START 9713515.2021

B08925-TMA-493

TMA

454 2

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RECORD COPY

WESTINGHOUSE HANFORD COMPANY

JUN 1993 RECEIVED SDLA

Results of Analyses For:

ORGANICS & GENERAL CHEMISTRY
Case No. 04-054
(TMA/ARLI Work Order # A3-04-054)

METALS & NITRATE/NITRITE
Case No. N3-04-080
(TMA/Skinner & Sherman W.O. # S3-04-183, S3-04-196, & S3-04-197)

June 1, 1993

JAN 1997 RECEIVED EDMC

TMA Master Work Order N3-04-080

i 30 8-16-96

PAGE 1 TMA/Norcal CHAIN OF CUSTODY ORD # N3-04-080 ~~000001~~

RCVD: 04/15/93 DUE: 05/20/93 04/15/93 14:28:36 KEEP: 08/18/93 DISP: S

DASH	SAMPLE IDENTIFICATION		STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY						
01A-W	BC8925	UNFILTERED	ARLI	WH018	WH019	WH020	WH043	WH114	WH121	WH122
				WH125	WH131	WH132	WH140			
01C-W	BC8925 MS	UNFILTERED	ARLI	WH018	WH019	WH020	WH043	WH114	WH140	
01D-W	BC8925 MSD	UNFILTERED	ARLI	WH018	WH019	WH020				
01E-W	BC8925 DUP	UNFILTERED	ARLI	WH043	WH114	WH121	WH122	WH128	WH131	WH132
				WH140						
03A	DIESEL		ARLI	WH018						

RELINQUISHED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Yamamoto	4-15-93	ARLI	4-15-93	[illegible]	4/16/93

9713515.2023

000002A

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 4/12/93

Ice Chest No. SML-151

Field Logbook No. EFL-1055

Bill of Lading/Airbill No 2536954266

Offsite Property No. W93-0420-10

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

BO 8925

3, 40ml, Gs, WATER; CLP-VOA
3, 2L, aG, WATER; CLP-SEMI VOA & PCB's/PEST
1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
1, 500ml, P, WATER; ANIONS/NO2-NO3 (H2SO4)
1, 1L, G, WATER; ALKALINITY/TOTAL DISSOLVED SOLIDS
1, 500ml, G, WATER; SULFIDE (Zink Acetate = NaOH pH>9)
1, 500ml, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)
1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) UNFILTERED
1, 1L, P, WATER; Cn(NaOH)
1, 4L, P & 1, ~~2L~~ 4L, P, WATER; GROSS ALPHA/GROSS BETA/GAMMA SPEC./ ALPHA SPEC.(to include U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)
LW 4-13-93
1, 1L, G/P,WATER; Tc-99 (HCl)
1, 250ml, Gs, WATER; TRITIUM/C-14

BO 8926

1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) FILTERED

BO 8927

3, 40ml, Gs, WATER; CLP-VOA

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

Relinquished By	Date	Time	Received By	Date	Time
LW 4-13-93 ~~A Simpson — AS SIMPSON~~	~~4/12/93~~				
L.D. Walker L.D. Walker	4-13-93	1030	B. WHITTEN	4/14/93	0700
B. WHITTEN	4/14/93	0700	[illegible]	4/15/93	1030

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Sample set placed in refrig. #4 at 1030, 4/13/93

A-6000-407 (12/92) WEF061

9713515.2024

000002B

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, L. Walker

Date Sampled ~~0735 4/13/93~~ LW 4-13-93 4-13-93 Time ~~0735~~ 1030 hours

Company Contact P. H. Butcher

Telephone (509) 376-5045 LW 4-13-93

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 8925	✓3; 40ml; Gs*;	WATER	CLP-VOA
	✓3; 2L; aG;	WATER	CLP-SEMI VOA & PCB's/PEST
	✓1; 1L; P;	WATER	ANIONS (IC) SO4, F, PO4, Cl/COND/pH
	✓1; 500ml; P;	WATER	ANIONS/NO3-NO2 (H2SO4)
	✓1; 1L; G;	WATER	ALK./TOT. DISSOLVED SOLIDS
	✓1; 500ml; G;	WATER	SULFIDE (add Zinc Acetate+NaOH pH>9)
	✓1; 500ml; G;	WATER	AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)
	✓1; 1L; P;	WATER	CLP-ICP/AA METALS & Hg (HNO3) UNFILTERED
	✓1; 1L; P;	WATER	CLP-CN (NaOH)
	1; 4L; P; & 1; 2L; P	WATER	GROSS ALPHA/BETA, GAMMA SPEC, ALPHA SPEC
			(U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)
	1; 1L; G/P;	WATER	Tc-99 (HCl)
	✓1; 250ml; Gs;	WATER	TRITIUM/C-14
BO 8926	✓1; 1L; P;	WATER	CLP-ICP/AA METAL & Hg (HNO3) FILTERED
BO 8927	✓3; 40ml; Gs	WATER	CLP-VOA
			OPC: # W93-0420-10
			BOL: #2536954266
			TASK#: 93-051

Field Information**

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Alfonso Mokly. Title SAMPLE CONTROL TECH Date 4/15/93

Analysis Required

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

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

A-6000-406(05/90)

9713515.2025

SAMPLE LOG-IN SHEET

000003

LAB NAME: TKA/NRLI

PAGE: 1 OF

RECEIVED BY (PRINT NAME): Trudy Colyer

LOG-IN-DATE: 4/16/93

RECEIVED BY (SIGNATURE): Trudy Colyer

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.: 2521033443
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: 4/16/93
12. Temp of Ice chest 5 °
13. Time Recieved: 1040

SAMPLE TRANSFER

Fraction:
Area #:
By:
On:

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B08927	A3-C4-054-02	
	B08925	A3-C4-054-01	

* Contact SMO and attach record of resolution

Reviewed By:
Date:
Logbook No.:
Logbook Page No.:

FORM DC-1

000004

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 2521033443

A304054

2521033443

RECIPIENT'S COPY

1 Date 4/15/93

From (Your Name) Please Print: Sample EXMtrol

Your Phone Number (Very Important): (510) 235-2633

Department/Floor No.

Company: T M A /NORCAL

Street Address: 2030 WRIGHT AVE

City: RICHMOND State: CA ZIP Required: 94804

2 To (Recipient's Name) Please Print: Carole Harris

Recipient's Phone Number (Very Important): (818) 357 8247

Department/Floor No.

Company: TMA / ARLI

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

City: Monrovia State: CA ZIP Required: 91016

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): 2340 - 6606

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†)
20 [ ] ECONOMY

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

Freight Service (for 5 kilo (1 pkg) or any pallet/skid over 150 lbs.)
70 [ ] OVERNIGHT FREIGHT ** (Earliest execution required)
80 [ ] TWO-DAY FREIGHT **

† Delivery commitment may begin 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 ck on 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 (If extra charge)
10 [ ]
11 [ ]
12 [ ] HOLIDAY DELIVERY (If allowed) (If extra charge)

6 PACKAGES / WEIGHT In Pounds Only / YOUR DECLARED VALUE OF

Total 1 / Total 65 / 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

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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TMA/ARI
The new Analytical Inc.

RADIATION DOSE RATE SURVEY FORM

Date 4/16/93 COMPANY TMA NORCAL (WHC) OTHER ORD # 252103344

Surveyor's Name MARK S. McCray

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

Serial Nos. 210289 / 02619 Serial Nos. 011726 / 02678

Calibration Date 12/02/93 Calibration Date 2/16/93

Instrument Calibration Factor 0.280 Instrument Calibration Factor 0.190

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 dpm/cm²
Background		39.0			9.97				
Consumery		7,440	0.2872		5,000	0.1838			
Smear SML-151		55.0			8.97			NONE	
Reported WHC (5) samples each <50 pCi/gram									

Comments

All OK ✓ Approved MSM

Not OK Date 4/16/93

GENERAL CHEMISTRY RESULTS

CASE NO. 04-054

Water Sample #:

B08925

CASE NARRATIVE

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

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

Maureen Parrish

Maureen Parrish

TMA Inc. REPORT Work Order # A3-04-054

Received: 04/15/93

Results by Sample

SAMPLE ID B08925 FRACTION 01E TEST CODE WCCLPL NAME Anions & Wet Chem. - VH043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	<0.2	mg/L	0.2
Fluoride	300.0	<0.1	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	150.1	5.5	pH	0.1
Sulfate	300.0	<1	mg/L	1
Elect. Conductivity	120.1	<6	umho/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-04-054

Received: 04/15/93

Results by Sample

SAMPLE ID #08925 FRACTION 01N TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	3	mg/L	2
Tot. Dissolved Solids	160.1	<5	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-04-054

Received: 04/15/93

Results by Sample

SAMPLE ID B08925 FRACTION 01J TEST CODE WCCLPL NAME Anions & Wet Chem. - WM043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-04-054

Received: 04/15/93

Results by Sample

SAMPLE ID B08925 FRACTION 01M TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.0	<5	mg/L	5

FORM I

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 04-054

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : April 15, 1993

1.0 DESCRIPTION OF CASE :

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

2.0 SAMPLE LIST :

WESTINGHOUSE ID	LAB ID	ANALYSIS REQUESTED	MATRIX	pH
B08925	A3-04-054-01A	V	WATER	7
B08925	A3-04-054-01B	SV & P	WATER	
B08925 MS	A3-04-054-01C	SV & P	WATER	
B08925 MSD	A3-04-054-01D	SV & P	WATER	
B08927	A3-04-054-02A	V	WATER	7
B08927 MS	A3-04-054-02B	V	WATER	7
B08927 MSD	A3-04-054-02C	V	WATER	7

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

All of the samples were received unbroken and properly documented.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were analyzed within the CLP SOW holding times.

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

TUNES :

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

3.2.2 SEMIVOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times. The matrix spike recoveries for 4-Nitrophenol in samples B08925MS and B08925MSD were above the QC limits. Sample B08925MSD also had 2,4-Dinitrotoluene, Pentachlorophenol and Pyrene spike recoveries slightly above the QC limits. In accordance with protocol, no further action was required.

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

3.2.3 PESTICIDE/PCB ANALYSIS COMMENTS :

SEQUENCE NOTES :

The sequence was started on 04/29/93 and was analyzed according to the CLP SOW. The sequence was analyzed by single injection into a dual column system.

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

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

SAMPLE NOTES :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times. Sample PBLK0417C1 had a DCB surrogate recovery slightly below the QC limits on the DB-1701 column. The TCX surrogate recoveries for all the samples were higher on the DB-1701 column compared to the DB-608 column. These high recoveries were due to an interference peak that co-eluted with TCX on the DB-1701 column. In sample B08925MS, the percent difference between the two GC columns exceeded 25%.

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

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08925

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04054 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304054-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30421B09

Level: (low/med) LOW Date Received: 04/15/93

% Moisture: not dec. ____ Date Analyzed: 04/21/93

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

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

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

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000006

EPA SAMPLE NO.

B08925

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04054 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304054-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30421B09

Level: (low/med) LOW Date Received: 04/15/93

% Moisture: not dec. ____ Date Analyzed: 04/21/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2037

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

000007

EPA SAMPLE NO.

B08927

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04054 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304054-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30421B11

Level: (low/med) LOW Date Received: 04/15/93

% Moisture: not dec. ____ Date Analyzed: 04/21/93

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

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

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

EPA SAMPLE NO.

B08927

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04054 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304054-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30421B11

Level: (low/med) LOW Date Received: 04/15/93

% Moisture: not dec. ____ Date Analyzed: 04/21/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2039

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

000009
EPA SAMPLE NO.

B08925

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04054 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304054-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30506I16

Level: (low/med) LOW Date Received: 04/15/93

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 04/17/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/06/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

9713515.2040

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

000010
EPA SAMPLE NO.

B08925

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04054 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304054-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30506I16

Level: (low/med) LOW Date Received: 04/15/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/17/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/06/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	2	J
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

9713515.2041

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

000011
EPA SAMPLE NO.

B08925

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04054 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304054-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30506I16

Level: (low/med) LOW Date Received: 04/15/93

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 04/17/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/06/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	5.72	2	BJ
2.	UNKNOWN HYDROCARBON	12.28	3	J
3.	UNKNOWN HYDROCARBON	24.72	7	J

9713515.2042

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

000012
EPA SAMPLE NO.

B08925

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04054 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304054-01B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/15/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 04/17/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/30/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

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

9713515.2043

000002

Page 1 Skinner&Sherman REPORT Work Order # S3-04-196

Received: 04/16/93 05/24/93 15:22:30

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

ATTEN Dan Steurmer

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

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

ATTEN Client Services
PHONE (617) 890-7200

CERTIFIED BY

CONTACT DP

WORK ID N3-04-080
TAKEN By Client
TRANS Fed Ex
TYPE Water
P.O. # N3-04-080
INVOICE under separate cover

SAMPLE IDENTIFICATION		TEST CODES and NAMES used on this workorder	
01 B08925		NO3NO2	Nitrate Plus Nitrite
01 B08925	DUPL		
01 B08925	SPIKE		
02 LCSW			

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

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

Page 2 Skinner&Sherman REPORT Work Order # S3-04-196

Received: 04/16/93 Results by Sample

SAMPLE ID B08925 SAMPLE # 01 FRACTIONS: A

Date & Time Collected 04/12/93 Category WATER

NO3NO2 <0.25 mgN/L

SAMPLE ID B08925 DUPL SAMPLE # 01 FRACTIONS: B

Date & Time Collected 04/12/93 Category WATER

NO3NO2 <0.25 mgN/L

SAMPLE ID B08925 SPIKE SAMPLE # 01 FRACTIONS: C

Date & Time Collected 04/12/93 Category WATER

NO3NO2 2.20 mgN/L

SAMPLE ID LCSW SAMPLE # 02 FRACTIONS: A

Date & Time Collected not specified Category WATER

NO3NO2 2.02 mgN/L

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

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

Page 3 Skinner&Sherman REPORT Work Order # S3-04-196
Received: 04/16/93 05/24/93 15:22:30

TMA/NORCAL Hanford

QUALITY CONTROL

MATRIX SPIKE

Sample ID	Sample Result	Spike Added	Spike Result	% Recovery
S304196-01	<0.25 mg/L	2.00 mg/L	2.20 mg/L	109.9

DUPLICATE

Sample ID	Sample Result	Duplicate Result	Relative % Difference
S304196-01	<0.25 mg/L	<0.25 mg/L	not calculable

QUALITY CONTROL SAMPLES

Sample ID	True Value	Found Value	% Recovery
LCS	2.00 mg/L	2.02 mg/L	101.1
Prep blank	--	<0.25 mg/L	--

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

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1-800-4 LAB TEST FAX (617) 890-3883

Page 4 Skinner&Sherman REPORT Work Order # S3-04-196

Received: 04/16/93 Test Methodology

TEST CODE NO3NO2 NAME Nitrate Plus Nitrite

Methods for Chemical Analysis of Water and Wastes
EPA - 600/4-79-020 March 1979 Method 353.2 (modified)

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

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

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

9713515.2047

000024

TMA/Skinner & Sherman Labs SAMPLE LOG-IN
WORKORDER 5304196 CLIENT Hanford NOC No. SAMPLES:
PROTCL CLP TURNARND 30 Day
COOLER TEMP: 4 oC, or NA (Soil) 1 (Water) (Specify Other)
CUSTODIAN B Daniel SDG/BATCH N/A
CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N304080
SHIPER & # Fed Ex PO/CONTRACT# 1
TAGS: PRESENT/ABSENT/NA/SEE COC CONTACT D SANCHEZ
CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS: none

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 4/16/93
LIST ANY DATE WITH PAPERWORK/SHIPMENT PROBLEMS & SPECIFY THE PROBLEM:

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	B08925	water	4/16/93	1.89	D.S. NO3NO2	
2						
3						
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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: BP

REVIEWED Complete 4/19/93

* EPA/CLP required Rev 1.6 PAGE: 1

9713515.2048

000025

PAGE 1 TMA/Norcal CHAIN OF CUSTODY ORD # N3-04-080

RCVD: 04/15/93 DUE: 05/20/93 04/15/93 14:28:21 KEEP: 08/18/93 DISP: S

DASH	SAMPLE IDENTIFICATION			STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY				
01B-W	B08925		UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
01F-W	B08925	MS	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
01G-W	B08925	DUP	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
01H-W	L C S			S&S	WH007	WH008	WH010	WH137	
02A-W	B08926		FILTERED	S&S	WH007	WH008	WH010		
02B-W	B08926	MS	FILTERED	S&S	WH007	WH008	WH010		
02C-W	B08926	DUP	FILTERED	S&S	WH007	WH008	WH010		
02D-W	L C S			S&S	WH007	WH008	WH010		

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
tyamamoto	4-15-93	Skinner	4-15-93	Bonc Prost	4/16/93

TMA 9713515.2049
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

JUN 1993
RECEIVED
SDLA

May 18, 1993

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

Quality Control Narrative

Scope
One (1) water sample was submitted to TMA/Skinner & Sherman Laboratories, Inc. on April 16, 1993 from TMA/Norcal. The sample was analyzed for the USEPA CLP metals and cyanide. The analysis was performed under TMA/Skinner and Sherman work order S304197.

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

Discussion
All quality control requirements were met for the 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.

Steven Provencal

Steven R. Provencal
Lead Chemist

i sai 8/16/96

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B08925

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

Lab Code: SKINER Case No.: N3-04-080SAS No.: SDG No.: B08925

Matrix (soil/water): WATER Lab Sample ID: 04197-01S

Level (low/med): LOW Date Received: 04/16/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19.2	U		P
7440-36-0	Antimony	18.6	U		P
7440-38-2	Arsenic	3.5	U		F
7440-39-3	Barium	2.6	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.4	U		P
7440-70-2	Calcium	334	B		P
7440-47-3	Chromium	3.3	U		P
7440-48-4	Cobalt	2.9	U		P
7440-50-8	Copper	4.6	B		P
7439-89-6	Iron	67.2	B		P
7439-92-1	Lead	1.9	B		F
7439-95-4	Magnesium	133	B		P
7439-96-5	Manganese	3.2	B		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	4.2	U		P
7440-09-7	Potassium	176	B		P
7782-49-2	Selenium	2.9	U	W	F
7440-22-4	Silver	3.3	U		P
7440-23-5	Sodium	383	B		P
7440-28-0	Thallium	2.7	U		F
7440-62-2	Vanadium	2.1	U		P
7440-66-6	Zinc	66.5			P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

002

9713515.2051

TMA/Skinner & Sherman Labs SAMPLE LOG-IN
WORKORDER 5304197 CLIENT Hanford Nav No. SAMPLES:
PROTCL CLP TURNARND 33 Day (Soil) 1 (Water) (Specify Other:
COOLER TEMP: 4 oC, or NA
CUSTODIAN B. Pronle SDG/BATCH N/A
CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N3ACT
SHIPER & # Fed Ex PO/CONTRACT# 1
TAGS: PRESENT/ABSENT/NA/SEE COC CONTACT D Sizzle
CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS: none

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 4/16/93
LIST ANY DATE WITH PAPERWORK/SHIPMENT PROBLEMS & SPECIFY THE PROBLEM:

UNFILTERED

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	B08925	water	4/16/93	1.90/12.63	D.S TM/CN	
2						
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27						

13A

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: 4/19/93

REVIEWED Compliance BP

* EPA/CLP required Rev 1.6 PAGE: 64

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

9713515.2052

May 13, 1993

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

Quality Control Narrative

Scope
One (1) water sample was submitted to TMA/Skinner & Sherman Laboratories, Inc. on April 16, 1993. The sample was analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S304183.

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

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

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

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

 SW 8/16/96

9713515.2053

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B08926

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

Lab Code: SKINER Case No.: N3-04-080SAS No.: SDG No.: B08926

Matrix (soil/water): WATER Lab Sample ID: 04183-01S

Level (low/med): LOW Date Received: 04/16/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19.2	U		P
7440-36-0	Antimony	18.6	U		P
7440-38-2	Arsenic	2.3	U		F
7440-39-3	Barium	1.1	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.4	U		P
7440-70-2	Calcium	93.7	U		P
7440-47-3	Chromium	3.3	U		P
7440-48-4	Cobalt	2.9	U		P
7440-50-8	Copper	2.7	U		P
7439-89-6	Iron	8.4	U		P
7439-92-1	Lead	4.0		M	F
7439-95-4	Magnesium	28.5	B		P
7439-96-5	Manganese	1.0	U		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	4.2	U		P
7440-09-7	Potassium	93.6	U		P
7782-49-2	Selenium	3.3	U		F
7440-22-4	Silver	3.3	U		F
7440-23-5	Sodium	90.8	B		P
7440-28-0	Thallium	1.2	U		F
7440-62-2	Vanadium	2.1	U		P
7440-66-6	Zinc	4.8	U		P
	Cyanide				MR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

002

9713515.2054

TMA/Skinner & Sherman Labs SAMPLE LOG-IN
WORKORDER 53041183 CLIENT Hanford NCR No. SAMPLES: 1
PROTCL CLP TURNARND 33 Day
COOLER TEMP: 4 oC, or NA (Soil) (Water) (Specify Other)
CUSTODIAN B Brown SDG/BATCH N/A
CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N3041183
SHIPER & # Fed Ex PO/CONTRACT# 1
TAGS: PRESENT/ABSENT/NA/SEE COC CONTACT D Sanchez
CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS: none

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 4/16/93
LIST ANY DATE WITH PAPERWORK/SHIPMENT PROBLEMS & SPECIFY THE PROBLEM:

filtered

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	B08926	water	4/16/93	1.94	DS TM	
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: 4/19/93 125

REVIEWED Composite BP

* EPA/CLP required Rev 1.6 PAGE: 60

9713515.2055

TMA

RECORD COPY

JUN 1993
RECEIVED
SDLA

WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

ORGANICS & GENERAL CHEMISTRY
Case No. 04-030
(TMA/ARLI Work Order # A3-04-030)

METALS & NITRATE/NITRITE
Case No. N3-04-043
(TMA/Skinner & Sherman W.O. # S3-04-138, S3-04-139, & S3-04-140)

June 1, 1993

TMA Master Work Order N3-04-043

i SDJ 8/27/96

9713515.2056

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

DATE: AUGUST 11, 1993

TO: FILE / B088R0-TMA-487

FROM: PAT REICH

Telephone:

cc:

SUBJECT: VALIDATION REPORT FOR 100-FR-3, SECOND ROUND GROUNDWATER SAMPLING.

