9613473.2147

START

B06ZR0-TMA-224

0045173

TMA
Thermo Analytical Inc.

TMA/Norcal
2030 Wright Avenue
P.O. Box 4040
Richmond, CA 94804-0040
(415) 235-2633 Fax No. (415) 235-0438

SEP 1992
RECEIVED
OSM DMO

September 10, 1992

Briana Colley
Westinghouse Hanford Company
2355 Stevens Drive
Richland, WA 99352

Reference: Case N2-07-050 (Metals)
Samples B0GZR0 & B0GZR1

Dear Briana:

This letter will confirm that the Westinghouse sample identification numbers on the above case should have read B06ZR0 and B06ZR1, respectively.

Sincerely,

Dolores Sanchez
Program Administrator

SEP 1996
RECEIVED
EDMC

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 07-033

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : July 15, 1992

1.0 DESCRIPTION OF CASE :

Two 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
B06ZR0	A2-07-033-01A	V	WATER	7
B06ZR0	A2-07-033-01B	SV & P	WATER	
B06ZR0 MS	A2-07-033-01C	SV & P	WATER	
B06ZR0 MSD	A2-07-033-01D	SV & P	WATER	
B06ZR2	A2-07-033-02A	V	WATER	7
B06ZR2 MS	A2-07-033-02B	V	WATER	7
B06ZR2 MSD	A2-07-033-02C	V	WATER	7

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

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 of the 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 7/21/92 and was analyzed in accordance with the EPA CLP SOW. The sequence met all of the QC limits specified in the CLP SOW.

The Chromatograms are presented in the manner consistent with the capabilities of the Nelson 2600 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. All of the QC results were within the limits specified by the EPA 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
CLP Program Manager

Widayati

Wida Ang
Organics Supervisor

9613473.2150

000004
EPA SAMPLE NO.

B06ZR0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07033 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A207033-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 20717R03

Level: (low/med) LOW Date Received: 07/15/92

% Moisture: not dec. ____ Date Analyzed: 07/17/92

GC Column: PACK ID: 2.00 (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

9613473.2151

000005

EPA SAMPLE NO.

B06ZR0

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07033 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A207033-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 20717R03

Level: (low/med) LOW Date Received: 07/15/92

% Moisture: not dec. ____ Date Analyzed: 07/17/92

GC Column: PACK ID: 2.00 (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

9613473.2152

000006

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B06ZR2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07033 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A207033-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 20717R04

Level: (low/med) LOW Date Received: 07/15/92

% Moisture: not dec. ____ Date Analyzed: 07/17/92

GC Column: PACK ID: 2.00 (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	19	
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

9613473.2153

000007

EPA SAMPLE NO.

B06ZR2

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07033 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A207033-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 20717R04

Level: (low/med) LOW Date Received: 07/15/92

% Moisture: not dec. ____ Date Analyzed: 07/17/92

GC Column: PACK ID: 2.00 (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

9613473 2154

000008

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B06ZR0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07033 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A207033-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 20727N03

Level: (low/med) LOW Date Received: 07/15/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 07/20/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/27/92

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.

B06ZR0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07033 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A207033-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 20727N03

Level: (low/med) LOW Date Received: 07/15/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 07/20/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/27/92

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

EPA SAMPLE NO.

B06ZR0

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07033 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A207033-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 20727N03

Level: (low/med) LOW Date Received: 07/15/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 07/20/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/27/92

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	4.22	16	BJ
2.	Unknown hydrocarbon	6.97	8	BJ
3.	Unknown cyclic ketone	8.48	4	BJ

9613473.2157

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

000011
EPA SAMPLE NO.

B06ZR0

ab Name: TMA/ARLI Contract: WHC

ab Code: TMALA Case No.: 07033 SAS No.: NA SDG No.: NA

atrix: (soil/water) WATER Lab Sample ID: A207033-01B

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

Moisture: _____ decanted: (Y/N) ___ Date Received: 07/15/92

xtraction: (SepF/Cont/Sonc) CONT Date Extracted: 07/20/92

oncentrated Extract Volume: 10000 (uL) Date Analyzed: 07/22/92

njection Volume: 1.00 (uL) Dilution Factor: 1.00

PC 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

GENERAL CHEMISTRY RESULTS

CASE NO. 07-033

Water Sample #:

B06ZR0

CASE NARRATIVE

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

Ernesto Vázquez

Ernesto Vazquez

TMA Inc. REPORT Work Order # A2-07-033

Received: 07/15/92 08/28/92 14:59:35

REPORT TO: Westinghouse Hanford Company
2355 Stevens Dr.
Richland,WA.99352
MO-346/200 West/T6-08
ATTEN: Jeanette Duncan

PREPARED BY: Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
ATTEN: Ms. Carole Harris
PHONE: 818-357-3247

CERTIFIED BY: Ernesto Vazquez
CONTACT: EVV CIH

CLIENT: WHC SAMPLES: 3
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: 200AAMS
TAKEN: By Westinghouse Staff
TRANS: Federal Express
TYPE: Liquid
P.O. #: N2-07-050-SU-AR
INVOICE: under separate cover

SAMPLE IDENTIFICATION

01	B06ZR0
01	B06ZR0 MS
01	B06ZR0 MSD
01	B06ZR0
01	B06ZR0 MS
01	B06ZR0 Duplicate
01	B06ZR0
01	B06ZR0 Duplicate
01	B06ZR0 MS
02	B06ZR2
02	B06ZR2 MS
02	B06ZR2 MSD
03	Wet Chemistry Blank

TEST CODES and NAMES used on this workorder

BNCLPW	CLP Semivol. Water
CL	Chloride
F W	Fluoride in Water
PECLPL	CLP Pesticides Liq.-WH019
PO4 L	Phosphate in Liquids
SO4 W	Sulfate (in Waters)
VOCLPL	CLP Volatile Org.Liq.
WCCLPL	Anions & Wet Chem. - WH043
WCQCD	Quality Control Summary
WCQCS	Quality Control Summary
WNH3 L	Ammonia in Water - WH140
W ALK	Alkalinity - WH131
W COD	COD Water - WH132
W TDS	Dissolved Solids WH128
W TSS	Suspended Solids WH129

TMA Inc. REPORT Work Order # A2-07-033

Received: 07/15/92 Results by Sample

SAMPLE ID B06ZR0 FRACTION 01E TEST CODE WCCLPL NAME Anions & Wet Chem. - WB043

Date & Time Collected 07/12/92 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300	0.4	mg/L	0.1
Chloride	300	15.4	mg/L	0.2
Sulfate	300	27	mg/L	1
Phosphate	300	<0.4	mg/L	0.4
Tot. Dissolved Solids	160.1	212	mg/L	NA
Alkalinity	310.1	96	mg/L	2
TSS	160.2	<5	mg/L	5

FORM I

nc. REPORT TMAW&nk Order # A2-07-033
Received: 07/15/92 Results by Sample

SAMPLE ID B06ZR0 FRACTION 01W TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043
Date & Time Collected 07/12/92 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia	350.3	0.05	mg/L	0.05
COD	410	<30	mg/L	30

FORM I

9613473.2162

000002

Westinghouse Hanford Company	CHAIN OF CUSTODY	ARI

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200AAMS

Collection Date July 12, 1992

Ice Chest No. SML-152

Field Logbook No. EFL 1632

Bill of Lading/Airbill No. 250986906-5

Offsite Property No. W92-0-0533-4

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks N/A

Sample Identification

B0GZR0
- 3, 40ml, aG, WATER, CLP-VOA
- 3, 2L, aG, WATER, SEMI-VOA, PCB/PEST
- ~~1, 1L, P, WATER, ICP/AA METAL & Hg (HNO3) UNFILTERED~~
- 3, 1L, P, WATER, TDS, ANIONS, TSS, ALK
- 1, 1L, P, WATER, AMMONIA, COD (H2SO4)
- 1, 250ml, aG, WATER, TOC(INCLUDES BICARBONATE/CARBONATE (H2SO4)
- ~~1, 250ml, G, WATER, TOX (H2SO4)~~
- ~~1, 1L, P, WATER, GROSS ALPHA/BETA, GAMMA SCAN (HNO3)~~

~~B0GZR1~~
- ~~1, 1L, P, WATER, ICP/AA METAL & Hg (HNO3) (FILTERED)~~

B0GZR2
- 3, 40ml aG, WATER, CLP-VOA

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: C Celiberti C. CELIBERTI	Received by: Refrid	Date/Time: 7-12-92 1530
Relinquished by:	Received by: K. Trapp / K. Trapp	Date/Time: 7/13/92 0950
Relinquished by: K. Trapp / K. Trapp	Received by: Kermit Blum	Date/Time: 7-15-92 1100
Relinquished by: Kermit Blum 7-15-92	Received by: C. Harris	Date/Time: 7/16/92 900

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

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

9613473.2163

000003

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST Task #92-128

PART I: FIELD SECTION

.or Kirby Lee — Date Sampled 7/12/92 — Time 0700 hours

pany Contact PH Butcher — Telephone (509) 376-5045

ample umber	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
162R0	3, Gs, 40ml	W	CLP-VOA
	3, aG, 2L	W	Semi-VOA, Pest/PCB
	~~1, P, 1L~~	~~W~~	~~ICP/AA Metals + Hg (HNO3) Unfiltered~~
	3, P, 1L	W	TDS, ~~COD, Dissolved Oxygen~~, Anions, TSS, ALK
	1, P 1L	W	Ammonia, COD (H_2SO_4)
	1, aG, 250ml	W	TOC (Includes Bicarbonate / Carbonate) (H_2SO_4)
	~~1, Gs, 250ml~~	~~W~~	~~TOX (H_2SO_4)~~
	~~1, A, 1L~~	~~W~~	~~Gross Alpha+ Beta, Gamma Scan (HNO3)~~
~~162R1~~	~~1, A, 1L~~	~~W~~	~~ICP/AA Metals + Hg (HNO3) Filtered~~
162R2	3, 40ml, GS	W	CLP-VOA
			BOL #: 250986 906-5
			OPC #: WA2-0-0533-4

eld Information** _____

ecial Handling and/or Storage _____

ossible Sample Hazards _____

PART II: LABORATORY SECTION

ed by Kermit Blum — Title Sample Control Supervisor — Date 7-15-92

nalysis Required _____

soil, sludge, water, etc.

000 406 (05/90)

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARLI PAGE : 1 OF 1

RECEIVED BY (PRINT NAME): CAROLE HARRIS LOG-IN-DATE : 7/16/97

RECEIVED BY (SIGNATURE): Carole Harris

CASE NUMBER:
SAMPLE DELIVERY GROUP NO.:
SAS NUMBER:

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.: 2501031100
7. Sample Tags Present/Absent*
8. Sample Tags 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: 7/16/97
12. Temp of ice chest 4.1 °C
13. Time Recieved: 9:00 AM

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B0L0ZR0	AZ-07-033-01	
	B0L0ZR2	AZ-07-033-02	

SAMPLE TRANSFER

Fraction:
Area #:
By:
On:

* Contact SMO and attach record of resolution

Reviewed By: Logbook No.:

Date: Logbook Page No.:

FORM DC-1

9613473.2165

000005

TMA/ARLI
Thermo Analytical Inc.

