. SML-232

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010252

Offsite Property No. ~~W93-~~ W94-02001-31

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DD2

- ~~3~~ 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~, 250ml, P, WATER; ALKALINITY
- ~~1~~, 500ml, P, WATER; TDS
- ~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- 1, 2L; ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09DD3

- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DD4

- ~~3~~ 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee	10/30/93	1400	L Sweeney	11-1-93	0730
L Sweeney	11-1-93	1100	H. Narciso	11-2-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: rel'ing. to frig. # 2B by K.D. Lee 10/30/93 1400

A-6000-407 (12/92) WEF061

9213507.0549

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/30/93 Time 1204 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D D2	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; 1; 2L	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D D3	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D D4	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2519010252 OPC #: W94-0-0001-31

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-02-93

Analysis Required

114

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/9

9213507.0550

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10-29-93

Ice Chest No. GWS005

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010252

Offsite Property No. ~~W93-~~ W94-0-0001-28

Method of Shipment EMERY

Shipped to TMA

LCS 11-1-93

Possible Sample Hazards/Remarks None

Sample Identification

B09DF4

~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
~~1~~, 250ml, P, WATER; ALKALINITY
~~1~~, 500ml, P, WATER; TDS
~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
1; ~~2L~~ & ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09DF5

~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DF6

~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
[signature]	10/29/93	1240	L Sweeney L Sweeney	11-1-93	0730
L Sweeney L Sweeney	11-1-93	1100	[signature] / H. Narciso	11-2-93	11:15 AM

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Relinq to Freig # 3C by [signature] 1240

A-6000-407 (12/92) WEF061

9213507.0551

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/29/93 Time 1013 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DF4	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; & 1; 2L P	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09DF5	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DF6	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 7519010252 OPC #: W94-0-0001-28

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-02-93

Analysis Required

116

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/9(

9213507.0552

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10-29-93

Ice Chest No. GWS013

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010252

Offsite Property No. ~~W93~~ W94-0-0001-30 LCS 11-1-93

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DF8

- ~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~, 250ml, P, WATER; ALKALINITY
- ~~1~~, 500ml, P, WATER; TDS
- ~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- T; 2L & ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09DF9

- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DG0

- ~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
[signature] B. WHITMEN	10/29/93	1240	L Sweeney L Sweeney	11-1-93	0730
L Sweeney L Sweeney	11-1-93	1100	[signature] / H. NARCISO	11-2-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Reling to Frig #3A Dr [signature] 1240

A-6000-407 (12/92) WEF061

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/29/93 Time 0920 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DF8	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; & 1; 2L P	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09DF9	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DG0	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2519010252 OPC #: 1194-0-0001-30

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-02-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90

9213507.0554

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10-27-93

Ice Chest No. ML-407

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010252

Offsite Property No. ~~W93-~~ W94-0-0001-31 LS 11-1-93

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09D66

- ~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~, 250ml, P, WATER; ALKALINITY
- ~~1~~, 500ml, P, WATER; TDS
- ~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- 1, 2L & ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09D67

- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09D68

- ~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
D. WHITTEN	10/29/93	1240	L Sweeney	11-1-93	0730
L Sweeney	11-1-93	1100	H. NARCISO	11-02-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Relinq to Frig #3A By 1240

A-6000-407 (12/92) WEF061

9213607.0555

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/25/93 Time 1107 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D66	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; & 1; 2L P	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D67	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D68	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2519010252 OPC #: 1094-0-0001-31

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-02-93

Analysis Required

120

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9213507.0556

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/30/93

Ice Chest No. SMC-350

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010252

Offsite Property No. ~~W93-~~ W94-0-0001-29

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09D86

- ~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~, 250ml, P, WATER; ALKALINITY
- ~~1~~, 500ml, P, WATER; TDS
- ~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- 1; 2L & ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09D87

- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09D88

- ~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
Kimberly D. Lee K.D. Lee	10/30/93	1400	L Sweeney L Sweeney	11-1-93	0730
L Sweeney L Sweeney	11-1-93		[illegible] / H. NARCISO	11-2-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: reling. to Brig. # 3A by K.D. Lee 10/30/93 1400

A-6000-407 (12/92) WEF061

9214507.0557

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/30/93 Time 0832 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D96	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; & 1; 2L; P	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D97	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D99	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2519010252 OPC #: 1094-0-0001-29

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-02-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90

9213502.0558

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/30/93

Ice Chest No. 357

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010252

Offsite Property No. ~~W93-~~ W94-0-0001-28

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

NCS 11-1-93

Sample Identification

B09D90

- ~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~, 250ml, P, WATER; ALKALINITY
- ~~1~~, 500ml, P, WATER; TDS
- ~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- 1,2C ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09D91

- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09D92

- ~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
Kirby D. Lee K.D. Lee	10/30/93	1400	L Sweeney L Sweeney	11-1-93	11-1-93
L Sweeney L Sweeney	11-1-93	1102	H. Narciso / H. NARCISO	11-2-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. @ 2C by K.D. Lee 10/30/93 1400

A-6000-407 (12/92) WEF061

9213507.0559

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/30/93 Time 0727 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D90	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; 1/2L	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D91	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D92	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2519010252 OPC #: W94-0-0001-28

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-02-93

Analysis Required

124

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90

9213507.0560

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/30/93

Ice Chest No. ~~GS~~ GWS023 LCS 11-1-93

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010252

Offsite Property No. ~~W93~~ W94-0-0001-22

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09D94

- ~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-SEMI VOA
- ~~1~~, 2L & ~~1~~, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- ~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- ~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- ~~1~~, 250ml, P, WATER; ALKALINITY
- ~~1~~, 500ml, P, WATER; TDS
- ~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- ~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- ~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
- ~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- ~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- 1,2L; ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- ~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- ~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09D95

- ~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09D96

- ~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee K.D. Lee	10/30/93	1400	L Sweeney L Sweeney	11-1-93	0730
L Sweeney L Sweeney	11/1/93	1100	[illegible] / H. Narciso	11-2-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. # 3B by K.D. Lee 10/30/93 1400

A-6000-407 (12/92) WEF061

9/15507.0561

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/30/93 Time 1016 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D94	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; C1, 2C	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D95	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D96	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2519010252 OPC #: W94-0-0001-29

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-02-93

Analysis Required

126

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9213607.0562

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/31/93

Ice Chest No. 125

Field Logbook No. EFC-1054

Bill of Lading/Airbill No. 2519010307

Offsite Property No. ~~W93-~~ AJS 11/2/93 W94-0-0001-34

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DB6

- 3, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
- 1, 2L & 1, 1L, aG; WATER; CLP-SEMI VOA
- 1, 2L & 1, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
- 1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
- 1, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
- 1, 250ml, P, WATER; ALKALINITY
- 1, 500ml, P, WATER; TDS
- 1, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
- 1, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
- 1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
- 1, 1L, P, WATER; Cn(NaOH to pH 12.0)
- 1, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
- 1, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
- 1, 2L; 1, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
- 1, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
- 1, 250ml, Gs, WATER; TRITIUM/C-14

B09DB7

- 1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DB8

- 3, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee KD Lee	10/31/93	1400	AJ Simpson AJ SIMPSON	11/2/93	0852
AJ Simpson AJ SIMPSON	11/2/93	0852	N M McElrath N M McELRATH	11-3-93	1440

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. # 2B by K.D. Lee 10/31/93 1400

A-6000-407 (12/92) WEF061

9415907.0563

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/31/93 Time 1017 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D B6	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; 1/2L	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D B7	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D B8	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 7519010307 OPC #: W94-0-0001-34

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Title Date

Analysis Required

128

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/9

9213507.0564

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/31/93

Ice Chest No. 698

Field Logbook No. FEFL-1054

Bill of Lading/Airbill No. 2519010307

Offsite Property No. ~~W93~~ AJS 11/2/93 WU4-0-0001-33

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DC0

✓✓✓ 3, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
✓✓ 1, 2L & 1, 1L, aG; WATER; CLP-SEMI VOA
✓✓ 1, 2L & 1, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
✓ 1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
✓ 1, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
✓ 1, 250ml, P, WATER; ALKALINITY
✓ 1, 500ml, P, WATER; TDS
✓ 1, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
✓ 1, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
✓ 1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
✓ 1, 1L, P, WATER; Cn(NaOH to pH 12.0)
✓ 1, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
✓ 1, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
✓ 1;2L; 1, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
✓ 1, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
✓ 1, 250ml, Gs, WATER; TRITIUM/C-14

B09DC1

✓ 1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DC2

✓✓✓ 3, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
Kathy D. Lee K.D. Lee	10/31/93	1400	AJ Simpson AJ SIMPSON	11/2/93	0900
AJ Simpson AJ SIMPSON	11/2/93	0900	Mark M. Hawk M. ELRATH	11-3-93	1444

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. # 2C by K.D. Lee 10/31/93 1400

A-6000-407 (12/92) WEF061

9214902 0565

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/31/93 Time 0757 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DC0	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; 1 L 2L	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09DC1	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DC2	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 25190 10307 OPC #: W94-0-0001-33

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Title Date

Analysis Required

130

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90

9215507.0596

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/31/93

Ice Chest No. ~~SML-91~~ AJS 11/2/93 #9

Field Logbook No. EFC-1054

Bill of Lading/Airbill No. 2591010307

Offsite Property No. ~~W93-~~ AJS 11/2/93 W94-0-009-33

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DF0

3, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
1, 2L & 1, 1L, aG; WATER; CLP-SEMI VOA
1, 2L & 1, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
1, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
1, 250ml, P, WATER; ALKALINITY
1, 500ml, P, WATER; TDS
1, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
1, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
1, 1L, P, WATER; Cn(NaOH to pH 12.0)
1, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
1, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
1; 2C 4 1, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
1, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
1, 250ml, Gs, WATER; TRITIUM/C-14

B09DF1

1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DF2

3, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
K.D. Lee	10/31/93	1400	AJ SIMPSON	11/2/93	0857
AJ SIMPSON	11/2/93	0857	N. McELRATH	11-3-93	1450

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relwg. to frig. # 3C by K.D. Lee 10/31/93 1400

A-6000-407 (12/92) WEF061

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/31/93 Time 0924 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D F0	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; 1; 2L	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D F1	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D F2	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 251904 0357 OPC #: W94-0-0001-33

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Title Date

Analysis Required

132

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

9213602.0569

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 10/31/93

Ice Chest No. RUSTY DUSTY

Field Logbook No. EFC-1054

Bill of Lading/Airbill No. 2514010307

Offsite Property No. ~~W93-~~ NJS 11/2/93 WC4-0-0001-34

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DG6

3, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
1, 2L & 1, 1L, aG; WATER; CLP-SEMI VOA
1, 2L & 1, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
1, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
1, 250ml, P, WATER; ALKALINITY
1, 500ml, P, WATER; TDS
1, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
1, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
1, 1L, P, WATER; Cn(NaOH to pH 12.0)
1, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
1, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
11/2 1, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
1, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
1, 250ml, Gs, WATER; TRITIUM/C-14

B09DG7

1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DG8

3, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
Rusty Dusty K.D. Lee	10/31/93	1400	AJ Simpson AJ SIMPSON	11/2/93	0850
AJ Simpson AJ SIMPSON	11/2/93	0850	Mary McCarthy M. McCARTHY	11-3-93	1447

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to Bldg. 2A by K.D. Lee 10/31/93 1400

A-6000-407 (12/92) WEF061

9413587.0569

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 10/31/93 Time 1017 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DG6	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; 3/2L	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09DG7	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DG9	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 251401030 7 OPC #: WA-0-0001-34

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Title Date

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90

Overnight Delivery

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W94-0-0001-24

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☒ Contractor ☐ Vendor

Shipped to TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 100 lbs.	Sample #: B09082, B09083, B09084 Cooler ID: 652 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 86 lbs.	Sample #: B09DG2, B09DG3, B09DG4 Cooler ID: ~~GW05A~~ GWSQ11 LCJ 10-27-93 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA

Bill of lading # 251901 0186

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
[signature]	156567	10-27-93

Location of Property (Area & Bldg.)	Contact	Phone
100-FR-3	PH Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
10-27-93	W81232/ PD5AA	NA

Originated By	Date	Authorized By	Date
P.H. Butcher	10/27/93	GJ Simpson	10/27/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		JP Hankel	10/27/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[signature]	135			
Date 10-27-93				

DISTRIBUTION

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

54-3000-479 (09/89)

Overnight Delivery

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W94-0-0001-34

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☐ Contractor ☐ Vendor

Shipped to TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 100 lbs.	Sample #: [illegible], [illegible], [illegible] Cooler ID: CS7 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 91 lbs.	Sample #: [illegible], [illegible], [illegible] Cooler ID: ~~[illegible]~~ GW5911 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA

Bill of lading # 251961196

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
[illegible]	156507	10-27-93

Location of Property (Area & Bldg.)	Contact	Phone
100-FR-2	FH Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
10-27-93	W81232/ PDSAA	NA

Originated By	Date	Authorized By	Date
F.H. Butcher	10-27-93	[illegible]	10/27/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	10/27/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible]	136			
Date 11-22-93				

DISTRIBUTION

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

54-3000-479 (09/89)

Overnight Delivery 9213507 0572

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		100d 0-0001-26

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☐ Contractor ☐ Vendor

Shipped to
TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 90 lbs.	Sample #: B01DC8 B01DC9 B01DD0 Cooler ID: G005C04 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: JJS 10/25/93 Cooler ID: Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA

Bill of lading # 2474259 13

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
[illegible]	152 575	1-11-13

Location of Property (Area & Bldg.)	Contact	Phone
100-FR-3	PH Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
10-28-93	W81232/ P05AA	NA

Originated By	Date	Authorized By	Date
P.H. Butcher	11/05/93	[illegible]	10/25/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	10/28/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible] 10-28-93	137			
Date				

DISTRIBUTION

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

54-3000-479 (09/89)

SAT DAY DELIVERY 9213607.0573

Signature Security Service

Contractor WHC	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)

PART I – TO BE COMPLETED BY ORIGINATOR

Department Env. Eng. & Tech.	Section Geosciences	Unit Geochem. & Hydrochem.