THE FINAL VALIDATION REPORT ISSUED BY AT KEARNEY FOR THIS DATA PACKAGE IS FILED IN SDG 9304L088-WES-1128.

PAT REICH

9713515.2057

Westinghouse Hanford Company

NONCONFORMANCE REPORT

1. Page 1 of 1

2. Preprinted No. 051892

QA Log No.

3. P. O., W. O., or Job Control No.	4. System/End Use	5. Item/Material	6. Dwg./Spec./Other No.	7. Rev.
N/A	RI/FS	SAMPLES	808825	N/A

8. Program/Project/Other: 100-FR-3 / 93-051

9. Safety Class: N/A

10. ASME Code Items ☐ Yes ☒ No (If yes, notify authorized inspector)

11. Supplier Name/Address: ENVIRONMENTAL FIELD SAMPLING SERVICES

12. Notification of Potential Occurence Required ☐ Yes ☒ No

13. Code: Lot/Heat/Serial	14. Lot Size	15. Sample	16. Qty. Acc.
N/A	1	1	0

17. Inspection Criteria ☐ Dwg. ☐ Spec. ☐ Insp. Plan ☒ Other WHC-CM-5.3 Sect 1.0, rev. 1

18. Item	19. Description of Nonconformance (list serial no. where applicable)	22. Disposition, Justification, and Instructions
	THE ALIQUOT FOR ALKALINITY/ TOTAL DISSOLVED SOLIDS WAS RECEIVED BROKEN AT THE LAB. THE CRITERION, OUTLINED IN BLOCK 17, FOR SAMPLE RECEIPT WAS VIOLATED	

20. Originator's Signature: IL C. SMITH — Date: 7/28/93

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

21. Cognizant QA Manager's Signature: TL BENNINGTON — Date

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

Disp. App.

25. Cognizant Engineer	Date	26. Technical Rep.	Date	Signature/Org.	Date
QA Engineer: GS COREIGAN	Date	Signature/Org.	Date	Signature/Org.	Date

Close

27. Accept _____ Reject _____ Follow on NCR _____ QA/C Personnel _____ Date

9713515.2058

Westinghouse Hanford Company

NONCONFORMANCE REPORT

1. Page 1 of 1

2. Preprinted No. 050043

QA Log No. EQA-93-071

3. P. O., W. O., or Job Control No.	4. System/End Use	5. Item/Material	6. Dwg./Spec./Other No.	7. Rev.
N/A	RI/FS	SAMPLES	TOO MANY TO LIST	N/A

8. Program/Project/Other	9. Safety Class	10. ASME Code Items
100-FR-3/93-051	N/A	☐ Yes ☒ No (If yes, notify authorized inspector)

11. Supplier Name/Address	12. Notification of Potential Occurence Required
ENVIRONMENTAL FIELD SAMPLING SERVICES	☐ Yes ☒ No

13. Code: Lot/Heat/Serial	14. Lot Size	15. Sample	16. Qty. Acc.	17. Inspection Criteria
N/A	55	55	0	☐ Dwg. ☐ Spec. ☐ Insp. Plan ☒ Other WHC-CM-7.7. EII5.1 SEC 6.3

18. Item	19. Description of Nonconformance (list serial no. where applicable)	22. Disposition, Justification, and Instructions
	THE CHAIN OF CUSTODIES FOR THE FOLLOWING SAMPLES WERE NOT RELINQUISHED BEFORE SENDING TO LABS: TMA: B088T5-T7, B088X5-X7, B088R0-R2, B088W5-W7, B088S5-S7, B08907, B08900, B088Q2, B08901, B088W0, B088W2 B088X0, B08915-917, B088T0-T2, B088R5-R7, B088Y5-Y7, B08905 B08906, B08934-35, B08901, B08900, B08902, B088W1, B088X1, B088X2. DATACHEM: B08859, B088R9, B088T4, B088T9, B088X9, B08909, B088Y9, B088R4, B08919, B08933, B088W9 CHAIN OF CUSTODY BROKEN	The analysis shall continue for the affected samples. The data shall be appropriatley flagged.

20. Originator's Signature	Date	23. Design Document Change Required?
RC SMITH RClaytSmith	4/14/93	☐ Yes, Doc. No. ☒ No

21. Cognizant QA Manager's Signature	Date	24. Corrective Action Required?
[signature]	4-16-93	☐ Yes, No. ☒ No

Disp. App.	25. Cognizant Engineer	Date	26. Technical Rep.	Date	Signature/Org.	Date
	J.W. Robertson [signature]	4/21/93	NA		NA	
	QA Engineer	Date	Signature/Org.	Date	Signature/Org.	Date
	GS CORRIGAN [signature]	4-21-93				

Close 27.

Accept _____ Reject _____ Follow on NCR _____

QA/C Personnel _____ Date

A-7310-104 (10/91)

9713515.2059

OFFICE OF SAMPLE MANAGEMENT

RECORD OF DISPOSITION

ROD-93-0100
Record of Disposition No.

DATE: 4/14/93	LABORATORY: TMA/DATACHEM
PROJECT TITLE/NO.: 100-FR-3/93-051	NCR NO.: 050043

SAMPLE IDENTIFICATION NUMBERS:

TMA: B088T5-T7, B088X5-X7, B088R0-R2, B088W5-W7, B088S5-S7, B08907, B088Q0, B088Q2, B08901, B088W0, B088W2, B088X0, B08915-917, B088T0-T2, B088R5-R7, B088Y5-Y7, B08905, B08906, B08934-35, B088Q1, B08900, B08902, B088W1, B088X1-X2.

DATACHEM: B08859, B088R9, B088T4, B088T9, B088X9, B08909, B088Y9, B088R4, B08919, B08933, B088W9.

DESCRIPTION OF EVENT:

The chain-of-custodies were not signed as relinquished by the field samplers. Chain-of-custodies were broken.

DISPOSITION OF SAMPLES:

With concurrence from J.W. Roberts, project engineer, continue with analysis "for information purposes only".

APPROVAL SIGNATURES:

R. C. Smith/ R Clayton Smith — 4/14/93
OSM Project Coordinator (Print/Sign Name) — Date

J. W. Roberts/ J. W. Roberts — 4/14/93
Technical Representative (Print/Sign Name) — Date

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

9713515.2060

Westinghouse Hanford Company

NONCONFORMANCE REPORT

1. Page 1 of 1

2. Preprinted No. 050044

QA Log No. EQA-93-072

3. P. O., W. O., or Job Control No.	4. System/End Use	5. Item/Material	6. Dwg./Spec./Other No.	7. Rev.
N/A	RI/FS	SAMPLES	B088W7, B083R2	N/A

8. Program/Project/Other	9. Safety Class	10. ASME Code Items
100-FR-3 / 93-051	N/A	☐ Yes ☒ No (If yes, notify authorized inspector)

11. Supplier Name/Address: ENVIRONMENTAL FIELD SAMPLING SERVICES

12. Notification of Potential Occurence Required: ☐ Yes ☒ No

13. Code: Lot/Heat/Serial	14. Lot Size	15. Sample	16. Qty. Acc.	17. Inspection Criteria
N/A	2	2	0	☐ Dwg. ☐ Spec. ☐ Insp. Plan ☒ Other EII 5.8 App A, Rev 3, Sec 5, Item 4

18. Item	19. Description of Nonconformance (list serial no. where applicable)	22. Disposition, Justification, and Instructions
	THREE ~~SAMPLES~~ BOTTLES REC 4/14/93 FOR VOLATILE ORGANIC ANALYSIS WERE COLLECTED. HOWEVER, CONTRARY TO THE SAMPLE COLLECTION CRITERIA REFERENCED IN BLOCK 17 ABOVE, TWO OF THE THREE BOTTLES WERE FOUND TO CONTAIN AIR BUBBLES.	The two bottles that contained air bubbles shall be discarded. The analysis shall continue utilizing the remaining sample bottle. See the attached letter for justification.

20. Originator's Signature	Date	23. Design Document Change Required?
RC SMITH	4/14/93	☐ Yes, Doc. No. ☒ No

21. Cognizant QA Manager's Signature	Date	24. Corrective Action Required?
	4/16/93	☐ Yes, No. ☒ No

Disp. App.	25. Cognizant Engineer	Date	26. Technical Rep.	Date	Signature/Org.	Date
	J.W. Roberts	4/21/93	NA		NA	
	QA Engineer	Date	Signature/Org.	Date	Signature/Org.	Date
	GS Corrigan	4-21-93				

Close

27. Accept 2 Reject 0 Follow on NCR NA

QA/C Personnel: Gary Corrigan Date: 4-21-93

A-7310-104 (10/91)

9713515.2061

OFFICE OF SAMPLE MANAGEMENT

RECORD OF DISPOSITION

ROD-93-0101
Record of Disposition No.

DATE: 4/14/93	LABORATORY: TMA
PROJECT TITLE/NO.: 100-FR-3/93-051	NCR NO.: 050044

SAMPLE IDENTIFICATION NUMBERS:

B088W7, B088R2 ncs 4/14/93

DESCRIPTION OF EVENT:

Two of three VOA vials received at the lab with bubbles.

DISPOSITION OF SAMPLES:

With concurrence from J. W. Roberts, project engineer, continue VOA analysis using vial without bubbles.

APPROVAL SIGNATURES:

R. C. Smith/ [signature] 4/14/93
OSM Project Coordinator (Print/Sign Name) Date

J. W. Roberts/ J. W. Roberts 4/14/93
Technical Representative (Print/Sign Name) Date

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

9713515.2062

DON'T SAY IT — *Write It!*

DATE: 4/15/93

TO: Gary Corrigan

FROM: R. C. Smith RCS

Telephone: 372-2537

cc:

SUBJECT: Volume Requirements for VOA Analysis

According to CLP SOW (OLM01.8, d-15, 1.1), a 5 ml sample aliquot is used for volatile organic analysis. Thus, a single 40 ml vial is sufficient to continue with a VOA analysis. Within a batch of samples, one VOA analysis requires three 40 ml vials for QC purposes. This information should allow disposition of NCRs concerning VOA vials with bubbles.

WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

GENERAL CHEMISTRY
CASE NO. 04-030
(TMA/ARLI Work Order # A3-04-030)

ORGANICS
CASE NO. 04-030
(TMA/ARLI Work Order # A3-04-030)

General Chemistry and Organics results are presented
for the following WHC WATER sample(s):

B08915	B08917
B088R0	B088R2
B088S5	B088S7
B088W5	B088W7

Norcal Work Order # N3-04-043

Thermo Analytical Inc.
160 Taylor Street
Monrovia, CA 91016
(818) 357-3247

Date submitted:

5 23 93

9713515.2064

000002

A304030

PAGE 1 [illegible] CHAIN OF CUSTODY ORD # NO-04-243
RCVD [illegible] KEEP. 06/[illegible]/93 DISP. S

DASH	SAMPLE IDENTIFICATION		TYPE	TESTS for FRACTIONS with work in DEPT SU and CATEGORY						
01A-W	B088P0	UNFILTERED	APLI	WH018	WH019	WH020	WH043	WH114	WH121	WH122
				WH128	WH131	WH132	WH140			
02A-W	B088S5	UNFILTERED	APLI	WH018	WH019	WH020	WH043	WH114	WH121	WH122
				WH128	WH131	WH132	WH140			
03A-W	B088W5	UNFILTERED	APLI	WH018	WH019	WH020	WH043	WH114	WH121	WH122
				WH128	WH131	WH132	WH140			
04A-W	B08915	UNFILTERED	APLI	WH018	WH019	WH020	WH043	WH114	WH121	WH122
				WH128	WH131	WH132	WH140			
04C-W	B08915 MS	UNFILTERED	APLI	WH018	WH019	WH020	WH043	WH114	WH140	
04D-W	B08915 MSD	UNFILTERED	APLI	WH018	WH019	WH020				
04E-W	B08915 DUP	UNFILTERED	APLI	WH043	WH114	WH121	WH122	WH128	WH131	WH132
				WH140						
09A-W	B088R2		APLI	WH018						
10A-W	B088S7		APLI	WH018						
11A-W	B088W7		APLI	WH018						
12A-W	B0891[illegible]		APLI	WH018						

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Yamamoto	4-9-93	ARLI	4-9-93	[signature]	4/12/93*

*Samples received 4/10/93 by ~~[illegible]~~ 4/24/93 MKP; Dave Whitaker
Opened on 4/12/93

9713515.2005

000002A

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 4/7/93

Ice Chest No. SML-285

Field Logbook No. EFL-1055

Bill of Lading/Airbill No. 2536954816

Offsite Property No. W93-0-420-02

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B088R0

3, 40ml, Gs, WATER; CLP-VOA

1; 4L and 2; 1L ~~3, 2L~~, aG, WATER; CLP-SEMI VOA & PCB's/PEST

KT 4/7/93

1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH

1, 500ml, P, WATER; ANIONS/NO2-NO3 (H2SO4)

1, 1L, G, WATER; ALKALINITY/TOTAL DISSOLVED SOLIDS

1, 500ml, G, WATER; SULFIDE (Zink Acetate = NaOH pH>9)

1, 500ml, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)

1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) UNFILTERED

1, 1L, P, WATER; Cn(NaOH)

1, 4L, P & 1, 2L, P, WATER; GROSS ALPHA/GROSS BETA/GAMMA SPEC./ ALPHA SPEC.(to include U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)

1, 1L, G/P,WATER; Tc-99 (HCl)

1, 250ml, Gs, WATER; TRITIUM/C-14

B088R1

1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) FILTERED

* B088R2

3, 40ml, Gs, WATER; CLP-VOA

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

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp/K. Trapp	4/7/93	1350	RC Cole RC Cole	4/8/93	0750
			Myone Hahly	4/9/93	1100

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Samples set in refrig 4 on 4/7/93 at 1350

* PINHEAD BUBBLES NOTED ON 2 VOA VIALS 4-13-93 ~~by~~

A-6000-407 (12/92) WEF061

9713515.2066

000002B

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, L. Walker Date Sampled 4/7/93 Time 1137 hours

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

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 88R0	3; 40ml; Gs*;	WATER	CLP-VOA
	~~3; 2L;~~ aG; 1; 4L and 2; 1L KR 4/7/93	WATER	CLP-SEMI VOA & PCB's/PEST
	1; 1L; P;	WATER	ANIONS (IC) SO4, F, PO4, Cl/COND/pH
	1; 500ml; P;	WATER	ANIONS/NO3-NO2 (H2SO4)
	1; 1L; G;	WATER	ALK./TOT. DISSOLVED SOLIDS
	1; 500ml; G;	WATER	SULFIDE (add Zinc Acetate+NaOH pH>9)
	1; 500ml; G;	WATER	AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)
	1; 1L; P;	WATER	CLP-ICP/AA METALS & Hg (HNO3) UNFILTERED
	1; 1L; P;	WATER	CLP-CN (NaOH)
	1; 4L; P; & 1; 2L; P	WATER	GROSS ALPHA/BETA, GAMMA SPEC, ALPHA SPEC
			(U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)
	1; 1L; G/P;	WATER	Tc-99 (HCl)
	1; 250ml; Gs;	WATER	TRITIUM/C-14
BO 88R1	1; 1L; P;	WATER	CLP-ICP/AA METAL & Hg (HNO3) FILTERED
BO 88R2 *	3; 40ml; Gs	WATER	CLP-VOA
			OPC: # W93-0-420-02
			BOL: #2536954816
			TASK#: 93-051

Field Information**

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Al Moberly Title SAMPLE control tech Date 4/8/93

Analysis Required

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

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

A-6000-406(05/90)

9713515.2067

000002C

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 4/7/93

Ice Chest No. MIKE

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2536954816

Offsite Property No. W93-0-420-01

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B0 8855

3, 40ml, Gs, WATER; CLP-VOA

1; 4L and 2; 1L ~~3, 2L~~, aG, WATER; CLP-SEMI VOA & PCB's/PEST

1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH

KT 4/9/93 1, 500ml, P, WATER; ANIONS/NO2-NO3 (H2SO4)

1, 1L, G, WATER; ALKALINITY/TOTAL DISSOLVED SOLIDS

1, 500ml, G, WATER; SULFIDE (Zink Acetate = NaOH pH>9)

1, 500ml, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)

1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) UNFILTERED

1, 1L, P, WATER; Cn(NaOH)

1, 4L, P & 1, 2L, P, WATER; GROSS ALPHA/GROSS BETA/GAMMA SPEC./ ALPHA SPEC.(to include U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)

1, 1L, G/P,WATER; Tc-99 (HCl)

1, 250ml, Gs, WATER; TRITIUM/C-14

B0 8856

1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) FILTERED

B0 8857

3, 40ml, Gs, WATER; CLP-VOA

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

Relinquished By	Date	Time	Received By	Date	Time
C. Colbert C. Colbert	4.7.93	1350	PCole PCole	4/8/93	0750
			[illegible] [illegible]	4/9/93	1100

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Relinq #1 on 4/7/93 at 1350

A-6000-407 (12/92) WEF061

9713515.2068

0000020

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, L. Walker Date Sampled 4.7.93 Time 0815 hours

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

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 8855	✓3; 40ml; Gs*;	WATER	CLP-VOA
	✓~~3; 2L;~~ aG; 1; 4L and 2; 1L kr 4/7/93	WATER	CLP-SEMI VOA & PCB's/PEST
	✓1; 1L; P;	WATER	ANIONS (IC) SO4, F, PO4, Cl/COND/pH
	✓1; 500ml; P;	WATER	ANIONS/NO3-NO2 (H2SO4)
	✓1; 1L; G;	WATER	ALK./TOT. DISSOLVED SOLIDS
	✓1; 500ml; G;	WATER	SULFIDE (add Zinc Acetate+NaOH pH>9)
	✓1; 500ml; G;	WATER	AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)
	✓1; 1L; P;	WATER	CLP-ICP/AA METALS & Hg (HNO3) UNFILTERED
	✓1; 1L; P;	WATER	CLP-CN (NaOH)
	✓1; 4L; P; & 1; 2L; P	WATER	GROSS ALPHA/BETA, GAMMA SPEC, ALPHA SPEC
			(U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)
	✓1; 1L; G/P;	WATER	Tc-99 (HCl)
	✓1; 250ml; Gs;	WATER	TRITIUM/C-14
BO 8856	✓1; 1L; P;	WATER	CLP-ICP/AA METAL & Hg (HNO3) FILTERED
BO 8857	✓3; 40ml; Gs	WATER	CLP-VOA
			OPC: # W93-0-420-01
			BOL: #2536954816
			TASK#: 93-051

Field Information** Sunny 45° Slight wind

NA

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Alfonso Gabaldy Title Sample control tech Date 4/9/93

Analysis Required

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

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

A-6000-406(05/90)

9713515.2069

000002E

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 4-7-93

Ice Chest No. ~~SML 265~~ SML-140

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. ~~4/8/93~~ BW 2536954816

Offsite Property No. W93-0-420-01

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B0 88W5

3, 40ml, Gs, WATER; CLP-VOA
3, 2L, aG, WATER; CLP-SEMI VOA & PCB's/PEST
1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
1, 500ml, P, WATER; ANIONS/NO2-NO3 (H2SO4)
1, 1L, G, WATER; ALKALINITY/TOTAL DISSOLVED SOLIDS
1, 500ml, G, WATER; SULFIDE (Zink Acetate = NaOH pH>9)
1, 500ml, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)
1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) UNFILTERED
1, 1L, P, WATER; Cn(NaOH)
1, 4L, P & 1, 2L, P, WATER; GROSS ALPHA/GROSS BETA/GAMMA SPEC./ ALPHA SPEC.(to include U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)
1, 1L, G/P,WATER; Tc-99 (HCl)
1, 250ml, Gs, WATER; TRITIUM/C-14

B0 88W6

1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) FILTERED

* B0 88W7

3, 40ml, Gs, WATER; CLP-VOA

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

Relinquished By	Date	Time	Received By	Date	Time
C. Celebrat C. Celebrat	4/7/93	1350	RCole RCole	4/8/93	0750
			Alfonso Galaly	4/9/93	1100

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:
Refrdg # 1 on 4/7/93 1350

* PINHEAD BUBBLES NOTED IN 2 of the 3 VOA VIALS. 4-13-93 ey

A-6000-407 (12/92) WEF061

9713515.2070

000002F

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, L. Walker Date Sampled 4/7/93 Time 0934 hours

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

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 88W5	✓3; 40ml; Gs*;	WATER	CLP-VOA
	✓3; 2L; aG;	WATER	CLP-SEMI VOA & PCB's/PEST
	✓1; 1L; P;	WATER	ANIONS (IC) SO4, F, PO4, Cl/COND/pH
	✓1; 500ml; P;	WATER	ANIONS/NO3-NO2 (H2SO4)
	✓1; 1L; G;	WATER	ALK./TOT. DISSOLVED SOLIDS
	✓1; 500ml; G;	WATER	SULFIDE (add Zinc Acetate+NaOH pH>9)
	✓1; 500ml; G;	WATER	AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)
	✓1; 1L; P;	WATER	CLP-ICP/AA METALS & Hg (HNO3) UNFILTERED
	✓1; 1L; P;	WATER	CLP-CN (NaOH)
	✓1; 4L; P; & 1; 2L; P	WATER	GROSS ALPHA/BETA, GAMMA SPEC, ALPHA SPEC
			(U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)
	✓1; 1L; G/P;	WATER	Tc-99 (HCl)
	✓1; 250ml; Gs;	WATER	TRITIUM/C-14
BO 88W6	✓1; 1L; P;	WATER	CLP-ICP/AA METAL & Hg (HNO3) FILTERED
BO 88W7*	✓3; 40ml; Gs	WATER	CLP-VOA
			OPC: # W93-0-420-01
			BOL: #2536954816
			TASK#: 93-051