RADIATION DOSE RATE SURVEY FORM

Date 7/16/92 COMPANY NORCAL (WHC) OTHER ORD # 252103100

Surveyor's Name Mark S. McCrary

Model No. HP-210 / ESP-1 Model No. AC-3-7 / ESP-1

Serial Nos. 710289 / 02619 Serial Nos. 407726 / 02628

Calibration Date 3/25/92 Calibration Date OUT FOR CALIBRATION

Instrument Calibration Factor 0.280 Instrument Calibration Factor

Sample	Location	HP-210 CPM	HP-210 Factor	HP-210 DPM	AC-3-7 CPM	AC-3-7 Factor	AC-3-7 DPM	Spillage or Breakage?	Activity, uCi/mL or uCi/g
Background		40.0							
Consistency		7,490	0.2891						
Smears: RED/PLAIN		33.0						NONE	
RED/Ruler		38.0						NONE	
Reported (WHC) 9 samples each < 50 pCi/gram									

Comments:

All OK ✓ Approved [illegible]

Not OK Date 7/16/92

Form: ARLI RA-01
Rev: 06

01/15/92

9613473.2166

000006

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL
PACKAGE TRACKING NUMBER 2521031100

2521031100

Date 7/6/92

RECIPIENT'S COPY

From (Your Name) Please Print: SAMPLE CONTROL
Your Phone Number (Very important): (213) 725-2377
Company: [illegible]
Department/Floor No:
Street Address: [illegible]
City: [illegible] State: CA ZIP Required: [illegible]

2 To (Recipient's Name) Please Print: SAMPLE COMPANY
Recipient's Phone Number (Very important): ( )
Company: TINA / ARCI
Department/Floor No:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes): 160 TAYLOR ST.
City: MONROVIA State: CA ZIP Required: 910 16

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): 2320 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
11 [x] YOUR PACKAGING
16 [ ] FEDEX LETTER *
12 [ ] FEDEX PAK *
13 [ ] FEDEX BOX
14 [ ] FEDEX TUBE

Standard Overnight
51 [ ] YOUR PACKAGING
56 [ ] FEDEX LETTER *
52 [ ] FEDEX PAK *
53 [ ] FEDEX BOX
54 [ ] FEDEX TUBE

Economy Two-Day
30 [ ] ECONOMY

Government Overnight
46 [ ] GOV'T LETTER
41 [ ] GOV'T PACKAGE

Freight Service
70 [ ] OVERNIGHT FREIGHT **
80 [ ] TWO-DAY FREIGHT **
* Declared value not $100

5 DELIVERY AND SPECIAL HANDLING (Check services required)
1 [ ] HOLD FOR PICK-UP
2 [x] DELIVER WEEKDAY
3 [ ] DELIVER SATURDAY (Extra charge)
4 [ ] DANGEROUS GOODS (Extra charge)
5 [ ]
6 [ ] DRY ICE
7 [ ] OTHER SPECIAL SERVICE
8 [ ]
9 [ ] SATURDAY PICK-UP (Extra charge)
10 [ ]
11 [ ]
12 [ ] HOLIDAY DELIVERY (Extra charge)

6 PACKAGES | WEIGHT (In Pounds Only) | YOUR DECLARED VALUE
Total | Total | Total
2 108

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

Received At
1 [x] Regular Stop 3 [ ] Drop Box
2 [ ] On-Call Stop 4 [ ] BSC 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
FedEx Emp No | Date/Time

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

REVISION DATE 6/91
PART #137204 FXEM 4/92
FORMAT #099
099

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9613473.2167

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

SEP 1992
RECEIVED
OSM DMO

August 13, 1992

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 July 16, 1992 from Westinghouse/Hanford Company. The samples were analyzed for the USEPA CLP Target Analyte List metals. The analysis was performed under Skinner and Sherman work order S207108.

Methodology

The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work 7/88 (CLP SOW788).

Discussion

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

The matrix spike recovery for mercury, and selenium exceeded the control limit requirements.

The laboratory duplicates for selenium 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.

David N. Peterson
Assistant Laboratory Manager

2-27-96
MC

WESTINGHOUSE/HANFORD

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N207050 SAS No.: SDG No.: B0GZR0

SOW No.: 7/88

SAMPLE NUMBER:	Lab Sample ID.
B0GZR0	07108-01S
B0GZR0D	07108-01S2
B0GZR0S	07108-01DS

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: Name: David N. Peterson

Date: 8/13/92 Title: Asst. Laboratory Manager

9613473.2169

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER:

B0GZR0

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N207050 SAS No.: SDG No.: B0GZR0

Matrix (soil/water): WATER Lab Sample ID: 07108-01S

Level (low/med): LOW Date Received: 07/17/92

% 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	19.80	B		P
7440-36-0	Antimony	16.50	U		P
7440-38-2	Arsenic	8.60	B		F
7440-39-3	Barium	22.20	B		P
7440-41-7	Beryllium	0.59	B		P
7440-43-9	Cadmium	1.40	U		P
7440-70-2	Calcium	25600.00			P
7440-47-3	Chromium	3.70	U		P
7440-48-4	Cobalt	2.30	U		P
7440-50-8	Copper	2.40	U		P
7439-89-6	Iron	1440.00			P
7439-92-1	Lead	6.80			F
7439-95-4	Magnesium	7900.00			P
7439-96-5	Manganese	2.70	B		P
7439-97-6	Mercury	0.20	U	N	CV
7440-02-0	Nickel	6.00	U		P
7440-09-7	Potassium	4990.00	B		P
7782-49-2	Selenium	9.00		+N*	F
7440-22-4	Silver	2.30	U		P
7440-23-5	Sodium	22600.00			P
7440-28-0	Thallium	0.90	U		F
7440-62-2	Vanadium	18.30	B		P
7440-66-6	Zinc	142.00			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

TMA/Skinner & Sherman Labs **SAMPLE LOG-IN**

WORKORDER 5207108 CLIENT Hanford Nor No. SAMPLES:

PROTCL CLP TURNARND 33 Day 1

COOLER TEMP: 6 oC, or NA (Soil) (Water) (Specify Other)

CUSTODIAN SDG/BATCH N/A

CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N207050

SHIPER & # Fed Ex PO/CONTRACT# N207050

TAGS: PRESENT/ABSENT/NA/SEE COC CONTACT D. SANCHEZ

CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS:

SAMPLE CONTAINERS-INTACT/BROKEN COMMENTS

CLIENT COMMENT? YES/NO

SAMPLE LABELS AGREE WITH CHAIN OF CUSTODY INFO? YES/NO (COMMENT)

CLIENT PAPERWORK AGREES WITH SAMPLES & COC? YES /NO (COMMENT)

SHIPMENT DATES 7/16/92

LIST ANY DATE WITH PAPERWORK/SHIPMENT PROBLEMS & SPECIFY THE PROBLEM:

N/A

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	BOG2RO	water	7.16.92	1.93	DS TM ONLY	Hg Due
2						
3						8/1/92
4						
5						
6						
7						
8						
9						
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24						
25						
26						
27						

Samples are from site known to have Rad-Contamination: YES ✓ NO

Samples have detectable amounts of Radioactive Material: YES NO ✓

SUBCONTRACT: YES/NO TO: DATE:

REVIEWED 0109

complete BP 7/17/92

* EPA/CLP required

9613473.2171

Westinghouse Hanford Company	CHAIN OF CUSTODY	S&S

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200AAMS

Collection Date July 12, 1992

Ice Chest No. SML-152

Field Logbook No. EFL 1032

Bill of Lading/Airbill No. 250986906-5

Offsite Property No. W92-0-0533-4

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks N/A

Sample Identification

B0GZR0

~~3, 40ml, aG, WATER, CLP-VOA~~

~~3, 2L, aG, WATER, SEMI-VOA, PCB/PEST~~

1, 1L, P, WATER, ICP/AA-METAL & Hg (HNO3) UNFILTERED

~~3, 1L, P, WATER, TDS, ANIONS, TSS, ALK~~

~~1, 1L, P, WATER, AMMONIA, COD (H2SO4)~~

~~1, 250ml, aG, WATER, TOC(INCLUDES BICARBONATE/CARBONATE (H2SO4)~~

~~1, 250ml, Gs, WATER, TOX (H2SO4)~~

~~1, 1L, P, WATER, GROSS ALPHA/BETA, GAMMA SCAN (HNO3)~~

B0GZR1

1, 1L, P, WATER, ICP/AA METAL & Hg (HNO3) (FILTERED)

~~B0GZA2~~

~~3, 40ml aG, WATER, CLP-VOA~~

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: C. Celiberti C. CELIBERTI	Received by: Refried	Date/Time: 7-13-92 1530
Relinquished by:	Received by: K. Trapp / K. Trapp	Date/Time: 7/13/92 0950
Relinquished by: K. Trapp / K. Trapp	Received by: Kermit Blum	Date/Time: 7-15-92 1100
Relinquished by: 7-15-92 Kermit Blum	Received by: Barbara Prowe	Date/Time: 7-16-92 10:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

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

0110

9613473.2172

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST Task #92-128

PART I: FIELD SECTION

.or Kirby Lee — Date Sampled 7/12/92 — Time 0700 hours

Company Contact PH Butcher — Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B06ZR0	~~3, GS, 40ml~~	~~W~~	~~CLP VOA~~
	~~3, GS, 2L~~	~~W~~	~~Semi-VOA, Pest/PCB~~
	1, P, 1L	W	ICP/AA Metals & Hg (HNO_3) Unfiltered
	~~3, P, 1L~~	~~W~~	~~TDS, BOD, Dissolved Oxygen, Anions, TSS, Alk~~
	~~1, P, 1L~~	~~W~~	~~Ammonia, COD (H_2SO_4)~~
	~~1, GS, 250ml~~	~~W~~	~~TOC (Includes Bicarbonate/Carbonate) (H_2SO_4)~~
	~~1, GS, 250ml~~	~~W~~	~~TOX (H_2SO_4)~~
	~~1, P, 1L~~	~~W~~	~~Gross Alpha/Beta, Gamma Scan (HNO_3)~~
B06ZR1	1, P, 1L	W	ICP/AA Metals & Hg (HNO_3) Filtered
~~B06ZR2~~	~~3, 40ml, GS~~	~~W~~	~~CLP VOA~~
			BOL #: 250986 906-5
			OPC #: WA2-0-0533-4

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by Kermit Blum — Title Sample Control Supervisor — Date 7-15-92

Analysis Required _____

0111

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

9613473.2173

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

SEP 1992
RECEIVED
OSM DMO

August 13, 1992

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 July 16, 1992 from Westinghouse/Hanford Company. The samples were analyzed for the USEPA CLP Target Analyte List metals. The analysis was performed under Skinner and Sherman work order S207109.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work 7/88 (CLP SOW788).