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

Routing Emery ☐ Contractor ☐ Vendor

Shipped to TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 91 lbs.	Sample #: [illegible] Cooler ID: [illegible] Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 59 lbs.	Sample #: [illegible] Cooler ID: [illegible] Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the [illegible].

Bill of lading # 251901-241

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. [illegible]	Date [illegible]
Location of Property (Area & Bldg.) [illegible]	Contact PH Butcher	Phone (509) 376-5045
Date Ready for Shipment [illegible]	Cost Code to be Charged W81232 [illegible]	Approximate Date This Property will be Returned NA
Originated By [illegible]	Date [illegible]	Authorized By [illegible] Date [illegible]
Signature and Name of Property Control	Custodian Date	Property Management Approval P Hankel Date 11/24/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient [illegible] 10/4/93	Return Order No. 138	Date Issued	Purchase Order No.	Date Issued
Date				

DISTRIBUTION

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

54-3000-479 (09/89)

Overnight Delivery

Signature Security Service

Contractor WHC 390	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT) 39

PART I – TO BE COMPLETED BY ORIGINATOR

Department Env. Eng. & Tech.	Section Geosciences	Unit Geochem. & Hydrochem.

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

Routing Emery ☐ Contractor ☐ Vendor

Shipped to TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 97 lbs.	Sample #: B09086, B09087, B09088 Cooler ID: Smc 350 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 88 lbs.	Sample #: B09094, B09095, B09096. Cooler ID: GWS023 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA

Bill of lading # 251901 0252

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
[illegible]	[illegible]	11-1-93

Location of Property (Area & Bldg.)	Contact	Phone
100-FR-3	PH Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
11-1-93	W81232/PDSAA	NA

Originated By	Date	Authorized By	Date
P.H. Butcher	11-1-93	[illegible] Simpson	11/1/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		JP Hankel	11/1/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible]	139			
Date 11-1-93				

DISTRIBUTION

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

54-3000-479 (09/89)

Overnight Delivery 2213507 0575

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC 008		1094-0-1004-28

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geoscience	Geochem & Hydrochem

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

Routing Emery ☐ Contractor ☐ Vendor

Shipped to
TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 106 lbs.	Sample #: ~~B0915F4~~ ~~B0915F5~~, ~~B0915F6~~, B0915G, B09091, B09092 Cooler ID: 357 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 92 lbs.	Sample #: B090F4, B090F5, B090F6 Cooler ID: GWS008 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA

Bill of lading # 2519010252

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
[signature]	150472	11-1-93

Location of Property (Area & Bldg.)	Contact	Phone
100-FR 3	PH Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
11-1-93	W81232/ PDSAA	N/A

Originated By	Date	Authorized By	Date
PH Butcher	11-1-93	[signature]	11/1/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[signature]	11/1/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[signature]	140			
Date 11-1-93				

DISTRIBUTION

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

54-3000-479 (09/89)

Overnight Delivery

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC 013		

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☒ Contractor ☐ Vendor

Shipped to TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 102 lbs.	Sample #: 1609DC4, 1609DC5, 1609DC6 Cooler ID: 422 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 92 lbs.	Sample #: 1609DF8, 1609DF9, 1609DG0 Cooler ID: GWS013 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA

Bill of lading # 251901025 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
	[illegible]	[illegible]-93

Location of Property (Area & Bldg.)	Contact	Phone
100-FR-3	PH Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
11-1-93	W81232/ DDSAA	N/A

Originated By	Date	Authorized By	Date
PH Butcher	11-1-93	[illegible]	11/1/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	11/1/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible]	141			
Date 11-1-93				

DISTRIBUTION

By Originator
White, Green, Yellow, Pink – Property Management
Goldenrod – Retain

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

54-3000-479 (09/89)

Overnight Delivery 9715503.0577

Signature Security Service

Contractor WHC SMC 407	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)

PART I – TO BE COMPLETED BY ORIGINATOR

Department Env. Eng. & Tech.	Section Geosciences	Unit Geochem. & Hydrochem.

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

Routing Emery ☐ Contractor ☐ Vendor

Shipped to TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 94 lbs.	Sample #: ~~B0 4D2~~, B09D02, B09D03, B09D04 Cooler ID: SMC 232 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 94 lbs.	Sample #: B09D66, B09D67, B09D68 Cooler ID: SMC 407 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 AREA

Bill of lading # 2519016252

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

Location of Property (Area & Bldg.)	Contact	Phone
100-FR 3	PH Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
11-1-93	W81232/ PD5AQ	NA

Originated By	Date	Authorized By	Date
PH Butcher	11-1-93		11/1/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
			11/1/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
Cgamilter Date 11-1-93	142			

DISTRIBUTION

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

54-3000-479 (09/89)

Overnight Delivery 9/15ORD578

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		WN4 - 0 - 0001 - 34

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☐ Contractor ☐ Vendor

Shipped to TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: B0 [illegible] B09DG7 B09DG8 Cooler ID: RUSTY DUSTY Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: B09DF6 B09DE7 B09DD8 Cooler ID: 125 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 GINGS.

Bill of lading # 251901 0307

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
[illegible]	156609	[illegible]/93

Location of Property (Area & Bldg.)	Contact	Phone
100 FR - 3	PH Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
11/2/93	W81232/ DD 3AA	NA

Originated By	Date	Authorized By	Date
P.H. Butcher	11/2/93	G. Sampson	11/2/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		AP Hankel	11/2/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
Camilley	143			
Date 11-29-93				

DISTRIBUTION

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

54-3000-479 (09/89)

9/15907.0579

EMERY WORLDWIDE — A CF Company

FORM OF PAYMENT: [ ] GBL [ ] FCCOD [ ] Bill to Consignee [ ] Third Party Billing

Shipper's Account Number: 350281585

SERVICES **: UNITED STATES / CANADA: [ ] Same Day (Extra Charges) [X] AM [ ] Second Day [ ] PM [ ] Saturday Delivery

INTERNATIONAL: [ ] Express [ ] Standard Plus [ ] Preferred [ ] Standard [ ] Business Documents [ ] Customs Clearance [ ] Delivery

Date: 11-02-93 | Origin: PSC | Shipment Number: 251901030 7

Tariff Dest. | Gateway

From:
INGHOUSE SHIPPING DEPT (509) 376-6665
DEPARTMENT OF ENERGY C/O
TINGHOUSE HANFORD
BLDG 1163
5 STEVENS DRIVE
HLAND WA [ ] Canada

To:
TMA/NORCAL
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA USA [ ] Canada [ ] Hold for Pick Up

Check to Shipper $

EMERY WORLDWIDE will accept Consignee's check with all risks being assumed by Shipper, including but not limited to non-payment, fraud and misrepresentation.

Customer's Reference Numbers: 232 PD3AA W94-0001 #33 & #34 | Zip: 99352 | E | Consignee's Account Number | Zip: 94804

FOR INFORMATION OR RATES CALL 1-800 44 EMERY (1-800-443-6379)

Declared Value $

Description	Pcs.	L	W	H	Total Pieces	Total Weight (In Lbs.)
OTCHER OLERS ID: 9 92#; 104#; RUSTY DUSTY 90# 104# WATER SAMPLES	4	21	14	17	4	390

251901030 7

Remarks: RNIGHT DELIVERY NATURE SECURITY SERVICE

Expiled 11 2 93

Zip Ship [ ]: For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used: Urgent Letter 9X12 [X] | Urgent Pack 12X15 [X]

International Shipments: [ ] Free Domicile | Commodity Code

Third Party Account Number mandatory for Third Party Billing. | Third Party Account Number: E

International Customs Value | International Insurance

Charge

Total Transportation Charges | Other Charges/Advance at Origin [ ] OC/AO- $

1-OAK-A

Terms and Conditions on Back

9215507.0580

FORM OF PAYMENT

☐ GBL ☐ FCCOD ☐

☒ Bill to Consignee ☐ Third Party Billing ☐

Shipper's Account Number
150281585

EMERY WORLDWIDE

A CF Company

SERVICES **

UNITED STATES / CANADA: ☐ Same Day (Extra Charges) ☐ ☒ AM ☐ PM ☐ Second Day ☐ Saturday Delivery

INTERNATIONAL: Express ☐ Standard Plus ☐ Preferred ☐ Standard ☐ Business Documents ☐ Customs Clearance ☐ Delivery ☐

Date	Origin	Shipment Number
11-01-93	PSC	251901025 2

INGHOUSE SHIPPING DEPT (509) 376-6665	To: TMA/NORCAL	Tariff Dest. / Gateway
DEPARTMENT OF ENERGY C/O	TMA/NORCAL	Check to Shipper $
TINGHOUSE HANFORD		
BLDG 1163	2030 WRIGHT AVENUE	Hold for Pick Up ☐
5 STEVENS DRIVE		
HLAND WA Canada ☐	RICHMOND CA USA Canada ☐	

EMERY WORLDWIDE will accept Consignee's check with all risks being assumed by Shipper, including but not limited to non-payment, fraud and misrepresentation.

Customer's Reference Numbers: PDSAA W94-0001 #28,#29 A9352

Consignee's Account Number: E 94804

Description	Pcs.	L	W	H	Total Pieces	Total Weight (In Lbs.)
ITCHER X30, #31 OLERS ## 106#, 92#, 88#, 102#, 92#, 94# WATER SAMPLES	8	24	16	17	8	765

FOR INFORMATION OR RATES CALL 1-800 44 EMERY (1-800-443-6379)

Declared Value $

2 5 1 9 0 1 0 2 5 2

Remarks: NIGHT DELIVERY ATURE SECURITY SERVICE

Zip Ship ☐ — For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used: Urgent Letter 9X12 ☐ Urgent Pack 12X15 ☐

International Shipments: ☐ ree nicile

Commodity Code

Third Party Account Number mandatory for Third Party Billing. Third Party Account Number: E

International Customs Value

International Insurance

harge

Total Transportation Charges

Other Charges/Advance at Origin ☐ OC/AO- $

1-OAK-A

Terms and Conditions on Back

9715507.0581

FORM OF PAYMENT -

ck ☐ GBL ☐ FCCOD ☐

to ☐ Bill to Consignee ☐ Third Party Billing ☐

Shipper's Account Number
450281585

EMERY WORLDWIDE
A CF Company

SERVICES **

UNITED STATES / CANADA: Same Day (Extra Charges) ☐ AM ☐ PM ☐ Second Day ☐ Saturday Delivery ☐

INTERNATIONAL: Express ☐ Standard Plus ☐ Preferred ☐ Standard ☐ Business Documents ☐ Customs Clearance ☐ Delivery ☐

Date	Origin	Shipment Number
10-29-93	PSC	251901024 1

TINGHOUSE SHIPPING DEPT (509) 376-6665
. DEPARTMENT OF ENERGY C/O
STINGHOUSE HANFORD
BLDG 1163
55 STEVENS DRIVE
CHLAND WA

Canada ☐

To:
TMA/NORCAL
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA USA

Canada ☐

Hold for Pick Up ☐

Tariff Dest. Gateway

Check to Shipper $

EMERY WORLDWIDE will accept Consignee's check with all risks being assumed by Shipper, including but not limited to non-payment, fraud and misrepresentation.

Customer's Reference Numbers
1232 PD5AA W94-0-0001#27 99352

E Consignee's Account Number 94804

Description	Pcs.	L	W	H	Total Pieces	Total Weight (In Lbs.)
COOLERS ID: GWS005 91# S028 89# IER SAMPLES	2	24	16	11	2	180

FOR INFORMATION OR RATES CALL 1-800 44 EMERY (1-800-443-6379)

Declared Value $

251901024 1

Remarks
TURDAY DELIVERY
GNATURE SECURITY SERVICE
10-29-9

Zip Ship ☐
For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used
Urgent Letter 9X12 ☒ Urgent Pack 12X15 ☒

International Shipments
Free Domicile ☐
Commodity Code

Third Party Account Number mandatory for Third Party Billing.
E Third Party Account Number

International Customs Value
International Insurance

Charge

Total Transportation Charges

Other Charges/Advance at Origin ☐ OC/AO- $

1-OAK SA

Terms and Conditions on Back

SH GBL CBL FGCOD COL OTH COMAT

EMERY WORLDWIDE — A CF Company

UNITED STATES / CANADA: Same Day, 10AM, Second Day, PM, Saturday Delivery

INTERNATIONAL: Express, Business Documents, Preferred, Customs Clearance, Standard, Delivery

Shipper's Account Number: 850281585

Date: 10-28-93 | Origin: PSC | Shipment Number: 247425291 3

From: STINGHOUSE SHIPPING DEPT (509) 376-6665
S. DEPARTMENT OF ENERGY C/O
ESTINGHOUSE HANFORD
BLDG 1163
355 STEVENS DRIVE
ICHLAND WA

To: TMA/NORCAL
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA USA

Tariff Dest. | Gateway | Check to Shipper $ | Hold for Pick Up | Canada

EMERY WORLDWIDE will collect consignee check made payable only to the shipper for the value of the goods in the amount shown above.