Field Information** Sunny, Slight Wind 45°

NA

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Alfonso Gobby Title Sample control tech Date 4/9/93

Analysis Required

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

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

A-6000-406(05/90)

9713515.2071

000002G

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 4.7.93

Ice Chest No. SML-EARL

Field Logbook No. EFL-1054

Bill of Lading/Airbill No. 2536954816

Offsite Property No. W93-0420-02

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

BO 8915
3, 40ml, Gs, WATER; CLP-VOA
~~3, 2L,~~ aG, WATER; CLP-SEMI VOA & PCB's/PEST
1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
1, 500ml, P, WATER; ANIONS/NO2-NO3 (H2SO4)
1, 1L, G, WATER; ALKALINITY/TOTAL DISSOLVED SOLIDS
1, 500ml, G, WATER; SULFIDE (Zink Acetate = NaOH pH>9)
1, 500ml, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)
1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) UNFILTERED
1, 1L, P, WATER; Cn(NaOH)
1, 4L, P & 1, 2L, P, WATER; GROSS ALPHA/GROSS BETA/GAMMA SPEC./ALPHA SPEC.(to include U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)
1, 1L, G/P,WATER; Tc-99 (HCl)
1, 250ml, Gs, WATER; TRITIUM/C-14

BO 8916
1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) FILTERED

BO 8917
3, 40ml, Gs, WATER; CLP-VOA

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

Relinquished By	Date	Time	Received By	Date	Time
C. Gilbert C. Gilbert	4/7/93	1350	PE Cole PE Cole	4/8/93	0750
			[illegible]	4/9/93	1100

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Refund # 5 on 4/7/93 at 1350

A-6000-407 (12/92) WEF061

9713515.2072

000002H

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, L. Walker Date Sampled 4-7-93 Time 0934 hours

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

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 8915	3; 40ml; Gs*;	WATER	CLP-VOA
✓ 3; 2L	~~3; 2L;~~ aG; ~~1; 1L and 2; 1L~~	WATER	CLP-SEMI VOA & PCB's/PEST
KT 4/8/93	1; 1L; P; KT 4/7/93	WATER	ANIONS (IC) SO4, F, PO4, Cl/COND/pH
	✓ 1; 500ml; P;	WATER	ANIONS/NO3-NO2 (H2SO4)
	✓ 1; 1L; G;	WATER	ALK./TOT. DISSOLVED SOLIDS
	✓ 1; 500ml; G;	WATER	SULFIDE (add Zinc Acetate+NaOH pH>9)
	✓ 1; 500ml; G;	WATER	AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)
	✓ 1; 1L; P;	WATER	CLP-ICP/AA METALS & Hg (HNO3) UNFILTERED
	✓ 1; 1L; P;	WATER	CLP-CN (NaOH)
	1; 4L; P; & 1; 2L; P	WATER	GROSS ALPHA/BETA, GAMMA SPEC, ALPHA SPEC
			(U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)
	✓ 1; 1L; G/P;	WATER	Tc-99 (HCl)
	✓ 1; 250ml; Gs;	WATER	TRITIUM/C-14
BO 8916	✓ 1; 1L; P;	WATER	CLP-ICP/AA METAL & Hg (HNO3) FILTERED
BO 8917	✓ 3; 40ml; Gs	WATER	CLP-VOA
			OPC: # W93-0-420-02
			BOL: # 2536A54816
			TASK#: 93-051

Field Information** Sunny Slight wind, 45°

NO

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Alfonso Sokolf Title SAMPLE control tech Date 4/9/93

Analysis Required

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

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

A-6000-406(05/90)

9713515.2073

000003

SAMPLE LOG-IN SHEET

LAB NAME: TRA/ARLI

PAGE: 1 OF 4

RECEIVED BY (PRINT NAME): Trudy Golub

LOG-IN-DATE: 4/12/93

RECEIVED BY (SIGNATURE): Trudy Golub

CASE NUMBER:

SAMPLE DELIVERY GROUP NO.:

SAS NUMBER:

REMARKS: SMILE

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.: 8502103346 5

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: *4/12/93

12. Temp of Ice chest: 1 °C

13. Time Recieved: 1000

SAMPLE TRANSFER

Fraction:

Area #:

By:

On:

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B0884 5	A3-04-0306	
	B0884 7	A3-04-0306	2 VOA BUBBLES

* Contact SMO and attach record of resolution

Reviewed By:

Date:

Logbook No.:

Logbook Page No.:

FORM SC-1

*Received 4/10/93; Opened 4/12/93 IG

9713515.2074

000004

SAMPLE LOG-IN SHEET

LAB NAME: TKA/ARLI

PAGE: 2 OF 4

RECEIVED BY (PRINT NAME): Judy Gaddis

LOG-IN-DATE: 4/12/93

RECEIVED BY (SIGNATURE): Judy Gaddis

CASE NUMBER:

SAMPLE DELIVERY GROUP NO.:

SAS NUMBER:

REMARKS: Mike F

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.: 25210 33465

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: *4/12/93

12. Temp of Ice chest 1 °C

13. Time Recieved: 1000

SAMPLE TRANSFER

Fraction:

Area #:

By:

On:

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B08855	A3-04-03003	
	B08857	A3-04-03001	

* Contact SMO and attach record of resolution

Reviewed By: Logbook No.:

Date: Logbook Page No.:

FORM SC-3

*Received 4/10/93; opened 4/12/93 TG

9713515.2075

SAMPLE LOG-IN SHEET

C0/0005

LAB NAME: TMA/NRLL

PAGE: 3 OF

RECEIVED BY (PRINT NAME): Trudy Galub

LOG-IN-DATE: 4/12/93

RECEIVED BY (SIGNATURE): [illegible]

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

REMARKS: 3ML-140

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.: 2521033465
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: * 4/12/93
12. Temp of Ice chest 1 °C
13. Time Recieved: 1200

SAMPLE TRANSFER

Fraction:
Area #:
By:
On:

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B08915	A3-04-03	
	B08917	A3-04-03	

* Contact SMO and attach record of resolution

Reviewed By: Logbook No.:

Date: Logbook Page No.:

FORM DC-1

* Received 4/10/93; Opened 4/12/93 TG

9713515.2076

SAMPLE LOG-IN SHEET

00006

LAB NAME: TMA/ARI

PAGE: 4 OF 4

RECEIVED BY (PRINT NAME): Trudy Gaiub

LOG-IN-DATE: 4/12/93

RECEIVED BY (SIGNATURE): Trudy Gaiub

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

REMARKS: SML-285

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.: 2521033465
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: 4/12/93
12. Temp of ice chest 1 °C
13. Time Recieved: 1000

SAMPLE TRANSFER

Fraction:
Area #:
By:
On:

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B[illegible]RC	A3-04-C30-01	
	B[illegible]R2	A3-04-C30-02	2 VOA 1 AMBER 5

* Contact SMO and attach record of resolution

Reviewed By: _____ Logbook No.: _____

Date: _____ Logbook Page No.: _____

FORM SC-1

* Opened 4/12/93; Received 4/10/93 TG

000067

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE

AIRBILL PACKAGE TRACKING NUMBER 2521033465

..2128M 2521033465

A304030

RECIPIENT'S COPY

1 Date 4-9-93

From (Your Name) Please Print: Sample Control
Your Phone Number (Very Important): ( ) 7235-2633
Company: T M A /LOCAL
Department/Floor No
Street Address: 2030 WRIGHT AVE
City: RICHMOND State: CA ZIP Required: 9 4 8 0 4

2 To (Recipient's Name) Please Print: Carole Harris
Recipient's Phone Number (Very Important): (818) 357-3247
Company: TMA /ARLI
Department/Floor No
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes): 160 Taylor Street
City: Monrovia State: Ca ZIP Required: 91016

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

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

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct No 3 [ ] Bill Third Party FedEx Acct No 4 [ ] Bill Credit Card
[ ] 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 the third business day)
30 [ ] ECONOMY

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

Freight Service (for Free Large or any package over 150 lbs)
70 [ ] OVERNIGHT FREIGHT **
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 (Fee on Back)
2 [ ] DELIVER WEEKDAY
3 DELIVER SATURDAY (Fee applies in all but areas) [X]
4 [ ] DANGEROUS GOODS (Fee Charge)
5 [ ]
6 [ ] DRY ICE Lbs
7 [ ] OTHER SPECIAL SERVICE
8 [ ]
9 [ ] SATURDAY PICK-UP (Fee Charge)
10 [ ]
11 [ ]
12 [ ] HOLIDAY DELIVERY (Fee Charge)

6 PACKAGES | WEIGHT in Pounds Only | YOUR DECLARED VALUE
Total Total Total
4 231

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 Dist [ ] 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 8/91
PART #137204 FXEM 4/92
FORMAT #099
099
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9713515-2017

9713515.2078

A304030

000008

TMA/ARI
The new Analytical Inc.

RADIATION DOSE RATE SURVEY FORM

Date 4/12/93 COMPANY TMA/NORCAL (WHC) OTHER ORD # 2521033465

Surveyor's Name MARK S. McCray

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

Serial Nos. 210289 / 02619 Serial Nos. 407726 / 02628

Calibration Date 12/02/92 Calibration Date 2/16/93

Instrument Calibration Factor 0.280 Instrument Calibration Factor 0.190

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 dpm/cm² or dpm/g
Background		38.0			1.99				
Consistency		7,560	0.2918		5,050	0.1856			
Smears SML 140		35.0			9.97			NONE	
SML 285		36.0			1.99			NONE	
"DUP"		34.0			9.97			NONE	
"MIKE"		37.0			1.99			NONE	
Reported (WHC)		24 samples each				<50 pCi/gram			

Comments

All OK ✓ Approved MSM

Not OK Date 4/12/93

GENERAL CHEMISTRY RESULTS

CASE NO. 04-030

Water Sample #:

B08915	B088R0
B088S5	B089W5

CASE NARRATIVE

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

Sample B088R0 (A3-04-030-01F) yielded a 69.0% recovery for the Phosphate analysis. The low Phosphate recovery compared to our laboratory control sample indicated the presence of a matrix interference.

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

Maureen Parrish

Maureen Parrish

9713515.2080

000010

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93 05/25/93 08:18:17

REPORT TO: Westinghouse Hanford Company
2355 Stevens Dr.,MSIN-H4-23
345 Hills Street/3000 Area
Richland, WA 99352

ATTEN: Jeanette Duncan

CLIENT: WHC SAMPLES: 9

COMPANY: Westinghouse Hanford Company

FACILITY:

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

ATTEN: Ms. Carole Harris

PHONE: 818-357-3247

Maureen Parrish

CERTIFIED BY

CONTACT: EVV CIH

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

WORK ID: 100-FR-3

TAKEN: By Westinghouse Staff

TRANS: By Federal Express

TYPE: Liquid

P.O. #: N3-04-043-SU-AR

INVOICE: under separate cover

SAMPLE IDENTIFICATION		TEST CODES and NAMES used on this workorder	
01	B088R0	BNCLPW	CLP Semivol. Water - WH020
01	B088R0 MS	PECLPL	CLP Pesticides Liq.
01	B088R0 MSD	VOCLPL	CLP Volatile Org.Liq.
01	B088R0	WCCLPL	Anions & Wet Chem. - WH043
01	B088R0 MS	WCLCS	Lab Control Sample Summary
01	B088R0	WCL L	Chloride - WH120
01	B088R0 Duplicate	WCQCD	Quality Control Summary
01	B088R0	WCQCS	Quality Control Summary
01	B088R0 MS	WF L	Fluoride in Water
01	B088R0	WNH3 L	Ammonia in Water - WH140
01	B088R0 MS	WPH L	pH of Liquid - WH121
02	B088R2	WPO4 L	Phosphate in Liquids
03	B088S5	WSO4 L	Sulfate (in Waters)
03	B088S5 MS	WSULFI	Sulfide - WH114
03	B088S5 MSD	W ALK	Alkalinity - WH131
03	B088S5	W COD	COD Water - WH132
03	B088S5 Duplicate	W COND	Conductivity-Water WH122
03	B088S5	W TDS	Dissolved Solids WH128
03	B088S5 Duplicate		
03	B088S5		
03	B088S5 Duplicate		
04	B088S7		
04	B088S7 MS		
04	B088S7 MSD		
05	B088W5		
06	B088W7		

TNA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93 05/25/93 08:18:17

	SAMPLE IDENTIFICATION
07	B08915
08	B08917
09	Wet Chemistry Blank
09	Laboratory Control Sample

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B08880 FRACTION 01E TEST CODE WCCLPL NAME Anions & Wet Chem. - WE043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	5.0	mg/L	0.2
Fluoride	300.0	<0.1	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	150.1	8.0	pH	0.1
Sulfate	300.0	69	mg/L	1
Elect. Conductivity	120.1	348	umho/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B088R0 FRACTION 01G TEST CODE WCCLPL NAME Anions & Wet Chem. - WR043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	98	mg/L	2
Tot. Dissolved Solids	160.1	254	mg/L	5

FORM I

9713515.2084

000015

TRA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B088R0 FRACTION 01I TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B08820 FRACTION 01K TEST CODE WCCLPL NAME Anions & Wet Chem. - WW043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.0	<5	mg/L	5

FORM I

9713515.2086

000017

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B088S5 FRACTION 03E TEST CODE WCCLPL NAME Anions & Wet Chem. - WR043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	10.0	mg/L	0.2
Fluoride	300.0	0.4	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	150.1	8.3	pH	0.1
Sulfate	300.0	20	mg/L	1
Elect. Conductivity	120.1	257	umho/cm	6

FORM I

9713515.2087

000018

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B08855 FRACTION 03G TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	93	mg/L	2
Tot. Dissolved Solids	160.1	183	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-04-038

Received: 04/09/93

Results by Sample

SAMPLE ID B088S5 FRACTION 03W TEST CODE WCCLPL NAME Anions & Wet Chem. - WR043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	<1	mg/L	1

FORM I

9713515.2009

000020

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B08885 FRACTION 03J TEST CODE WCCLPL NAME Anions & Wet Chem. - VW043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	0.13	mg/L	0.05
COD	410.0	<5	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B088W5 FRACTION 05C TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	34.5	mg/L	0.4
Fluoride	300.0	0.4	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	150.1	7.7	pH	0.1
Sulfate	300.0	102	mg/L	2
Elect. Conductivity	120.1	827	umho/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-04-038

Received: 04/09/93

Results by Sample

SAMPLE ID B088W5 FRACTION 05D TEST CODE WCCLPL NAME Anions & Wet Chem. - WW043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	212	mg/L	2
Tot. Dissolved Solids	160.1	554	mg/L	5

FORM I

9713515.2092

000025

TMA Inc. REPORT Work Order # A3-04-838

Received: 04/09/93

Results by Sample

SAMPLE ID 808915 FRACTION 07C TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	35.4	mg/L	0.4
Fluoride	300.0	0.3	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	150.1	7.7	pH	0.1
Sulfate	300.0	102	mg/L	2
Elect. Conductivity	120.1	830	umho/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B08915 FRACTION 07D TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	212	mg/L	2
Tot. Dissolved Solids	160.1	572	mg/L	5

FORM I

TRA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B08915 FRACTION 07E TEST CODE WCCLPL NAME Anions & Wet Chem. - WW043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	<1	mg/L	1

FORM I

9713515.2095

TMA Inc. REPORT Work Order # A3-04-030 000023

Received: 04/09/93

Results by Sample

SAMPLE ID B088W5 FRACTION 05E TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B088W5 FRACTION 05F TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.0	<5	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B08915 FRACTION 07F TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.0	<5	mg/L	5

FORM I

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 04-030

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : April 9, 1993

1.0 DESCRIPTION OF CASE :

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

2.0 SAMPLE LIST :

WESTINGHOUSE ID	LAB ID	ANALYSIS REQUESTED	MATRIX	pH
B088R0	A3-04-030-01A	V	WATER	7
B088R0	A3-04-030-01B	SV & P	WATER	
B088R0 MS	A3-04-030-01C	SV	WATER	
B088R0 MSD	A3-04-030-01D	SV	WATER	
B088R2	A3-04-030-02A	V	WATER	7
B088S5	A3-04-030-03A	V	WATER	7
B088S5	A3-04-030-03B	SV & P	WATER	
B088S5 MS	A3-04-030-03C	P	WATER	
B088S5 MSD	A3-04-030-03D	P	WATER	
B088S7	A3-04-030-04A	V	WATER	7
B088S7 MS	A3-04-030-04B	V	WATER	7
B088S7 MS	A3-04-030-04C	V	WATER	7
B088W5	A3-04-030-05A	V	WATER	7
B088W5	A3-04-030-05B	SV & P	WATER	
B088W5 RE	A3-04-030-05B	SV	WATER	
B088W7	A3-04-030-06A	V	WATER	7
B08915	A3-04-030-07A	V	WATER	7
B08915	A3-04-030-07B	SV & P	WATER	
B08917	A3-04-030-08A	V	WATER	7

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

All of the samples were received unbroken and properly documented.

2 of the 3 VOA vials for sample B088W7 contained air bubbles.
2 of the 3 VOA vials for sample B088R2 contained air bubbles.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were analyzed within the CLP SOW holding times.

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

TUNES :

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

3.2.2 SEMIVOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times. It appears that the internal standard mix that was used for the sample extracts was a different lot than that used for the standard. The area count for Perylene-d12 in the samples were almost 2 times greater than the standard. Sample B088W5 had an Internal Standard Area Count for Perylene-d12 that was above the QC limits. For further confirmation, the sample was re-analyzed on a different instrument with the associated method blank SBLK0412CRE. The re-analyzed sample was labeled as B088W5RE and had the same high Internal Standard Area Count for Perylene-d12. There were no TCL analytes detected in the samples that were quantitated using Perylene-d12.

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 04/17/93 and was analyzed according to the CLP SOW. The sequence was analyzed by single injection into a dual column system.

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

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

SAMPLE NOTES :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times. Samples B088S5, B088S5MS and B088S5MSD had DCB surrogate recoveries slightly below the QC limits on both GC columns. The low DCB surrogate recoveries were due to sample matrix. In accordance with protocol, no further action was required.

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

We certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data in this hardcopy data package and in the computer-readable data submitted on diskette is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Nicole Roth 5/27/93
Nicole Roth
CLP Program Manager

Didayat 5/27/93
Wida Ang
Organics Manager

9713515.2101

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

000005

EPA SAMPLE NO.

B088R0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B06

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

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

9713515.2102

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

000006
EPA SAMPLE NO.

B088R0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B06

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2103

000007

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088R2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B07

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

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

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	7	J
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	4	BJ
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	2	J
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

9713515.2104

000008

EPA SAMPLE NO.

B088R2

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B07

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2105

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

000009

EPA SAMPLE NO.

B088S5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B09

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	10	
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	6	BJ
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	2	J
591-78-6	2-Hexanone	3	J
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

9713515.2106

000010

EPA SAMPLE NO.

B088S5

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B09

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2107

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

000011

EPA SAMPLE NO.

B088S7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B18

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	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

9713515.2108

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

000012

B088S7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B18

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2109

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

000013
EPA SAMPLE NO.

B088W5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B13

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

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

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

9713515.2110

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

000014
EPA SAMPLE NO.

B088W5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B13

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2101

000015

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088W7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-06A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B19

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

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

9713515.2112

000016

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B088W7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-06A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B19

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2113

000017

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B08915

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-07A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B15

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

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

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

9713515.2114

000018

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B08915

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-07A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B15

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2115

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

000020
EPA SAMPLE NO.

B08917

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-08A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B16

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2116

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

000019

EPA SAMPLE NO.

B08917

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-08A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B16

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	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

9713515.2117

000021
EPA SAMPLE NO.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B088R0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30423S10

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/23/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	1	J
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

9713515.2118

000022

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088R0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30423S10

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/23/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

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

(1) - Cannot be separated from Diphenylamine

9713515.2119

000023
EPA SAMPLE NO.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B088R0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30423S10

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/23/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 7

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	8.25	15	J
2.	UNKNOWN HYDROCARBON	8.77	16	J
3. 872-50-4	1-METHYL-2-PYRROLIDINONE	9.08	190	JN
4.	UNKNOWN HYDROCARBON	17.42	4	J
5.	UNKNOWN HYDROCARBON	18.57	2	J
6.	UNKNOWN HYDROCARBON	21.32	7	J
7.	UNKNOWN HYDROCARBON	22.17	2	J

9713515.2120

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

000024
EPA SAMPLE NO.

B088S5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30423S13

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/23/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

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

9713515.2181

000025

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088S5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30423S13

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/23/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

(1) - Cannot be separated from Diphenylamine

9713515.2122

000026

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B088S5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30423S13

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/23/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN PHOSPHORIC ACID ESTE	10.28	4	J
2.	UNKNOWN HYDROCARBON	22.40	6	J
3.	HEXADECANOIC ACID ESTER ISOM	23.22	2	J
4.	UNKNOWN HYDROCARBON	26.10	2	J

9713515.2123

000027

EPA SAMPLE NO.