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

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

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

David N. Peterson
Assistant Laboratory Manager

2-27-96
MC

WESTINGHOUSE/HANFORD

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N207050 SAS No.: SDG No.: B0GZR1

SOW No.: 7/88

SAMPLE NUMBER:	Lab Sample ID.
B0GZR1	07109-01S
B0GZR1D	07109-01S2
B0GZR1S	07109-01DS

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: Name: David N. Peterson

Date: 8/13/90 Title: Asst. Laboratory Manager

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B0GZR1

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N207050 SAS No.: SDG No.: B0GZR1

Matrix (soil/water): WATER Lab Sample ID: 07109-01S

Level (low/med): LOW Date Received: 07/17/92

% 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	17.30	U		P
7440-36-0	Antimony	16.50	U		P
7440-38-2	Arsenic	8.00	B		F
7440-39-3	Barium	22.40	B		P
7440-41-7	Beryllium	0.59	B		P
7440-43-9	Cadmium	1.40	U		P
7440-70-2	Calcium	25900.00			P
7440-47-3	Chromium	3.70	U		P
7440-48-4	Cobalt	2.30	U		P
7440-50-8	Copper	2.40	U		P
7439-89-6	Iron	16.30	U		P
7439-92-1	Lead	3.00	B		F
7439-95-4	Magnesium	8010.00			P
7439-96-5	Manganese	1.30	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	6.00	U		P
7440-09-7	Potassium	5030.00			P
7782-49-2	Selenium	18.50	U	W	F
7440-22-4	Silver	2.30	U		P
7440-23-5	Sodium	23000.00			P
7440-28-0	Thallium	1.60	U		F
7440-62-2	Vanadium	18.90	B		P
7440-66-6	Zinc	10.10	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

5207109

TMA/Skinner & Sherman Labs SAMPLE LOG-IN

WORKORDER 5207109 CLIENT Hanford War No. SAMPLES:

PROTCL clp TURNARND 33 Days 1

COOLER TEMP: 6 oC, or NA (Soil) (Water) (Specify Other)

CUSTODIAN B. Prodale SDG/BATCH N/A

CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N207050

SHIPER & # Fed Ex PO/CONTRACT# N207050

TAGS: PRESENT/ABSENT/NA/SEE COC CONTACT D. Sanchez

CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS:

SAMPLE CONTAINERS-INTACT/BROKEN COMMENTS

CLIENT COMMENT? YES/NO

SAMPLE LABELS AGREE WITH CHAIN OF CUSTODY INFO? YES/NO (COMMENT)

CLIENT PAPERWORK AGREES WITH SAMPLES & COC? YES /NO (COMMENT)

SHIPMENT DATES 7.16.92

LIST ANY DATE WITH PAPERWORK/SHIPMENT PROBLEMS & SPECIFY THE PROBLEM:

Field Filtered

N/A

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	BOG2R1	Water	7.16.92	2.01	TM only	Hg Due
2						8/1/92
3						
4						
5						
6						
7						
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26						
27						

Samples are from site known to have Rad-Contamination: YES ✓ NO ___

Samples have detectable amounts of Radioactive Material: YES ___ NO ✓

116 SUBCONTRACT: YES/NO TO: DATE:

7/31/92

REVIEWED

complete 7/31/92

9613473.2177

Westinghouse Hanford Company	CHAIN OF CUSTODY	S & S

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200AAMS

Collection Date July 12, 1992

Ice Chest No. SML-152

Field Logbook No. EFL 1632

Bill of Lading/Airbill No. 250986906-5

Offsite Property No. W92-0-0533-4

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks N/A

Sample Identification

B0GZR0

~~3, 40ml, aG, WATER, CLP-VOA~~

~~3, 2L, aG, WATER, SEMI-VOA, PCB/PEST~~

1, 1L, P, WATER, ICP/AA-METAL & Hg (HNO3) UNFILTERED

~~3, 1L, P, WATER, TDS, ANIONS, TSS, ALK~~

~~1, 1L, P, WATER, AMMONIA, COD (H2SO4)~~

~~1, 250ml, aG, WATER, TOC(INCLUDES BICARBONATE/CARBONATE (H2SO4)~~

~~1, 250ml, Gs, WATER, TOX (H2SO4)~~

~~1, 1L, P, WATER, GROSS ALPHA/BETA, GAMMA SCAN (HNO3)~~

B0GZR1

1, 1L, P, WATER, ICP/AA METAL & Hg (HNO3) (FILTERED)

~~B0GZA1~~

~~3, 40ml aG, WATER, CLP-VOA~~

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: C. Celiberti C. CELIBERTI	Received by: Refrid	Date/Time: 7-13-92 1530
Relinquished by:	Received by: K. Trapp / K. Trapp	Date/Time: 7/13/92 0950
Relinquished by: K. Trapp / K. Trapp	Received by: Kermit Blum	Date/Time: 7-15-92 1100
Relinquished by: 7-15-92 Kermit Blum	Received by: Barbara Prowe	Date/Time: 7-16-92 10:15

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

117

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

9613473.2178

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST Task #92-128

PART I: FIELD SECTION

.or Kirby Lee — Date Sampled 7/12/92 Time 0700 hours

Company Contact PH Butcher — Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B06ZB0	~~3, GS, 40ml~~	~~W~~	~~CLP VOA~~
	~~3, GS, 2L~~	~~W~~	~~Semi-VOA, Pest/PCB~~
	1, P, 1L	W	ICP/AA Metals & Hg (HNO_3) Unfiltered
	~~3, P, 1L~~	~~W~~	~~TDS, BOD, Dissolved Oxygen, Anions, TSS, Alk~~
	~~1, P, 1L~~	~~W~~	~~Ammonia, COD (H_2SO_4)~~
	~~1, GS, 250ml~~	~~W~~	~~TOC (Includes Bicarbonate/Carbonate) (H_2SO_4)~~
	~~1, GS, 250ml~~	~~W~~	~~TOX (H_2SO_4)~~
	~~1, P, 1L~~	~~W~~	~~Gross Alpha/Beta, Gamma Scan (HNO_3)~~
06ZB1	1, P, 1L	W	ICP/AA Metals & Hg (HNO_3) Filtered
06ZB2	3, 40ml, GS	~~W~~	~~CLP VOA~~
			BOL #: 250986906-5
			OPC #: WA2-0-0533-4

eld Information** _____

pecial Handling and/or Storage _____

ossible Sample Hazards _____

118

PART II: LABORATORY SECTION

ed by Kermit Blum — Title Sample Control Supervisor — Date 7-15-92

nalysis Required _____

9613473.2179

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

SEP 1992
RECEIVED
OSM DMO

September 18, 1992

SENT BY FEDERAL EXPRESS

Ref. TMA/Norcal N2-07-061-7062

Mr. John Bourgeault
Westinghouse Hanford Company
2355 Stevens Drive
Richland, WA 99352

Dear Mr. Bourgeault:

Enclosed on the Summary Data Section, are the gross alpha, gross beta, and gamma scan results for the water samples from 200-AAMS Location, we received 17 July 1992. The QA/QC results are also given in the Summary Data Section.

Please call if you have any questions concerning this data.

Sincerely,

D. P. Kharkar

Dinkar P. Kharkar, Ph.D.
Manager, Nuclear Programs

DPK/ss

Enclosures: Section 1 through 7
Appendices

RECORD COPY

2-27-96
MC

9613473.2180

TMA NORCAL

REPORTING GROUP 7062

DATA SHEET

N207061-01

B06ZR0

SDG	7062	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N207061-01	Client sample id	B06ZR0
Dept sample id	7062-001	Matrix	WATER
Received	07/15/92	Collected	07/12/92
		Chain of custody id	EFL-1032

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	2.6	1.9	1.9	3.0	J	80A
Gross Beta	Beta	22	2.1	1.9	4.0		80B
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		250		U	GAM
Iron 59		U		85		U	GAM
Chromium 51	14392-02-0	U		400		U	GAM
Cobalt 60	10198-40-0	U		18		U	GAM
Zinc 65	17982-39-3	U		34		U	GAM
Ruthenium 106	13967-48-1	U		140		U	GAM
Cesium 134	17967-70-9	U		15		U	GAM
Cesium 137	10045-97-3	U		16		U	GAM
Europium 152	14683-23-9	U		26		U	GAM
Europium 154	15585-10-1	U		18		U	GAM
Radium 226	13982-67-7	U		28		U	GAM
Thorium 228	14274-82-9	U		38		U	GAM
Thorium 232	7440-29-1	U		67		U	GAM

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.16
Report date	09/18/92

9613473.2181

N207061-02

TMA NORCAL

REPORTING GROUP 7062

DATA SHEET

B06ZR3

SDG	7062	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N207061-02	Client sample id	B06ZR3
Dept sample id	7062-002	Matrix	WATER
Received	07/16/92	Collected	07/13/92
		Chain of custody id	EFL-1033

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	8.6	4.7	4.0	3.0		80A
Gross Beta	Beta	100	4.8	2.9	4.0		80B
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		170		U	GAM
Iron 59		U		60		U	GAM
Chromium 51	14392-02-0	U		370		U	GAM
Cobalt 60	10198-40-0	U		14		U	GAM
Zinc 65	17982-39-3	U		26		U	GAM
Ruthenium 106	13967-48-1	U		130		U	GAM
Cesium 134	17967-70-9	U		14		U	GAM
Cesium 137	10045-97-3	U		13		U	GAM
Europium 152	14683-23-9	U		23		U	GAM
Europium 154	15585-10-1	U		14		U	GAM
Radium 226	13982-67-7	U		26		U	GAM
Thorium 228	14274-82-9	U		22		U	GAM
Thorium 232	7440-29-1	U		52		U	GAM

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.16
Report date	09/18/92

TMA

SDG 7062	Client Westinghouse Hanford
Contact Dinkar P. Kharkar	Contract MBH-SVV-069262

CASE NARRATIVE

1.0 GENERAL

Water sample results from Location 200-AAMS (TMA/Norcal Group 7062) are reported herein. TMA/Norcal Group 7062 was comprised of the two samples listed on the Chain-of-Custody documents and were identified as Sample 1 and 2.

1.1 CHAINS-OF-CUSTODY

This report includes data from the samples delivered under Chain-of-Custody documents Field Logbook No. EFL-1032.

1.2 SAMPLE VOLUME

1000 mL bottles of samples were received for the analyses.

1.3 MISSING SAMPLES

The samples were accounted for in an undamaged condition.

1.4 HOLDING TIMES

The collection were made between 7/12/92 and 7/13/92 and the sample processing was initiated within 180 days of collection.

2.0 QUALITY CONTROL

The internal quality control consisted of one sample each of a laboratory control, a blank, and a replicate. All original analyses were performed with QC samples 7062-3 through 6.

The QC samples were prepared and labelled by the quality control officer. Copies of The QC notebook pages are included in the data package.