Customer's Reference Numbers: 81232 PD5AA W94-0-0001#26 | 99352 | E | Consignee's Account Number: 94804

Description	Pcs.	L	W	H	Total Pieces	Total Weight (In Lbs.)
BUTCHER . COOLER ID: GWS 004 ER SAMPLES	1	1	16	17	1 #90	90

FOR INFORMATION OR RATES CALL 1-800 HI EMERY (1-800-443-6379)

Declared Value $

DDSR Haz Mat Edit A B C D E F G H I J K

1 2 3 4 5 6 / 7 8 9 0 1 2

ERNIGHT DELIVERY
GNATURE SECURITY SERVICE

Envelope 9X12 | Pack 12X15

er's ature 10-28-93

International Shipments: Free Domicile | Commodity Code | Third party Account Number mandatory for Third party billing. | E | Third Party Account Number

International Customs Value | International Insurance

e Charge | Total Transportation Charges | Other Charges/Advance at Origin OC/AO $

WORLDWIDE CF Company

SIGNATURE AND TALLY RECORD

60U29-46 (6/89) Litho USA

DATE: 10-28-93 SHIPMENT NO.: 247425291 3
SHIPPER: WESTINGHOUSE SHIPPING DEPT (509) 376-6665
REFERENCE NO.: W94-0-0001#26

SHIPPER NAME AND ADDRESS
WESTINGHOUSE SHIPPING DEPT (509) 376-6665
U.S. DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD COMPANY
2355 STEVENS DRIVE 1163 BUILDING
PO BOX 1970
RICHLAND WA 99352

CONSIGNEE NAME AND ADDRESS
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA 94804

Pieces	Weight	Description/Marks	Emery Authorization No.
1	90 LBS	COOLER ID: GWS 004 WATER SAMPLES	

EACH PERSON HANDLING OR TAKING CUSTODY OF THIS SHIPMENT MUST SIGN AND COMPLETE THE INFORMATION BELOW

Name of Person/Company	Transship Point/Destination	Signature of Person Accepting Custody	Time/Date
1. DENNIS FINLEY SHIPPING DEPT WESTINGHOUSE HANFORD CO	RICHLAND WA		
2.			
3.			
4.			
5. [illegible]	[illegible]	[illegible]	[illegible]
6. JR. CORSO TMA/NORCAL	RICH	[illegible]	10-29 12:0[illegible]
7.			
8.	147		

SPECIAL HANDLING INSTRUCTIONS

CONSIGNEE COPY

FORM OF PAYMENT

[ ] GBL [ ] FCCOD [ ]

[X] Bill to Consignee [ ] Third Party Billing [ ]

Shipper's Account Number: 850281585

92 3907 0585 79

EMERY WORLDWIDE — A CF Company

SERVICES

UNITED STATES / CANADA: [ ] Same Day (Extra Charges) [ ] [X] AM [ ] PM [ ] Second Day [ ] Saturday Delivery

INTERNATIONAL: Express [ ] Standard Plus [ ] Preferred [ ] Standard [ ] Business Documents [ ] Customs Clearance [ ] Delivery [ ]

Date	Origin	Shipment Number
10-27-93	PSC	251901018 6

From:
TINGHOUSE SHIPPING DEPT (509) 376-6665
. DEPARTMENT OF ENERGY C/O
STINGHOUSE HANFORD
BLDG 1163
5 STEVENS DRIVE
CHLAND WA
Canada [ ]

To:
TMA/NORCAL
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA USA
Canada [ ]
Hold for Pick Up [ ]

Tariff Dest. | Gateway

Check to Shipper $

EMERY WORLDWIDE will accept Consignee's check with all risks being assumed by Shipper, including but not limited to non-payment, fraud and misrepresentation.

Customer's Reference Numbers: 232 PD5AA W94-0-0001#24 | 99352

E Consignee's Account Number: 94804

Description	Pcs.	L	W	H	Total Pieces	Total Weight (In Lbs.)
BUTCHER OOLERS ID: 682 100# 011 # 86# ER SAMPLES	2	9	16	17	2	186

FOR INFORMATION OR RATES CALL 1-800 44 EMERY (1-800-443-6379)

Declared Value $

251901018 6

Remarks: RNIGHT DELIVERY NATURE SECURITY SERVICE

Zip Ship [ ] — For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used: Urgent Letter 9X12 [ ] Urgent Pack 12X15 [ ]

International Shipments: Free Domicile [ ] Commodity Code

Third Party Account Number mandatory for Third Party Billing. E Third Party Account Number

International Customs Value | International Insurance

Charge

Total Transportation Charges | Other Charges/Advance at Origin [ ] OC/AO- $

1-OAK-A

Terms and Conditions on Back

WORLDWIDE Company

SIGNATURE AND TALLY RECORD

60029-46 (8/89) Litho USA

DATE: 89 10
SHIPPER: WESTINGHOUSE SHIPPING DEPT (509) 376-6665
REFERENCE NO.: W94-0-0001 #24

SHIPPER NAME AND ADDRESS
WESTINGHOUSE SHIPPING DEPT (509) 376-6665
U.S. DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD COMPANY
2355 STEVENS DRIVE 1163 BUILDING
PO BOX 1970
RICHLAND WA 99352

CONSIGNEE NAME AND ADDRESS
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA 94804

Pieces	Weight	Description/Marks	Emery Authorization No.
2	186 LBS	COOLER ID: 682 100#. GWS011 86# WATER SAMPLES	

EACH PERSON HANDLING OR TAKING CUSTODY OF THIS SHIPMENT MUST SIGN AND COMPLETE THE INFORMATION BELOW

	Name of Person/Company	Transship Point/Destination	Signature of Person Accepting Custody	Time/Date
1.	CG MILLER SHIPPING DEPT WESTINGHOUSE HANFORD CO	RICHLAND WA		
2.				
3.				
4.				
5.	[illegible]	OAK	[illegible]	[illegible]
6.	Kermit Blum TMA/Norcal	Richmond CA	Kermit Blum	1145 10-28-93
7.				
8.		148		

SPECIAL HANDLING INSTRUCTIONS

CONSIGNEE COPY

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 11-041

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : November 9, 1993

1.0 DESCRIPTION OF CASE :

Five water samples were analyzed for TCL Organics- Volatiles, Semivolatiles, and Pesticides/PCBs according to the USEPA Contract Laboratory Program (CLP) Statement of Work for Organic Analysis, Revision OLM01.8.

2.0 SAMPLE LIST :

WESTINGHOUSE ID	LAB ID	ANALYSIS REQUESTED	MATRIX	pH
B09D78	A3-11-041-01A	V	WATER	0
B09D78	A3-11-041-01B	SV	WATER	
B09D78 MS	A3-11-041-01C	SV	WATER	
B09D78 MSD	A3-11-041-01D	SV	WATER	
B09D78	A3-11-041-01E	P	WATER	
B09D80 MS	A3-11-041-01F	P	WATER	
B09D80 MSD	A3-11-041-01G	P	WATER	
B09D80	A3-11-041-02A	V	WATER	0
B09D98 MS	A3-11-041-02B	V	WATER	0
B09D98 MSD	A3-11-041-02C	V	WATER	0
B09D98	A3-11-041-03A	V	WATER	0
B09D98	A3-11-041-04A	V	WATER	0
B09D98	A3-11-041-04B	SV	WATER	
B09DB0	A3-11-041-04C	P	WATER	
B09DJ7	A3-11-041-05A	V	WATER	0

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

All of the samples were received unbroken and properly documented.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were analyzed within the CLP SOW holding times.

In sample B09D98 low levels of Chloroform and Trichloroethane were detected.

All of the QC results were within the limits specified by the EPA CLP SOW.

TUNES :

All BFB tunes are injected directly into the GC/MS instrument.

3.2.2 SEMIVOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times.

Samples B09D78MS and B09DB6MSD both had 4-Nitrophenol matrix spike recoveries slightly above the QC limits. In accordance with the protocol, no further action was required.

All of the other QC results were within the limits specified by the EPA CLP SOW.

3.2.3 PESTICIDE/PCB ANALYSIS COMMENTS :

SEQUENCE NOTES :

The sequence was started on 11/25/93 and was analyzed according to the USEPA CLP SOW. The sequence was analyzed by single injection into a dual column system.

On the DB-608 column, the %RSD for all of the analytes were within the QC limits. However, on the DB-1701 column the %RSD for alpha-BHC and gamma-BHC exceeded 20% but were less than the 30% limit.

All of the QC criteria were within the limits specified by the EPA CLP SOW for this case.

The chromatograms are presented in the manner consistent with the capabilities of the Nelson 2700 Turbochrome Data System which normalizes the largest peak to scale.

SAMPLE NOTES :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times. No TCL analytes were detected in the samples.

All of the QC results were within the limits specified by CLP SOW.

We 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 in this hardcopy data package and in the computer-readable data submitted on diskette is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Nicole Roth

Nicole Roth 12/23/93
CLP Program Manager

Maureen Parrish

Maureen Parrish 12/23/93
Project Manager

9213507.0587

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B09D78

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11041 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311041-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31112M07

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/12/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

9713507.0588

1E

EPA SAMPLE NO.

B09D78

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11041 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311041-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31112M07

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/12/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9/13507.0599 1A

EPA SAMPLE NO.

B09D80

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11041 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311041-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31112M06

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/12/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

EPA SAMPLE NO.

B09D80

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11041 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311041-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31112M06

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/12/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

EPA SAMPLE NO.

B09D98

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11041 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311041-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31112M18

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/12/93

GC Column: CAP 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
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	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	7	J
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	1	J
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	Xylene (total)	10	U

9213507.0592

EPA SAMPLE NO.

B09D98

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11041 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311041-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31112M18

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/12/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9213507.0593

000115

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B09DB0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11041 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311041-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31112M11

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/12/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

EPA SAMPLE NO.

B09DB0

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11041 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311041-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31112M11

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/12/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

EPA SAMPLE NO.

B09DJ7

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11041 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311041-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31112M12

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/12/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

EPA SAMPLE NO.

B09DJ7

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11041 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311041-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31112M12

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: not dec. ____ Date Analyzed: 11/12/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9213507.0597

EPA SAMPLE NO.

B09D78

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11041 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311041-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I14

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/11/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

EPA SAMPLE NO.

B09D78

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11041 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311041-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I14

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/11/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

9213507.0599

EPA SAMPLE NO.

B09D78

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11041 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311041-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I14

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/11/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ALCOHOL	5.28	7	J

9715507.0600

1B

EPA SAMPLE NO.

B09D98

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11041 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311041-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I17

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/11/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B09D98

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11041 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311041-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I17

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/11/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

9213507.0692

EPA SAMPLE NO.

B09D98

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11041 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311041-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31116I17

Level: (low/med) LOW Date Received: 11/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/11/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/16/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

EPA SAMPLE NO.

B09D78

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11041 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311041-01E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/09/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/11/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/28/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

EPA SAMPLE NO.

B09D98

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11041 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311041-03C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/09/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/11/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/28/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

9713507.0605

TMA

RECORD COPY

JAN 1994
RECEIVED
SDLA

WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

ORGANICS & GENERAL CHEMISTRY
Case No. 11-041
(TMA/ARLI W.O. No. A3-11-041)

METALS & NITRATE/NITRITE
Case No. N3-11-056
(TMA/Skinner & Sherman W.O. Nos. S3-11-109,
S3-11-111 & S3-11-112)

TOTAL ORGANIC CARBON/TOTAL ORGANIC HALOGEN
Case No. N3-11-056
(TMA/ERG W.O. No. E3-11-167)

January 4, 1994

TMA Master Work Order N3-11-056

2-7-96
MC

9713507.0606

000002

PAGE 1 TMA/Norcal CHAIN OF CUSTODY ORD # N3-11-056

RCVD: 11/09/93 DUE: 12/14/93 11/09/93 15:57:17 KEEP: 12/14/94 DISP: S

DASH	SAMPLE IDENTIFICATION	STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY						
01A-W	B09D78	ARLI	WH018	WH019	WH020	WH043	WH114	WH121	WH122
			WH128	WH131	WH132	WH140			
01D-W	B09D78 MS	ARLI	WH018	WH019	WH020	WH043	WH114	WH140	
01E-W	B09D78 MSD	ARLI	WH018	WH019	WH020				
01F-W	B09D78 DUP	ARLI	WH043	WH114	WH121	WH122	WH128	WH131	WH132
			WH140						
02A-W	B09D98	ARLI	WH018	WH019	WH020	WH043	WH114	WH121	WH122
			WH128	WH131	WH132	WH140			
05A-W	B09D80	ARLI	WH018						
06A-W	B09D80	ARLI	WH018						
07A W	B09DJ7	ARLI	WH018						

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
[illegible]	11-9-93	ARLI	11-9-93	C. Harris	11/10/93

9713507.0607

000002A

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 11/6/93

Ice Chest No. ~~SAL-68~~ EMS LCS ~~#~~11-8-93

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519016362

Offsite Property No. ~~W93~~ AJS 11/8/93 W94-0-0001-37

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09D78

~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
KDL ~~1, 2L & 1, 4L~~, aG; WATER; CLP-SEMI VOA
11/6/93 ~~1, 2L & 1, 4L~~, aG; WATER; CLP-PCB's/PEST(pH 5-9)
~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
~~1~~, 250ml, P, WATER; ALKALINITY
~~1~~, 500ml, P, WATER; TDS
~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
1, 2L * ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09D79

~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09D80

~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
Turnby Other K.D. Lee	11/6/93	1500	AJ Simpson AJ SIMPSON	11/8/93	0940
AJ Simpson AJ SIMPSON	11/8/93	0940	[illegible] / H. NARUSE	11-9-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. # 28 by K.D. Lee 11/6/93 1500

* Received 4L x 1 & 2L x 1 for gross alpha/beta, gamma @ TMA/NORCAL.