B088W5

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-05B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30423S14

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/24/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

9713515.2124

000028
EPA SAMPLE NO.

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B088W5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-05B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30423S14

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/24/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

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

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B088W5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-05B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30423S14

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/24/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	5.70	14	J
2.	UNKNOWN HYDROCARBON	21.27	3	J
3.	OCTADECANOIC ACID ESTER ISOM	24.85	2	J
4.	UNKNOWN ALKANE	24.95	2	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088W5RE

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-05B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I13

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/04/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

9713515.2127

000031
EPA SAMPLE NO.

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B088W5RE

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-05B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I13

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/04/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND		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

9713515.2128

000032
EPA SAMPLE NO.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B088W5RE

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-05B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I13

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/04/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 8

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	HEXADECANOIC ACID ESTER ISOM	23.30	5	J
2.	UNKNOWN ALKANE	24.23	2	J
3.	OCTADECANOIC ACID ESTER ISOM	24.88	5	J
4.	UNKNOWN ALKANE	25.00	4	J
5.	UNKNOWN ALKANE	25.73	3	J
6.	UNKNOWN ALKANE	26.43	3	J
7.	UNKNOWN ALKANE	27.12	2	J
8.	UNKNOWN ALKANE	27.87	2	J

9713515.2129

000033

EPA SAMPLE NO.

B08915

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-07B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30426S16

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/26/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

9713515.2130

000034

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08915

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-07B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30426S16

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/26/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

(1) - Cannot be separated from Diphenylamine

9713515.2131

000035

EPA SAMPLE NO.

B08915

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-07B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30426S16

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/26/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 13

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	21.22	4	J
2.	HEXADECANOIC ACID ESTER ISOM	23.17	5	J
3.	UNKNOWN ALKANE	23.28	3	J
4.	UNKNOWN HYDROCARBON	23.35	3	J
5.	UNKNOWN ALKANE	24.08	5	J
6.	OCTADECANOIC ACID ESTER ISOM	24.75	5	J
7.	UNKNOWN ALKANE	24.85	8	J
8.	UNKNOWN ALKANE	25.58	7	J
9.	UNKNOWN ALKANE	26.27	7	J
10.	UNKNOWN ALKANE	26.95	6	J
11.	UNKNOWN ALKANE	27.67	6	J
12.	UNKNOWN ALKANE	28.45	5	J
13.	UNKNOWN ALKANE	29.32	3	J

9713515.2132

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088R0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-01B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/09/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 04/12/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/18/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

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

9713515.2193

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

000037
EPA SAMPLE NO.

B088S5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-03B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/09/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 04/12/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

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

9713515.2134

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

000038

EPA SAMPLE NO.

B088W5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-05B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/09/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 04/12/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

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

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08915

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-07B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/09/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 04/12/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

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

Page 1 Skinner&Sherman REPORT Work Order # S3-04-139

Received: 04/13/93 05/14/93 15:21:00

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

ATTEN Dan Steurmer

CLIENT HANFORD NOR SAMPLES 5
COMPANY TMA/NORCAL Hanford
FACILITY Richmond, CA

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

ATTEN Client Services
PHONE (617) 890-7200

CERTIFIED BY 5/14/93

CONTACT DP

Duplicate of report of 05/12/93.

WORK ID N3-04-043
TAKEN By Client
TRANS Fed Ex
TYPE WATER
P.O. # N3-04-043
INV. # 35466

SAMPLE IDENTIFICATION		TEST CODES and NAMES used on this workorder	
01	B088R0	NO3NO2	Nitrate Plus Nitrite
02	B088S5		
03	B088W5		
04	B08915		
04	B08915 DUPL		
04	B08915 SPIKE		
05	LCSW		

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

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

Page 2 Skinner&Sherman REPORT Work Order # S3-04-139

Received: 04/13/93 Results by Sample

SAMPLE ID B088R0 SAMPLE # 01 FRACTIONS: A
Date & Time Collected 04/07/93 Category WATER

NO3NO2 <0.25
mg N/L

SAMPLE ID B088S5 SAMPLE # 02 FRACTIONS: A
Date & Time Collected 04/07/93 Category WATER

NO3NO2 0.33
mg N/L

SAMPLE ID B088W5 SAMPLE # 03 FRACTIONS: A
Date & Time Collected 04/07/93 Category WATER

NO3NO2 20.4
mg N/L

SAMPLE ID B08915 SAMPLE # 04 FRACTIONS: A
Date & Time Collected 04/07/93 Category WATER

NO3NO2 21.7
mg N/L

SAMPLE ID B08915 DUPL SAMPLE # 04 FRACTIONS: B
Date & Time Collected 04/07/93 Category WATER

NO3NO2 20.3
mg N/L

SAMPLE ID B08915 SPIKE SAMPLE # 04 FRACTIONS: C
Date & Time Collected 04/07/93 Category WATER

NO3NO2 22.3
mg N/L

SAMPLE ID LCSW SAMPLE # 05 FRACTIONS: A
Date & Time Collected not specified Category WATER

NO3NO2 2.03
mg N/L

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

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

Page 3 Skinner&Sherman REPORT Work Order # S3-04-139
Received: 04/13/93 05/12/93 15:55:05

TMA/NORCAL Hanford

QUALITY CONTROL

MATRIX SPIKE

Sample ID	Sample Result	Spike Added	Spike Result	% Recovery
S304139-04	21.7 mg/L	2.00 mg/L	22.3 mg/L	30

DUPLICATE

Sample ID	Sample Result	Duplicate Result	Relative % Difference
S304139-04	21.7 mg/L	20.3 mg/L	6.7

QUALITY CONTROL SAMPLES

Sample ID	True Value	Found Value	% Recovery
LCS	2.00 mg/L	2.03 mg/L	101.4
Prep blank	--	<0.25 mg/L	--

TMA Thermo Analytical Inc.

This report is rendered upon the following conditions: Skinner & Sherman Laboratories, Inc. certifies ownership of this report until it is certified, submitted, invoiced, and paid in full. Upon payment, it shall be available in conjunction with the report only. Under no circumstances was it made and accepted before the analysis. Client will be responsible for Skinner & Sherman court and collection fees. Unless specifically agreed to otherwise, the liability of Skinner & Sherman is limited to the invoice amount. The results in this report apply only to the sample and to the parameters. Samples are not analyzed in accordance with New York State protocol unless indicated. No other warranty, either express or implied, is made. Skinner & Sherman Laboratories, Inc. will not be responsible for the correctness of samples and analyses if the information provided by client is incorrect or incomplete. Samples are held for thirty (30) days following issuance of report. Samples will be stored at client's request for an additional charge.

Skinner & Sherman Laboratories Inc. 200 Second Avenue, P.O. Box 691, Watertown, MA 02272-0691

Page 4 Skinner&Sherman REPORT Work Order # S3-04-139

Received: 04/13/93 Test Methodology

TEST CODE NO3NO2 NAME Nitrate Plus Nitrite

Methods for Chemical Analysis of Water and Wastes
EPA - 600/4-79-020 March 1979 Method 353.2 (modified)

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

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

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TMA/Skinner & Sherman Labs SAMPLE LOG-IN
WORKORDER 5304139 CLIENT Hanford Nav No. SAMPLES:
PROTCL CLP TURNARND 33 Day 4
COOLER TEMP: 2 oC, or NA (Soil) (Water) (Specify Other)
CUSTODIAN B Frenux SDG/BATCH N/A
CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N304043
SHIPER & # Fed Ex PO/CONTRACT# ↓
TAGS: PRESENT/ABSENT/NA/SEE COC CONTACT D. Sanchez
CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS: none

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 4/13/93
LIST ANY DATE WITH PAPERWORK/SHIPMENT PROBLEMS & SPECIFY THE PROBLEM:

N/A

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	B088R0	water	4/13/93	1.80	NO3NO2	due
2	B088S5	↓	↓	1.72	↓	
3	B088W5			1.85		5-5-93
4	B08915			1.90	D.S	
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 4/14/93

* EPA/CLP required Rev 1.6 PAGE: 23

9713515.2141

PAGE 1 TMA/Norcal CHAIN OF CUSTODY ORD # N3-04-043 000025

RCVD: 04/09/93 DUE: 05/09/93 04/09/93 14:06:51 KEEP: 08/07/93 DISP: S

DASH	SAMPLE IDENTIFICATION		STORED	TESTS for FRACTIONS with work in DEPT: 3U and CATEGORY				
01B-W	B088R0	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
02B-W	B088S5	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
03B-W	B088W5	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
04B-W	B08915	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
04F-W	B08915 MS	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
04G-W	B08915 DUP	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
04H-W	L C S		S&S	WH007	WH008	WH010	WH137	
05A-W	B088R1	FILTERED	S&S	WH007	WH008	WH010		
06A-W	B088S6	FILTERED	S&S	WH007	WH008	WH010		
07A-W	B088W6	FILTERED	S&S	WH007	WH008	WH010		
08A-W	B08916	FILTERED	S&S	WH007	WH008	WH010		
08B-W	B08916 MS	FILTERED	S&S	WH007	WH008	WH010		
08C-W	B08916 DUP	FILTERED	S&S	WH007	WH008	WH010		
08D-W	L C S		S&S	WH007	WH008	WH010		

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
yamamoto	4-12-93	Steiner	4-12-93	Bart Perry	4/13/93

9713515.2142

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

JUN 1993
RECEIVED
SDLA

May 12, 1993

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

Quality Control Narrative

Scope
Four (4) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on April 13, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals and cyanide as indicated on the chain of custody. The analysis was performed under TMA/Skinner and Sherman work order S304138.

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

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

The selenium laboratory duplicate exceeded the control limit requirement.

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

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

1 8/27/96 SW

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

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

Lab Code: SKINER Case No.: N3-04-043 SAS No.: SDG No.: B088R0

SOW No.: ILM02.1

SAMPLE NUMBER:	Lab Sample ID.
B088R0	04138-01S
B088S5	04138-02S
B088W5	04138-03S
B08915	04138-04S
B08915D	04138-04S2
B08915S	04138-04DS

Were ICP interelement corrections applied? Yes/No YES
Were ICP background corrections applied? Yes/No YES
If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Steven Provencal Name: Steven R. Provencal

Date: 5/14/93 Title: Lead Chemist

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B088R0

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

Lab Code: SKINER Case No.: N3-04-043SAS No.: SDG No.: B088R0

Matrix (soil/water): WATER Lab Sample ID: 04138-01S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	41.3	B		P
7440-36-0	Antimony	18.6	U		P
7440-38-2	Arsenic	2.3	U		F
7440-39-3	Barium	15.9	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.4	U		P
7440-70-2	Calcium	46300			P
7440-47-3	Chromium	30.6			P
7440-48-4	Cobalt	2.9	U		P
7440-50-8	Copper	2.7	U		P
7439-89-6	Iron	11200			P
7439-92-1	Lead	3.2			F
7439-95-4	Magnesium	11400			P
7439-96-5	Manganese	96.0			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	36.3	B		P
7440-09-7	Potassium	4700	B		P
7782-49-2	Selenium	3.3	U	+*	F
7440-22-4	Silver	3.3	U		P
7440-23-5	Sodium	6810			P
7440-28-0	Thallium	2.7	U	W	F
7440-62-2	Vanadium	2.1	U		P
7440-66-6	Zinc	4.8	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

Comments:

002

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B088S5

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

Lab Code: SKINER Case No.: N3-04-043SAS No.: SDG No.: B088R0

Matrix (soil/water): WATER Lab Sample ID: 04138-025

Level (low/med): LOW Date Received: 04/13/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	57.7	B		P
7440-36-0	Antimony	18.6	U		P
7440-38-2	Arsenic	2.3	U		F
7440-39-3	Barium	19.1	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.4	U		P
7440-70-2	Calcium	22300			P
7440-47-3	Chromium	6.3	B		P
7440-48-4	Cobalt	2.9	U		P
7440-50-8	Copper	14.7	B		P
7439-89-6	Iron	14400			P
7439-92-1	Lead	3.4			F
7439-95-4	Magnesium	6480			P
7439-96-5	Manganese	42.6			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	4.2	U		P
7440-09-7	Potassium	4630	B		P
7782-49-2	Selenium	3.3	U	*	F
7440-22-4	Silver	3.3	U		P
7440-23-5	Sodium	23700			P
7440-28-0	Thallium	2.2	U	W	F
7440-62-2	Vanadium	2.1	U		P
7440-66-6	Zinc	33.4			P
	Cyanide	10.0	U		CA

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B088W5

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

Lab Code: SKINER Case No.: N3-04-043SAS No.: SDG No.: B088R0

Matrix (soil/water): WATER Lab Sample ID: 04138-03S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	24.4	B		P
7440-36-0	Antimony	18.6	U		P
7440-38-2	Arsenic	3.6	B	W	F
7440-39-3	Barium	58.4	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.4	U		P
7440-70-2	Calcium	104000			P
7440-47-3	Chromium	20.4			P
7440-48-4	Cobalt	2.9	U		P
7440-50-8	Copper	2.7	U		P
7439-89-6	Iron	48.7	B		P
7439-92-1	Lead	2.2	B		F
7439-95-4	Magnesium	23600			P
7439-96-5	Manganese	23.9			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	5.4	B		P
7440-09-7	Potassium	6150			P
7782-49-2	Selenium	5.2		S*	F
7440-22-4	Silver	3.3	U		P
7440-23-5	Sodium	34500			P
7440-28-0	Thallium	2.7	U		F
7440-62-2	Vanadium	3.7	B		P
7440-66-6	Zinc	4.8	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B08915

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

Lab Code: SKINER Case No.: N3-04-043SAS No.: SDG No.: B088R0

Matrix (soil/water): WATER Lab Sample ID: 04138-04S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19.2	U		P
7440-36-0	Antimony	18.6	U		P
7440-38-2	Arsenic	2.6	B	W	F
7440-39-3	Barium	58.4	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.4	U		P
7440-70-2	Calcium	105000			P
7440-47-3	Chromium	20.7			P
7440-48-4	Cobalt	2.9	U		P
7440-50-8	Copper	2.7	U		P
7439-89-6	Iron	112			P
7439-92-1	Lead	2.3	B		F
7439-95-4	Magnesium	23800			P
7439-96-5	Manganese	28.0			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	4.2	U		P
7440-09-7	Potassium	6100			P
7782-49-2	Selenium	4.3	U	W*	F
7440-22-4	Silver	3.3	U		P
7440-23-5	Sodium	34000			P
7440-28-0	Thallium	2.2	U	W	F
7440-62-2	Vanadium	4.0	B		P
7440-66-6	Zinc	4.8	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9713515.2148

TMA/Skinner & Sherman Labs SAMPLE LOG-IN

WORKORDER S304138 CLIENT Hanford Nor No. SAMPLES:

PROTCL CLP TURNAROUND 33 Day 4

COOLER TEMP: 2 oC, or NA (Soil) (Water) (Specify Other)

CUSTODIAN B Brown SDG/BATCH N/A

CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N304043

SHIPER & # Fed Ex PO/CONTRACT# 1

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

CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS: none

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 4/13/93

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

UNFILTERED

	CLIENT ID	MATRIX	RECEIVED	PH*		TEST(S) & QC	HOLD TIME UP
1	B088RD	water	4/13/93	1.98	12.08	TM/CN	
2	B088S5	↓	↓	1.93	12.22	↓	
3	B088WS			1.90	12.21		
4	B08915			1.86	12.14	D.S	
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							

157

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: Complete 4/14/93 BP

REVIEWED

* EPA/CLP required Rev 1.6 PAGE: 22

TMA 9713515.2149
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

JUN 1993
RECEIVED
SDLA

May 12, 1993

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

Quality Control Narrative

Scope
Four (4) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on April 13, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S304140.

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

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

The lead, selenium, and thallium digestion spike recoveries exceeded the control limit requirements.

The selenium laboratory duplicate exceeded the control limit requirement.

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

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

8/27/96 JW

9213515.2190
WESTINGHOUSE/HANFORD

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

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

Lab Code: SKINER Case No.: N3-04-043 SAS No.: SDG No.: B088R1

SOW No.: ILM02.1

SAMPLE NUMBER:	Lab Sample ID.
B088R1	04140-01S
B088S6	04140-02S
B088W6	04140-03S
B08916	04140-04S
B08916D	04140-04S2
B08916S	04140-04DS

Were ICP interelement corrections applied? Yes/No YES
Were ICP background corrections applied? Yes/No YES
If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Steven Provencal Name: Steven R. Provencal

Date: 5/14/93 Title: Lead Chemist

9715515.2191

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B088R1

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

Lab Code: SKINER Case No.: N3-04-043SAS No.: SDG No.: B088R1

Matrix (soil/water): WATER Lab Sample ID: 04140-01S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23.5	U		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	3.5	U		F
7440-39-3	Barium	12.0	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	45600			P
7440-47-3	Chromium	5.8	U		P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	66.5	B		P
7439-92-1	Lead	1.2	U	N	F
7439-95-4	Magnesium	11500			P
7439-96-5	Manganese	28.0			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	4850	B		P
7782-49-2	Selenium	5.3		SN*	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	6980			P
7440-28-0	Thallium	2.6	U	WN	F
7440-62-2	Vanadium	3.3	U		P
7440-66-6	Zinc	3.6	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

002

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B088S6

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

Lab Code: SKINER Case No.: N3-04-043SAS No.: SDG No.: B088R1

Matrix (soil/water): WATER Lab Sample ID: 04140-02S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23.5	U		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	3.5	U		F
7440-39-3	Barium	8.0	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	23200			P
7440-47-3	Chromium	5.8	U		P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	10.5	B		P
7439-92-1	Lead	1.6	B	N	F
7439-95-4	Magnesium	6590			P
7439-96-5	Manganese	8.3	B		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	4690	B		P
7782-49-2	Selenium	2.9	U	N*	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	23400			P
7440-28-0	Thallium	2.6	U	WN	F
7440-62-2	Vanadium	3.3	U		P
7440-66-6	Zinc	3.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

003

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B088W6

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

Lab Code: SKINER Case No.: N3-04-043SAS No.: SDG No.: B088R1

Matrix (soil/water): WATER Lab Sample ID: 04140-03S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23.5	U		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	3.5	U		F
7440-39-3	Barium	64.1	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	103000			P
7440-47-3	Chromium	20.7			P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	23.0	B		P
7439-92-1	Lead	1.2	B	WN	F
7439-95-4	Magnesium	23600			P
7439-96-5	Manganese	24.8			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	6160			P
7782-49-2	Selenium	2.9	U	SN*	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	33400			P
7440-28-0	Thallium	2.6	U	WN	F
7440-62-2	Vanadium	5.5	B		P
7440-66-6	Zinc	3.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

004

9713515.2154

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B08916

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

Lab Code: SKINER Case No.: N3-04-043SAS No.: SDG No.: B088R1

Matrix (soil/water): WATER Lab Sample ID: 04140-04S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	28.8	B		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	3.5	U		F
7440-39-3	Barium	64.1	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	104000			P
7440-47-3	Chromium	17.9			P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	14.5	B		P
7439-92-1	Lead	5.7		WN	F
7439-95-4	Magnesium	23800			P
7439-96-5	Manganese	25.0			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	6240			P
7782-49-2	Selenium	4.4	B	SN*	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	33800			P
7440-28-0	Thallium	2.6	U	WN	F
7440-62-2	Vanadium	5.0	B		P
7440-66-6	Zinc	3.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

005

9713515.2155

Sampled 4/7/93

TMA/Skinner & Sherman Labs SAMPLE LOG-IN

WORKORDER 5304140 CLIENT Hanford Nev No. SAMPLES:

PROTCL CLP TURNARND 33 Day 4

COOLER TEMP: 2 oC, or NA (Soil) (Water) (Specify Other)

CUSTODIAN B Brown SDG/BATCH UP

CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N304043

SHIPER & # Fed Ex PO/CONTRACT# 1

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

CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # NA COMMENTS: none

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 4/13/93

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

filtered

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	B088R1	water	4/13/93	2.04	TM	
2	B088S6	↓	↓	1.99	↓	
3	B088W6			1.94		
4	B08916			1.92	D.S.	
5						
6						
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17						
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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: 140

Cerrolite 4/14/93

REVIEWED

* EPA/CLP required Rev 1.6 PAGE: 34 BP

9713515.2156

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

MAY 1993
RECEIVED
SBLA

May 26, 1993

SENT BY FEDERAL EXPRESS

Ref: TMA/Norcal N3-04-046-7183

Ms. Briana Colley
Westinghouse Hanford Company
2355 Stevens Drive
MSIN H4-23
345 Hills Street/3000 Area
Richland, WA 99352

Dear Ms. Colley:

Enclosed in the Summary Data Section, are the gross alpha, gross beta, ^{3}H, ^{14}C, ^{90}Sr, ^{99}Tc, isotopic uranium, isotopic plutonium, ^{241}Am, and gamma scan results for the water samples from 100-FR-3 Location we received 9 April 1993. The QA/QC results are also given in the Summary Data Section. The Summary Data Section is numbered pages 1 to 57, and the appendices are numbered pages 58 to 608.

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 and 2
Appendices

i 8/27/96

SDG	7183	Client	Westinghouse Hanford
Contact	Dinkar P. Kharkar	Contract	MBH-SVV-069262

CASE NARRATIVE

1.0 GENERAL

Water sample results from 100-FR-3 Location (TMA/Norcal Group 7183) are provided in this report. TMA/Norcal Group 7183 is comprised of the ten samples listed on the Chain-of-Custody documents below which are identified as samples 1 through 10.

1.1 CHAINS-OF-CUSTODY

This report includes data from samples delivered under Chain-of-Custody documents Field Logbook No. EFL-1054 and EFL-1055.

1.2 SAMPLE VOLUME

Four L and 2 L plastic bottles and 250 mL glass bottles containing the samples were received for the analyses.

1.3 MISSING SAMPLES

All samples were accounted for in an undamaged condition.