2.1 LABORATORY CONTROL SAMPLES

LCS recoveries for gross alpha, gross beta, ^{60}Co, and ^{137}Cs were good. The MDA's for gross alpha and gross beta were within RDL requirement.

2.2 BLANKS

MDA's for all the analyses meet the RDL requirements.

2.3 REPLICATES

Results were satisfactory for gross alpha, gross beta, and gamma scan analyses. The MDA for gross alpha in the replicate and the original were higher because a sufficient volume of water was not available to meet the RDL.

SDG 7062 Contact Dinkar P. Kharkar	Client Westinghouse Hanford Contract MBH-SVV-069262

CASE NARRATIVE

3.0 ANALYTICAL NOTES

3.1 Gross Alpha Analyses: The average MDA for gross alpha analyses was 2.6 ± 2.4 pCi/L. The MDA for gross alpha in sample number 7062-2 was higher because a sufficient volume of water was not available to meet the RDL. Sample number 7062-2 had positive gross alpha concentration.

3.2 Gross Beta Analyses: The average MDA for gross beta analyses was 2.2 ± 1.2 pCi/L. Positive gross beta concentration was found in both samples.

3.3 Gamma Scan Analyses: Gamma scan analysis did not find positive concentration of gamma nuclides in either sample.

9613473.2184

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200AAMS

Collection Date July 12, 1992

Ice Chest No. SML-152

Field Logbook No. EFL 1032

Bill of Lading/Airbill No. 250986906-5

Offsite Property No. W92-0-0533-4

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks N/A

Sample Identification

B06ZR0
- 3, 40ml, aG, WATER, CLP-VOA
- 3, 2L, aG, WATER, SEMI-VOA, PCB/PEST
- 1, 1L, P, WATER, ICP/AA-METAL & Hg (HNO3) UNFILTERED
- 3, 1L, P, WATER, TDS, ANIONS, TSS, ALK
- 1, 1L, P, WATER, AMMONIA, COD (H2SO4)
- 1, 250ml, aG, WATER, TOC(INCLUDES BICARBONATE/CARBONATE (H2SO4)
- 1, 250ml, Gs, WATER, TOX (H2SO4)
- 1, 1L, P, WATER, GROSS ALPHA/BETA, GAMMA SCAN (HNO3)

B06ZR1
- 1, 1L, P, WATER, ICP/AA METAL & Hg (HNO3) (FILTERED)

B06ZR2
- 3, 40ml aG, WATER, CLP-VOA

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

Relinquished by:	Received by:	Date/Time:
C Celiberti C. CELIBERTI	Refrid	7-12-92 1530
Relinquished by:	Received by: K. Trapp / K. Trapp	Date/Time: 7/13/92 0950
Relinquished by: K. Trapp / K. Trapp	Received by: Kermit Blum	Date/Time: 7-15-92 1100
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

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

9613473.2185

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST Task #92-128

PART I: FIELD SECTION

.or Kirby Lee Date Sampled 7/12/92 Time 0700 hours

Company Contact PH Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B06ZR0	3, Gs, 40ml	W	CLP-VOA
	3, aG, 2L	W	Semi-VOA, Pest/PCB
	1, P, 1L	W	ICP/AA Metals & Hg (HNO3) Unfiltered
	3, P, 1L	W	TDS, BOD, Dissolved Oxygen, Anions, TSS, ALK
	1, P 1L	W	Ammonia, COD (H2SO4)
	1, aG, 250ml	W	TOC (Includes Bicarbonate/Carbonate) (H2SO4)
	1, Gs, 250ml	W	TOX (H2SO4)
	1, P, 1L	W	Gross Alpha/Beta, Gamma Scan (HNO3)
B06ZR1	1, P, 1L	W	ICP/AA Metals & Hg (HNO3) Filtered
B06ZR2	3, 40mL, GS	W	CLP-VOA
			BOL #: 250986406-5
			OPC #: WA2-0-0533-4

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by Kermit Blum Title Sample Control Supervisor Date 7-15-92

Analysis Required _____

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

**Include additional information relative to sample location

A-6000-406 (05/90)

9613473.2186

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200AAMS

Collection Date 7/13/92

Ice Chest No. SML-157

Field Logbook No. EFL-1033

Bill of Lading/Airbill No. 250986824-0

Offsite Property No. W92-0-0533-5

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks N/A

Sample Identification

B06ZR3
- 3, 40ml, aG, WATER, CLP-VOA
- 3, 2L, aG, WATER, SEMI-VOA, PCB/PEST
- 1, 1L, P, WATER, ICP/AA-METAL & Hg (HNO3) UNFILTERED
- 3, 1L, P, WATER, TDS, ANIONS, TSS, ALK
- 1, 1L, P, WATER, AMMONIA, COD (H2SO4)
- 1, 250ml, aG, WATER, TOC(INCLUDES BICARBONATE/CARBONATE (H2SO4)
- 1, 250ml, Gs, WATER, TOX (H2SO4)
- 1, 1L, P, WATER, GROSS ALPHA/BETA, GAMMA SCAN (HNO3)

B06ZR4
- 1, 1L, P, WATER, ICP/AA METAL & Hg (HNO3) (FILTERED)

B06ZR5
- 3, 40ml aG, WATER, CLP-VOA

[] Field Transfer of Custody

Relinquished by:	Received by:	Date/Time:
[signature]	[signature] B. WHITTEN	7-15-92 0:900
Relinquished by: [signature] B WHITTEN	Received by: Kermit Blum	Date/Time: 7-16-92 1130
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Chain of Possession (Sign and Print Names)

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

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

9613473.2157

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST Task #92-128

PART I: FIELD SECTION

.or _____ Date Sampled 7-13-92 Time 0941 hours

:ompany Contact PH Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B06ZR3	3, Gs, 40ml	W	CLP-VOA
	3, aG, 2L	W	Semi-VOA, Pest/PCB
	1, P, 1L	W	ICP/AA Metals & Hg (HNO3) Unfiltered
	3, P, 1L	W	TDS, BOD, Disolved Oxygen, Anions, TSS, ALK
	1, P 1L	W	Ammonia, COD (H2SO4)
	1, aG, 250ml	W	TOC (Includes Bicarbonate/Carbonate) (H2SO4)
	1, Gs, 250ml	W	TOX (H2SO4)
	1, P, 1L	W	Gross Alpha/Beta, Gamma Scan (HNO3)
B06ZR4	1, P, 1L	W	ICP/AA Metals & Hg (HNO3) Filtered
B06ZR5	3, 40ML, GS	W	CLP-VOA
			BOL #: 250986824-0
			OPC #: W92-0-0533-5

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

ed by Kermit Blum Title Sample Control Supervisor Date 7-16-92

Analysis Required _____

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

**Use for additional information relative to sample location

A-6000-406 (05/90)

FORM OF PAYMENT

Check [ ] GBL [ ] FCCOD [ ]

Bill to Shipper [X] Bill to Consignee [ ] Third Party Billing [ ]

EMERY WORLDWIDE

A CF Company

SERVICES

UNITED STATES / CANADA: [ ] Same Day [X] AM [ ] PM [ ] Second Day [ ] Saturday Delivery

INTERNATIONAL: Express [ ] Preferred [ ] Standard [ ] Business Documents [ ] Customs Clearance [ ] Delivery [ ]

Shipper's Account Number: E 850281585

Date: 07-14-92 Origin: PSC Shipment Number: 250986906 5

From:
WESTINGHOUSE SHIPPING DEPT (509) 376-6665
U.S. DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD
BLDG 1163
2355 STEVENS DRIVE
RICHLAND WA
Canada [ ]

Customer's Reference Numbers: W81231 PH23B W92-0-0533#4
Zip: 99352

To:
DELORES SANCHEZ
TMA/MORCAL
2030 WRIGHT AVE
RICHMOND CA 94804
Canada [ ]

Hold for Pick Up [ ]

Consignee's Account Number: E
Zip:

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.

Description	Dimensions Pcs.	L	W	H	Total Pieces	Total Weight (In Lbs.)
1 COOLER ID: SML-152 WATER SAMPLES W92-0-0533#4	1	26	16	17	1	77

FOR INFORMATION OR RATES CALL 1-800 44 EMERY (1-800-443-6379)

Declared Value $

250986906 5

Remarks:
OVERNIGHT DELIVERY
SIGNATURE SECURITY SERVICE

Shipper's Signature X

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. Third Party Account Number: E

International Customs Value | International Insurance

Base Charge | Total Transportation Charges | Other Charges/Advance at Origin | CC/AO $

1 OAKLA

Terms and Conditions on Back

9613473.2189

AY IT --- *Write It!*

DATE March 10, 1993

FROM Doris Ayres - HASM

The entire data package (N2-07-061-7062) was resubmitted by TMA to HASM to meet the Data Package Verification Checklist.

The new package was stamped received March 3, 1993 and is paginated ~~1-106~~ DER 1-119.

9613473.2190

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

September 18, 1992 SENT BY FEDERAL EXPRESS

Ref. TMA/Norcal N2-07-061-7062

Mr. John Bourgeault
Westinghouse Hanford Company
2355 Stevens Drive
Richland, WA 99352

Dear Mr. Bourgeault:

Enclosed on the Summary Data Section, are the gross alpha, gross beta, and gamma scan results for the water samples from 200-AAMS Location, we received 17 July 1992. The QA/QC results are also given in the Summary Data Section.

Please call if you have any questions concerning this data.

Sincerely,

D. P. Kharkar

Dinkar P. Kharkar, Ph.D.
Manager, Nuclear Programs

DPK/ss

Enclosures: Section 1 through 7
Appendices

ia 2-28-96
MC

N207061-01

TMA NORCAL
REPORTING GROUP 7062
DATA SHEET

B06ZR0

SDG 7062
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N207061-01
Dept sample id 7062-001
Received 07/15/92
Client sample id B06ZR0
Matrix WATER
Collected 07/12/92
Chain of custody id EFL-1032

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	2.6	1.9	1.9	3.0	J	80A
Gross Beta	Beta	22	2.1	1.9	4.0		80B
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		250		U	GAM
Iron 59		U		85		U	GAM
Chromium 51	14392-02-0	U		400		U	GAM
Cobalt 60	10198-40-0	U		18		U	GAM
Zinc 65	17982-39-3	U		34		U	GAM
Ruthenium 106	13967-48-1	U		140		U	GAM
Cesium 134	17967-70-9	U		15		U	GAM
Cesium 137	10045-97-3	U		16		U	GAM
Europium 152	14683-23-9	U		26		U	GAM
Europium 154	15585-10-1	U		18		U	GAM
Radium 226	13982-67-7	U		28		U	GAM
Thorium 228	14274-82-9	U		38		U	GAM
Thorium 232	7440-29-1	U		67		U	GAM

Lab id TMAN
Protocol WHC-HEIS
Version Ver 1.0
Form DVD-DS
Version 2.16
Report date 09/18/92

N207061-02

TMA NORCAL
REPORTING GROUP 7062
DATA SHEET

B06ZR3

SDG 7062
Contact Dinkar Kharkar
Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N207061-02
Dept sample id 7062-002
Received 07/16/92
Client sample id B06ZR3
Matrix WATER
Collected 07/13/92
Chain of custody id EFL-1033

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	8.6	4.7	4.0	3.0		80A
Gross Beta	Beta	100	4.8	2.9	4.0		80B
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		170		U	GAM
Iron 59		U		60		U	GAM
Chromium 51	14392-02-0	U		370		U	GAM
Cobalt 60	10198-40-0	U		14		U	GAM
Zinc 65	17982-39-3	U		26		U	GAM
Ruthenium 106	13967-48-1	U		130		U	GAM
Cesium 134	17967-70-9	U		14		U	GAM
Cesium 137	10045-97-3	U		13		U	GAM
Europium 152	14683-23-9	U		23		U	GAM
Europium 154	15585-10-1	U		14		U	GAM
Radium 226	13982-67-7	U		26		U	GAM
Thorium 228	14274-82-9	U		22		U	GAM
Thorium 232	7440-29-1	U		52		U	GAM

Lab id TMAN
Protocol WHC-HEIS
Version Ver 1.0
Form DVD-DS
Version 2.16
Report date 09/18/92

TMA

SDG 7062 Contact Dinkar P. Kharkar	Client Westinghouse Hanford Contract MBH-SVV-069262

CASE NARRATIVE

1.0 GENERAL

Water sample results from Location 200-AAMS (TMA/Norcal Group 7062) are reported herein. TMA/Norcal Group 7062 was comprised of the two samples listed on the Chain-of-Custody documents and were identified as Sample 1 and 2.