A-6000-407 (12/92) WEF061

9213507.0608

0000028

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 11/6/93 Time 1204 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D78	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	~~1; 2L &~~ 1; 4L; aG;	WATER	CLP-SEMI VOA
100 11/6/93	~~1; 2L &~~ 1;4L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P;	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D79	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D80	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 251901036-2 OPC #:W94-0-0001-37

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-09-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

9713507.0609 DDDDD2C

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 11/6/93

Ice Chest No. JERRY

Field Logbook No. EFC-1054

Bill of Lading/Airbill No. 251901036Z

Offsite Property No. ~~W93-~~ AJS 11/8/93 W94-0-0001-37

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09D98

~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
~~1, 2L~~ & ~~1, 4L~~, aG; WATER; CLP-SEMI VOA
1 gal 11/6/93 ~~1, 2L~~ & ~~1, 4L~~, aG; WATER; CLP-PCB's/PEST(pH 5-9)
~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
~~1~~, 250ml, P, WATER; ALKALINITY
~~1~~, 500ml, P, WATER; TDS
~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
1, 2L ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09D99

~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09D80

~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

B09D97 3, 40ml; GS; WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
Kirby D. Lee K.D. Lee	11/6/93	1500	AJ Simpson AJ SIMPSON	11/8/93	0939
AJ Simpson AJ SIMPSON	11/8/93	0939	[illegible] / H. NARCISO	11-09-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. #2C by K.D. Lee 11/6/93 1500

NOTE: B09D98 X 2 LITER GROSS ALPHA/BETA & 4 liter gross alpha/beta etc. received @ TMA/NORCAL. KB

A-6000-407 (12/92) WEF061

9213507.0610 ODDDD2D

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 11/6/93 Time 0803 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D99	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P;	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D99	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D80	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 25190|0362 OPC #: WG14-0-0001-37

METHOD BLANK B09D07 3: 40ml; Gs, WATER; CLP-VOA (HCL to pH<2.0)

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-09-93

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/90)

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARLI

PAGE : 1 OF 1

RECEIVED BY (PRINT NAME): PAYAM SHADY

LOG-IN-DATE : 11/10/93

RECEIVED BY (SIGNATURE): Payam Shady

ICE CHEST NO. HAPPY-2

REMARKS: (BROKEN CAP)

1. Custody Seal(s) — Present / Absent* — Intact / Broken
2. Custody Seal Nos: _____
3. Chain of Custody Records — Present / Absent*
4. Traffic Reports or Packing List — Present / Absent*
5. Airbill — Airbill Present / Sticker Present / Absent*
6. Airbill No.: 7289155285
7. Sample Tags — Present / Absent*
8. Sample Tag Numbers — Listed on Chain of Custody / Not Listed
9. Sample Condition: Intact / Broken* / Leaking
10. Does information on custody records, traffic reports, and sample tags agree? — Yes / No*
11. Date Recieved at Lab: 11/10/93
12. Temp of Ice chest 3 °C
13. Time Recieved: 10:00

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT,ETC
	B09D80	A311041	
	B09DB0	A311041	
	B09D98	A311041	
	B09DJ7	A311041	
	B09F12	A311040	
	B09F19	A311040	
	B09D78	A311041	

SAMPLE TRANSFER

Fraction: _____ _____

Area #: _____ _____

By: _____ _____

On: _____ _____

* Contact SMO and attach record of resolution

Reviewed By: _____ Logbook No.: _____

Date: _____ Logbook Page No.: _____

FORM QC-1

9713507.0612

000004

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 7289155285

30994 7289155285

RECIPIENT'S COPY

1 Date 11-09-93

From (Your Name) Please Print: SAMPLE CONTROL

Your Phone Number (Very Important): 810-835-2633

Company: T M A / NO-CAL

Department/Floor No.:

Street Address: 2070 WRIGHT AVE

City: RICHMOND State: CA ZIP Required: 94804

2 To (Recipient's Name) Please Print: CAROLE HARRIS

Recipient's Phone Number (Very Important): (818) 357-3247

Company: TMA/ARLI

Department/Floor No.:

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 160 TAYLOR STREET

City: MONROVIA, State: CA. ZIP Required: 91016

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): 2340-6406

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address:
City: State: ZIP Required:

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card 5 [ ] Cash/Check

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning)
11 [X] OTHER PACKAGING
16 [ ] FEDEX LETTER*
12 [ ] FEDEX PAK*
13 [ ] FEDEX BOX
14 [ ] FEDEX TUBE

Standard Overnight (Delivery by next business afternoon, by Saturday delivery†)
51 [ ] OTHER PACKAGING
56 [ ] FEDEX LETTER*
52 [ ] FEDEX PAK*
53 [ ] FEDEX BOX
54 [ ] FEDEX TUBE

Economy Two-Day (Delivery by second business day †)
30 [ ] ECONOMY*
* Economy Letter rate not available. Minimum charge: One pound economy rate.

Government Overnight (Available for authorized users only)
46 [ ] GOVT LETTER
41 [ ] GOVT PACKAGE

Freight Service (for packages over 150 lbs.)
70 [ ] OVERNIGHT FREIGHT** (Additional reservation required)
80 [ ] TWO-DAY FREIGHT**
†Delivery commitment may be later in some areas.
*Declared Value Limit $500.
**Call for delivery schedule.

5 DELIVERY AND SPECIAL HANDLING (Check services required)

1 [ ] HOLD FOR PICK-UP (Fill in Box H)
2 [X] DELIVER WEEKDAY
3 DELIVER SATURDAY (Extra charge) [ ] (Not available to all locations)
4 [ ] DANGEROUS GOODS (Extra charge)
5 [ ]
6 [ ] DRY ICE Dangerous Goods Shipper's Declaration not required
Dry Ice, 9, UN 1845 ____ x ____ kg. 904 III
7 [ ] OTHER SPECIAL SERVICE
8 [ ]
9 [ ] SATURDAY PICK-UP (Extra charge)
[ ]
12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See right)
Total 4	Total 302	Total

DIM SHIPMENT (Chargeable Weight) [ ] ____ lbs.
L x W x H

Received At
1 [X] Regular Stop 3 [ ] Drop Box
2 [ ] On-Call Stop 4 [ ] B.S.C. 5 [ ] Station

Emp. No. Date

[ ] Cash Received
[ ] Return Shipment
[ ] Third Party [ ] Chg. To Del. [ ] Chg. To Hold

Street Address

City State Zip

Received By: X

Date/Time Received FedEx Employee Number

7 Release Signature:

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

REVISION DATE 11/92
PART #137204 FXEM 3/93
FORMAT #155

155

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9213507.0613

000005

PACE/ARLI
Thermo Analytical Inc.

RADIATION DOSE RATE SURVEY FORM

Date 11/10/93 COMPANY TMA/NORCAL OTHER ORD # 7289155285

Surveyor's Name MARK S. McCray

Model No. HP-210 / ESP-1 Model No. AC-2-7 / ESP-1

Serial No. 110289 / 02619 Serial No. 407726 / 02678

Calibration Date 4/26/93 Calibration Date 9/16/93

Instrument Calibration Factor 0.280 Instrument Calibration Factor 0.192

Sample	Location	HP-210 CPM	HP-210 Factor	HP-210 DPM	AC-2-7 CPM	AC-2-7 Factor	AC-2-7 DPM	Smear Wipe	Activity dpm/100 cm²
Background		29.0			1.0				
Consistency		7,450	0.2876		5,030	0.1849			
Smear SML 353		31.0			3.0			None	
Jerry		52.0			5.0			None	
HAPPY-2		38.0			4.0			None	
SML 435		38.0			1.0			None	
Reported WHC (34) samples each <50pCi/gram									

Comments

All OK ✓ Approved MSM

Not OK Date 11/10/93

GENERAL CHEMISTRY RESULTS

CASE NO. 11-041

Water Sample #:

B09D78 B09D98

CASE NARRATIVE

Sample B09D78 (A3-11-041-01G) yielded a 72% Recovery for the Phosphate analysis. A secondary spike was prepared without the eluent. The recovery was within the control criteria. The low recovery compared to our laboratory control sample and secondary spike indicates the presence of a matrix interference caused from changing the pH of the sample.

The data from the Calibration Verification and the samples, run on November 20, 1993, was reprocessed on December 23, 1993. The calculated data was originally from a five point calibration forces through the zero point. The data has been reprocessed without forcing the calibration through the zero point.

No other problems were encountered during sample analysis. All QC results were acceptable.

Maureen Parrish 12-23-93

Maureen Parrish

9213607.0615 000007 ~~UUUUU~~ 12/23/93

TMA Inc. REPORT Work Order # A3-11-041

Received: 11/09/93 12/23/93 14:22:47

REPORT TO: Westinghouse Hanford Company, 345 Hills, Richland, WA 99352

ATTEN: Jeanette Duncan

PREPARED BY: Thermo Analytical, Inc., 160 Taylor Street, Monrovia, CA 91016

ATTEN: Ms. Carole Harris

PHONE: 818-357-3247

Maureen Parrish
CERTIFIED BY

CONTACT: MKP CIH

CLIENT: WHC SAMPLES: 6

COMPANY: Westinghouse Hanford Company

FACILITY:

This report is for the sole and exclusive use of the client to whom it is addressed and represents only those samples herein described. Samples not destroyed in testing are retained a maximum of 30 days unless otherwise requested.

WORK ID: SAF #93-319 CLP

TAKEN: By Westinghouse Staff

TRANS: Federal Express

TYPE: Liquid

P.O. #: N3-11-056-SU-AR

INVOICE: under separate cover

SAMPLE IDENTIFICATION

01	B09D78
01	B09D78 MS
01	B09D78 MSD
01	B09D78
01	B09D78 MS
01	B09D78
01	B09D78 Duplicate
01	B09D78
01	B09D78 Duplicate
01	B09D78
01	B09D78 MS
01	B09D78
01	B09D78 MS
02	B09D80
02	B09D80 MS
02	B09D80 MSD
03	B09D98
03	B09D98 MS
03	B09D98 MSD
03	B09D98
03	B09D98 Duplicate
03	B09D98
03	B09D98 Duplicate
03	B09D98
03	B09D98 Duplicate
04	B09DB0

TEST CODES and NAMES used on this workorder

BNCLPW	CLP Semivol. Water
PECLPL	CLP Pesticides Liq.
WCCLPL	Anions & Wet Chem.
WCLCS	Lab Control Sample Summary
WCL_L	Chloride - WH120
WCQCD	Quality Control Summary
WCQCS	Quality Control Summary
WF_L	Fluoride in Water
WNH3_L	Ammonia in Water
WPH_L	pH of Liquid
WPO4_L	Phosphate in Liquids
WSO4_L	Sulfate (in Waters)
WSULFI	Sulfide
W_ALK	Alkalinity
W_COD	COD Water
W_COND	Conductivity-Water
W_TDS	Dissolved Solids

TMA Inc. REPORT Work Order # A3-11-041

Received: 11/09/93 12/23/93 14:22:47

	SAMPLE IDENTIFICATION
05	B09DJ7
06	Lab Blank
06	LCS

TMA Inc. REPORT Work Order # A3-11-041

Received: 11/09/93 Results by Sample

SAMPLE ID B09D78 FRACTION 01F TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	34.4	mg/L	2.0
Fluoride	300.0	0.2	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.8	pH	0.1
Sulfate	300.0	99	mg/L	10
Elect. Conductivity	9050	850	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-11-041

Received: 11/09/93

Results by Sample

SAMPLE ID B09D78 FRACTION 01H TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	205	mg/L	2

FORM I

9713507.0619

000012

TMA Inc. REPORT Work Order # A3-11-041

Received: 11/09/93

Results by Sample

SAMPLE ID B09D78 FRACTION 01J TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solids	160.1	538	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-041

Received: 11/09/93

Results by Sample

SAMPLE ID B09D78 FRACTION 01L TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

9713507.0621

000014

TMA Inc. REPORT Work Order # A3-11-041

Received: 11/09/93

Results by Sample

SAMPLE ID B09D78 FRACTION 01N TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

TMA Inc. REPORT Work Order # A3-11-041

Received: 11/09/93

Results by Sample

SAMPLE ID B09D98 FRACTION 03F TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	12.2	mg/L	2.0
Fluoride	300.0	0.2	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	9040	7.9	pH	0.1
Sulfate	300.0	40	mg/L	10
Elect. Conductivity	9050	450	umhos/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-11-041

Received: 11/09/93

Results by Sample

SAMPLE ID B09D98 FRACTION 03H TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	138	mg/L	2

FORM I

TMA Inc. REPORT Work Order # A3-11-041

Received: 11/09/93

Results by Sample

SAMPLE ID B09D98 FRACTION 03I TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solids	160.1	287	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-041

Received: 11/09/93

Results by Sample

SAMPLE ID B09D98 FRACTION 03J TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-11-041

Received: 11/09/93

Results by Sample

SAMPLE ID B09D98 FRACTION 03L TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/06/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

9713507.0627

TMA
Thermo Analytical Inc.

TMA
525 Avis Drive, Suite 7
Ann Arbor, MI 48108

(313) 662-3104
(313) 662-3344 (Fax)

JAN 1994
RECEIVED
SDLA

Federal Express : 7289157[illegible]

December 8, 1993

Quality Control Narrative

Scope
This report contains one Delivery Order. Two water sample were received by TMA/ERG from TMA/NORCAL on November 10, 1993. The cooler temperature when received was 4 deg. C. The sample was analyzed for Total Organic Halogens and Total Organic Carbon based on USEPA methods. Samples received with Work Order N3-11-056 are enclosed in this package.The TMA/ERG WO# is E3-11-167.

Methodology:
The samples were prepared, analyzed and reported in accordance with the Westinghouse Hanford Program Statement of Work MBH-SVV-069262 March 5, 1992.
The following is a list of methodologies used:

Analyte	Method/Description
TOC	415.1 Total Organic Carbon (TMA/ERG SOP WC022)
TOX	9022 Total Organic Halides by Neutron Activation (TMA/ERG SOP NUC03)

Instrument ID Numbers	Serial Numbers
OI Model 700 TOC Analyzer	H224069
NA Multi Channel Analyzer	Not Applicable

Discussion
The TOC and TOX samples were prepared according to protocol. The quality control requirements have been met for these analyses without exception. Initaially, the TOX matrix spikes did not meet QC requirements, and these were rerun within the holding time.If there are any questions concerning this package please do not hesitate to call.