1.4 HOLDING TIMES

Samples were collected between 4/07/93 and 4/13/93 and 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 7183-11 through 7183-13.

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

The LCS recoveries for gross alpha, and ^{14}C were 51% and 72%, respectively and did not pass at the 3 σ protocol limits. The low recovery for gross alpha was due to uneven distribution of the sample on the planchet. The low recovery of ^{14}C is also under investigation. The LCS recoveries for all other nuclides were satisfactory.

The MDA's of the results for all the nuclides met the RDL requirements except for ^{99}Tc and ^{59}Fe. The MDA of the result for ^{99}Tc was higher than RDL due to low recovery. The higher MDA for ^{59}FE was due to slightly higher background.

SDG	7183	Client	Westinghouse Hanford
Contact	Dinkar P. Kharkar	Contract	MBH-SVV-069262

CASE NARRATIVE

2.2 BLANKS

The MDA's of the results for all analyses met RDL requirements except for ^{238}Pu and ^{239,240}Pu. The MDA's for plutonium isotopes were higher than RDL due to low chemical yield. The ^{90}Sr error was underlined because it was larger than both the MDA and the result, implying that the MDA may not be a good estimate of the "real" minimum detectable activity.

2.3 REPLICATES

Results were satisfactory for all replicate analyses. The 2 σ erros of gross alpha for the original of sample BO88R0 and its replicate were underlined because it was larger than both the MDA and the result implying that the MDA may not be a good estimate of the "real" minimum detectable activity. The MDA's for ^{238}Pu and ^{239,240}Pu of the replicate (7183-13) were higher than the RDL due to low chemical recovery.

3.0 ANALYTICAL NOTES

3.1 Gross Alpha Analyses: The average MDA for gross alpha was (3 $\pm$ 2) pCi/L. Gross alpha activity above the RDL was found in sample numbers B08915 and B088Z5. The residue on planchets B088W5, B08915, B088Y5, BO89O5, B088Z0, and BO88Z5 exceeded the nominal residue limits of 5-150 mg. The MDA's of sample numbers B088W5, B08915, BO89O5, B088Z0, and BO88Z5 were higher than the RDL due to higher residue weights on the planchets.

3.2 Gross Beta Analyses: The average MDA for gross beta was (2 $\pm$ 0) pCi/L. Gross beta activity above the RDL was found in all samples except in sample numbers B08920 and BO8925. Again, the residue on planchets B088W5, B08915, B088Y5, BO89O5, B088Z0, and BO88Z5 exceeded the nominal residue limits of 5-150 mg.

3.3 Tritium Analyses: The average MDA for thirteen analyses was (200 $\pm$ 0) pCi/L. Tritium activity above RDL was found in all of the samples except in sample numbers BO8920 and BO8925.

3.4 Carbon-14 Analyses: The average MDA for thirteen analyses was (50 $\pm$ 30) pCi/L. Carbon-14 activity above the RDL was found in sample numbers BO8915, BO88Y5, and BO88Z0. The MDA's of samples BO88R0 and BO8855 were higher than RDL due to low scintillation efficiencies.

3.5 Strontium-90 Analyses: The average yield for thirteen analyses was (86 $\pm$ 8)%. The lowest yield was 78% and the highest was 92%. The average MDA was (0.9 $\pm$ 0.2) pCi/L. Strontium-90 activity above the RDL was found in sample number BO88R0.

SDG	7183	Client	Westinghouse Hanford
Contact	Dinkar P. Kharkar	Contract	MBH-SVV-069262

CASE NARRATIVE

3.6 Technicium-99 Analyses: The average yield for thirteen analyses was (56 ± 33)%. The lowest yield was 18% and the highest was 76%. The average MDA was (4 ± 3) pCi/L. Technicium-99 activity above the RDL was not found in any of the samples. The MDA of sample number BO88Z5 was higher than the RDL due to low chemical yield.

3.7 Uranium-233, 234, 238 Analyses: The average yield for thirteen analyses was (70 ± 14)%. The lowest yield was 58% and the highest was 79%. The average MDA was (0.1 ± 0.08) pCi/L. Uranium-233,234 and ^{238}U activity above the RDL was found in all of the samples except in sample numbers BO88R0, BO8920, and BO8925.

3.8 Plutonium-238, 239/240 Analyses: The average yield for thirteen analyses was (24 ± 12%). The lowest yield was 14% and the highest was 35%. The average MDA was (0.05 ± 0.10) pCi/L. Plutonium activity above the RDL was not found in any of the samples.

3.9 Americium-241 Analyses: The average yield for thirteen analyses was (42 ± 21)%. The lowest yield was 39% and the highest yield was 65%. The average MDA was (0.03 ± 0.03) pCi/L. Americium activity above the RDL was not found in any of the samples.

3.10 Gamma Scan Analyses: Gamma scan analysis did not find positive concentration of gamma nuclides in any of the samples.

9713515.2160

N304046-01

TMA NORCAL
REPORTING GROUP 7183

DATA SHEET

B088R0

SDG 7183
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304046-01
Dept sample id 7183-001
Received 04/09/93

Client sample id B088R0
Matrix LIQUID
Collected 04/07/93
Chain of custody id EFL-1055

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	-7.8	2.4	2	3	U	80A
Gross Beta	Beta	480	8.5	2	4		80B
Uranium 233/234		0.097	0.098	0.1	0.2	U	U
Uranium 235	15117-96-1	0.029	0.030	0.1	0.2	U	U
Uranium 238	7440-61-1	0.085	0.074	0.09	0.2	U	U
Plutonium 238	13981-16-3	0.003	0.013	0.02	0.05	U	PU
Plutonium 239/240		0.003	0.006	0.02	0.05	U	PU
Americium 241	14596-10-2	-0.015	0.015	0.04	0.05	U	AM
Strontium 90	10098-97-2	220	13	0.8	2		Y
Technetium 99	14133-76-7	0.47	2.2	4	5	U	TC
Tritium	10028-17-8	810	170	200	400		H
Carbon 14	14762-75-5	-47	58	100	50	U	C
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		100		U	GAM
Iron 59	14596-12-4	U		20	30	U	GAM
Chromium 51	14392-02-0	U		80		U	GAM
Cobalt 60	10198-40-0	U		10	30	U	GAM
Zinc 65	13982-39-3	U		20		U	GAM
Ruthenium 106	13967-48-1	U		80		U	GAM
Cesium 134	13967-70-9	U		9		U	GAM
Cesium 137	10045-97-3	U		9	20	U	GAM
Cerium 144	14762-78-8	U		40		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		10	40	U	GAM
Radium 226	13982-63-3	U		20		U	GAM
Thorium 228	14274-82-9	U		10		U	GAM
Thorium 232	7440-29-1	U		40		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 05/26/93

9713515.2161

N304046-02

TMA NORCAL
REPORTING GROUP 7183

DATA SHEET

B088S5

SDG 7183
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304046-02
Dept sample id 7183-002
Received 04/09/93

Client sample id B088S5
Matrix LIQUID
Collected 04/07/93
Chain of custody id EFL-1054

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.15	1.2	2	3	U	80A
Gross Beta	Beta	9.0	1.5	2	4		80B
Uranium 233/234		0.25	0.12	0.1	0.2		U
Uranium 235	15117-96-1	0	0.028	0.1	0.2	U	U
Uranium 238	7440-61-1	0.16	0.093	0.09	0.2	J	U
Plutonium 238	13981-16-3	-0.005	0.011	0.04	0.05	U	PU
Plutonium 239/240		0.005	0.011	0.04	0.05	U	PU
Americium 241	14596-10-2	0.011	0.016	0.02	0.05	U	AM
Strontium 90	10098-97-2	1.1	0.34	0.9	2	J	Y
Technetium 99	14133-76-7	1.8	0.93	3	5	U	TC
Tritium	10028-17-8	500	170	200	400		H
Carbon 14	14762-75-5	-25	38	60	50	U	C
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		200		U	GAM
Iron 59	14596-12-4	U		30	30	U	GAM
Chromium 51	14392-02-0	U		100		U	GAM
Cobalt 60	10198-40-0	U		10	30	U	GAM
Zinc 65	13982-39-3	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		50		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		10	40	U	GAM
Radium 226	13982-63-3	U		20		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		40		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 05/26/93

9713515.2162

N304046-03

TMA NORCAL
REPORTING GROUP 7183

DATA SHEET

B088W5

SDG 7183
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304046-03
Dept sample id 7183-003
Received 04/09/93

Client sample id B088W5
Matrix LIQUID
Collected 04/07/93
Chain of custody id EFL-1054

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	2.0	3.3	5	3	U	80A
Gross Beta	Beta	11	1.6	2	4		80B
Uranium 233/234		3.6	0.51	0.1	0.2		U
Uranium 235	15117-96-1	0.21	0.10	0.09	0.2		U
Uranium 238	7440-61-1	3.4	0.50	0.1	0.2		U
Plutonium 238	13981-16-3	-0.005	0.010	0.04	0.05	U	PU
Plutonium 239/240		0	0.010	0.04	0.05	U	PU
Americium 241	14596-10-2	0.002	0.007	0.01	0.05	U	AM
Strontium 90	10098-97-2	0.95	0.43	1	2	U	Y
Technetium 99	14133-76-7	0.93	1.1	3	5	U	TC
Tritium	10028-17-8	12000	440	200	400		H
Carbon 14	14762-75-5	-14	26	40	50	U	C
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		100		U	GAM
Iron 59	14596-12-4	U		20	30	U	GAM
Chromium 51	14392-02-0	U		90		U	GAM
Cobalt 60	10198-40-0	U		10	30	U	GAM
Zinc 65	13982-39-3	U		20		U	GAM
Ruthenium 106	13967-48-1	U		80		U	GAM
Cesium 134	13967-70-9	U		9		U	GAM
Cesium 137	10045-97-3	U		9	20	U	GAM
Cerium 144	14762-78-8	U		40		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		10	40	U	GAM
Radium 226	13982-63-3	17	17				GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		30		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 05/26/93

9713515.2163

N304046-05

TMA NORCAL
REPORTING GROUP 7183

DATA SHEET

B088Y5

SDG 7183
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304046-05
Dept sample id 7183-005
Received 04/12/93

Client sample id B088Y5
Matrix LIQUID
Collected 04/08/93
Chain of custody id EFL-1055

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	0.71	2.3	3	3	U	80A
Gross Beta	Beta	8.5	1.6	2	4		80B
Uranium 233/234		3.3	0.48	0.1	0.2		U
Uranium 235	15117-96-1	0.13	0.095	0.09	0.2	J	U
Uranium 238	7440-61-1	2.4	0.38	0.07	0.2		U
Plutonium 238	13981-16-3	0	0.008	0.03	0.05	U	PU
Plutonium 239/240		0.004	0.008	0.03	0.05	U	PU
Americium 241	14596-10-2	0	0.015	0.03	0.05	U	AM
Strontium 90	10098-97-2	-0.13	0.82	0.9	2	U	Y
Technetium 99	14133-76-7	2.0	1.2	3	5	U	TC
Tritium	10028-17-8	430	160	200	400		H
Carbon 14	14762-75-5	150	28	40	50		C
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		400		U	GAM
Iron 59	14596-12-4	U		30	30	U	GAM
Chromium 51	14392-02-0	U		100		U	GAM
Cobalt 60	10198-40-0	U		20	30	U	GAM
Zinc 65	13982-39-3	U		30		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Cesium 134	13967-70-9	U		20		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		70		U	GAM
Europium 152	14683-23-9	U		30	40	U	GAM
Europium 154	15585-10-1	U		20	40	U	GAM
Radium 226	13982-63-3	U		30		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		60		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 05/26/93

9713515.2164

N304046-07

TMA NORCAL
REPORTING GROUP 7183

DATA SHEET

B088Z0

SDG 7183
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304046-07
Dept sample id 7183-007
Received 04/13/93

Client sample id B088Z0
Matrix LIQUID
Collected 04/09/93
Chain of custody id EFL-1055

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	1.4	2.8	4	3	U	80A
Gross Beta	Beta	8.3	1.6	2	4		80B
Uranium 233/234		2.4	0.36	0.1	0.2		U
Uranium 235	15117-96-1	0.11	0.068	0.09	0.2	J	U
Uranium 238	7440-61-1	2.0	0.33	0.09	0.2		U
Plutonium 238	13981-16-3	0.006	0.012	0.05	0.05	U	PU
Plutonium 239/240		0	0.012	0.05	0.05	U	PU
Americium 241	14596-10-2	-0.003	0.013	0.04	0.05	U	AM
Strontium 90	10098-97-2	0.082	0.27	1	2	U	Y
Technetium 99	14133-76-7	1.6	1.2	4	5	U	TC
Tritium	10028-17-8	1400	200	200	400		H
Carbon 14	14762-75-5	110	30	40	50		C
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		80		U	GAM
Iron 59	14596-12-4	U		20	30	U	GAM
Chromium 51	14392-02-0	U		70		U	GAM
Cobalt 60	10198-40-0	U		10	30	U	GAM
Zinc 65	13982-39-3	U		20		U	GAM
Ruthenium 106	13967-48-1	U		60		U	GAM
Cesium 134	13967-70-9	U		7		U	GAM
Cesium 137	10045-97-3	U		7	20	U	GAM
Cerium 144	14762-78-8	U		30		U	GAM
Europium 152	14683-23-9	U		10	40	U	GAM
Europium 154	15585-10-1	U		8	40	U	GAM
Radium 226	13982-63-3	U		10		U	GAM
Thorium 228	14274-82-9	U		10		U	GAM
Thorium 232	7440-29-1	U		30		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 05/26/93

9713515.2105

N304046-08

TMA NORCAL
REPORTING GROUP 7183

DATA SHEET

B088Z5

SDG 7183
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304046-08
Dept sample id 7183-008
Received 04/14/93

Client sample id B088Z5
Matrix LIQUID
Collected 04/12/93
Chain of custody id EFL-1054

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	7.8	3.8	4	3		80A
Gross Beta	Beta	12	1.8	2	4		80B
Uranium 233/234		8.8	0.98	0.1	0.2		U
Uranium 235	15117-96-1	0.44	0.14	0.09	0.2		U
Uranium 238	7440-61-1	8.7	0.97	0.1	0.2		U
Plutonium 238	13981-16-3	0.006	0.012	0.05	0.05	U	PU
Plutonium 239/240		0	0.012	0.05	0.05	U	PU
Americium 241	14596-10-2	-0.010	0.020	0.05	0.05	U	AM
Strontium 90	10098-97-2	-0.061	1.1	0.9	2	U	Y
Technetium 99	14133-76-7	0.76	2.1	6	5	U	TC
Tritium	10028-17-8	1700	210	200	400		H
Carbon 14	14762-75-5	2.5	21	30	50	U	C
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		200		U	GAM
Iron 59	14596-12-4	U		20	30	U	GAM
Chromium 51	14392-02-0	U		70		U	GAM
Cobalt 60	10198-40-0	U		10	30	U	GAM
Zinc 65	13982-39-3	U		20		U	GAM
Ruthenium 106	13967-48-1	U		70		U	GAM
Cesium 134	13967-70-9	U		9		U	GAM
Cesium 137	10045-97-3	U		9	20	U	GAM
Cerium 144	14762-78-8	U		40		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		10	40	U	GAM
Radium 226	13982-63-3	U		20		U	GAM
Thorium 228	14274-82-9	U		10		U	GAM
Thorium 232	7440-29-1	U		40		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 05/26/93

9713515.2166

N304046-06

TMA NORCAL
REPORTING GROUP 7183

DATA SHEET

B08905

SDG 7183
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304046-06
Dept sample id 7183-006
Received 04/12/93

Client sample id B08905
Matrix LIQUID
Collected 04/08/93
Chain of custody id EFL-1055

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	2.4	2.7	4	3	U	80A
Gross Beta	Beta	6.9	1.6	2	4		80B
Uranium 233/234		4.3	0.54	0.1	0.2		U
Uranium 235	15117-96-1	0.20	0.11	0.08	0.2		U
Uranium 238	7440-61-1	3.1	0.42	0.08	0.2		U
Plutonium 238	13981-16-3	0	0.007	0.03	0.05	U	PU
Plutonium 239/240		-0.003	0.007	0.03	0.05	U	PU
Americium 241	14596-10-2	0	0.015	0.04	0.05	U	AM
Strontium 90	10098-97-2	-0.045	0.59	0.9	2	U	Y
Technetium 99	14133-76-7	1.0	1.2	3	5	U	TC
Tritium	10028-17-8	11000	420	200	400		H
Carbon 14	14762-75-5	22	22	40	50	U	C
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		100		U	GAM
Iron 59	14596-12-4	U		30	30	U	GAM
Chromium 51	14392-02-0	U		100		U	GAM
Cobalt 60	10198-40-0	U		10	30	U	GAM
Zinc 65	13982-39-3	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		60		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		10	40	U	GAM
Radium 226	13982-63-3	U		30		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		50		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 05/26/93

9713515.2167

TMA NORCAL
REPORTING GROUP 7183

DATA SHEET

N304046-04

B08915

SDG 7183
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304046-04
Dept sample id 7183-004
Received 04/09/93

Client sample id B08915
Matrix LIQUID
Collected 04/07/93
Chain of custody id EFL-1054

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	5.5	3.5	4	3		80A
Gross Beta	Beta	10	1.6	2	4		80B
Uranium 233/234		5.1	0.70	0.1	0.2		U
Uranium 235	15117-96-1	0.21	0.11	0.1	0.2		U
Uranium 238	7440-61-1	3.8	0.56	0.1	0.2		U
Plutonium 238	13981-16-3	0	0.009	0.03	0.05	U	PU
Plutonium 239/240		0.017	0.017	0.03	0.05	U	PU
Americium 241	14596-10-2	0	0.005	0.02	0.05	U	AM
Strontium 90	10098-97-2	1.5	0.39	1	2	J	Y
Technetium 99	14133-76-7	0.71	1.1	3	5	U	TC
Tritium	10028-17-8	12000	430	200	400		H
Carbon 14	14762-75-5	350	29	40	50		C
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		100		U	GAM
Iron 59	14596-12-4	U		30	30	U	GAM
Chromium 51	14392-02-0	U		100		U	GAM
Cobalt 60	10198-40-0	U		10	30	U	GAM
Zinc 65	13982-39-3	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Cesium 134	13967-70-9	U		10		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		60		U	GAM
Europium 152	14683-23-9	U		30	40	U	GAM
Europium 154	15585-10-1	U		10	40	U	GAM
Radium 226	13982-63-3	U		20		U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	7440-29-1	U		60		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 05/26/93

9713515.2168

N304046-09

TMA NORCAL
REPORTING GROUP 7183

DATA SHEET

B08920

SDG 7183
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304046-09
Dept sample id 7183-009
Received 04/14/93

Client sample id B08920
Matrix LIQUID
Collected 04/12/93
Chain of custody id EFL-1055

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	-0.62	1.1	2	3	U	80A
Gross Beta	Beta	0.38	1.3	2	4	U	80B
Uranium 233/234		0.015	0.060	0.1	0.2	U	U
Uranium 235	15117-96-1	0	0.036	0.1	0.2	U	U
Uranium 238	7440-61-1	0.030	0.030	0.1	0.2	U	U
Plutonium 238	13981-16-3	0.005	0.010	0.04	0.05	U	PU
Plutonium 239/240		0	0.010	0.04	0.05	U	PU
Americium 241	14596-10-2	0.008	0.024	0.04	0.05	U	AM
Strontium 90	10098-97-2	0.084	0.23	0.9	2	U	Y
Technetium 99	14133-76-7	2.2	1.2	3	5	U	TC
Tritium	10028-17-8	88	140	200	400	U	H
Carbon 14	14762-75-5	-33	24	40	50	U	C
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		90		U	GAM
Iron 59	14596-12-4	U		20	30	U	GAM
Chromium 51	14392-02-0	U		60		U	GAM
Cobalt 60	10198-40-0	U		7	30	U	GAM
Zinc 65	13982-39-3	U		10		U	GAM
Ruthenium 106	13967-48-1	U		60		U	GAM
Cesium 134	13967-70-9	U		6		U	GAM
Cesium 137	10045-97-3	U		7	20	U	GAM
Cerium 144	14762-78-8	U		30		U	GAM
Europium 152	14683-23-9	U		10	40	U	GAM
Europium 154	15585-10-1	U		8	40	U	GAM
Radium 226	13982-63-3	U		10		U	GAM
Thorium 228	14274-82-9	U		10		U	GAM
Thorium 232	7440-29-1	U		30		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 05/26/93

9713515.2169

N304046-10

TMA NORCAL
REPORTING GROUP 7183

DATA SHEET

B08925

SDG 7183
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304046-10
Dept sample id 7183-010
Received 04/15/93

Client sample id B08925
Matrix LIQUID
Collected 04/13/93
Chain of custody id EFL-1055

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	Alpha	-0.64	1.1	2	3	U	80A
Gross Beta	Beta	0.30	1.0	2	4	U	80B
Uranium 233/234		0.047	0.093	0.2	0.2	U	U
Uranium 235	15117-96-1	-0.019	0.038	0.1	0.2	U	U
Uranium 238	7440-61-1	0.031	0.062	0.1	0.2	U	U
Plutonium 238	13981-16-3	-0.013	0.017	0.05	0.05	U	PU
Plutonium 239/240		0.004	0.009	0.03	0.05	U	PU
Americium 241	14596-10-2	0	0.005	0.02	0.05	U	AM
Strontium 90	10098-97-2	0.10	0.22	0.8	2	U	Y
Technetium 99	14133-76-7	1.2	0.92	2	5	U	TC
Tritium	10028-17-8	170	150	200	400	U	H
Carbon 14	14762-75-5	-10	26	40	50	U	C
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		100		U	GAM
Iron 59	14596-12-4	U		20	30	U	GAM
Chromium 51	14392-02-0	U		100		U	GAM
Cobalt 60	10198-40-0	U		10	30	U	GAM
Zinc 65	13982-39-3	U		20		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Cesium 134	13967-70-9	U		9		U	GAM
Cesium 137	10045-97-3	U		10	20	U	GAM
Cerium 144	14762-78-8	U		60		U	GAM
Europium 152	14683-23-9	U		20	40	U	GAM
Europium 154	15585-10-1	U		10	40	U	GAM
Radium 226	13982-63-3	U		20		U	GAM
Thorium 228	14274-82-9	U		30		U	GAM
Thorium 232	7440-29-1	U		50		U	GAM