1.1 CHAINS-OF-CUSTODY

This report includes data from the samples delivered under Chain-of-Custody documents Field Logbook No. EFL-1032.

1.2 SAMPLE VOLUME

1000 mL bottles of samples were received for the analyses.

1.3 MISSING SAMPLES

The samples were accounted for in an undamaged condition.

1.4 HOLDING TIMES

The collection were made between 7/12/92 and 7/13/92 and the sample processing was initiated within 180 days of collection.

2.0 QUALITY CONTROL

The internal quality control consisted of one sample each of a laboratory control, a blank, and a replicate. All original analyses were performed with QC samples 7062-3 through 6.

The QC samples were prepared and labelled by the quality control officer. Copies of The QC notebook pages are included in the data package.

2.1 LABORATORY CONTROL SAMPLES

LCS recoveries for gross alpha, gross beta, ^{60}Co, and ^{137}Cs were good. The MDA's for gross alpha and gross beta were within RDL requirement.

2.2 BLANKS

MDA's for all the analyses meet the RDL requirements.

2.3 REPLICATES

Results were satisfactory for gross alpha, gross beta, and gamma scan analyses. The MDA for gross alpha in the replicate and the original were higher because a sufficient volume of water was not available to meet the RDL.

SDG 7062	Client Westinghouse Hanford
Contact Dinkar P. Kharkar	Contract MBH-SVV-069262

CASE NARRATIVE

3.0 ANALYTICAL NOTES

3.1 Gross Alpha Analyses: The average MDA for gross alpha analyses was 2.6 ± 2.4 pCi/L. The MDA for gross alpha in sample number 7062-2 was higher because a sufficient volume of water was not available to meet the RDL. Sample number 7062-2 had positive gross alpha concentration.

3.2 Gross Beta Analyses: The average MDA for gross beta analyses was 2.2 ± 1.2 pCi/L. Positive gross beta concentration was found in both samples.

3.3 Gamma Scan Analyses: Gamma scan analysis did not find positive concentration of gamma nuclides in either sample.

9613473.2195

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200AAMS

Collection Date July 12, 1992

Ice Chest No. SML-152

Field Logbook No. EFL 1032

Bill of Lading/Airbill No. 250986906-5

Offsite Property No. W92-0-0533-4

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks N/A

Sample Identification

B06ZR0
- 3, 40ml, aG, WATER, CLP-VOA
- 3, 2L, aG, WATER, SEMI-VOA, PCB/PEST
- 1, 1L, P, WATER, ICP/AA-METAL & Hg (HNO3) UNFILTERED
- 3, 1L, P, WATER, TDS, ANIONS, TSS, ALK
- 1, 1L, P, WATER, AMMONIA, COD (H2SO4)
- 1, 250ml, aG, WATER, TOC(INCLUDES BICARBONATE/CARBONATE (H2SO4)
- 1, 250ml, Gs, WATER, TOX (H2SO4)
- 1, 1L, P, WATER, GROSS ALPHA/BETA, GAMMA SCAN (HNO3)

B06ZR1
- 1, 1L, P, WATER, ICP/AA METAL & Hg (HNO3) (FILTERED)

B06ZR2
- 3, 40ml aG, WATER, CLP-VOA

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: C. Celebrate C. CELEBRATE	Received by: Refrid	Date/Time: 7-13-92 1530
Relinquished by:	Received by: K. Trapp / K. Trapp	Date/Time: 7/13/92 0950
Relinquished by: K. Trapp / K. Trapp	Received by: Kermit Blum	Date/Time: 7-15-92 1100
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

031

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

9613473.2196

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST Task #92-128

PART I: FIELD SECTION

.or Kirby Lee Date Sampled 7/12/92 Time 0700 hours

ompany Contact PH Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
0062R0	3, Gs, 40ml	W	CLP-VOA
	3, aG, 2L	W	Semi-VOA, Pest/PCB
	1, P, 1L	W	ICP/AA Metals & Hg (HNO_3) Unfiltered
	3, P, 1L	W	TDS, BOD, Dissolved Oxygen, Anions, TSS, ALK
	1, P 1L	W	Ammonia, COD (H_2SO_4)
	1, aG, 250ml	W	TOC (Includes Bicarbonate/Carbonate) (H_2SO_4)
	1, Gs, 250ml	W	TOX (H_2SO_4)
	1, P, 1L	W	Gross Alpha/Beta, Gamma Scan (HNO_3)
0062R1	1, P, 1L	W	ICP/AA Metals & Hg (HNO_3) Filtered
0062R2	3, 40mL, GS	W	CLP-VOA
			BOL #: 250986906-5
			OPC #: WA2-0-0533-4

eld Information** _____

ecial Handling and/or Storage _____

ssible Sample Hazards _____

PART II: LABORATORY SECTION

ed by Kermit Blum Title Sample Control Supervisor Date 7-15-92

alysis Required _____

032

9613473.2197

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200AAMS

Collection Date 7/13/92

Ice Chest No. SML-157

Field Logbook No. EPL-1033

Bill of Lading/Airbill No. 250986824-0

Offsite Property No. W92-0-0533-5

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks N/A

Sample Identification

B06ZR3
- 3, 40ml, aG, WATER, CLP-VOA
- 3, 2L, aG, WATER, SEMI-VOA, PCB/PEST
- 1, 1L, P, WATER, ICP/AA-METAL & Hg (HNO3) UNFILTERED
- 3, 1L, P, WATER, TDS, ANIONS, TSS, ALK
- 1, 1L, P, WATER, AMMONIA, COD (H2SO4)
- 1, 250ml, aG, WATER, TOC(INCLUDES BICARBONATE/CARBONATE (H2SO4)
- 1, 250ml, Gs, WATER, TOX (H2SO4)
- 1, 1L, P, WATER, GROSS ALPHA/BETA, GAMMA SCAN (HNO3)

B06ZR4
- 1, 1L, P, WATER, ICP/AA METAL & Hg (HNO3) (FILTERED)

B06ZR5
- 3, 40ml aG, WATER, CLP-VOA

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

Relinquished by:	Received by:	Date/Time:
[signature]	[signature] B. WHITTEN	7-15-92 0:900
Relinquished by: [signature] B. WHITTEN	Received by: Kermit Blum	Date/Time: 7-16-92 1130
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

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

9615473.2108

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST Task #92-128

PART I: FIELD SECTION

.or _____ Date Sampled 7-13-92 Time 0941 hours

mpany Contact PH Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
06ZR3	3, Gs, 40ml	W	CLP-VOA
	3, aG, 2L	W	Semi-VOA, Pest/PCB
	1, P, 1L	W	ICP/AA Metals & Hg (HNO_3) Unfiltered
	3, P, 1L	W	TDS, BOD, Dissolved Oxygen, Anions, TSS, ALK
	1, P 1L	W	Ammonia, COD (H_2SO_4)
	1, aG, 250ml	W	TOC (Includes Bicarbonate/Carbonate) (H_2SO_4)
	1, Gs, 250ml	W	TOX (H_2SO_4)
	1, P, 1L	W	Gross Alpha/Beta, Gamma Scan (HNO_3)
06ZR4	1, P, 1L	W	ICP/AA Metals & Hg (HNO_3) Filtered
06ZR5	3, 40ML, GS	W	CLP-VOA
			BOL #: 250986824-0
			OPC #: W92-0-0533-5

Id Information** _____

ecial Handling and/or Storage _____

ssible Sample Hazards _____

PART II: LABORATORY SECTION

ed by Kermit Blum Title Sample Control Supervisor Date 7-16-92

alysis Required _____

C34

dicate whether sample is soil, sludge, water, etc.

FORM OF PAYMENT

Check [ ] GBL [ ] FCCOD [ ]

Bill to Shipper [X] Bill to Consignee [ ] Third Party Billing [ ]

EMERY WORLDWIDE — A CF Company

SERVICES

UNITED STATES / CANADA: Same Day [ ] AM [X] Second Day [ ] PM [ ] Saturday Delivery [ ]

INTERNATIONAL: Express [ ] Preferred [ ] Standard [ ] Business Documents [ ] Customs Clearance [ ] Delivery [ ]

E Shipper's Account Number: 850281585

Date: 07-23-92 Origin: PSC Shipment Number: 250986906 5

From:
WESTINGHOUSE SHIPPING DEPT (509) 376-6665
U.S. DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD
BLDG 1163
2355 STEVENS DRIVE
RICHLAND WA Canada [ ]

To:
DELORES SANCHEZ
TMA/MCRCAL
2030 WRIGHT AVE
RICHMOND CA 94804 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: W81231 PH23B W92-0-0533#4

Zip: 99352

E Consignee's Account Number

Zip

Description	Pcs.	L	W	H	Total Pieces	Total Weight (In Lbs.)
1 COOLER ID: SML-152 WATER SAMPLES W92-0-0533#4	1	16	16	17	1	77

FOR INFORMATION OR RATES CALL 1-800 44 EMERY (1-800-443-6379)

Declared Value $

250986906 5

Remarks: OVERNIGHT DELIVERY
SIGNATURE SECURITY SERVICE

Shipper's Signature X

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

Base Charge

Total Transportation Charges

Other Charges/Advance at Origin: [ ] OC/AO- $

1 OAK A

Terms and Conditions on Back

9618742199

035

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 07-039

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : July 16, 1992

1.0 DESCRIPTION OF CASE :

Two 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
B06ZR3	A2-07-039-01A	V	WATER	7
B06ZR3 DL	A2-07-039-01A	V	WATER	7
B06ZR3	A2-07-039-01B	SV & P	WATER	
B06ZR3 MS	A2-07-039-01C	SV & P	WATER	
B06ZR3 MSD	A2-07-039-01D	SV & P	WATER	
B06ZR5	A2-07-039-02A	V	WATER	7
B06ZR5 MS	A2-07-039-02B	V	WATER	7
B06ZR5 MSD	A2-07-039-02C	V	WATER	7

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

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. Sample B06ZR3 had two TCL analytes (Acetone and Carbon Tetrachloride) detected at concentrations that exceeded the GC/MS calibration. Hence, the "E" qualifier reported on Form 1A. Sample B06ZR3DL was analyzed within the holding times at a 20 fold dilution. The concentration of Carbon Tetrachloride was confirmed in the re-analysis. The results of both analyses have been included in the package.