Respectfully submitted,

TMA/Environmental Research Group

Mark B. Ruwe

Mark B. Ruwe
QA Officer

RECORD COPY

COVER PAGE - CLASSICALS ANALYSIS DATA PACKAGE

Lab Name: TMA/ERG #WO No. E3-11-167

Episode No. N3-11-056 SOW No. MBH-SVV-069262 SOW /Rev.Date March 5, 1992

TMA Sample No.	Lab Sample ID
B09D78	E3-11-167-01A,D
B09D78MS	E3-11-167-01B,E
B09D78DUP	E3-11-167-01C,F
B09D98	E3-11-167-02A,B

COMMENTS: Narrative Report is attached. Yes X No

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 in the narrative report. Release of the data contained in this hardcopy data package(and in the data submitted on magnetic media, if data is submitted on magnetic media), has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Mark B. Ruwe Name: Mark B. Ruwe

Date: December 8, 1993 Title: QA Officer

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME:	Thermo Analytical ERG Inc.	LAB SAMPLE ID:	B09D78
CASE NO.:	N3-11-056	Work ID:	100-FR-3
Matrix:	WATER		
Receipt Date:	10-Nov-93		
Units:	MG/L	% Solids:	NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	1.5	1	11-Nov-93
ORGANIC BROMIDE	0.01	0.01	20-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	20-Nov-93
ORGANIC IODIDE	<0.01	0.01	20-Nov-93

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME:	Thermo Analytical ERG Inc.	LAB SAMPLE ID:	B09D98
CASE NO.:	N3-11-056	Work ID:	100-FR-3
Matrix:	WATER		
Receipt Date:	10-Nov-93		
Units:	MG/L	% Solids:	NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	1.2	1	11-Nov-93
ORGANIC BROMIDE	<0.01	0.01	20-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	20-Nov-93
ORGANIC IODIDE	<0.01	0.01	20-Nov-93

PAGE 1 TMA/Norpak 507 063 CHAIN OF CUSTODY ORD # N3-11-056

RCVD: 11/09/93 DUE: 12/14/93 11/09/93 14:33:57 KEEP: 12/14/94 DISP: S

DASH	SAMPLE IDENTIFICATION	STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY	
01C-W	B09D73	ERG	WH113	WH116
01J-W	B09D73 MS	ERG	WH113	WH116
01K-W	B09D73 DUP	ERG	WH113	WH116
02C-W	B09D93	ERG	WH113	WH116

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
[illegible]	11-9-93	ERG	11-9-93	Christine Pardo	11-10-93

Cooler at 4°C

9713507.0632

TMA

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 7289157551

7289157551

RECIPIENT'S COPY

1 Date 11-09-93

From (Your Name) Please Print: SAMPLE CONTROL

Your Phone Number (Very Important): (610-935-2033

Company: [illegible]

Department/Floor No.

Street Address: [illegible] BRIGHT AVE

City: [illegible] State: CA ZIP Required: [illegible]

2 To (Recipient's Name) Please Print: SAMPLE CONTROL

Recipient's Phone Number (Very Important): (313)[illegible]-2104

Company: THERMO ANALYTICAL / EKG

Department/Floor No.

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 725 AVIS DRIVE, SUITE 7

City: ANN ARBOR State: MI ZIP Required: 48108

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): 2340-6406

H IF HOLD FOR PICK-UP, Print FEDEX Address Here: Street Address

City State ZIP Required

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card 5 [ ] Cash/Check

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning)
- 11 [X] OTHER PACKAGING
- 16 [ ] FEDEX LETTER*
- 12 [ ] FEDEX PAK*
- 13 [ ] FEDEX BOX
- 14 [ ] FEDEX TUBE

Standard Overnight (Delivery by next business afternoon. No Saturday delivery†)
- 51 [ ] OTHER PACKAGING
- 56 [ ] FEDEX LETTER*
- 52 [ ] FEDEX PAK*
- 53 [ ] FEDEX BOX
- 54 [ ] FEDEX TUBE

Economy Two-Day (Delivery by second business day†)
- 30 [ ] ECONOMY*

Government Overnight (Restricted for authorized users)
- 46 [ ] GOV'T LETTER
- 41 [ ] GOV'T PACKAGE

* Economy Letter rate not available. Minimum charge. One pound economy rate.

Freight Service (for packages over 150 lbs.)
- 70 [ ] OVERNIGHT FREIGHT** (Contract service required)
- 80 [ ] TWO-DAY FREIGHT**

† Delivery commitment may be later in some areas. *Declared Value Limit $50. **Call for delivery schedule.

5 DELIVERY AND SPECIAL HANDLING (Check services required)
- 1 [ ] HOLD FOR PICK-UP (Fill in Box H)
- 2 [X] DELIVER WEEKDAY
- DELIVER SATURDAY (Extra charge) (Not available to all locations) [ ]
- 4 [ ] DANGEROUS GOODS (Extra charge)
- 5 [ ]
- 6 [ ] DRY ICE Dangerous Goods Shipper's Declaration not required. Dry Ice lb. UN 1845 ____ x ____ kg. 904 III
- 7 [ ] OTHER SPECIAL SERVICE
- 8 [ ]
- 9 [ ] SATURDAY PICK-UP Extra charge
- [ ]
- 12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See rate)
1		
Total	Total 27	Total

DIM SHIPMENT (Chargeable Weight) [ ] ____ lbs.

L x W x H

Received At: 1 [ ] Regular Stop 2 [ ] On-Call Stop 3 [ ] Drop Box 4 [ ] B.S.C. 5 [ ] Station

Emp. No. Date

[ ] Cash Received
[ ] Return Shipment
[ ] Third Party [ ] Chg. To Del. [ ] Chg. To Hold

Street Address

City State Zip

Received By: X

Date/Time Received FedEx Employee Number

7 Release Signature:

Federal Express Use

Base Charges

Declared Value Charge

Other 1

Other 2

Total Charges

REVISION DATE 11/92 PART #137204 FSEM 3/93 FORMAT #155

155

PRINTED IN U.S.A.

025

9713507.0633

 Skinner&Sherman REPORT Work Order # S3-11-111

Received: 11/10/93 12/22/93 15:01:07

REPORT TO: TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804

ATTEN: Dan Steurmer

PREPARED BY: TMA / Skinner & Sherman Labs.
300 Second Avenue
P.O. Box 521
Waltham, MA 02254

ATTEN: Client Services
PHONE: (617) 890-7200

CERTIFIED BY

CONTACT: DP

CLIENT: HANFORD NOR SAMPLES: 3
COMPANY: TMA/NORCAL Hanford
FACILITY: Richmond, CA

WORK ID: N3-11-056
TAKEN: By Client
TRANS: Fedex
TYPE: 2 Waters NO3NO2
P.O. #: N3-11-056
INVOICE: under separate cover

SAMPLE IDENTIFICATION	TEST CODES and NAMES used on this workorder	
01 B09D78	NO3NO2	Nitrate/Nitrite
02 B09D98		
02 B09D98D		
02 B09D98S		
03 LCSW		

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

9713507.0634

 Skinner&Sherman REPORT Work Order # S3-11-111

Received: 11/10/93 Results by Sample

SAMPLE ID B09D78 SAMPLE # 01 FRACTIONS: A
Date & Time Collected 11/06/93 Category WATER

NO3NO2 18.6
mg N/L

SAMPLE ID B09D98 SAMPLE # 02 FRACTIONS: A
Date & Time Collected 11/06/93 Category WATER

NO3NO2 7.14
mg N/L

SAMPLE ID B09D98D SAMPLE # 02 FRACTIONS: B
Date & Time Collected 11/06/93 Category WATER

NO3NO2 7.11
mg N/L

SAMPLE ID B09D98S SAMPLE # 02 FRACTIONS: C
Date & Time Collected 11/06/93 Category WATER

NO3NO2 18.9
mg N/L

SAMPLE ID LCSW SAMPLE # 03 FRACTIONS: A
Date & Time Collected not specified Category WATER

NO3NO2 2.05
mg N/L

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

This report is rendered upon all of the following conditions: Skinner & Sherman Laboratories, Inc., retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted, before the analysis. Client will be responsible for Skinner & Sherman costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. Product endorsement is neither inferred nor implied. Skinner & Sherman Laboratories, Inc., will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3883

TMA
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

9213507.0635

RECORD COPY

JAN 1994
RECEIVED
SDLA

December 22, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Two (2) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on November 10, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S311112.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with no exceptions.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal
Steven R. Provencal
Lead Chemist

2-7-96
MC

9213507.0636

WESTINGHOUSE/HANFORD

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-056 SAS No.: SDG No.: B09D79

SOW No.: ILM02.1

SAMPLE NUMBER:	Lab Sample ID.
B09D79	11112-01S
B09D99	11112-02S
B09D99D	11112-02S2
B09D99S	11112-02DS

Were ICP interelement corrections applied? Yes/No YES
Were ICP background corrections applied? Yes/No YES
If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

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 and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Steven Provencal Name: Steven R. Provencal

Date: 12/22/93 Title: Lead Chemist

9213507.0637

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

809D79

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-056SAS No.: SDG No.: 809D79

Matrix (soil/water): WATER Lab Sample ID: 11112-01S

Level (low/med): LOW Date Received: 11/10/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	22.4	B		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	5.1	B		P
7440-39-3	Barium	56.6	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.1	B		P
7440-70-2	Calcium	102000			P
7440-47-3	Chromium	20.1			P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	22.4	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	23700			P
7439-96-5	Manganese	1.3	U		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.9	U		P
7440-09-7	Potassium	6580			P
7782-49-2	Selenium	3.6	B		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	27700			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	B		P
7440-66-6	Zinc	8.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

2

9713507.0638

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09D99

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-056SAS No.: SDG No.: B09D79

Matrix (soil/water): WATER Lab Sample ID: 11112-02S

Level (low/med): LOW Date Received: 11/10/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	21.2	B		P
7440-36-0	Antimony	15.4	B		P
7440-38-2	Arsenic	5.4	B		P
7440-39-3	Barium	29.5	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.6	B		P
7440-70-2	Calcium	50300			P
7440-47-3	Chromium	8.8	B		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	3.0	B		P
7439-89-6	Iron	21.3	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	11700			P
7439-96-5	Manganese	2.4	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	5.1	B		P
7440-09-7	Potassium	4810	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	3.7	U		P
7440-23-5	Sodium	17100			P
7440-28-0	Thallium	2.2	B		P
7440-62-2	Vanadium	14.0	B		P
7440-66-6	Zinc	8.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

003

Comments:

TMA 9715507.0639
Thermo Analytical Inc.

Skinner & Sherman Labs., Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200
FAX (617) 890-3883

RECORD COPY

JAN 1994
RECEIVED
SDLA

December 20, 1993

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

Quality Control Narrative

Scope
Two (2) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on November 10, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals and cyanide. The analysis was performed under TMA/Skinner and Sherman work order S311109.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work ILM02.

Discussion
All quality control requirements were met for the samples with no exceptions.

Please feel free to call if there are any questions concerning the data package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal
Steven R. Provencal
Lead Chemist

2-7-96
MC

9713507.0640

WESTINGHOUSE/HANFORD

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-056 SAS No.: SDG No.: 809D78

SOW No.: ILM02.1

SAMPLE NUMBER:	Lab Sample ID.
809D78	11109-01S
809D98	11109-02S
809D98D	11109-02S2
809D98S	11109-02DS

Were ICP interelement corrections applied? Yes/No YES
Were ICP background corrections applied? Yes/No YES
If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

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 and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Steven Provencal Name: Steven R. Provencal

Date: 12/20/93 Title: Lead Chemist

9713507.0641

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

809D78

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-056SAS No.: SDG No.: 809D78

Matrix (soil/water): WATER Lab Sample ID. 11109-01S

Level (low/med): LOW Date Received: 11/10/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight). UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	4.0	B		P
7440-39-3	Barium	51.3	B		P
7440-41-7	Beryllium	0.33	B		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	102000			P
7440-47-3	Chromium	18.4			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	8.0	B		P
7439-89-6	Iron	42.1	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	23500			P
7439-96-5	Manganese	1.6	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.4	U		P
7440-09-7	Potassium	6600			P
7782-49-2	Selenium	3.6	B		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	27100			P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	5.4	B		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

2

9213597.0642

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

809D98

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-0565AS No.: SDG No.: 809D78

Matrix (soil/water): WATER Lab Sample ID: 11109-02S

Level (low/med): LOW Date Received: 11/10/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10.6	U		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	7.3	B		P
7440-39-3	Barium	23.6	B		P
7440-41-7	Beryllium	0.33	B		P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	51300			P
7440-47-3	Chromium	11.7			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	4.9	B		P
7439-89-6	Iron	21.3	B		P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	11800			P
7439-96-5	Manganese	1.3	B		P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	5.0	B		P
7440-09-7	Potassium	4710	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	16800			P
7440-28-0	Thallium	4.1	B		P
7440-62-2	Vanadium	9.1	B		P
7440-66-6	Zinc	4.4	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

9213507.0643

B090078

TMA
Thermo Analytical Inc.

TMA/Norcal
2030 Wright Avenue
P. O. Box 4040
Richmond, CA 94804-0040
(510) 235-2633 Fax No. (510) 235-0438

JAN 1994
RECEIVED
SDLA

January 18, 1994

Ref: TMA/Norcal N3-11-048-7294

Ms. Briana Colley
Westinghouse Hanford Company
345 Hills Street
Richland, WA 99352

Dear Ms. Colley:

Enclosed is the data report for the five water samples received November 5 through 11, 1993 from location 100-FR-3. Results are given for gross alpha, gross beta, tritium, carbon-14, strontium-90, technetium-99, isotopic uranium, isotopic plutonium, americium-241, and gamma scan analyses.

The data package is paginated 1 through 540.

Please call if you have any questions concerning this data.

Sincerely,

D. P. Kharkar

Dinkar P. Kharkar, Ph.D.
Manager, Nuclear Programs

DPK/ss

Enclosure: Data Package

TMA/Norcal

Report N3-22-048-7294
Sample Delivery Group 7294

Westinghouse Hanford Company
P.O. MBH-SVV-069262

Case Narrative

January 18, 1994

1.0 GENERAL

TMA/Norcal Sample Delivery Group 7294 is comprised of the five water samples from location 100-FR-3, delivered under Field Log Book #EFL-1054. Chain-of-Custody numbers were not provided.

One 4000 mL, one 1000 mL plastic bottle, and one 150 mL glass bottle containing each sample was received for analysis.

2.0 ANALYSIS NOTES

2.1 Gross Alpha Analyses

No problems were encountered by the laboratory in the analyses. The residue for sample BO9D78 is slightly higher than the nominal residue of 150 mg. The MDA meets the RDL despite this.

2.2 Gross Beta Analyses

No problems were encountered by the laboratory in the analyses. Again, the residue for sample BO9D78 is higher than the nominal residue of 150 mg. The MDA is well below the RDL despite this.

2.3 Tritium Analyses

No problems were encountered by the laboratory in the analyses.

2.4 Carbon-14 Analyses

No problems were encountered by the laboratory in the analyses.