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 05/26/93

OVERNIGHT DELIVERY

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W93-0-420-02

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☒ Contractor ☐ Vendor

Shipped to
TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 86 lbs.	Sample #: B088RD, B088R1, B088R2 Cooler ID: SML-285 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 85 lbs.	Sample #: B08915, B08916, B08917 Cooler ID: SML-LARL Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 Area

Bill of lading # 2536954816

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

RM Clearance for Public Release	RM Survey No.	Date
RL Palmer	131389	4-8-93

Location of Property (Area & Bldg.)	Contact	Phone
100-FR-3	PH Butcher	(509) 376-5046

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
4/8/93	W81232/PD3BA	

Originated By	Date	Authorized By	Date
PC Cole	4/8/93	B. WHITTEN	4/8/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
			4/8/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
Date 4-8-93				

67

DISTRIBUTION

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

54-3000-479 (09/89)

OVERNIGHT DELIVERY

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W93-0-420-01

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☒ Contractor ☐ Vendor

Shipped to
TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 88 lbs.	Sample #: B088S5, B088S6, B088S7 Cooler ID: MIKE Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 86 lbs.	Sample #: B088W5, B088W6, B088W7 Cooler ID: SMC-140 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 Area

Bill of lading # 2536954816

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

RM Clearance for Public Release	RM Survey No.	Date
[signature]	131380	4-8-93

Location of Property (Area & Bldg.)	Contact	Phone
100 FR-3	PH Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
4/8/93	W81232/PD3BA	

Originated By	Date	Authorized By	Date
PC Cole	4/8/93	B. Wimmer	4/8/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[signature]	4/8/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[signature]				68
Date 4-8-93				

DISTRIBUTION

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

54-3000-479 (09/89)

OVERNIGHT DELIVERY

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W93-0-420-01

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☒ Contractor ☐ Vendor

Shipped to TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 88 lbs.	Sample #: B0885, B0886, B0887 Cooler ID: MIKE Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 86 lbs.	Sample #: B0885, B0886, B0887 Cooler ID: SML-140 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 Area

Bill of lading # 2316754816

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

RM Clearance for Public Release	RM Survey No.	Date
[signature]	131350	4-5-93

Location of Property (Area & Bldg.)	Contact	Phone
100 F-2-3	PH Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
4/8/93	W81232/RD3BA	

Originated By	Date	Authorized By	Date
P.C. Cole	4/8/93	[signature] B Warren	4/8/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[signature]	4/8/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[signature]				69
Date 4-8-93				

DISTRIBUTION

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

54-3000-479 (09/89)

OVERNIGHT 7135152173

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		UN3-0-420-C2

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☒ Contractor ☐ Vendor

Shipped to
TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 [illegible] lbs.	Sample #: B088R0, B088R1, B088R2 Cooler ID: SMC-285 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 65 lbs.	Sample #: B08915, B08916, B08917 Cooler ID: SMC-LACC Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 Area

Bill of lading # 2536454816

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

RM Clearance for Public Release	RM Survey No.	Date
[illegible]	13380	4-5-93

Location of Property (Area & Bldg.)	Contact	Phone
100-KR-3	PH Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
4/8/93	W81232/1D3BA	

Originated By	Date	Authorized By	Date
PC Tate	4/9/93	[illegible] B. Wanner	4/8/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	4/8/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible]				
Date 4-8-93				

70

DISTRIBUTION

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

54-3000-479 (09/89)

FORM OF PAYMENT

Check ☐ GBL ☐ FCCOD ☐

Bill to Shipper ☒ Bill to Consignee ☐ Third Party Billing ☐

Shipper's Account Number: E 850281585

EMERY WORLDWIDE — A CF Company

SERVICES **

UNITED STATES / CANADA: Same Day (Extra Charges) ☐ AM ☐ PM ☐ Second Day ☒ Saturday Delivery ☐

INTERNATIONAL: Express ☐ Standard Plus ☐ Preferred ☐ Standard ☐

Date: 04-09-93 Origin: PSC Shipment Number: 2536954 8

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:
TMA/NORCAL
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA ☐ Canada ☐

Tariff Dest.

Check to Shipper $

Hold for Pick Up ☐

EMERY WO. will accept C check with being assur Shipper, inc but not limi non-paymer and misrepr

Customer's Reference Numbers: W81232 PD3BA W93-0-420#3

Zip: 99352

Consignee's Account Number: E

Zip: 94804

Description	Pcs.	L	W	H	Total Pieces	Total Weight (In Lbs.)
2 COOLERS ID: SML-188 88# SML 244 88# WATER SAMPLES	2	27	16	17	2	176

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

Declared $

2536954 85 T

Remarks: SATURDAY DELIVERY SIGNATURE SECURITY SERVICE

Shipper's Signature: 4-9-93

Zip Ship ☐ For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used: Urgent Letter 9X12 ☐ 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-S

Terms and Conditions on Back

EMERY WORLDWIDE — A CF Company

SIGNATURE AND TALLY RECORD

60029-46 (8/89) Litho USA

DATE: 04-09-93 SHIPMENT NO.: 2536954 485 T

SHIPPER: WESTINGHOUSE SHIPPING DEPT. (509) 37

REFERENCE NO.: W93-0-420#3

SHIPPER NAME AND ADDRESS
WESTINGHOUSE SHIPPING DEPT. (509) 376-6665
G2-06 U.S. DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD COMPANY
2355 STEVENS DRIVE 1163 BUILDING
PO BOX 1970
RICHLAND WA 99352

CONSIGNEE NAME AND ADDRESS
DELORES SANCHEZ
TMA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA 94804

Pieces	Weight	Description/Marks	Emery Authorization No.
2	176 LBS	COOLERS ID: SML-188 88# SML 244 88# WATER SAMPLES	

EACH PERSON HANDLING OR TAKING CUSTODY OF THIS SHIPMENT MUST SIGN AND COMPLETE THE INFORMATION BELOW

	Name of Person/Company	Transship Point/Destination	Signature of Person Accepting Custody	Time/Date
1.	[illegible]	[illegible]	[illegible]	[illegible]
2.	[illegible]	[illegible]	[illegible]	[illegible]
3.	[illegible]			[illegible]
4.				
5.	M Hal Helvoso Emery	OAK	M Hal	12 45
6.	F. Kep Kaeppel	[illegible]	F Kep Kaeppel	13:55
7.				
8.				75

SPECIAL HANDLING INSTRUCTIONS

CONSIGNEE COPY

SATURDAY PRIORITY

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		1193-0-420-03

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☒ Contractor ☐ Vendor

Shipped to
TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: B08905, B08906, B08907, B08934, B08935 Cooler ID: SML-188 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: B08845, B08846, B08847 Cooler ID: SML-244 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling, supports RI/FS work in the 100 Area

Bill of lading # 253695485T

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

RM Clearance for Public Release	RM Survey No.	Date
[illegible]	131353	4-9-93

Location of Property (Area & Bldg.)	Contact	Phone
100-FR-3	PH Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
4/9/93	W81232/PD3BA	

Originated By	Date	Authorized By	Date
RC Cole	4/9/93	[illegible]	

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	4/9/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
Skaymond				
Date 4-9-93				

76

DISTRIBUTION

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

54-3000-479 (09/89)

9213515276

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		1193-0-420-03

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geoscienceer	Geochem. & Hydrochem.

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

Routing Emery ☒ Contractor ☐ Vendor

Shipped to
TMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: B08905, B08906, B08907, B08734, B08935 Cooler ID: SML-188 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: B08845, B08846, B08847 Cooler ID: SML-244 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 Area

(NA)

Bill of lading # 2236954ST

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

RM Clearance for Public Release	RM Survey No.	Date
[illegible]	1313F3	4-9-93

Location of Property (Area & Bldg.)	Contact	Phone
100 CR-3	PH Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
4/9/93	W81232/PD3BA	

Originated By	Date	Authorized By	Date
RC Cole	4/9/93	[illegible]	

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	4/9/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
A Raymond				
Date 4-9-93				7.7

DISTRIBUTION

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

54-3000-479 (09/89)

9713515.2177

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 4/9/93

Ice Chest No. SMC-291

Field Logbook No. EFL-1055

Bill of Lading/Airbill No. 2536154904

Offsite Property No. W93-0420-06

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B0 88Z0

3, 40ml, Gs, WATER; CLP-VOA

;4L + 2; 1L ~~3, 2L~~, aG, WATER; CLP-SEMI VOA & PCB's/PEST

KT 4/9/93 1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH

1, 500ml, P, WATER; ANIONS/NO2-NO3 (H2SO4)

1, 1L, G, WATER; ALKALINITY/TOTAL DISSOLVED SOLIDS

1, 500ml, G, WATER; SULFIDE (Zink Acetate = NaOH pH>9)

1, 500ml, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)

1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) UNFILTERED

1, 1L, P, WATER; Cn(NaOH)

KT 4/9/93 2 ~~1~~, 4L, P & ~~1, 2L, P,~~ WATER; GROSS ALPHA/GROSS BETA/GAMMA SPEC./ ALPHA SPEC.(to include U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)

1, 1L, G/P,WATER; Tc-99 (HCl)

1, 250ml, Gs, WATER; TRITIUM/C-14

B0 88Z1

1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) FILTERED

B0 88Z2

3, 40ml, Gs, WATER; CLP-VOA

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K. Trapp / K. Trapp	4/9/93	1409	PC Cole PC Cole	4/12/93	0730
PC Cole PC Cole	4/12/93	0730	[illegible] [illegible]	4/13/93	1030

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Samples set in refrig at 4/9/93 at 1409

A-6000-407 (12/92) WEF061

9713515.2178

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, L. Walker Date Sampled 4/9/93 Time 1122 hours

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

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 8820	✓3; 40ml; Gs*;	WATER	CLP-VOA
	✓~~3; 2L~~; aG; 1; 4L & 2; 1L KT 4/9/93	WATER	CLP-SEMI VOA & PCB's/PEST
	✓1; 1L; P;	WATER	ANIONS (IC) SO4, F, PO4, Cl/COND/pH
	✓1; 500ml; P;	WATER	ANIONS/NO3-NO2 (H2SO4)
	✓1; 1L; G;	WATER	ALK./TOT. DISSOLVED SOLIDS
	✓1; 500ml; G;	WATER	SULFIDE (add Zinc Acetate+NaOH pH>9)
	✓1; 500ml; G;	WATER	AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)
	✓1; 1L; P;	WATER	CLP-ICP/AA METALS & Hg (HNO3) UNFILTERED
	✓1; 1L; P;	WATER	CLP-CN (NaOH)
✓2	~~1~~; 4L; P; ~~& 1; 2L; P~~ KT 4/9/93	WATER	GROSS ALPHA/BETA, GAMMA SPEC, ALPHA SPEC
			(U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)
	✓1; 1L; G/P;	WATER	Tc-99 (HCl)
	✓1; 250ml; Gs;	WATER	TRITIUM/C-14
BO 8821	✓1; 1L; P;	WATER	CLP-ICP/AA METAL & Hg (HNO3) FILTERED
BO 8822	✓3; 40ml; Gs	WATER	CLP-VOA
			OPC: # W93-0420-06
			BOL: # 2536954904
			TASK#: 93-051

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by Monica Mahaffy Title Sample control tech Date _____

Analysis Required _____

79

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

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

A-6000-406(05/90)

OVERNIGHT DELIVERY 9213515 2179

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W93-0-420-06

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☒ Contractor ☐ Vendor

Shipped to
IMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 88 lbs.	Sample #: B08ZZ0, B08ZZ1, B08ZZ2 Cooler ID: SMC 291 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: Cooler ID: Polycooler with groundwater samples packed in wet ice and vermiculite N/A 2616016 4/12/93	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 Area

Bill of lading # 3216954704

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

RM Clearance for Public Release	RM Survey No.	Date
RZ Palmer	131357	4-12-93

Location of Property (Area & Bldg.)	Contact	Phone
100-FR-3	PH Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
4/12/93	W81232 PD3 BA	

Originated By	Date	Authorized By	Date
PC Cole	4/12/93	R L Whitten	4/12/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
			4/12/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
Date 4-12-93				

80

DISTRIBUTION

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

54-3000-479 (09/89)

9713515.2180

EMERY WORLDWIDE

CF Company

GBL ☐ FCCOD ☐ Bill to Consignee ☐ Third Party Billing ☐

Shipper's Account Number: 50261585

SERVICES ** UNITED STATES / CANADA: Same Day (Extra Charge) ☐ AM ☐ PM ☐ Second Day ☐ Saturday Delivery ☐ INTERNATIONAL: Express ☐ Standard Plus ☐ Preferred ☐ Standard ☐ Business Documents ☐ Economy Cargo ☐

Date: 04-13-93 Origin: PSC Shipment Number: 2536953397

Tariff Dest. Gateway

From:
NGHOUSE SHIPPING DEPT. (509) 376-6665
DEPARTMENT OF ENERGY C/O
INGHOUSE HANFORD
PLUG 1163
STEVENS DRIVE
LAND WA

To:
THA/NORCAL
THA/NORCAL
2030 WRIGHT AVENUE
RICHMOND CA

Check to Shipper ☐ Hold for Pick Up ☐ Canada ☐

EMERY WORLDWIDE will accept Consignee's check with all risks being assumed by Shipper, including but not limited to non-payment, fraud and misrepresentation.

Customer's Reference Numbers: 232 PD23A W93-0-420-07

Zip: 99352

E Consignee's Account Number

Zip: 94804

Description	Pcs.	L	W	H	Total Pieces	Total Weight (In Lbs.)
OOLERS COOLER LID -194 / 85 lbs -265 / 85 lbs ER SAMPLES	2	14	16	17	2	170 lbs

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

Declared Value $

2536953397

NIGHT DELIVERY
ATURE SECURITY SERVICE

Zip Ship ☐ For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used: Urgent Letter 9X12 ☐ Urgent Pack 12X15 ☐

International Shipments: Commodity Code

Third Party Account Number mandatory for Third Party Billing. E Third Party Account Number

International Customs Value

International Ins

Total Transportation Charges

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

1-OAK-A

Terms and Conditions on Back

OVERNIGHT DELIVERY

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W93-0-420-07

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☒ Contractor ☐ Vendor

Shipped to IMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 85 lbs.	Sample #: B08825, B08826, B08827 Cooler ID: SML-194 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 85 lbs.	Sample #: B08920, B08921, B08922 Cooler ID: SML-265 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 Area

Bill of lading # 2536953397

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

RM Clearance for Public Release	RM Survey No.	Date
RA Palmer	131395	4-13-93

Location of Property (Area & Bldg.)	Contact	Phone
100-FR-3	PH Butcher	(509) 376-5046

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
4/13/93	W81232/PD3BA	

Originated By	Date	Authorized By	Date
PC Cole	4/13/93	[illegible]	4/13/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	4/13/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
C Miller Date 4-13-93				86

DISTRIBUTION

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

54-3000-479 (09/89)

9713515.2H2

OVERNIGHT DELIVERY

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		WM3-0-420-07

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☒ Contractor ☐ Vendor

Shipped to
IMA/NORCAL
2030 Wright Ave.
Richmond, CA 94804

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 85 lbs.	Sample #: B08835, B08836, B08837 Cooler ID: SML 194 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 85 lbs.	Sample #: B08920, B08921, B08922 Cooler ID: SML 265 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the 100 Area

Bill of lading # 2536953397

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

RM Clearance for Public Release	RM Survey No.	Date
RR Schuner	131345	4-13-93

Location of Property (Area & Bldg.)	Contact	Phone
100-FR-3	PH Butcher	(509) 376-5045

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
4/13/93	W81232/ PD3BA	

Originated By	Date	Authorized By	Date
VC Cole	4/13/93	PH Butcher / RWHomer	4/13/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	4/13/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible]				
Date 4-13-93				

87

DISTRIBUTION

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

SA 2000-450 (09/90)

9715515.2183

TMA

RECORD COPY

JUN 1993
RECEIVED
SDLA

WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

ORGANICS & GENERAL CHEMISTRY
Case No. 04-034
(TMA/ARLI Work Order # A3-04-034)

METALS & NITRATE/NITRITE
Case No. N3-04-048
(TMA/Skinner & Sherman W.O. # S3-04-141, S3-04-142, & S3-04-143)

June 2, 1993

TMA Master Work Order N3-04-048

i 8/20/96

PAGE 1 TMA/Norcal CHAIN OF CUSTODY ORD # N3-04-048

RCVD: 04/12/93 DUE: 05/12/93 04/12/93 12:42:28 KEEP: 08/10/93 DISP: S

DASH	SAMPLE IDENTIFICATION		STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY						
01A-W	B08915	UNFILTERED	ARLI	WH018	WH019	WH020	WH043	WH114	WH121	WH122
				WH128	WH131	WH132	WH140			
02A-W	B08905	UNFILTERED	ARLI	WH018	WH019	WH020	WH043	WH114	WH121	WH122
				WH128	WH131	WH132	WH140			
02C-W	B08905 MS	UNFILTERED	ARLI	WH018	WH019	WH020	WH043	WH114	WH140	
02D-W	B08905 MSD	UNFILTERED	ARLI	WH018	WH019	WH020				
02E-W	B08905 DUP	UNFILTERED	ARLI	WH043	WH114	WH121	WH122	WH128	WH131	WH132
				WH140						
05A-W	B08907		ARLI	WH018						
06A-W	B08907		ARLI	WH018						
07A-W	B08934		ARLI	WH018						
08A-W	B08935		ARLI	WH018						

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Yamamoto	4-12-93	ARLI	4-12-93	[illegible]	4/13/93

9713515.2185

000002A

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 4/8/93

Ice Chest No. SML-244

Field Logbook No. EFL1055

Bill of Lading/Airbill No. 2538 5485T

Offsite Property No. W93-0-420-03

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B088Y5 RCole 4/9/93

2 ~~3~~, 40ml, Gs, WATER; CLP-VOA
3, 2L, aG, WATER; CLP-SEMI VOA & PCB's/PEST
1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
1, 500ml, P, WATER; ANIONS/NO2-NO3 (H2SO4)
1, 1L, G, WATER; ALKALINITY/TOTAL DISSOLVED SOLIDS
1, 500ml, G, WATER; SULFIDE (Zink Acetate = NaOH pH>9)
1, 500ml, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)
1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) UNFILTERED
1, 1L, P, WATER; Cn(NaOH)
KT 4/9/93 2 ~~1~~, 4L, P & ~~1, 2L, P,~~ WATER; GROSS ALPHA/GROSS BETA/GAMMA SPEC./ ALPHA SPEC.(to include U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)
1, 1L, G/P,WATER; Tc-99 (HCl)
1, 250ml, Gs, WATER; TRITIUM/C-14

B088Y6
1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) FILTERED

B088Y7
3, 40ml, Gs, WATER; CLP-VOA

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

Relinquished By	Date	Time	Received By	Date	Time
GG Hamilton	4/8/93	1535	RCCole RCCole	4/9/93	0740
			[illegible]	4-12-93 *	

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Samples set in refrig 1 on 4/9/93 at 1535

* Received @ TMA/NorCal 4-10-93 @ 1355 ; opened 4-12-93 · KB

A-6000-407 (12/92) WEF061

9713515.2186

000002B

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, L. Walker Date Sampled 4/8/93 Time 910 hours

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

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B0 88Y5	~~3~~ PCLK 4/9/93; 40ml; Gs*;	WATER	CLP-VOA
	3; 2L; aG;	WATER	CLP-SEMI VOA & PCB's/PEST
	1; 1L; P;	WATER	ANIONS (IC) SO4, F, PO4, Cl/COND/pH
	1; 500ml; P;	WATER	ANIONS/NO3-NO2 (H2SO4)
	1; 1L; G;	WATER	ALK./TOT. DISSOLVED SOLIDS
	1; 500ml; G;	WATER	SULFIDE (add Zinc Acetate+NaOH pH>9)
	1; 500ml; G;	WATER	AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)
	1; 1L; P;	WATER	CLP-ICP/AA METALS & Hg (HNO3) UNFILTERED
	1; 1L; P;	WATER	CLP-CN (NaOH)
	2 ~~1~~; 4L; P; & ~~1; 2L; P~~ KT 4/9/93	WATER	GROSS ALPHA/BETA, GAMMA SPEC, ALPHA SPEC
			(U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)
	1; 1L; G/P;	WATER	Tc-99 (HCl)
	1; 250ml; Gs;	WATER	TRITIUM/C-14
B0 88Y6	1; 1L; P;	WATER	CLP-ICP/AA METAL & Hg (HNO3) FILTERED
B0 88Y7	3; 40ml; Gs	WATER	CLP-VOA
			OPC: # W93-0420-03
			BOL: # 2536954 85T
			TASK#: 93-051

Field Information**

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by [illegible] Title Sample control tech Date 4-12-93

Analysis Required

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

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

A-6000-406(05/90)