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

TUNES :

All of the 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. Sample B06ZR3MSD had a spike recovery for 4-Nitrophenol slightly above the QC limit.

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 7/21/92 and was analyzed in accordance with the EPA CLP SOW. The sequence met all of the QC limits specified in the CLP SOW.

The Chromatograms are presented in the manner consistent with the capabilities of the Nelson 2600 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. All of the QC results were within the limits specified by the EPA 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
CLP Program Manager

Widayati
Wida Ang
Organics Supervisor

9613473.2203

000005
EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

B06ZR3

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07039 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A207039-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 20721R03

Level: (low/med) LOW Date Received: 07/16/92

% Moisture: not dec. ____ Date Analyzed: 07/21/92

GC Column: PACK ID: 2.00 (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	4	BJ
67-64-1	Acetone	260	E
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	13	
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	2100	E
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	18	
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

9613473.2204

000006

EPA SAMPLE NO.

B06ZR3

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07039 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A207039-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 20721R03

Level: (low/med) LOW Date Received: 07/16/92

% Moisture: not dec. ____ Date Analyzed: 07/21/92

GC Column: PACK ID: 2.00 (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

9613473.2205

000007

EPA SAMPLE NO.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

B06ZR3DL

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07039 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A207039-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 20721R11

Level: (low/med) LOW Date Received: 07/16/92

% Moisture: not dec. ____ Date Analyzed: 07/21/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 20.0

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	200	U
74-83-9	Bromomethane	200	U
75-01-4	Vinyl Chloride	200	U
75-00-3	Chloroethane	200	U
75-09-2	Methylene Chloride	65	BDJ
67-64-1	Acetone	200	U
75-15-0	Carbon Disulfide	200	U
75-35-4	1,1-Dichloroethene	200	U
75-34-3	1,1-Dichloroethane	200	U
540-59-0	1,2-Dichloroethene (total)	200	U
67-66-3	Chloroform	200	U
107-06-2	1,2-Dichloroethane	200	U
78-93-3	2-Butanone	200	U
71-55-6	1,1,1-Trichloroethane	200	U
56-23-5	Carbon Tetrachloride	1600	D
75-27-4	Bromodichloromethane	200	U
78-87-5	1,2-Dichloropropane	200	U
10061-01-5	cis-1,3-Dichloropropene	200	U
79-01-6	Trichloroethene	200	U
124-48-1	Dibromochloromethane	200	U
79-00-5	1,1,2-Trichloroethane	200	U
71-43-2	Benzene	200	U
10061-02-6	trans-1,3-Dichloropropene	200	U
75-25-2	Bromoform	200	U
108-10-1	4-Methyl-2-Pentanone	200	U
591-78-6	2-Hexanone	200	U
127-18-4	Tetrachloroethene	200	U
79-34-5	1,1,2,2-Tetrachloroethane	200	U
108-88-3	Toluene	200	U
108-90-7	Chlorobenzene	200	U
100-41-4	Ethylbenzene	200	U
100-42-5	Styrene	200	U
1330-20-7	Xylene (total)	200	U

1E

EPA SAMPLE NO.

B06ZR3DL

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07039 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A207039-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 20721R11

Level: (low/med) LOW Date Received: 07/16/92

% Moisture: not dec. ____ Date Analyzed: 07/21/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 20.0

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

9613473.2207

000009

EPA SAMPLE NO.

B06ZR5

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07039 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A207039-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 20721R05

Level: (low/med) LOW Date Received: 07/16/92

% Moisture: not dec. ____ Date Analyzed: 07/21/92

GC Column: PACK ID: 2.00 (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	7	BJ
67-64-1	Acetone	45	
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

9613473.2208

000010
EPA SAMPLE NO.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B06ZR5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07039 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A207039-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 20721R05

Level: (low/med) LOW Date Received: 07/16/92

% Moisture: not dec. ____ Date Analyzed: 07/21/92

GC Column: PACK ID: 2.00 (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

9613473.2209

000011

EPA SAMPLE NO.

B06ZR3

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07039 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A207039-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 20724N05

Level: (low/med) LOW Date Received: 07/16/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 07/21/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/24/92

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

9613473.2210

000012

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B06ZR3

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07039 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A207039-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 20724N05

Level: (low/med) LOW Date Received: 07/16/92

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 07/21/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/24/92

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

9613473.2211

000013
EPA SAMPLE NO.

B06ZR3

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07039 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A207039-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 20724N05

Level: (low/med) LOW Date Received: 07/16/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 07/21/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/24/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown hydrocarbon	4.22	17	BJ
2.	Unknown hydrocarbon	6.97	10	BJ
3.	Unknown cyclic alcohol	7.58	2	J
4.	Unknown cyclic ketone	8.48	5	BJ
5.	Unknown hydrocarbon	13.87	3	J
6.	Unknown carboxylix acid	15.77	4	J

9613473.2212

000014

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B06ZR3

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07039 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A207039-01B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 07/16/92

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 07/21/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 07/22/92

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

9613473.2213

TMA

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SEP 1992
RECEIVED
OSM DMD

WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

ORGANICS & GENERAL CHEMISTRY
Case No. 07-039
(TMA/ARLI Work Order # A2-07-039)

METALS
Case No. N2-07-068
(TMA/Skinner & Sherman W.O. # S2-07-118 & S2-07-119)

September 8, 1992

TMA Master Work Order # N2-07-068

9613473.2214

000002

Westinghouse Hanford Company	CHAIN OF CUSTODY	ARL1

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200AAMS

Collection Date 7/13/92

Ice Chest No. SML-157

Field Logbook No. EFL-1083

Bill of Lading/Airbill No. 250986824-0

Offsite Property No. W92-0-0533-5

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks N/A

Sample Identification

B06ZR3

- 3, 40ml, aG, WATER, CLP-VOA
- 3, 2L, aG, WATER, SEMI-VOA, PCB/PEST
- ~~1, 1L, P, WATER, ICP/AA METAL & Hg (HNO3) UNFILTERED~~
- 3, 1L, P, WATER, TDS, ANIONS, TSS, ALK
- 1, 1L, P, WATER, AMMONIA, COD (H2SO4)
- ~~1, 250ml, aG, WATER, TOC(INCLUDES BICARBONATE/CARBONATE (H2SO4)~~
- ~~1, 250ml, Gs, WATER, TOX (H2SO4)~~
- ~~1, 1L, P, WATER, GROSS ALPHA/BETA, GAMMA SCAN (HNO3)~~

~~B06ZR4~~

- ~~1, 1L, P, WATER, ICP/AA METAL & Hg (HNO3) (FILTERED)~~

B06ZR5

- 3, 40ml aG, WATER, CLP-VOA

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: [illegible]	Received by: [illegible] B. WHITTEN	Date/Time: 7-15-92 0:900
Relinquished by: [illegible] B. WHITTEN	Received by: Kermit Blum	Date/Time: 7-16-92 1130
Relinquished by: Kermit Blum 7-16-92	Received by: C. Harris	Date/Time: 7/17/92 9[illegible]
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

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

9615473.2215

000003

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST Task #92-128

PART I: FIELD SECTION

.or _____ Date Sampled 7-13-92 Time 0941 hours

ıpany Contact PH Butcher Telephone (509) 376-5045

ample umber	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
)6ZR3	3, Gs, 40ml	W	CLP-VOA
	3, aG, 2L	W	Semi-VOA, Pest/PCB
	~~1, A, 1L~~	~~W~~	~~ICP/AA Metals & Hg (HNO3) Unfiltered~~
	3, P, 1L	W	TDS, ~~BOD, Dissolved Oxygen, Amm~~, TSS, ALK
	1, P 1L	W	Ammonia, COD (H_2SO_4)
	~~1, aG, 250ml~~	~~W~~	TOC (Includes Bicarbonate/Carbonate) (H_2SO_4)
	~~1, Gs, 250ml~~	~~W~~	~~TOX (H_2SO_4)~~
	~~1, A, 1L~~	~~W~~	~~Gross Alpha/Beta, Gamma Scan (HNO_3)~~
~~)6ZR4~~	~~1, A, 1L~~	~~W~~	~~ICP/AA Metals & Hg (HNO3) Filtered~~
)6ZR5	3, 40ML, GS	W	CLP-VOA
			BOL #: 250946824-0
			OPC #: W92-0-0533-5

ld Information** _____

ecial Handling and/or Storage _____

ssible Sample Hazards _____

PART II: LABORATORY SECTION

ed by Kermit Blum Title Sample Control Supervisor Date 7-16-92

nalysis Required _____

TMA/ARLI
Thermo Analytical Inc.

RADIATION DOSE RATE SURVEY FORM

Date 7/17/92 COMPANY NORCAL OTHER ORD # 252103111

Surveyor's Name MARK S. McCRAY

Model No. HP-210 / ESP-1 Model No. AC-3-7 / ESP-1

Serial Nos. 710289 / 02619 Serial Nos. 407726 / 02628

Calibration Date 3/25/92 Calibration Date OUT FOR CALIBRATION

Instrument Calibration Factor 0.280 Instrument Calibration Factor

Sample	Location	HP-210 CPM	HP-210 Factor	HP-210 DPM	AC-3-7 CPM	AC-3-7 Factor	AC-3-7 DPM	Spillage or Breakage?	Activity, pCi/mL or pCi/g
Background		42.0							
Consistency		7,300	0.2818						
Smears: SML-32		47.0						NONE	
NORTH CREEK BLUE		31.0						NONE	
Reported (WHC)		3 samples	each	<50	pCi/gram				

Comments:

All OK ✓ Approved [signature]

Not OK Date 7/17/92

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARLI

PAGE : 1 OF 1

RECEIVED BY (PRINT NAME): CAROLE HARRIS

LOG-IN-DATE : 7/17/98

RECEIVED BY (SIGNATURE): Carole Harris

CASE NUMBER:

SAMPLE DELIVERY GROUP NO.:

SAS NUMBER:

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.: 2521031111
7. Sample Tags Present/Absent*
8. Sample Tags 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: 7/17/98
12. Temp of ice chest 4.0 °C
13. Time Recieved: 9:00 AM

SAMPLE TRANSFER

Fraction:

Area #:

By:

On:

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B06ZR3	AD-07-039-01	
	B06ZR5	AD-07-039-02	

* Contact SMO and attach record of resolution

Reviewed By:

Date:

Logbook No.:

Logbook Page No.:

FORM DC-1

9613473.2218

000006

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 2521031111

2128M 2521031111

RECIPIENT'S COPY

Date 7 16 92

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: 9 4 8 0 4

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

Recipient's Phone Number (Very Imp

Company: TMA/ARV.