2.5 Strontium-90 Analyses

No problems were encountered by the laboratory in the analyses.

2.6 Technetium-99 Analyses

The reagent blank contained activity above the RDL which is probably due to molybdenum-99 contamination in the technetium tracer. This may have contributed to activity in the samples at the same level and affected the duplicate results. The MDA of sample BO9DD6 is higher than the RDL due to a low chemical yield.

TMA/Norcal
Report N3-22-048-7294
Sample Delivery Group 7294

Westinghouse Hanford Company
P.O. MBH-SVV-069262

Case Narrative

January 18, 1994

2.0 ANALYSIS NOTES (con't.)

2.7 Isotopic Uranium Analyses
The recovery of uranium-235 in the laboratory control sample is 125%, which is outside the (80-120)% protocol limits but within the 3 σ contract limits. The MDA's of uranium-233/234 and uranium-238 in the laboratory control sample are above the RDL due to interference from uranium-235. The blank was counted for less than the nominal count time of 150 minutes however, the MDA's meet the RDL's despite the shorter count time.

2.8 Isotopic Plutonium Analyses
The MDA for sample BO9DD6 is higher than the RDL due to the combination of a low chemical yield and a high counter background in the region of interest.

2.9 Americium-241 Analyses
The recovery of americium-241 in the laboratory control sample is 121%, which is outside the (80-120)% protocol limits but within the 3 σ contract limits. The MDA of the laboratory control sample is above the RDL due to a low chemical yield. Given that this is a laboratory control sample containing activity twenty times the RDL, the high MDA is of no particular concern. The QC associated with the initial batch of samples failed and the samples were reanalyzed with a new QC. Because of the reanalysis, there was not enough sample to analyze a duplicate using the nominal 1 L aliquot.

2.10 Gamma Scan Analyses
The MDA's of iron-59, cobalt-58, and europium-155 are higher than the RDL's due to a slightly higher background under the peak for the above nuclides. The iron-59 MDA's for all samples are higher than the RDL due to the short half-life of iron-59.

9713507.0646

TMA

N311048-02

TMA NORCAL
REPORTING GROUP 7294

DATA SHEET

B09D78

SDG 7294 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N311048-02 Client sample id B09D78
Dept sample id 7294-002 Location/Matrix 100-FR-3 LIQUID
Received 11/09/93 Collected 11/06/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	4.3	2.6	3	3		80A
Gross Beta	Beta	8.7	1.6	2	4		80B
Tritium	10028-17-8	9800	400	200	400		H
Carbon 14	14762-75-5	86	31	50	100	J	C
Strontium 90	10098-97-2	0.43	0.26	0.8	2	U	Y
Technetium 99	14133-76-7	13	1.1	1	5	B	TC
Uranium 233/234		4.1	0.35	0.07	0.2		U
Uranium 235	15117-96-1	0.18	0.059	0.04	0.2	J	U
Uranium 238		3.5	0.32	0.05	0.2		U
Plutonium 238	13981-16-3	0.003	0.012	0.02	0.05	U	PU
Plutonium 239/240		0	0.006	0.02	0.05	U	PU
Americium 241	14596-10-2	-0.004	0.008	0.03	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		20		U	GAM
Potassium 40	13966-00-2	U		300		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		50	30	U	GAM
Cobalt 58	13981-38-9	U		20	20	U	GAM
Cobalt 60	10198-40-0	U		20	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		30		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		80		U	GAM
Europium 152	14683-23-9	U		30	40	U	GAM
Europium 154	15585-10-1	U		20	40	U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/17/94

TMA NORCAL
REPORTING GROUP 7294

N311048-02

DATA SHEET, cont

B09D78

SDG 7294
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N311048-02
Dept sample id 7294-002
Received 11/09/93
Client sample id B09D78
Location/Matrix 100-FR-3 LIQUID
Collected 11/06/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Europium 155	14391-16-3	U		40	40	U	GAM
Radium 226	13982-63-3	U		30		U	GAM
Radium 228	15262-20-1	U		60		U	GAM
Thorium 228	14274-82-9	U		40		U	GAM
Thorium 232	7440-29-1	U		60		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/17/94

TMA

N311048-03

TMA NORCAL
REPORTING GROUP 7294

DATA SHEET

B09D98

SDG 7294 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N311048-03 Client sample id B09D98
Dept sample id 7294-003 Location/Matrix 100-FR-3 LIQUID
Received 11/09/93 Collected 11/06/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.88	1.1	1	3	U	80A
Gross Beta	Beta	5.6	1.4	2	4		80B
Tritium	10028-17-8	1100	180	200	400		H
Carbon 14	14762-75-5	61	31	50	100	J	C
Strontium 90	10098-97-2	0.17	0.21	0.7	2	U	Y
Technetium 99	14133-76-7	8.3	1.3	2	5	B	TC
Uranium 233/234		1.3	0.17	0.06	0.2		U
Uranium 235	15117-96-1	0.10	0.051	0.04	0.2	J	U
Uranium 238		1.2	0.16	0.05	0.2		U
Plutonium 238	13981-16-3	0	0.006	0.02	0.05	U	PU
Plutonium 239/240		0.003	0.011	0.02	0.05	U	PU
Americium 241	14596-10-2	0.010	0.015	0.02	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		200		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		50	30	U	GAM
Cobalt 58	13981-38-9	U		20	20	U	GAM
Cobalt 60	10198-40-0	U		10	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		30		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		60		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		20	40	U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/17/94

TMA

TMA NORCAL
REPORTING GROUP 7294

N311048-03

DATA SHEET, cont

B09D98

SDG 7294 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N311048-03 Client sample id B09D98
Dept sample id 7294-003 Location/Matrix 100-FR-3 LIQUID
Received 11/09/93 Collected 11/06/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Europium 155	14391-16-3	U		30	40	U	GAM
Radium 226	13982-63-3	U		30		U	GAM
Radium 228	15262-20-1	U		60		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		60		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/17/94

TMA

N311048-04

TMA NORCAL
REPORTING GROUP 7294

DATA SHEET

B09DB2

SDG 7294 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N311048-04 Client sample id B09DB2
Dept sample id 7294-004 Location/Matrix 100-FR-3 LIQUID
Received 11/11/93 Collected 11/06/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	3.2	2.0	2	3		80A
Gross Beta	Beta	25	2.3	2	4		80B
Tritium	10028-17-8	4700	290	200	400		H
Carbon 14	14762-75-5	16	28	50	100	U	C
Strontium 90	10098-97-2	9.1	1.4	0.7	2		Y
Technetium 99	14133-76-7	9.9	2.2	5	5	B	TC
Uranium 233/234		2.8	0.26	0.06	0.2		U
Uranium 235	15117-96-1	0.17	0.053	0.03	0.2	J	U
Uranium 238		2.6	0.24	0.05	0.2		U
Plutonium 238	13981-16-3	0	0.010	0.04	0.05	U	PU
Plutonium 239/240		-0.005	0.010	0.04	0.05	U	PU
Americium 241	14596-10-2	0.021	0.018	0.02	0.05	J	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		20		U	GAM
Potassium 40	13966-00-2	U		200		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		50	30	U	GAM
Cobalt 58	13981-38-9	U		20	20	U	GAM
Cobalt 60	10198-40-0	U		20	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		60		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		20	40	U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/17/94

TMA

TMA NORCAL
REPORTING GROUP 7294

N311048-04

DATA SHEET, cont

B09DB2

SDG 7294
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N311048-04
Dept sample id 7294-004
Received 11/11/93
Client sample id B09DB2
Location/Matrix 100-FR-3 LIQUID
Collected 11/06/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Europium 155	14391-16-3	U		30	40	U	GAM
Radium 226	13982-63-3	U		20		U	GAM
Radium 228	15262-20-1	U		50		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		50		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/17/94

TMA

TMA NORCAL
REPORTING GROUP 7294

DATA SHEET

N311048-05

B09DD6

SDG 7294
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N311048-05
Dept sample id 7294-005
Received 11/11/93
Client sample id B09DD6
Location/Matrix 100-FR-3 LIQUID
Collected 11/06/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	1.9	1.8	2	3	U	80A
Gross Beta	Beta	7.0	1.4	2	4		80B
Tritium	10028-17-8	1100	180	200	400		H
Carbon 14	14762-75-5	12	30	50	100	U	C
Strontium 90	10098-97-2	0.096	0.17	0.6	2	U	Y
Technetium 99	14133-76-7	38	4.2	6	5	B	TC
Uranium 233/234		2.2	0.30	0.09	0.2		U
Uranium 235	15117-96-1	0.096	0.065	0.06	0.2	J	U
Uranium 238		1.7	0.25	0.06	0.2		U
Plutonium 238	13981-16-3	-0.021	0.041	0.09	0.05	U	PU
Plutonium 239/240		0.005	0.031	0.07	0.05	U	PU
Americium 241	14596-10-2	-0.005	0.010	0.02	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		40		U	GAM
Potassium 40	13966-00-2	U		200		U	GAM
Manganese 54	13966-31-9	U		20		U	GAM
Iron 59	14596-12-4	U		50	30	U	GAM
Cobalt 58	13981-38-9	U		20	20	U	GAM
Cobalt 60	10198-40-0	U		20	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		30		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		20		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		80		U	GAM
Europium 152	14683-23-9	U		30	40	U	GAM
Europium 154	15585-10-1	U		20	40	U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/17/94

TMA NORCAL
REPORTING GROUP 7294

N311048-05

DATA SHEET, cont

B09DD6

SDG 7294
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N311048-05
Dept sample id 7294-005
Received 11/11/93
Client sample id B09DD6
Location/Matrix 100-FR-3 LIQUID
Collected 11/06/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Europium 155	14391-16-3	U		40	40	U	GAM
Radium 226	13982-63-3	U		40		U	GAM
Radium 228	15262-20-1	U		60		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		60		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/17/94

TMA

TMA NORCAL
REPORTING GROUP 7294

DATA SHEET

N311048-01

B09DJ2

SDG 7294
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N311048-01
Dept sample id 7294-001
Received 11/05/93
Client sample id B09DJ2
Location/Matrix 100-FR-3 LIQUID
Collected 11/03/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.064	1.1	2	3	U	80A
Gross Beta	Beta	0.34	1.0	2	4	U	80B
Tritium	10028-17-8	15	120	200	400	U	H
Carbon 14	14762-75-5	83	33	50	100	J	C
Strontium 90	10098-97-2	0.062	0.50	0.7	2	U	Y
Technetium 99	14133-76-7	19	1.8	3	5	B	TC
Uranium 233/234		0.055	0.055	0.08	0.2	U	U
Uranium 235	15117-96-1	0.008	0.033	0.06	0.2	U	U
Uranium 238		0.17	0.070	0.05	0.2	J	U
Plutonium 238	13981-16-3	-0.004	0.008	0.03	0.05	U	PU
Plutonium 239/240		0	0.008	0.03	0.05	U	PU
Americium 241	14596-10-2	0.003	0.027	0.05	0.05	U	AM
GAMMA SCAN ANALYTES							
Sodium 22	13966-32-0	U		10		U	GAM
Potassium 40	13966-00-2	U		100		U	GAM
Manganese 54	13966-31-9	U		10		U	GAM
Iron 59	14596-12-4	U		40	30	U	GAM
Cobalt 58	13981-38-9	U		10	20	U	GAM
Cobalt 60	10198-40-0	U		10	20	U	GAM
Niobium 94	14681-63-1	U		10		U	GAM
Ruthenium 103	13968-53-1	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Tin 113	13966-06-8	U		20		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		8	20	U	GAM
Cerium 144	14762-78-8	U		50		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		10	40	U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.28
Report date 01/17/94

TMA NORCAL
REPORTING GROUP 7294

N311048-01

DATA SHEET, cont

B09DJ2

SDG 7294 Client Westinghouse Hanford
Contact Dinkar Kharkar Contract MBH-SVV-069262

Lab sample id N311048-01 Client sample id B09DJ2
Dept sample id 7294-001 Location/Matrix 100-FR-3 LIQUID
Received 11/05/93 Collected 11/03/93
Chain of custody id EFL-1054

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Europium 155	14391-16-3	U		30	40	U	GAM
Radium 226	13982-63-3	U		20		U	GAM
Radium 228	15262-20-1	U		40		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		40		U	GAM

9213502.0656 PM

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 11/3/93

Ice Chest No. RM#110

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010337

Offsite Property No. ~~W93-~~ W94-0-0001-36 LCS 11-4-93

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DJ2

3, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
1, 2L & 1, 1L, aG; WATER; CLP-SEMI VOA
1, 2L & 1, 1L, aG; WATER; CLP-PCB's/PEST(pH 5-9)
1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
1, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
1, 250ml, P, WATER; ALKALINITY
1, 500ml, P, WATER; TDS
1, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
1, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
1, 1L, P, WATER; Cn(NaOH to pH 12.0)
1, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
1, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
1, 2L & 1, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
1, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
1, 250ml, Gs, WATER; TRITIUM/C-14

B09DJ3

1, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DJ4

3, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
KD Lee	11/3/93	1015	L Sweeney	11-4-93	0840
L Sweeney	11-4-93	1030	Kermit Blum K. Blum	11-5-93	1145

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: reling. to frig. # 3C by K.D. Lee 11/3/93

A-6000-407 (12/92) WEF061

9213507.0657

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 11/3/93 Time 1015 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DJ2	3; 40ml; Gs*; ✓✓✓	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG; ✓	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG; ✓	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P ✓	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P; ✓	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P; ✓	WATER	ALKALINITY
	1; 500ml; ~~G~~; P ✓	WATER	TDS
	1; 500ml; G; ✓	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G; ✓	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P; ✓	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P; ✓	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; 1/2L ✓	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P; ✓	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs ✓	WATER	TRITIUM, C14
	1; 125mL; aGs ✓	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs ✓	WATER	TOX (HNO3 to pH<2.0)
B09DJ3	1; 1L; P ✓	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DJ4	3; 40mL; Gs ✓✓✓	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 2579016337 OPC #: W94-0-0001-36

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Title Date

Analysis Required 74

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05/93)

9213507.0659

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 11/6/93

Ice Chest No. ~~SAL-68~~ EMS UCS #11-8-93

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 251901 6362

Offsite Property No. ~~W93~~ AJS 11/8/93 W94-0-0001-37

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09D78

~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)

KDL ~~1, 2L & 1, 1L~~, aG; WATER; CLP-SEMI VOA

11/6/93 ~~1, 2L & 1, 1L~~, aG; WATER; CLP-PCB's/PEST(pH 5-9)

~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH

~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)

~~1~~, 250ml, P, WATER; ALKALINITY

~~1~~, 500ml, P, WATER; TDS

~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)

~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)

~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED

~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)

~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)

~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)

1, 2L * ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)

~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)

~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09D79

~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09D80

~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
[illegible] K.D. Lee	11/6/93	1500	AJ Simpson AJ SIMPSON	11/8/93	0940
AJ Simpson AJ SIMPSON	11/8/93	0940	[illegible] / H. Narcuse	11-9-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. # 2B by K.D. Lee 11/6/93 1500

* Received 4L x1 & 2L x1 for gross alpha/beta, gamma @ TMA/Norcal.