9713515.2187

000002C

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 4/8/93

Ice Chest No. SML-186

Field Logbook No. EFL 1095

Bill of Lading/Airbill No. 2536945485T

Offsite Property No. W93-Q-420-03

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B08905

3, 40ml, Gs, WATER; CLP-VOA
3, 2L, aG, WATER; CLP-SEMI VOA & PCB's/PEST
1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
1, 500ml, P, WATER; ANIONS/NO2-NO3 (H2SO4)
1, 1L, G, WATER; ALKALINITY/TOTAL DISSOLVED SOLIDS
1, 500ml, G, WATER; SULFIDE (Zink Acetate = NaOH pH>9)
1, 500ml, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)
1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) UNFILTERED
1, 1L, P, WATER; Cn(NaOH)
2 ~~1~~, 4L, P & ~~1, 2L~~, P, WATER; GROSS ALPHA/GROSS BETA/GAMMA SPEC./ALPHA SPEC.(to include U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)
1, 1L, G/P,WATER; Tc-99 (HCl)
1, 250ml, Gs, WATER; TRITIUM/C-14

B08906

1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) FILTERED

B08934 2, 40ml, Gs, WATER; CLP-VOA PCCole 4/9/93

B08907

3, 40ml, Gs, WATER; CLP-VOA

B08935 3, 40ml, Gs, WATER; CLP-VOA PCCole 4/5/93

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

Relinquished By	Date	Time	Received By	Date	Time
GG Hamilton	4/8/93	1535	PCCole PCCole	4/9/93	0740
			Alonzo Hobbs	4-12-93 *	

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Samples set in refrig 4 on 4/8/93 at 1535

* Received @ TMA/NORCAL 4-10-93 @ 1355 ; opened 4-12-93 - KB

A-6000-407 (12/92) WEF061

9713515.2188

000002D

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, L. Walker Date Sampled 4/8/93 Time 1205 hours

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

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 8905	✓3; 40ml; Gs*;	WATER	CLP-VOA
	✓3; 2L; aG;	WATER	CLP-SEMI VOA & PCB's/PEST
	✓1; 1L; P;	WATER	ANIONS (IC) SO4, F, PO4, Cl/COND/pH
	✓1; 500ml; P;	WATER	ANIONS/NO3-NO2 (H2SO4)
	✓1; 1L; G;	WATER	ALK./TOT. DISSOLVED SOLIDS
	✓1; 500ml; G;	WATER	SULFIDE (add Zinc Acetate+NaOH pH>9)
	✓1; 500ml; G;	WATER	AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)
	✓1; 1L; P;	WATER	CLP-ICP/AA METALS & Hg (HNO3) UNFILTERED
	✓1; 1L; P;	WATER	CLP-CN (NaOH)
✓	~~1~~ 2; 4L; P; ~~& 1; 2L; P~~ 4/9/93	WATER	GROSS ALPHA/BETA, GAMMA SPEC, ALPHA SPEC
			(U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)
	✓1; 1L; G/P;	WATER	Tc-99 (HCl)
	✓1; 250ml; Gs;	WATER	TRITIUM/C-14
BO 8906	✓1; 1L; P;	WATER	CLP-ICP/AA METAL & Hg (HNO3) FILTERED
BO8934	2; 40ml; Gs	WATER	CLP-VOA 4/9/93 PCCole
BO8935	3; 40ml; GS	WATER	CLP-VOA
BO8907	✓3; 40ml; Gs	WATER	CLP-VOA
			OPC: # W93-0-420-03
			BOL: # 2536954 85T
			TASK#: 93-051

Field Information** Raining lightly

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Allison Hately Title SAMPLE CONTROL TECH Date 4-12-93

Analysis Required

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

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

VOA Rec'd LIPKICAL

A-6000-406(05/90)

9713515.2189

SAMPLE LOG-IN SHEET

000003

LAB NAME: TMA/NFL

PAGE: 1 OF 2

RECEIVED BY (PRINT NAME): Trudy Galub

LOG-IN DATE: 4/13/93

RECEIVED BY (SIGNATURE): Trudy Galub

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

REMARKS: SMW-188

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.: 2521633351
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: 4/13/93
12. Temp of Ice chest 2 °C
13. Time Recieved: 1040

SAMPLE TRANSFER

Fraction:
Area #:
By:
On:

EPA SAMPLE #	SAMPLE TAG #	ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B08845	A3-04-034-01	
	B08847	A3-04-034-02	
	B08903	A3-04-034-04	
	B08905	A3-04-034-03	

* Contact SMO and attach record of resolution

Reviewed By: Logbook No.:

Date: Logbook Page No.:

FORM SC-1

9713515.2190

000004

SAMPLE LOG-IN SHEET

LAB NAME: TMA/MKI

PAGE: 2 OF 2

RECEIVED BY (PRINT NAME): Trudy Golub

LOG-IN-DATE: 4/13/93

RECEIVED BY (SIGNATURE): Trudy Golub

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

REMARKS: SML-244

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.: 2521033351

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: 4/13/93

12. Temp of ice chest 3 °

13. Time Recieved: 1040

SAMPLE TRANSFER

Fraction:

Area #:

By:

On:

CORRESPONDING			
EPA SAMPLE #	SAMPLE TAG #	ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B08905	A3-04-03-03	
	B08935	A3-04-03-06	
	B08934	A3-04-03-05	ONE VOA BUBBLE

* Contact SMO and attach record of resolution

Reviewed By: Logbook No.:

Date: Logbook Page No.:

FORM DC-1

000005

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE

A304034

AIRBILL PACKAGE TRACKING NUMBER 2521033351

2128M 2521033351

RECIPIENT'S COPY

1 Date 4/12/03

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

2 To (Recipient's Name) Please Print: Carole Harris

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

Company: TMA / ARLI

Department/Floor No:

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

City: Monrovia State: Ca ZIP Required: 91016

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

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

Street Address:

City: State: ZIP Required:

3 PAYMENT 1 [ ] Bill Sender 2 [ ] Bill Recipient's FedEx Acct No 3 [ ] Bill 3rd Party FedEx Acct No 4 [ ] Bill Credit Card

[ ] 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 *
- 4L [ ] GOVT PACKAGE

Freight Service (Not for single packages over 150 lbs.)
- 70 [ ] OVERNIGHT FREIGHT ** (Guaranteed next-day service)
- 80 [ ] TWO-DAY FREIGHT **

† Delivery commitment may be later in some areas

*Declared Value Limit $100
**Call for rates and charges

5 DELIVERY AND SPECIAL HANDLING (Check services required)
- 1 [ ] HOLD FOR PICK-UP (Fee in Box 4)
- 2 [X] DELIVER WEEKDAY
- 3 DELIVER SATURDAY (Fee charge) (Not available to all locations) [ ]
- 4 [ ] DANGEROUS GOODS (Fee charge)
- 5 [ ]
- 6 [ ] DRY ICE lbs
- 7 [ ] OTHER SPECIAL SERVICE
- 8 [ ]
- 9 [ ] SATURDAY PICK-UP (Fee charge)
- P10 [ ]
- 11 [ ]
- 12 [ ] HOLIDAY DELIVERY (Fee charge)

6 PACKAGES | WEIGHT In Pounds Only | YOUR DECLARED VALUE

Total | Total 2.118 | 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 Dest [ ] 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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9713515.2192

A 304C 34

000006

TMA/ARI
The new Analytical Inc.

RADIATION DOSE RATE SURVEY FORM

Date 4/13/93 COMPANY TMA/NORCAL (WHC) OTHER ORD # 2521033351

Surveyor's Name MARK S. McCrak

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

Serial No. 110289 / 02619 Serial No. 007726 / 076228

Calibration Date 12/02/92 Calibration Date 2/16/93

Instrument Calibration Factor 0.280 Instrument Calibration Factor 0.190

Sample	Location	HP-210 CPM	HP-210 Factor	HP-210 DPM	AC-3-7 CPM	AC-3-7 Factor	AC-3-7 DPM	Surface or Average?	Activity, pCi/gm or pCi/g
Background		38.0			9.97				
Consumer		7,430	0.2868		5,020	0.1845			
Smears SML 188		37.0			11.0				
SML 244		45.0			4.99				
Repeated (WHC)	12	samples	each		<50 pCi/gram				

Comments

All OK ✓ Approved MSM

Not OK Date 4/13/93

GENERAL CHEMISTRY RESULTS

CASE NO. 04-034

Water Sample #:

B08BY5 B08905

CASE NARRATIVE

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

Sample B088Y5 (A3-04-034-01F) yielded a 78.0% recovery for the Phosphate analysis. The low Phosphate recovery compared to our laboratory control sample indicated the presence of a matrix interference.

Because the Fluoride concentration level was near the instrument detection limit, the % RPD for the Fluoride analysis reported for liquid sample B08905 (A3-04-034-03F) was 22.2%.

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

Maureen Parrish

Maureen Parrish

9713515.2194

000011

TMA Inc. REPORT Work Order # A3-04-034

Received: 044/12/93

Results by Sample

SAMPLE ID B088Y5 FRACTION 01E TEST CODE WCCLPL NAME Anions & Wet Chem. - WM043

Date & Time Collected 04/08/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	13.4	mg/L	0.2
Fluoride	300.0	0.4	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	150.1	8.0	pH	0.1
Sulfate	300.0	64	mg/L	1
Elect. Conductivity	120.1	673	umho/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-04-034

Received: 04/12/93

Results by Sample

SAMPLE ID B088Y5 FRACTION 01G TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/08/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	209	mg/L	2
Tot. Dissolved Solids	160.1	414	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-04-034

Received: 04/12/93

Results by Sample

SAMPLE ID B088Y5 FRACTION 011 TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/08/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-04-034

Received: 04/12/93

Results by Sample

SAMPLE ID B088Y5 FRACTION 01K TEST CODE WCCLPL NAME Anions & Wet Chem. - WW043

Date & Time Collected 04/08/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.0	<5	mg/L	5

FORM I

9713515.2198

00001

TMA Inc. REPORT Work Order # A3-04-036

Received: 04/12/93

Results by Sample

SAMPLE ID B08905 FRACTION 03E TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/08/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS				
ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	10.3	mg/L	0.2
Fluoride	300.0	0.5	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	150.1	7.9	pH	0.1
Sulfate	300.0	59	mg/L	1
Elect. Conductivity	120.1	707	umho/cm	6

FORM I

9713515.2199

000016

TMA Inc. REPORT Work Order # A3-04-034

Received: 04/12/93

Results by Sample

SAMPLE ID B08905 FRACTION 036 TEST CODE VCCLPL NAME Anions & Wet Chem. - VN043

Date & Time Collected 04/08/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	200	mg/L	2
Tot. Dissolved Solids	160.1	446	mg/L	5

FORM I

9713515.2200

000017

TMA Inc. REPORT Work Order # A3-04-034

Received: 04/12/93

Results by Sample

SAMPLE ID B08905 FRACTION 03N TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/08/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	<1	mg/L	1

FORM I

9713515.2201

TNA Inc. REPORT Work Order # A3-04-034

Received: 04/12/93

Results by Sample

SAMPLE ID B08905 FRACTION 03J TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/08/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.0	<5	mg/L	5

FORM I

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 04-034

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : April 12, 1993

1.0 DESCRIPTION OF CASE :

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

2.0 SAMPLE LIST :

WESTINGHOUSE ID	LAB ID	ANALYSIS REQUESTED	MATRIX	pH
B088Y5	A3-04-034-01A	V	WATER	7
B088Y5	A3-04-034-01B	SV & P	WATER	
B088Y5 MS	A3-04-034-01C	SV	WATER	
B088Y5 MSD	A3-04-034-01D	SV	WATER	
B088Y7	A3-04-034-02A	V	WATER	7
B088Y7 MS	A3-04-034-02B	V	WATER	7
B088Y7 MSD	A3-04-034-02C	V	WATER	7
B08905	A3-04-034-03A	V	WATER	7
B08905	A3-04-034-03B	SV & P	WATER	
B08905 MS	A3-04-034-03C	P	WATER	
B08905 MSD	A3-04-034-03D	P	WATER	
B08907	A3-04-034-04A	V	WATER	7
B08934	A3-04-034-05A	V	WATER	7
B08935	A3-04-034-06A	V	WATER	7

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

All of the samples were received unbroken and properly documented.

1 of the 2 VOA vials for sample B08934 contained air bubbles.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were analyzed within the CLP SOW holding times. Sample B088Y7MSD had a Bromofluorobenzene surrogate recovery slightly below the QC limits. In accordance with protocol, no further action was required.

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

TUNES :

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

3.2.2 SEMIVOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times. The matrix spike recoveries for 4-Nitrophenol in samples B088Y5MS and B088Y5MSD were slightly above the QC limits. In accordance with protocol, no further action was required.

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

3.2.3 PESTICIDE/PCB ANALYSIS COMMENTS :

SEQUENCE NOTES :

The sequence was started on 04/17/93 and was analyzed according to the CLP SOW. The sequence was analyzed by single injection into a dual column system.

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

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

SAMPLE NOTES :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times. The matrix spike recoveries for Dieldrin in samples B08905MS and B08905MSD were above the QC limits on the DB-1701 column. The high recovery was due to an interference peak that co-eluted with Dieldrin. The percent difference between the two GC columns for Dieldrin exceeded 25%. Therefore, Dieldrin has been "P" qualified.

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

We certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data in this hardcopy data package and in the computer-readable data submitted on diskette is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Nicole Roth 5/28/93
Nicole Roth
CLP Program Manager

Nicole Roth 5/28/93
for Wida Ang
Organics Manager

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Y5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30420B04

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/20/93

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

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B088Y5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30420B04

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/20/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Y7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B10

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B088Y7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B10

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2209

000009

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08905

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30420B07

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/20/93

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

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

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

9713515.2210

000010

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B08905

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30420B07

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/20/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2211

000011

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08907

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B15

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

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

9713515.2212

000012

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B08907

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B15

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08934

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B16

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	53	
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	3	J
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

9713515.2214

000014

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B08934

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B16

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2215

000015

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08935

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-06A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B17

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	18	
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	3	J
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B08935

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-06A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B17

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Y5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I17

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/13/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/04/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Y5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I17

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/13/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/04/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

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

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B088Y5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I17

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/13/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/04/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	8.80	5	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08905

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I20

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/13/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/05/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

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

9713515.2221

000021
EPA SAMPLE NO.

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B08905

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I20

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/13/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/05/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	58	
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

9713515.2282

000022

EPA SAMPLE NO.

B08905

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I20

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/13/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/05/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	21.35	7	J

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Y5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-01B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/12/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 04/13/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

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

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08905

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-03B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/12/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 04/13/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

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

9713515.2225

000002

Page 1 Skinner&Sherman REPORT Work Order # S3-04-143

Received: 04/13/93 05/12/93 15:56:38

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

ATTEN Dan Steurmer

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

ATTEN Client Services
PHONE (617) 890-7200

CERTIFIED BY

CONTACT DP

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

WORK ID N3-04-048
TAKEN By Client
TRANS Fed Ex
TYPE WATER
P.O. # N3-04-048
INVOICE under separate cover

SAMPLE IDENTIFICATION		TEST CODES and NAMES used on this workorder	
01 B088Y5		NO3NO2	Nitrate Plus Nitrite
02 B08905			
02 B08905	DUPL		
02 B08905	SPIKE		
03 LCSW			

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

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

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

Page 2 Skinner&Sherman REPORT Work Order # S3-04-143

Received: 04/13/93 Results by Sample

SAMPLE ID B088Y5 SAMPLE # 01 FRACTIONS: A
Date & Time Collected 04/08/93 Category WATER

NO3NO2 15.7

SAMPLE ID B08905 SAMPLE # 02 FRACTIONS: A
Date & Time Collected 04/08/93 Category WATER

NO3NO2 24.0

SAMPLE ID B08905 DUPL SAMPLE # 02 FRACTIONS: B
Date & Time Collected 04/08/93 Category WATER

NO3NO2 24.2

SAMPLE ID B08905 SPIKE SAMPLE # 02 FRACTIONS: C
Date & Time Collected 04/08/93 Category WATER

NO3NO2 26.7

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

NO3NO2 2.02

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

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

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1-800-4 LAB TEST FAX (617) 890-3883

TMA/NORCAL Hanford

QUALITY CONTROL

MATRIX SPIKE

Sample ID	Sample Result	Spike Added	Spike Result	% Recovery
S304143-02	24.0 mg/L	2.00 mg/L	26.7 mg/L	135

DUPLICATE

Sample ID	Sample result	Duplicate Result	Relative % Difference
S304143-02	24.0 mg/L	24.2 mg/L	0.8

QUALITY CONTROL SAMPLES

Sample ID	True Value	Found Value	Percent Recovery
LCS	2.00 mg/L	2.02 mg/L	101.1
Prep blank	--	<0.25 mg/L	--

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

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

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1-800-4 LAB TEST FAX (617) 890-3883

Page 4 Skinner&Sherman REPORT Work Order # S3-04-143

Received: 04/13/93 Test Methodology

TEST CODE NO3NO2 NAME Nitrate Plus Nitrite

Methods for Chemical Analysis of Water and Wastes
EPA - 600/4-79-020 March 1979 Method 353.2 (modified)

TMA
Thermo Analytical Inc.

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

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

TMA/Skinner & Sherman Labs SAMPLE LOG-IN
WORKORDER 5304143 CLIENT Hanford Nav No. SAMPLES:
PROTCL CLP TURNARND 33 Day 2
COOLER TEMP: 2 oC, or NA (Soil) (Water) (Specify Other)
CUSTODIAN BPROWX SDG/BATCH NA
CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N304048
SHIPER & # Fed EX PO/CONTRACT# +
TAGS: PRESENT/ABSENT/NA/SEE COC CONTACT D. SANCHEZ
CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS: none

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 4/13/93
LIST ANY DATE WITH PAPERWORK/SHIPMENT PROBLEMS & SPECIFY THE PROBLEM:

N/A

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	B08845	water	4/13/93	1.93	NO3NO2	
2	B08965	+	+	1.90	DS +	
3						
4						
5						
6						
7						
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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 4/14/93 BP

* EPA/CLP required Rev 1.6 PAGE: 27

 93A/N3-04-15.2230 CHAIN OF CUSTODY ORD # N3-04-048

RCVD: 04/12/93 DUE: 05/12/93 04/12/93 12:42:10 KEEP: 08/10/93 DISP: S

000022

DASH	SAMPLE IDENTIFICATION		STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY				
01B-W	B08BY5	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
02B-W	B08905	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
02F-W	B08905 MS	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
02G-W	B08905 DUP	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
02H-W	L C S		S&S	WH007	WH008	WH010	WH137	
03A-W	B08BY6	FILTERED	S&S	WH007	WH008	WH010		
04A-W	B08906	FILTERED	S&S	WH007	WH008	WH010		
04B-W	B08906 MS	FILTERED	S&S	WH007	WH008	WH010		
04C-W	B08906 DUP	FILTERED	S&S	WH007	WH008	WH010		
04D-W	L C S		S&S	WH007	WH008	WH010		

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Yamamoto	4-12-93	Skinner	4-12-93	Paul Prowl	4/13/93

9713515.2231

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

JUN 1993
RECEIVED
SDLA

May 12, 1993

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

Quality Control Narrative

Scope
Two (2) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on April 13, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals and cyanide as indicated on the chain of custody. The analysis was performed under TMA/Skinner and Sherman work order S304141.

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

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

The selenium, iron, and thallium digestion spike recoveries exceeded the control limit requirements.

The iron laboratory duplicate exceeded the control limit requirement.

The iron ICP serial dilution exceeded the control limit requirement.

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

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

i 20 E120196

9713515.2232

WESTINGHOUSE/HANFORD

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

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

Lab Code: SKINER Case No.: N3-04-048 SAS No.: SDG No.: B088Y5

SOW No.: ILM02.1

SAMPLE NUMBER:	Lab Sample ID.
B088Y5	04141-01S
B08905	04141-02S
B08905D	04141-02S2
B08905S	04141-02DS

Were ICP interelement corrections applied? Yes/No YES
Were ICP background corrections applied? Yes/No YES
If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Steven Provencal Name: Steven R. Provencal

Date: 5/14/93 Title: Lead Chemist

9713515.2235

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B088Y5

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

Lab Code: SKINER Case No.: N3-04-048SAS No.: SDG No.: B088Y5

Matrix (soil/water): WATER Lab Sample ID: 04141-01S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	41.9	B		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	5.3	B		F
7440-39-3	Barium	25.2	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	58400			P
7440-47-3	Chromium	5.8	U		P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	40.6	B	EN*	P
7439-92-1	Lead	3.2			F
7439-95-4	Magnesium	17500			P
7439-96-5	Manganese	1.8	U		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	6430			P
7782-49-2	Selenium	3.3	U	WN	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	53200			P
7440-28-0	Thallium	1.2	U	WN	F
7440-62-2	Vanadium	15.4	B		P
7440-66-6	Zinc	9.2	B		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

C002

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER:

B08905

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

Lab Code: SKINFR Case No.: N3-04-048SAS No.: SDG No.: B08AY5

Matrix (soil/water): WATER Lab Sample ID: 04141-025

Level (low/med): LOW Date Received: 04/13/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	145	B		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	3.5	B		F
7440-39-3	Barium	39.8	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	66500			P
7440-47-3	Chromium	17.6			P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	261		EN*	P
7439-92-1	Lead	2.0	B		F
7439-95-4	Magnesium	16900			P
7439-96-5	Manganese	13.0	B		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	5640			P
7782-49-2	Selenium	3.3	U	WN	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	48400			P
7440-28-0	Thallium	1.2	U	WN	F
7440-62-2	Vanadium	11.1	B		P
7440-66-6	Zinc	12.1	B		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

L003

9713515.2235

TMA/Skinner & Sherman Labs SAMPLE LOG-IN

WORKORDER S304M1 CLIENT Hanford NW No. SAMPLES:

PROTCL CLP TURNAROUND 33 Days 2

COOLER TEMP: 2 oC, or NA (Soil) (Water) (Specify Other)

CUSTODIAN B. Proulx SDG/BATCH NA

CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N304048

SHIPER & # Fed Ex PO/CONTRACT# 1

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

CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # NA COMMENTS: none

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 4/13/93

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

NA UNFILTERED

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	B08845	water	4/13/93	1.99/11.43	TM/CN	
2	B08905	1	1	1.98/12.06	DS 1	
3						
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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: 4/14/93

REVIEWED ___ Compute BP

* EPA/CLP required Rev 1.6 PAGE: 25

PAGE 1 9T4 5645 2246 CHAIN OF CUSTODY ORD # NO-04-048

RCVD: 04/12/93 DUE: 05/10/93 04/12/93 12:42:11 KEEP: 08/10/93 DISP: S

DASH	SAMPLE IDENTIFICATION		STORED	TESTS AT FRACTIONS with work in DEPT: SU and CATEGORY				
01B-W	B0BE45	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
02B-W	B0BF05	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
02F-W	B0B915 MS	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
02G-W	B0BF05 DUP	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
02H-W	L C B		S&S	WH007	WH008	WH010	WH137	
03A-W	B0BBY6	FILTERED	S&S	WH007	WH008	WH010		
04A-W	B0B90b	FILTERED	S&S	WH007	WH008	WH010		
04B-W	B0B90b MS	FILTERED	S&S	WH007	WH008	WH010		
04C-W	B0B90b DUP	FILTERED	S&S	WH007	WH008	WH010		
04D-W	L C B		S&S	WH007	WH008	WH010		

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Yamamoto	4-12-93	Skinner	4-12-93	Paul Prowl	4/13/93

TMA 9713515.2237
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

JUN 1993
RECEIVED
SDLA

May 12, 1993

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

Quality Control Narrative

Scope
Two (2) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on April 13, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S304142.