Department/Floo

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): 2320 640G

IF HOLD FOR PICK-UP, Print FEDEX Address Here

Street Address

City State ZIP Required

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

SERVICES (Check only one box)

Priority Overnight (Delivery by noon business morning)
11 [X] YOUR PACKAGING
10 [ ] FEDEX LETTER
12 [ ] FEDEX PAK
13 [ ] FEDEX BOX
14 [ ] FEDEX TUBE

Standard Overnight (Delivery by end business afternoon)
51 [ ] YOUR PACKAGING
50 [ ] FEDEX LETTER
52 [ ] FEDEX PAK
53 [ ] FEDEX BOX
54 [ ] FEDEX TUBE

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

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

Freight Service (50 Extra Large if any package over 150 lbs.)
70 [ ] OVERNIGHT FREIGHT ** (Delivery commitment may vary)
80 [ ] TWO-DAY FREIGHT **
**Declared Value Limit $100.

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 ____ Lbs.
7 [ ] OTHER SPECIAL SERVICE
8 [ ]
9 [ ] SATURDAY PICK-UP (Extra charge)
10 [ ]
11 [ ]
12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

PACKAGES	WEIGHT (Pounds)	YOUR DECLARED VALUE
Total	Total 2.61	Total

DIM SHIPMENT (Chargeable Weight) [ ] ____ lbs.

L x W x H

Received At: [ ] Regular Stop [ ] Drop Box [ ] Station [ ] On-Call Stop [ ] Station

Brnp. No. Date

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

Street Address

City State Zip

Received By: X

Date/Time Received FedEx Employee Number

Release Signature: Date/Time

FedEx Brnp. No.

Federal Express Us

Base Charges

Declared Value Charg

Other 1

Other 2

Total Charges

REVISION DATE 6/91 PART #137204 FXEM 4/92 FORMAT #099

099

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GENERAL CHEMISTRY RESULTS

CASE NO. 07-039

Water Sample #:

B06ZR3

CASE NARRATIVE

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

Ernesto Vázquez

Ernesto Vazquez

9613473.2220

000009

TMA Inc. REPORT Work Order # A2-07-039

Received: 07/16/92 08/31/92 06:28:46

REPORT TO: Westinghouse Hanford Company
2355 Stevens Dr.
Richland,WA.99352
MO-346/200 West/T6-08
ATTEN: Jeanette Duncan

PREPARED BY: Thermo Analytical, Inc.
160 Taylor Street
Monrovia, CA 91016
ATTEN: Ms. Carole Harris
PHONE: 818-357-3247

CERTIFIED BY: Ernesto Vazquez
CONTACT: EVV CIH

CLIENT: WHC SAMPLES: 3
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: 200AAMS
TAKEN: By Westinghouse Staff
TRANS: Federal Express
TYPE: Liquid
P.O. #: N2-07-068-SU-AR
INVOICE: under separate cover

SAMPLE IDENTIFICATION

01	B06ZR3
01	B06ZR3 MS
01	B06ZR3 MSD
01	B06ZR3
01	B06ZR3 MS
01	B06ZR3 Duplicate
01	B06ZR3
01	B06ZR3 MS
01	B06ZR3 Duplicate
02	B06ZR5
02	B06ZR5 MS
02	B06ZR5 MSD
03	Wet Chemistry Blank

TEST CODES and NAMES used on this workorder

BNCLPW	CLP Semivol. Water
CL	Chloride
F W	Fluoride in Water
PECLPL	CLP Pesticides Liq.-WH019
PO4 L	Phosphate in Liquids
SO4 W	Sulfate (in Waters)
VOCLPL	CLP Volatile Org.Liq.
WCCLPL	Anions & Wet Chem. - WH043
WCQCD	Quality Control Summary
WCQCS	Quality Control Summary
WNH3 L	Ammonia in Water - WH140
W ALK	Alkalinity - WH131
W COD	COD Water - WH132
W TDS	Dissolved Solids WH128
W TSS	Suspended Solids WH129

9615473.2221

000010

TMA Inc. REPORT Work Order # A2-07-039

Received: 07/16/92 Results by Sample

SAMPLE ID B06ZR3 FRACTION 01E TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 07/13/92 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Fluoride	300	3.1	mg/L	0.1
Chloride	300	25.7	mg/L	0.2
Sulfate	300	55	mg/L	1
Phosphate	300	<1.6	mg/L	0.4
Tot. Dissolved Solids	160.1	576	mg/L	5
Alkalinity	310.1	147	mg/L	2
TSS	160.2	<5	mg/L	5

FORM I

9613473.2222

000011

TMA Inc. REPORT Work Order # A2-07-039

Received: 07/16/92

Results by Sample

SAMPLE ID B06ZR3 FRACTION 01W TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 07/13/92 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia	350.3	<0.05	mg/L	0.05
COD	410	<30	mg/L	30

FORM I

9613473.2223

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

SEP 1992
RECEIVED
OSM DMO

August 14, 1992

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 July 17, 1992 from Westinghouse/Hanford Company. The samples were analyzed for the USEPA CLP Target Analyte List metals. The analysis was performed under Skinner and Sherman work order S207118.

Methodology
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work 7/88 (CLP SOW788).

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

The lead and selenium laboratory duplicates 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.

David N. Peterson
Assistant Laboratory Manager

2-28-96
MC

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B06ZR3

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N207068 SAS No.: SDG No.: B06ZR3

Matrix (soil/water): WATER Lab Sample ID: 07118-01S

Level (low/med): LOW Date Received: 07/17/92

% 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	23.90	U		P
7440-36-0	Antimony	16.30	U		P
7440-38-2	Arsenic	7.80	B		F
7440-39-3	Barium	25.80	B		P
7440-41-7	Beryllium	0.70	U		P
7440-43-9	Cadmium	1.50	U		P
7440-70-2	Calcium	19700.00			P
7440-47-3	Chromium	44.30			P
7440-48-4	Cobalt	3.50	U		P
7440-50-8	Copper	3.80	U		P
7439-89-6	Iron	185.00			P
7439-92-1	Lead	4.00		MW*	F
7439-95-4	Magnesium	5930.00			P
7439-96-5	Manganese	4.70	B		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	3.90	U		P
7440-09-7	Potassium	2780.00	B		P
7782-49-2	Selenium	5.50		+*	F
7440-22-4	Silver	4.80	U		P
7440-23-5	Sodium	139000.00			P
7440-28-0	Thallium	1.60	U	MW	F
7440-62-2	Vanadium	46.60	B		P
7440-66-6	Zinc	5.60	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

617 573 2225

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL
PACKAGE TRACKING NUMBER 2521035101

2120N 2521035101

RECIPIENT'S COPY

1 Date 7/6/92

From (Your Name) Please Print: SAMPLE CONTROL
Your Phone Number (Very Important): (415) 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: SAMPLE CONTROL
Recipient's Phone Number (Very Important): (617) 890-7200
Company: T M A / SKINNER & SHERMAN
Department/Floor No.:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 300 SECOND AVENUE
City: WALTHAM State: MA ZIP Required: 02254

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): 2320-6406

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] YOUR PACKAGING
16 [ ] FEDEX LETTER*
12 [ ] FEDEX PAK*
13 [ ] FEDEX BOX
14 [ ] FEDEX TUBE

Standard Overnight (Delivery by next business afternoon†)
51 [ ] YOUR 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 to authorized users only)
46 [ ] GOVT LETTER
41 [ ] GOVT PACKAGE

Freight Service (for Extra Large or any package over 150 lbs.)
70 [ ] OVERNIGHT FREIGHT** (Confirmed reservation required)
80 [ ] TWO-DAY FREIGHT**
†Delivery commitment may be later in some areas.
*Declared Value Limit $100.
**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 lbs.
7 [ ] OTHER SPECIAL SERVICE
8 [ ]
9 [ ] SATURDAY PICK-UP (Extra charge)
10 [ ]
11 [ ]
12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6 PACKAGES | WEIGHT In Pounds Only | YOUR DECLARED VALUE
Total | Total | Total
1 | 14

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 7/17/92 FedEx Employee Number 9:50

7 Release Signature:
FedEx Emp. No. Date/Time

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

REVISION DATE 6/91
PART #137204 FXEM 4/92
FORMAT #099
099

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116

TMA/Skinner & Sherman Labs SAMPLE LOG-IN

WORKORDER S207118 CLIENT Hanford War NO. SAMPLES:

PROTCL CLP TURNARND 33 Days _____ 1 _____

COOLER TEMP: _____oC, or NA (Soil) (Water) (Specify Other)

CUSTODIAN B. Brown SDG/BATCH N/A

CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N207068

SHIPER & # Fed Ex PO/CONTRACT# N207068

TAGS: PRESENT/ABSENT/NA/SEE COC CONTACT D. Sanchez

CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS:

SAMPLE CONTAINERS-INTACT/BROKEN COMMENTS

CLIENT COMMENT? YES/NO

SAMPLE LABELS AGREE WITH CHAIN OF CUSTODY INFO? YES/NO (COMMENT)

CLIENT PAPERWORK AGREES WITH SAMPLES & COC? YES/NO (COMMENT)

SHIPMENT DATES 7/17/92

LIST ANY DATE WITH PAPERWORK/SHIPMENT PROBLEMS & SPECIFY THE PROBLEM:

N/A (unfiltered)

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	7/17/92 BOB ~~B06~~ B06ZR3	Water	7.17.92	1.96	D.S Tm only	Hg Due 8/1/92
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						

Samples are from site known to have Rad-Contamination: YES ✓ NO ____

Samples have detectable amounts of Radioactive Material: YES ____ NO ✓

117

SUBCONTRACT: YES/NO TO: _____ DATE: _____

REVIEWED _____

complete BP 7/17/92

* EPA/CLP required

9613473.2227

Westinghouse Hanford Company	CHAIN OF CUSTODY	S & S

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200AAMS

Collection Date 7/13/92

Ice Chest No. SML-157

Field Logbook No. EFL-1033

Bill of Lading/Airbill No. 250986824-0

Offsite Property No. W92-0-0533-5

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks N/A

Sample Identification

B06ZR3

~~3, 40ml, aG, WATER, CLP VOA~~

~~3, 2L, aG, WATER, SEMI-VOA, PCB/PEST~~

1, 1L, P, WATER, ICP/AA-METAL & Hg (HNO3) UNFILTERED

~~3, 1L, P, WATER, TDS, ANIONS, TSS, ALK~~

~~1, 1L, P, WATER, AMMONIA, COD (H2SO4)~~

~~1, 250ml, aG, WATER, TOC(INCLUDES BICARBONATE/CARBONATE (H2SO4)~~

~~1, 250ml, G3, WATER, TOX (H2SO4)~~

~~1, 1L, P, WATER, GROSS ALPHA/BETA, GAMMA SCAN (HNO3)~~

03/03/93

B06ZR4

1, 1L, P, WATER, ICP/AA METAL & Hg (HNO3) (FILTERED)