A-6000-407 (12/92) WEF061

9713507.0659

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 11/6/93 Time 1204 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D78	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	~~1; 2L &~~ 1; ~~4~~L; aG;	WATER	CLP-SEMI VOA
1100 11/6/93	~~1; 2L &~~ 1;~~4~~L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P;	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D79	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D80	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 251901036-2 OPC #:W94-0-0001-37

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-09-93

Analysis Required

76

*Indicate whether sample is soil, sludge, water, etc.

9713507.0660

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 11/6/93

Ice Chest No. Jerry

Field Logbook No. EFC-1054

Bill of Lading/Airbill No. 251901036 2

Offsite Property No. ~~W93-~~ AJS 11/8/93 W94-0-0001-37

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09D98

~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
~~1, 2L~~ & ~~1, 4L~~, aG; WATER; CLP-SEMI VOA
1 aGL 11/6/93 ~~1, 2L~~ & ~~1, 4L~~, aG; WATER; CLP-PCB's/PEST(pH 5-9)
~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
~~1~~, 250ml, P, WATER; ALKALINITY
~~1~~, 500ml, P, WATER; TDS
~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
1, 2L ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09D99

~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09D80

~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

B09D97 3, 40ml; GS; WATER; CLP-VOA (HCL to pH<2.0

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

Relinquished By	Date	Time	Received By	Date	Time
Kirby D. Lee K.D. Lee	11/6/93	1500	AJ Simpson AJ SIMPSON	11/8/93	0939
AJ Simpson AJ SIMPSON	11/8/93	0939	[illegible] / H. NARCISO	11-09-93	11:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: reling. to Seq. #2C by K.D. Lee 11/6/93 1500

NOTE: B09D98 2 LITER GROSS ALPHA/BETA & 4 liter gross alpha/beta etc. received @ TMA/NORCAL. KB

77

A-6000-407 (12/92) WEF061

9713507.0661

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 11/6/93 Time 0803 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D99	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	1; 2L & 1; 1L; aG;	WATER	CLP-SEMI VOA
	1; 2L & 1; 1L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P;	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D99	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D80	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 25190/0362 OPC #: W94-0-0001-37

METHOD BLANK B09D97 3: 40ml; GS, WATER; CLP-VOA (HCL to pH<2.0)

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-09-93

Analysis Required 78

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location

A-6000-406(05/9

9715502.0662

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator: KD LEE/GG HAMILTON/KF TRAPP

Company Contact: PH BUTCHER — Telephone: (509) 376-5045

Project Designation/Sampling Locations: 100-FR-3 — Collection Date: 11/6/93

Ice Chest No.: SMC-385 — Field Logbook No.: EFL-1054

Bill of Lading/Airbill No.: 2590104 28 — Offsite Property No.: ~~W93-~~ KD 11-10-93 W94-0-0001-40

Method of Shipment: EMERY

Shipped to: TMA

Possible Sample Hazards/Remarks: None

Sample Identification

B09DB2

~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)

~~1, 2L~~ & ~~1, 4~~L, aG; WATER; CLP-SEMI VOA

KD 11/16/93 ~~1, 2L~~ & ~~1, 4~~L, aG; WATER; CLP-PCB's/PEST(pH 5-9)

~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH

~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)

~~1~~, 250ml, P, WATER; ALKALINITY

~~1~~, 500ml, P, WATER; TDS

~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)

~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)

~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED

~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)

~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)

~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)

~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)

~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)

~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

~~1~~, 2L, P, WATER; Gross Alpha, Beta Gamma Spec. (U 235/238) (HNO3 to ph<2.0 PU 239/240, Am 241, Sr 90

B09DB3

~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DB4

~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
[illegible]	11/6/93	1500	[illegible]/Karl F. Donnelson	11-10-93	0830
Karl F. Donnelson	11/10/93	0900	[illegible]/H. Narciso	11-11-93	12:45

Final Sample Disposition

Disposal Method: — Disposed by: — Date/Time:

Comments: relinq. to frig. # 2C by K.D. Lee 11/6/93 1500

A-6000-407 (12/92) WEF061

9215507.0663

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 11/6/93 Time 0964 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09DB2	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	~~1; 2L &~~ 1;~~4~~L; aG;	WATER	CLP-SEMI VOA
	~~1; 2L &~~ 1;~~4~~L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P;	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09DB3	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09DB4	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BOL #: 251901042 8 OPC #: W940-0001-40

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECHNICIAN Date 11-11-93

Analysis Required

80

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05

9213507.0664

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON/KF TRAPP

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 11/6/93

Ice Chest No. SML 423

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2519010428

Offsite Property No. ~~W93-~~ W94-0-0001-40

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks None

Sample Identification

B09DD6

~~3~~, 40ml, Gs, WATER; CLP-VOA(HCl to pH<2.0)
~~1~~, 2L & ~~1~~, 4L, aG; WATER; CLP-SEMI VOA
ICOC 11/6/93 ~~1, 2L & 1, 4L~~, aG; WATER; CLP-PCB's/PEST(pH 5-9)
~~1~~, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
~~1~~, 500ml, P, WATER; NO2-NO3 (H2SO4 to pH<2.0)
~~1~~, 250ml, P, WATER; ALKALINITY
~~1~~, 500ml, P, WATER; TDS
~~1~~, 500ml, G, WATER; SULFIDE (Zinc Acetate + NaOH pH>9)
~~1~~, 1L, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2.0)
~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM/THALLIUM/HG (HNO3 pH<2.0)UNFILTERED
~~1~~, 1L, P, WATER; Cn(NaOH to pH 12.0)
~~1~~, 125mL, aGs, WATER; TOC (H2SO4 to pH<2.0)
~~1~~, 500mL, aGs, WATER; TOX (HNO3 to pH<2.0)
T, 2L and ~~1~~, 4L, G/P, WATER; GROSS ALPHA/BETA,GAMMA SPEC./ALPHA SPEC. (to include U-235/238,Pu-239/240,Am-241),Sr-90 (HNO3 to pH<2.0)
~~1~~, 1L, G/P,WATER; Tc-99 (HCl to pH<2.0)
~~1~~, 250ml, Gs, WATER; TRITIUM/C-14

B09DD7

~~1~~, 1L, P, WATER; CLP-ICP METALS/ARSENIC/LEAD/SELENIUM,THALLIUM/HG (HNO3 to pH<2.0) FILTERED

B09DD8

~~3~~, 40ml, Gs, WATER; CLP-VOA (HCL to pH<2.0)

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

Relinquished By	Date	Time	Received By	Date	Time
Kathy Butcher KD Lee	11/6/93	1580	Karl F. Donnelson / Karl F. Donnelson	11-10-93	0830
Karl F. Donnelson	11-10-93	0900	[illegible] / H. NARUSO	11-11-93	12:45

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: relinq. to frig. #2B by K.D. Lee 11/6/93 1500

A-6000-407 (12/92) WEF061

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. LEE, G. HAMILTON Date Sampled 11/6/93 Time 1255 hours

Company Contact P. H. Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09D06	3; 40ml; Gs*;	WATER	CLP-VOA(HCl to pH<2.0)
	~~1; 2L &~~ 1; 4L; aG;	WATER	CLP-SEMI VOA
11/6/93	~~1; 2L &~~ 1; 4L; aG;	WATER	CLP-PCB's/PEST(pH 5-9)
	1; 1L; P	WATER	ANIONS(IC) SO4, F, Cl, PO4, COND., pH
	1; 500ml; P;	WATER	NO2, NO3(H2SO4 to pH<2.0)
	1; 250ml; P;	WATER	ALKALINITY
	1; 500ml; G;	WATER	TDS
	1; 500ml; G;	WATER	SULFIDE(ZINC ACETATE + NaOH pH>9)
	1; 1L; G;	WATER	AMMONIA, COD(H2SO4 to pH<2.0)
	1; 1L; P;	WATER	CLP-ICP METALS(HNO3 to pH<2.0)UNFILTERED
	1; 1L; P;	WATER	ARSENIC/LEAD/SELENIUM/THALLIUM, Hg(HNO3 pH<2)
	1; 1L; P;	WATER	Cn(NaOH to pH<2.0)
	1; 4L; G/P; and 1; 2L	WATER	GROSS ALPHA/BETA,GAMMA SPEC,ALPHA SPEC:U-235/
			U-238,Pu-239/240, Am-241, Sr-90(HNO3 pH<2.0)
	1; 1L; G/P;	WATER	Tc-99(HCl to pH<2.0)
	1; 250ml; Gs	WATER	TRITIUM, C14
	1; 125mL; aGs	WATER	TOC (H2SO4 to pH<2.0)
	1; 500mL; aGs	WATER	TOX (HNO3 to pH<2.0)
B09D07	1; 1L; P	WATER	CLP-ICP METALS; As/Pb/Se/Tl/Hg(HNO3) FILTERED
B09D08	3; 40mL; Gs	WATER	CLP-VOA (HCL to pH<2.0)

Field Information** TASK #: 93-319 BQL #: 2519010428 OPC #: W94-0-0001-40

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [signature] Title SAMPLE CONTROL TECH. Date 11-11-93

Analysis Required

82

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406(05

FORM OF PAYMENT

heck ☐ CBL ☐ FCCOD ☐

Bill to Shipper ☒ Bill to Consignee ☐ Third Party Billing ☐

Shipper's Account Number 850281585

EMERY WORLDWIDE — A EF Company

SERVICES ** — UNITED STATES / CANADA: Same Day (Extra Charges) ☐ AM ☒ Second Day ☐ PM ☐ Saturday Delivery ☐ Standard Plus ☐ Preferred ☐ Standard ☐

INTERNATIONAL: Express ☐ Business Documents ☐ Customs Clearance ☐ Delivery ☐

Date 11-08-93 | Origin PSC | Shipment Number 251901036 2

From:
ESTINGHOUSE SHIPPING DEPT (509) 376-6665
.S. DEPARTMENT OF ENERGY C/O
ESTINGHOUSE HANFORD
BLDG/1163
355 STEVENS DRIVE
ICHLAND WA
Canada ☐

To:
TMA/NORCAL
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA USA
Hold for Pick Up ☐
Canada ☐

Tariff Dest. | Gateway

Check to Shipper $

EMERY WORLDWIDE will accept Consignee check with all risks being assumed by Shipper, including but not limited to non-payment, fraud and misrepresentatio

Customer's Reference Numbers: W81232 PD3AA W94-0-0001 #3799302
H BOTCHER #37

Consignee's Account Number: E 94804

Description	Pcs	L	W	H	Total Pieces	Total Weight
2 COOLER ID: ERS 99#; JERRY 101# WATER SAMPLES	2	/	/	/	2	200

FOR INFORMATION OR RATES CALL 1-800-44-EMERY

Declared Value $

251901036 2

ERNIGHT DELIVERY
GNATURE SECURITY SERVICE

Zip Ship ☐ — For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used: Urgent Letter 9X12 ☒ Urgent Pack 12X15 ☒

Shipper's Signature 11-8-93

International Shipments: Free Domicile ☐ Commodity Code

Third Party Account Number mandatory for Third Party Billing. Third Party Account Number E

International Customs Value | International Insurance

se Charge

Total Transportation Charges | Other Charges/Advance at Origin ☐ OC/AO $

1-OAK-A

Terms and Conditions on Back

Overnight Delivery

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W4-D-[illegible]1-37

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env Eng. & Tech.	Geosciences	Geochem. & Hydrochem

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

Routing Energy ☐ Contractor ☐ Vendor

Shipped to	Off-site Custodian
TMA/NORCAL 2030 Wright Ave. Richmond, CA 94804	
	Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: B0 9D9[illegible] B0 9D99 B0 9D50 Cooler ID: Jerry Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

[illegible] 1510[illegible]362

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

Location of Property (Area & Bldg.)	Contact	Phone
0-FC-3	PH Butcher	(509) 376-6045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
11/5/93	W81232/PD5AA	NA

Originated By	Date	Authorized By	Date
P.H. Butcher	11/6/93	A. Bonjour	11/5/93
Signature and Name of Property Control	**Custodian Date**	**Property Management Approval**	**Date**
		J P Hanket	11/8/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
HBE	84			
Date				

DISTRIBUTION

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

Overnight Delivery 9130X.0668 Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		WHC-D-901-37

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem

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

Routing Energy ☐ Contractor ☐ Vendor

Shipped to TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: B09D98 B09D99 B09D80 Cooler ID: Jerry Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

25/90/0362

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

Location of Property (Area & Bldg.)	Contact	Phone
200-AR-3	M. Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
11/8/93	W01222/PD5AA	NA

Originated By	Date	Authorized By	Date
P.H. Butcher	11/6/93	A. Simpson	11/8/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		J.P. Hankel	11/8/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
11-8-93	85			
Date				

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

54-3000-479 (09/89)

9713507.0669

VALIDATION SUMMARY

9213507.0670

000144

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B18

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B18

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9715507.0672

000155

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DJ4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B14

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DJ4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B14

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9213507.0674

000230

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31117I03

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/17/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

1 1/14 CH

9713507.0675

000231

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31117I03

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/17/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

11/21/94 CH

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31117I03

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/17/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9715507.0677

000338

EPA SAMPLE NO.