~~B06ZR5~~

~~3, 40ml aG, WATER, CLP VOA~~

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: K.D. Lee	Received by: B. WHITTEN	Date/Time: 7-15-92 0:900
Relinquished by: B. WHITTEN	Received by: Kermit Blum	Date/Time: 7-16-92 1130
Relinquished by: Kermit Blum 7-16-92	Received by:	Date/Time: 7/17/92 9:30
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

118

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

9613473.2228

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST Task #92-128

PART I: FIELD SECTION

.or _____ Date Sampled 7-13-92 Time 0941 hours

Company Contact PH Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B06ZR3	~~3, G3, 40ml~~	~~W~~	~~CLP VOA~~
	~~3, G3, 2L~~	~~W~~	~~Semi-VOA, Pest/PCB~~ RLP 3/03/93
	1, P, 1L	W	ICP/AA Metals & Hg (HNO_3) Unfiltered
	~~3, P, 1L~~	~~W~~	~~TDS, BOD, Dissolved Oxygen, Anions, TSS, Alk~~
	~~1, P, 1L~~	~~W~~	~~Ammonia, COD (H_2SO_4)~~
	~~1, G, 250ml~~	~~W~~	~~TOC (Includes Bicarbonate/Carbonate) (H_2SO_4)~~
	~~1, G3, 250ml~~	~~W~~	~~TOX (H_2SO_4)~~
	~~1, P, 1L~~	~~W~~	~~Gross Alpha/Beta, Gamma Scan (HNO_3)~~
B06ZR4	1, P, 1L	W	ICP/AA Metals & Hg (HNO_3) Filtered
~~B06ZR5~~	~~3, 40ml, G3~~	~~W~~	~~CLP-VOA~~
			BOL #: 250986824-0
			OPC #: W92-0-0533-5

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

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PART II: LABORATORY SECTION

ed by Kermit Blum Title Sample Control Supervisor Date 7-16-92

Analysis Required _____

9613473.2229

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

4 SEP 1992 RECEIVED OSM DMO

August 14, 1992

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 July 17, 1992 from Westinghouse/Hanford Company. The samples were analyzed for the USEPA CLP Target Analyte List metals. The analysis was performed under TMA/Skinner and Sherman work order S207119.

Methodology

The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work 7/88 (CLP SOW788).

Discussion

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

The selenium digestion spike recovery 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.

David N. Peterson
Assistant Laboratory Manager

2-28-96
MC

9613473.2230

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B06ZR4

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N207068 SAS No.: SDG No.: B06ZR4

Matrix (soil/water): WATER Lab Sample ID: 07119-01S

Level (low/med): LOW Date Received: 07/17/92

% 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	17.30	U		P
7440-36-0	Antimony	16.50	U		P
7440-38-2	Arsenic	10.40			F
7440-39-3	Barium	28.40	B		P
7440-41-7	Beryllium	0.40	U		P
7440-43-9	Cadmium	1.40	U		P
7440-70-2	Calcium	19800.00			P
7440-47-3	Chromium	42.70			P
7440-48-4	Cobalt	2.30	U		P
7440-50-8	Copper	2.40	U		P
7439-89-6	Iron	16.30	U		P
7439-92-1	Lead	2.60	B		F
7439-95-4	Magnesium	6000.00			P
7439-96-5	Manganese	2.20	B		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	6.00	U		P
7440-09-7	Potassium	2890.00	B		P
7782-49-2	Selenium	7.10		+N	F
7440-22-4	Silver	2.40	B		P
7440-23-5	Sodium	140000.00			P
7440-28-0	Thallium	1.60	U		F
7440-62-2	Vanadium	48.30	B		P
7440-66-6	Zinc	10.10	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL
PACKAGE TRACKING NUMBER 2521035101

2521035101

RECIPIENT'S COPY

1 From (Your Name) Please Print: SAMPLE CONTROL
Company: [illegible] CAL.
Street Address: [illegible] LIGHT AVE
City: [illegible]
State: CA
ZIP Required: [illegible]
Your Phone Number (Very Important): [illegible]
Department/Floor No.
Date: 7/16/92

2 To (Recipient's Name) Please Print: SAMPLE CONTROL
Company: T M A / SKINNER & SHERMAN
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes): 300 SECOND AVENUE
City: WALTHAM
State: MA
ZIP Required: 02254
Recipient's Phone Number (Very Important): (617) 890-7200
Department/Floor No.

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.)
2320-6406

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

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

4 SERVICES (Check only one box)

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

Standard Overnight (Delivery by next business afternoon†)
51 [ ] YOUR 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 to authorized users only)
46 [ ] GOVT LETTER
41 [ ] GOVT PACKAGE

Freight Service (for Extra Large or any package over 150 lbs.)
70 [ ] OVERNIGHT FREIGHT ** (Confirmed reservation required)
80 [ ] TWO-DAY FREIGHT **
† Delivery commitment may be later in some areas
*Declared Value Limit $100
**Call for delivery schedule

5 DELIVERY AND SPECIAL HANDLING (Check services required)
1 [ ] HOLD FOR PICK-UP (If at an Box Hq)
2 [x] DELIVER WEEKDAY
3 [ ] DELIVER SATURDAY (Extra charge) (Not available to all locations)
4 [ ] DANGEROUS GOODS (Extra charge)
5 [ ]
6 [ ] DRY ICE Lbs.
7 [ ] OTHER SPECIAL SERVICE
8 [ ]
9 [ ] SATURDAY PICK-UP (Extra charge)
10 [ ]
11 [ ]
12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6 PACKAGES | WEIGHT In Pounds Only | YOUR DECLARED VALUE
Total 1 | Total 14 | 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 [ ] BSC 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 [illegible]
Date/Time Received 7/17/92
FedEx Employee Number 9:30

7 Release Signature:
FedEx Emp. No.
Date/Time

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges
REVISION DATE
PART #
FORM #
PRINTED IN U.S.A.

118

1577.5473.7251

TMA/Skinner & Sherman Labs SAMPLE LOG-IN

WORKORDER S207119 CLIENT Hanford War No. SAMPLES:

PROTCL CLP TURNARND 33 Day (Soil) 1 (Water) (Specify Other)

COOLER TEMP: ____oC, or NA

CUSTODIAN B. Drouix SDG/BATCH N/A

CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N207068

SHIPER & # Fed Ex PO/CONTRACT# N207068

TAGS: PRESENT/ABSENT/NA/SEE COC CONTACT D. Sanchez

CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS:

SAMPLE CONTAINERS-INTACT/BROKEN COMMENTS

CLIENT COMMENT? YES/NO

SAMPLE LABELS AGREE WITH CHAIN OF CUSTODY INFO? YES/NO (COMMENT)

CLIENT PAPERWORK AGREES WITH SAMPLES & COC? YES /NO (COMMENT)

SHIPMENT DATES 7/17/92

LIST ANY DATE WITH PAPERWORK/SHIPMENT PROBLEMS & SPECIFY THE PROBLEM:

FIELD FILTERED

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	BOGZR4	Water	7/17/92	1.89	DS TM ~~Cr~~ 7/17/92 BP	Hg Due 8/1/92
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						

Samples are from site known to have Rad-Contamination: YES ✓ NO ____

Samples have detectable amounts of Radioactive Material: YES ____ NO ✓

SUBCONTRACT: YES/NO, TO: ____ DATE: ____

REVIEWED ____

complete 7/17/92

* EPA/CLP

9613473.2233

Westinghouse Hanford Company	CHAIN OF CUSTODY	S4S

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200AAMS

Collection Date 7/13/92

Ice Chest No. SML-157

Field Logbook No. EFL-1033

Bill of Lading/Airbill No. 250986824-0

Offsite Property No. W92-0-0533-5

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks N/A

Sample Identification

B06ZR3

~~2, 40ml, aG, WATER, CLP VOA~~

~~3, 2L, aG, WATER, SEMI-VOA, PCB/PEST~~

1, 1L, P, WATER, ICP/AA-METAL & Hg (HNO3) UNFILTERED

~~3, 1L, P, WATER, TDS, ANIONS, TSS, ALK~~

~~1, 1L, P, WATER, AMMONIA, COD (H2SO4)~~

~~1, 250ml, aG, WATER, TOC(INCLUDES BICARBONATE/CARBONATE (H2SO4)~~

~~1, 250ml, Gs, WATER, TOX (H2SO4)~~

~~1, 1L, P, WATER, GROSS ALPHA/BETA, GAMMA SCAN (HNO3)~~

B06ZR4

1, 1L, P, WATER, ICP/AA METAL & Hg (HNO3) (FILTERED)

~~B06ZR5~~

~~2, 40ml aG, WATER, CLP VOA~~

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: [signature]	Received by: [signature] B.WHITTEN	Date/Time: 7-15-92 0:900
Relinquished by: [signature] B.WHITTEN	Received by: Kermit Blum	Date/Time: 7-16-92 1130
Relinquished by: Kermit Blum 7-16-92	Received by: [signature]	Date/Time: 7/17/92 9:30
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

120

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

9615475.2254

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST Task #92-128

PART I: FIELD SECTION

.or _____ Date Sampled 7-13-92 Time 0941 hours

Company Contact PH Butcher Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B06ZR3	~~3, G3, 40ml~~	~~W~~	~~CLP VOA~~
	~~3, AG, 2L~~	~~W~~	~~Semi-VOA, Pest/PCB~~
	1, P, 1L	W	ICP/AA Metals & Hg (HNO_3) Unfiltered
	~~3, P, 1L~~	~~W~~	~~TDS, BOD, Dissolved Oxygen, Anions, TSS, Acid~~
	~~1, P, 1L~~	~~W~~	~~Ammonia, COD (H_2SO_4)~~
	~~1, AG, 250ml~~	~~W~~	~~TOC (Includes Bicarbonate/Carbonate) (H_2SO_4~~
	~~1, G3, 250ml~~	~~W~~	~~TOX (H_2SO_4)~~
	~~1, P, 1L~~	~~W~~	~~Gross Alpha/Beta, Gamma Scan (HNO_3)~~
B06ZR4	1, P, 1L	W	ICP/AA Metals & Hg (HNO_3) Filtered
~~B06ZR5~~	~~3, 40ml, G3~~	~~W~~	~~CLP VOA~~
			BOL #: 250986824-0
			OPC #: W92-0-0533-5

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

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PART II: LABORATORY SECTION

Received by Kermit Blum Title Sample Control Supervisor Date 7-16-92

Analysis Required _____