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/05/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/08/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/30/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U J
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U J
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U J
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1-19-94 SC

9213507.0678

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DJ2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-046SAS No.: SDG No.: B09DJ2

Matrix (soil/water): WATER Lab Sample ID: 11115-01S

Level (low/med): LOW Date Received: 11/06/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19.5	B	VJ	P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	1.2	U		P
7440-41-7	Beryllium	0.31	B	V	P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	59.0	U		P
7440-47-3	Chromium	6.3	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	37.7	B	V	P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	22.9	U		P
7439-96-5	Manganese	0.86	B	V	P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.6	B		P
7440-09-7	Potassium	101	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	114	U		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

002

9314907.0679

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DJ3

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-02-0039

Lab Code: SKINER Case No.: N3-11-046SAS No.: SDG No.: B09DJ3

Matrix (soil/water): WATER Lab Sample ID: 11118-01S

Level (low/med): LOW Date Received: 11/06/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	1230		E*	P	
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	2.1	U		P	
7440-39-3	Barium	5.1	B		P	
7440-41-7	Beryllium	0.23	B		P	
7440-43-9	Cadmium	1.3	U		P	
7440-70-2	Calcium	1230	B		P	
7440-47-3	Chromium	2.9	B		P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	2.6	B		P	U
7439-89-6	Iron	85.9	B		P	
7439-92-1	Lead	2.9	U		P	
7439-95-4	Magnesium	130	B		P	
7439-96-5	Manganese	35.6		*	P	
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.4	U		P	
7440-09-7	Potassium	166	B		P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	262	B		P	
7440-28-0	Thallium	1.7	B		P	U
7440-62-2	Vanadium	5.5	U		P	
7440-66-6	Zinc	8.6	B		P	
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

002

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93 Results by Sample

SAMPLE ID B09DJ2 FRACTION 01H TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	<0.2 U	mg/L	0.2
Fluoride	300.0	<0.1 U	mg/L	0.1
Phosphate	300.0	<0.4 R	mg/L	0.4
pH	9040	6.1 J	pH	0.1
Sulfate	300.0	<1 U	mg/L	1
Elect. Conductivity	9050	<6 U	umhos/cm	6

FORM I

149-1056

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93 Results by Sample

SAMPLE ID B09DJ2 FRACTION 01K TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	<2 U	mg/L	2

FORM I

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93

Results by Sample

SAMPLE ID B09DJ2 FRACTION 01M TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solid	160.1	<5 U	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93

Results by Sample

SAMPLE ID B09DJ2 FRACTION 010 TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1 V	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93

Results by Sample

SAMPLE ID B09DJ2 FRACTION 01R TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

1-14-94

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME:	Thermo Analytical ERG Inc.	LAB SAMPLE ID:	B09DJ2
CASE NO.:	N3-11-046	Work ID:	100-FR-3
Matrix:	WATER		
Receipt Date:	08-Nov-93		
Units:	MG/L	% Solids:	NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	<1 U	1	11-Nov-93
ORGANIC BROMIDE	<0.01 U	0.01	20-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	20-Nov-93
ORGANIC IODIDE	<0.01	0.01	20-Nov-93

COMMENTS:

Received: 11/06/93 Results by Sample

SAMPLE ID B09DJ2 SAMPLE # 01 FRACTIONS: A
Date & Time Collected 11/03/93 Category WATER

NO3NO2 <0.25 UJ
mg N/L

SAMPLE ID B09DJ2D SAMPLE # 01 FRACTIONS: B
Date & Time Collected 11/03/93 Category WATER

NO3NO2 <0.25
mg N/L

SAMPLE ID B09DJ2S SAMPLE # 01 FRACTIONS: C
Date & Time Collected 11/03/93 Category WATER

NO3NO2 2.31
mg N/L

SAMPLE ID LCSW SAMPLE # 02 FRACTIONS: A
Date & Time Collected not specified Category WATER

NO3NO2 2.05
mg N/L

1-19-94 SC

9215507.0687

000144

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B18

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B18

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9215507.0689

000155

EPA SAMPLE NO.

B09DJ4

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B14

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

11/21/93

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DJ4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B14

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9215507.0691

000230

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31117I03

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/17/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

1 1/14 CH

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31117I03

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/17/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

11/21/93 CH

9213507.0695

000232

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31117I03

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/17/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9 1 5 3 7 0 6 9 4

000338

EPA SAMPLE NO.

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/05/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/08/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/30/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U J
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U J
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U J
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1-19-94 SC

9215597.0695

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DJ2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-046SAS No.: SDG No.: B09DJ2

Matrix (soil/water): WATER Lab Sample ID: 11115-01S

Level (low/med): LOW Date Received: 11/06/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19.5	B	VJ	P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	1.2	U		P
7440-41-7	Beryllium	0.31	B	V	P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	59.0	U		P
7440-47-3	Chromium	6.3	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	37.7	B	V	P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	22.9	U		P
7439-96-5	Manganese	0.86	B	V	P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.6	B		P
7440-09-7	Potassium	101	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	114	U		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

002

9713507.0696

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

809DJ3

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-046SAS No.: SDG No.: 809DJ3

Matrix (soil/water): WATER Lab Sample ID: 11118-01S

Level (low/med): LOW Date Received: 11/06/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	1230		E*	P	J
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	2.1	U		P	
7440-39-3	Barium	5.1	B		P	
7440-41-7	Beryllium	0.23	B		P	
7440-43-9	Cadmium	1.3	U		P	
7440-70-2	Calcium	1230	B		P	
7440-47-3	Chromium	2.9	B		P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	2.6	B		P	U
7439-89-6	Iron	85.9	B		P	
7439-92-1	Lead	2.9	U		P	
7439-95-4	Magnesium	130	B		P	U
7439-96-5	Manganese	35.6		*	P	J
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.4	U		P	
7440-09-7	Potassium	166	B		P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	262	B		P	
7440-28-0	Thallium	1.7	B		P	U
7440-62-2	Vanadium	5.5	U		P	
7440-66-6	Zinc	8.6	B		P	U
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

JMS 1-19-94

Comments:

002

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93

Results by Sample

SAMPLE ID B09DJ2 FRACTION 01H TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	<0.2 U	mg/L	0.2
Fluoride	300.0	<0.1 U	mg/L	0.1
Phosphate	300.0	<0.4 R	mg/L	0.4
pH	9040	6.1 J	pH	0.1
Sulfate	300.0	<1 U	mg/L	1
Elect. Conductivity	9050	<6 U	umhos/cm	6

FORM I

149405

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93

Results by Sample

SAMPLE ID B09DJ2 FRACTION 01K TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	<2 U	mg/L	2

FORM I

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93

Results by Sample

SAMPLE ID B09DJ2 FRACTION 01M TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solid	160.1	<5 U	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93

Results by Sample

SAMPLE ID B09DJ2 FRACTION 010 TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1 V	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93

Results by Sample

SAMPLE ID B09DJ2 FRACTION 01R TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME:	Thermo Analytical ERG Inc.	LAB SAMPLE ID:	B09DJ2
CASE NO.:	N3-11-046	Work ID:	100-FR-3
Matrix:	WATER		
Receipt Date:	08-Nov-93		
Units:	MG/L	% Solids:	NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	<1 U	1	11-Nov-93
ORGANIC BROMIDE	<0.01 U	0.01	20-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	20-Nov-93
ORGANIC IODIDE	<0.01	0.01	20-Nov-93

COMMENTS:

9713507.0703

 Skinner&Sherman REPORT Work Order # S3-11-116

Received: 11/06/93 Results by Sample

SAMPLE ID B09DJ2 SAMPLE # 01 FRACTIONS: A
Date & Time Collected 11/03/93 Category WATER

NO3NO2 <0.25 UJ
mg N/L

SAMPLE ID B09DJ2D SAMPLE # 01 FRACTIONS: B
Date & Time Collected 11/03/93 Category WATER

NO3NO2 <0.25
mg N/L

SAMPLE ID B09DJ2S SAMPLE # 01 FRACTIONS: C
Date & Time Collected 11/03/93 Category WATER

NO3NO2 2.31
mg N/L

SAMPLE ID LCSW SAMPLE # 02 FRACTIONS: A
Date & Time Collected not specified Category WATER

NO3NO2 2.05
mg N/L

1-19-94 SC

9213507.0704

000144
EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B18

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

9713507.0705

000145

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B18

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9213507.0706

000155

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DJ4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B14

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP 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
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	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	Xylene (total)	10	U

11/21/93

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DJ4

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31109B14

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9213507.0708

000230

EPA SAMPLE NO.

B09DJ2

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31117I03

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/17/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U

1/14 CH

9213507.0709

000231

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31117I03

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/17/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

11/21/94 CH

9215507.0710

000232

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 31117I03

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/17/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I SV-TIC

3/90

9213507.0711

000338

EPA SAMPLE NO.

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

B09DJ2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 11029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A311029-01E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 11/05/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/08/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/30/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U J
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U J
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U J
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1-19-94 SC

9213507.0712

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

809DJ2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-046SAS No.: SDG No.: 809DJ2

Matrix (soil/water): WATER Lab Sample ID: 11115-01S

Level (low/med): LOW Date Received: 11/06/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19.5	B	VJ	P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	1.2	U		P
7440-41-7	Beryllium	0.31	B	V	P
7440-43-9	Cadmium	1.3	U		P
7440-70-2	Calcium	59.0	U		P
7440-47-3	Chromium	6.3	B		P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	2.5	U		P
7439-89-6	Iron	37.7	B	V	P
7439-92-1	Lead	2.9	U		P
7439-95-4	Magnesium	22.9	U		P
7439-96-5	Manganese	0.86	B	V	P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	3.6	B		P
7440-09-7	Potassium	101	B		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-23-5	Sodium	114	U		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	4.4	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

002

9213507.0713

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B09DJ3

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D2-0039

Lab Code: SKINER Case No.: N3-11-046SAS No.: SDG No.: B09DJ3

Matrix (soil/water): WATER Lab Sample ID: 11118-01S

Level (low/med): LOW Date Received: 11/06/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	1230		E*	P	J
7440-36-0	Antimony	12.9	U		P	
7440-38-2	Arsenic	2.1	U		P	
7440-39-3	Barium	5.1	B		P	
7440-41-7	Beryllium	0.23	B		P	
7440-43-9	Cadmium	1.3	U		P	
7440-70-2	Calcium	1230	B		P	
7440-47-3	Chromium	2.9	B		P	
7440-48-4	Cobalt	2.6	U		P	
7440-50-8	Copper	2.6	B		P	U
7439-89-6	Iron	85.9	B		P	
7439-92-1	Lead	2.9	U		P	
7439-95-4	Magnesium	130	B		P	
7439-96-5	Manganese	35.6		*	P	J
7439-97-6	Mercury	0.20	U		AV	
7440-02-0	Nickel	3.4	U		P	
7440-09-7	Potassium	166	B		P	
7782-49-2	Selenium	2.8	U		P	
7440-22-4	Silver	2.6	U		P	
7440-23-5	Sodium	262	B		P	
7440-28-0	Thallium	1.7	B		P	U
7440-62-2	Vanadium	5.5	U		P	
7440-66-6	Zinc	8.6	B		P	
	Cyanide				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

002

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93

Results by Sample

SAMPLE ID B09DJ2 FRACTION 01H TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	<0.2 U	mg/L	0.2
Fluoride	300.0	<0.1 U	mg/L	0.1
Phosphate	300.0	<0.4 R	mg/L	0.4
pH	9040	6.1 J	pH	0.1
Sulfate	300.0	<1 U	mg/L	1
Elect. Conductivity	9050	<6 U	umhos/cm	6

FORM I

1-9-94 SC

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93

Results by Sample

SAMPLE ID B09DJ2 FRACTION 01K TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	<2 U	mg/L	2

FORM I

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93

Results by Sample

SAMPLE ID B09DJ2 FRACTION 01M TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Tot. Dissolved Solid	160.1	<5 U	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93

Results by Sample

SAMPLE ID B09DJ2 FRACTION 010 TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	9030	<1 V	mg/L	1

FORM I

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000014

TMA Inc. REPORT Work Order # A3-11-029

Received: 11/05/93

Results by Sample

SAMPLE ID B09DJ2 FRACTION 01R TEST CODE WCCLPL NAME Anions & Wet Chem.

Date & Time Collected 11/03/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.1	<30	mg/L	30

FORM I

1-19-94

FORM 1
INORGANIC ANALYSIS DATA SHEET

LAB NAME:	Thermo Analytical ERG Inc.	LAB SAMPLE ID:	B09DJ2
CASE NO.:	N3-11-046	Work ID:	100-FR-3
Matrix:	WATER		
Receipt Date:	08-Nov-93		
Units:	MG/L	% Solids:	NA

Analyte	Concentration	Detection Limit	Analysis Date
TOTAL ORGANIC CARBON	<1 U	1	11-Nov-93
ORGANIC BROMIDE	<0.01 U	0.01	20-Nov-93
ORGANIC CHLORIDE	<0.01	0.01	20-Nov-93
ORGANIC IODIDE	<0.01	0.01	20-Nov-93

COMMENTS:

9713507.0720

Received: 11/06/93 Results by Sample

SAMPLE ID B09DJ2 SAMPLE # 01 FRACTIONS: A
Date & Time Collected 11/03/93 Category WATER

NO3NO2 <0.25 UJ
mg N/L

SAMPLE ID B09DJ2D SAMPLE # 01 FRACTIONS: B
Date & Time Collected 11/03/93 Category WATER

NO3NO2 <0.25
mg N/L

SAMPLE ID B09DJ2S SAMPLE # 01 FRACTIONS: C
Date & Time Collected 11/03/93 Category WATER

NO3NO2 2.31
mg N/L

SAMPLE ID LCSW SAMPLE # 02 FRACTIONS: A
Date & Time Collected not specified Category WATER

NO3NO2 2.05
mg N/L

1-19-94 SC