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

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

The selenium digestion spike recovery exceeded the control limit requirement.

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

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

i 8/20/96

9713515.2238

WESTINGHOUSE/HANFORD

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

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

Lab Code: SKINER Case No.: N3-04-048 SAS No.: SDG No.: B088Y6

SOW No.: ILM02.1

SAMPLE NUMBER:	Lab Sample ID.
B088Y6	04142-01S
B08906	04142-02S
B08906D	04142-02S2
B08906S	04142-02DS

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Steven Provencal Name: Steven R. Provencal

Date: 5/14/93 Title: Lead Chemist

9713515.2239

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B088Y6

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

Lab Code: SKINER Case No.: N3-04-048SAS No.: SDG No.: B088Y6

Matrix (soil/water): WATER Lab Sample ID: 04142-01S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	45.3	B		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	7.7	B		F
7440-39-3	Barium	24.4	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	58200			P
7440-47-3	Chromium	5.8	U		P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	15.6	B		P
7439-92-1	Lead	3.9		W	F
7439-95-4	Magnesium	17500			P
7439-96-5	Manganese	1.8	U		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	6410			P
7782-49-2	Selenium	3.5	B	SN	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	52900			P
7440-28-0	Thallium	1.2	U	W	F
7440-62-2	Vanadium	15.1	B		P
7440-66-6	Zinc	3.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

002

FORM I - IN ILM02.1

9713515.2240

WESTINGHOUSE/HANFORD

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B08906

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

Lab Code: SKINER Case No.: N3-04-048SAS No.: SDG No.: B088Y6

Matrix (soil/water): WATER Lab Sample ID: 04142-02S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23.5	U		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	5.5	B		F
7440-39-3	Barium	40.6	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	64700			P
7440-47-3	Chromium	11.9			P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	26.2	B		P
7439-92-1	Lead	3.9			F
7439-95-4	Magnesium	16300			P
7439-96-5	Manganese	1.8	U		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	5490			P
7782-49-2	Selenium	3.3	U	WN	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	47200			P
7440-28-0	Thallium	1.2	U	W	F
7440-62-2	Vanadium	9.0	B		P
7440-66-6	Zinc	3.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

003

9713515.2242

TMA

RECORD COPY

JUN 1993
RECEIVED
SDLA

WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

ORGANICS & GENERAL CHEMISTRY
Case No. 04-040
(TMA/ARLI Work Order # A3-04-040)

METALS & NITRATE/NITRITE
Case No. N3-04-059
(TMA/Skinner & Sherman W.O. # S3-04-174, S3-04-175, & S3-04-176)

June 4, 1993

TMA Master Work Order N3-04-059

1 SW 8/21/96

 TMA/Norcal CHAIN OF CUSTODY ORD # N3-04-059 000002

RCVD: 04/13/93 DUE: 05/18/93 04/13/93 14:58:44 KEEP: 08/16/93 DISP: S

DASH	SAMPLE IDENTIFICATION			STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY
01A-W	B088Z0		UNFILTERED	ARLI	WH018 WH019 WH020 WH043 WH114 WH121 WH122 WH128 WH131 WH132 WH140
01C-W	B088Z0	MS	UNFILTERED	ARLI	WH018 WH019 WH020 WH043 WH114 WH140
01D-W	B088Z0	MSD	UNFILTERED	ARLI	WH018 WH019 WH020
01E-W	B088Z0	DUP	UNFILTERED	ARLI	WH043 WH114 WH121 WH122 WH128 WH131 WH132 WH140
03A-W	B088Z2			ARLI	WH018

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Yamamoto	4-13-93	ARLI	4-13-93	Sandy [illegible]	4/14/93

9713515.2244

000002A

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 4/9/93

Ice Chest No. SML-291

Field Logbook No. EFL-1055

Bill of Lading/Airbill No. 2536954904

Offsite Property No. W93-0420-06

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B088Z0

3, 40ml, Gs, WATER; CLP-VOA

;4L +2; 1L ~~3, 2L~~, aG, WATER; CLP-SEMI VOA & PCB's/PEST

KT 4/9/93 1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH

1, 500ml, P, WATER; ANIONS/NO2-NO3 (H2SO4)

1, 1L, G, WATER; ALKALINITY/TOTAL DISSOLVED SOLIDS

1, 500ml, G, WATER; SULFIDE (Zink Acetate = NaOH pH>9)

1, 500ml, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)

1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) UNFILTERED

1, 1L, P, WATER; Cn(NaOH)

KT 4/9/93 2 ~~1~~, 4L, P & ~~1, 2L, P,~~ WATER; GROSS ALPHA/GROSS BETA/GAMMA SPEC./ ALPHA SPEC.(to include U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)

1, 1L, G/P,WATER; Tc-99 (HCl)

1, 250ml, Gs, WATER; TRITIUM/C-14

B088Z1

1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) FILTERED

B088Z2

3, 40ml, Gs, WATER; CLP-VOA

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
K.J. Trapp / K. Trapp	4/9/93	1409	PC Cole PC Cole	4/12/93	0730
PC Cole PC Cole	4/12/93	0730	M. Mc...	4/13/93	1030

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Samples set in refrig at 4/9/93 at 1409

A-6000-407 (12/92) WEF061

9713515.2245

000002B

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, L. Walker Date Sampled 4/7/93 Time 1122 hours

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

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
30 88Z0	✓3; 40ml; Gs*;	WATER	CLP-VOA
	✓~~3; 2L;~~ aG; 1; 4L & 2; 1L KT 4/9/93	WATER	CLP-SEMI VOA & PCB's/PEST
	✓1; 1L; P;	WATER	ANIONS (IC) SO4, F, PO4, Cl/COND/pH
	✓1; 500ml; P;	WATER	ANIONS/NO3-NO2 (H2SO4)
	✓1; 1L; G;	WATER	ALK./TOT. DISSOLVED SOLIDS
	✓1; 500ml; G;	WATER	SULFIDE (add Zinc Acetate+NaOH pH>9)
	✓1; 500ml; G;	WATER	AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)
	✓1; 1L; P;	WATER	CLP-ICP/AA METALS & Hg (HNO3) UNFILTERED
	✓1; 1L; P;	WATER	CLP-CN (NaOH)
✓2	~~1~~; 4L; P; ~~& 1; 2L; P~~ KT 4/9/93	WATER	GROSS ALPHA/BETA, GAMMA SPEC, ALPHA SPEC
			(U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)
	✓1; 1L; G/P;	WATER	Tc-99 (HCl)
	✓1; 250ml; Gs;	WATER	TRITIUM/C-14
088Z1	✓1; 1L; P;	WATER	CLP-ICP/AA METAL & Hg (HNO3) FILTERED
088Z2	✓3; 40ml; Gs	WATER	CLP-VOA
			OPC: # W93-0420-06
			BOL: # 2536954904
			TASK#: 93-051

Field Information**

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Monica Mahaffy Title Sample control tech Date

Analysis Required

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

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

A-6000-406(05/90)

000003

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

A 304039
A 304040

AIRBILL PACKAGE TRACKING NUMBER 2521033421

2521033421

RECIPIENT'S COPY

1 Date 4-1-

From (Your Name) Please Print: Sample Control

Your Phone Number (Very Important)

Company

Department/Floor No

Street Address

City

State

ZIP Required

2 To (Recipient's Name) Please Print: Carolw Harris

Recipient's Phone Number (Very Important)

Company: TMF / ARLI

Department/Floor No

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

City: Monrovia

State: Ca

ZIP Required: 91016

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice): 2340.6406

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

Street Address

City

State

ZIP Required

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

5 [ ] Cash/Check

4 SERVICES (Check only one box)

Priority Overnight
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 **
† 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
2 [X] DELIVER WEEKDAY
3 DELIVER SATURDAY [ ]
4 [ ] DANGEROUS GOODS
5 [ ]
6 [ ] DRY ICE lbs
7 [ ] OTHER SPECIAL SERVICE
8 [ ]
9 [ ] SATURDAY PICK-UP (Extra charge)
10 [ ]
11 [ ]
12 [ ] HOLIDAY DELIVERY

6 PACKAGES | WEIGHT in Pounds Only | YOUR DECLARED VALUE

Total 2 Total 12.0 Total

DIM SHIPMENT (Chargeable Weight) [ ] _____ lbs

L x W x H = _____

Received At
1 [X] Regular Stop 3 [ ] Drop Box
2 [ ] On Call Stop* 4 [ ] 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 FEM 4/92
FORMAT #079

099

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9713515.2246

9713515.2247 SAMPLE LOG-IN SHEET

LAB NAME TMA/MPLS PAGE: 1 000004

RECEIVED BY (PRINT NAME): Trudy Galuh LOG-IN DATE: 4/14/93

RECEIVED BY (SIGNATURE): Trudy Galuh

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

REMARKS: SML-227/84-11

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.: 2521633421
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: 4/14/93
12. Temp of Ice chest 2 °C
13. Time Recieved: 1120

SAMPLE TRANSFER

Fraction:
Area #:
By:
On:

CPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B08570	A3-04-~~03~~ Traffic-01	
	B08572	A3-04-040-02	
	B085H3	A3-04-037-02	
	B085H4	A3-04-039-03	
	B085H2	A3-04-039-01	

* Contact SMO and attach record of resolution

Reviewed By: Logbook No.:

Date: Logbook Page No.:

FORM SC-1

9713515.2248

SAMPLE LOG-IN SHEET

LAB NAME - TRA/ABLI

PAGE: 2 OF 2 000005

RECEIVED BY (PRINT NAME): Trudy Colub

LOG-IN-DATE: 4/14/93

RECEIVED BY (SIGNATURE): Trudy McColub

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

REMARKS: SML-302

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.: 2521033421
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: 4/14/93
12. Temp of ice chest 2 °
13. Time Recieved: 1120

SAMPLE TRANSFER

Fraction:
Area #:
By:
On:

EPA SAMPLE #	CODE SPECIFIC: SAMPLE TAG #	CODE SPECIFIC: ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B085J0	A304-039-08	
	B085J1	" -09	
	B085H2	" -01	
	B085H3	" -02	
	B085H4	" -03	
	B085H5	" -04	
	B085H6	" -05	
	B085H7	" -06	
	B085H9	" -07	

* Contact SMO and attach record of resolution

Reviewed By: Logbook No.:

Date: Logbook Page No.:

FORM DC-1

9713515.2249 A304040 A304039 000006

TMA/ARLI
Thermo Analytical Inc.

RADIATION DOSE RATE SURVEY FORM

Date 4/14/93 COMPANY TMA/NORCAL (WHC) OTHER ORD # 2521033421

Surveyor's Name MARK S. McCRAY

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

Serial Nos. 210289 / 02619 Serial Nos. 007726 / 02628

Calibration Date 12/02/93 Calibration Date 2/16/93

Instrument Calibration Factor 0.280 Instrument Calibration Factor 0.190

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 dpm/100 cm² or dpm/g
Background		51.0			9.97				
Consumary		7,310	0.2822		4,089	0.1503			
Smear SML-204		34.0			1.99			None	
8-4-11		51.0			2.99			None	
Reported (WHC)		15 samples each			<50 pCi/gram				

Comments

All OK ✓ Approved MSM

Not OK Date 4/14/93

01/15/92

GENERAL CHEMISTRY RESULTS

CASE NO. 04-040

Water Sample #:

B088Z0

CASE NARRATIVE

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

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

Maureen Parrish

Maureen Parrish

TMA Inc. REPORT Work Order # A3-04-040

Received: 04/13/93 05/25/93 13:30:02

REPORT TO: Westinghouse Hanford Company
2355 Stevens Dr.,MSIN-H4-23
345 Hills Street/3000 Area
Richland, WA 99352
ATTEN: Jeanette Duncan

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

Maureen Parrist
CERTIFIED BY

CONTACT: MKP 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: 100-FR-1
TAKEN: By Westinghouse Staff
TRANS: By Federal Express
TYPE: Liquid
P.O. #: N3-04-059-SU-AR
INVOICE: under separate cover

SAMPLE IDENTIFICATION

01 B088Z0
01 B088Z0 MS
01 B088Z0 MSD
01 B088Z0
01 B088Z0 MS
01 B088Z0 Duplicate
01 B088Z0
01 B088Z0 Duplicate
01 B088Z0
01 B088Z0 MS
01 B088Z0 Duplicate
01 B088Z0
01 B088Z0 MS
01 B088Z0 Duplicate
02 B088Z2
02 B088Z2 MS
02 B088Z2 MSD
03 Wet Chemistry Blank
03 Laboratory Control Sample

TEST CODES and NAMES used on this workorder

BNCLPW	CLP Semivol. Water - WH020
PECLPL	CLP Pesticides Liq.
VOCLPL	CLP Volatile Org.Liq.
WCCLPL	Anions & Wet Chem. - WH043
WCLCS	Lab Control Sample Summary
WCL L	Chloride - WH120
WCQCD	Quality Control Summary
WCQCS	Quality Control Summary
WF L	Fluoride in Water
WNH3 L	Ammonia in Water - WH140
WPH L	pH of Liquid - WH121
WPO4 L	Phosphate in Liquids
WSO4 L	Sulfate (in Waters)
WSULFI	Sulfide - WH114
W ALK	Alkalinity - WH131
W COD	COD Water - WH132
W COND	Conductivity-Water WH122
W TDS	Dissolved Solids WH128

TMA Inc. REPORT Work Order # A3-04-040

Received: 04/13/93

Results by Sample

SAMPLE ID B088Z0 FRACTION 01E TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/09/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	32.6	mg/L	0.4
Fluoride	300.0	0.6	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	150.1	8.0	pH	0.1
Sulfate	300.0	106	mg/L	2
Elect. Conductivity	120.1	879	umho/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-04-040

eceived: 04/13/93

Results by Sample

AMPLE ID B088Z0 FRACTION 01M TEST CODE WCCLPL NAME Anions & Wet Chem. - WR043

Date & Time Collected 04/09/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	200	mg/L	2
Tot. Dissolved Solids	160.1	628	mg/L	5

FORM I

9713515.2254

000012

TMA Inc. REPORT Work Order # A3-04-040

Received: 04/13/93

Results by Sample

SAMPLE ID B08820 FRACTION 01J TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/09/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-04-040

Received: 04/13/93

Results by Sample

SAMPLE ID B088Z0 FRACTION 01M TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/09/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.0	<5	mg/L	5

FORM 1

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 04-040

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : April 13, 1993

1.0 DESCRIPTION OF CASE :

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

2.0 SAMPLE LIST :

WESTINGHOUSE ID	LAB ID	ANALYSIS REQUESTED	MATRIX	pH
B088Z0	A3-04-040-01A	V	WATER	7
B088Z0	A3-04-040-01B	SV & P	WATER	
B088Z0 MS	A3-04-040-01C	SV & P	WATER	
B088Z0 MSD	A3-04-040-01D	SV & P	WATER	
B088Z2	A3-04-040-02A	V	WATER	7
B088Z2 MS	A3-04-040-02B	V	WATER	7
B088Z2 MSD	A3-04-040-02C	V	WATER	7

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

All of the samples were received unbroken and properly documented.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were analyzed within the CLP SOW holding times.

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

TUNES :

All BFB tunes are injected directly into 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 B088Z0MS had surrogate recoveries for 2-Fluorophenol and the advisory surrogate 2-Chlorophenol-d4 below the QC limits. Sample B088Z0MS also had low matrix spike recoveries for 2-Chlorophenol, 1,4-Dichlorobenzene and 1,2,4-Trichlorobenzene. The low recoveries indicate that during the extraction process the compounds with a lower boiling point were lost. As a result, the relative percent differences for Phenol, 2-Chlorophenol, 1,4-Dichlorobenzene and 1,2,4-Trichlorobenzene were above the QC limits for the MS and MSD samples.

The spike recoveries of 4-Nitrophenol and Pentachlorophenol in samples B088Z0MS and B088Z0MSD were above the QC limits with a relative percent difference of 0 and 3, respectively. In accordance with protocol, no further action was required.

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

3.2.3 PESTICIDE/PCB ANALYSIS COMMENTS :

SEQUENCE NOTES :

The sequence was started on 04/17/93 and was analyzed according to the CLP SOW. The sequence was analyzed by single injection into a dual column system.

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

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

SAMPLE NOTES :

LOW LEVEL WATER :

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

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

We certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data in this hardcopy data package and in the computer-readable data submitted on diskette is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Nicole Roth 6/3/93
CLP Program Manager

Widayati 6/3/93
Wida Ang
Organics Manager

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Z0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04040 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304040-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419R14

Level: (low/med) LOW Date Received: 04/13/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B088Z0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04040 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304040-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419R14

Level: (low/med) LOW Date Received: 04/13/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Z2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04040 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304040-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30417R16

Level: (low/med) LOW Date Received: 04/13/93

% Moisture: not dec. ____ Date Analyzed: 04/17/93

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	10	U
67-64-1	Acetone	11	
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	2	J
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B088Z2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04040 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304040-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30417R16

Level: (low/med) LOW Date Received: 04/13/93

% Moisture: not dec. ____ Date Analyzed: 04/17/93

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

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Z0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04040 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304040-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30506I12

Level: (low/med) LOW Date Received: 04/13/93

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 04/14/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/06/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

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

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Z0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04040 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304040-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30506I12

Level: (low/med) LOW Date Received: 04/13/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/14/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/06/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

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

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

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B088Z0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04040 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304040-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30506I12

Level: (low/med) LOW Date Received: 04/13/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/14/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/06/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	5.72	3	BJ

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Z0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04040 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304040-01B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/13/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 04/14/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/18/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

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

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

9713515.2267

 Skinner&Sherman REPORT Work Order # S3-04-175

Received: 04/14/93 05/12/93 15:56:13

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

ATTEN: Dan Steurmer

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

ATTEN: Client Services
PHONE: (617) 890-7200

CERTIFIED BY: RWPrg

CONTACT: DP

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

WORK ID: N3-04-059
TAKEN: By Client
TRANS: Fed Ex
TYPE: Water
P.O. #: N3-04-059
INVOICE: under separate cover

SAMPLE IDENTIFICATION	TEST CODES and NAMES used on this workorder	
01 B088Z0	NO3NO2	Nitrate Plus Nitrite
01 B088Z0 DUPL		
01 B088Z0 SPIKE		
02 LCSW		

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

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

9713515.2268

 Skinner&Sherman REPORT Work Order # S3-04-175

Received: 04/14/93

Results by Sample

SAMPLE ID B088Z0 SAMPLE # 01 FRACTIONS: A

Date & Time Collected 04/09/93 Category WATER

NO3NO2 26.9
mg N/L

SAMPLE ID B088Z0 DUPL SAMPLE # 01 FRACTIONS: B

Date & Time Collected 04/09/93 Category WATER

NO3NO2 27.4
mg N/L

SAMPLE ID B088Z0 SPIKE SAMPLE # 01 FRACTIONS: C

Date & Time Collected 04/09/93 Category WATER

NO3NO2 29.2
mg N/L

SAMPLE ID LCSW SAMPLE # 02 FRACTIONS: A

Date & Time Collected not specified Category WATER

NO3NO2 2.02
mg N/L

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

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

9713515.2269

Received: 04/14/93 05/12/93 15:56:13

TMA/NORCAL Hanford

QUALITY CONTROL

MATRIX SPIKE

Sample ID	Sample Result	Spike Added	Spike Result	% Recovery
S304175-01	26.9 mg/L	2.00 mg/L	29.2 mg/L	115

DUPLICATE

Sample ID	Sample result	Duplicate Result	Relative % Difference
S304175-01	26.9 mg/L	27.4 mg/L	1.8

QUALITY CONTROL SAMPLES

Sample ID	True Value	Found Value	Percent Recovery
LCS	2.00 mg/L	2.02 mg/L	101.1
Prep blank	--	<0.25 mg/L	--

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

9713515.2270

Received: 04/14/93 Test Methodology

TEST CODE NO3NO2 NAME Nitrate Plus Nitrite

Methods for Chemical Analysis of Water and Wastes
EPA - 600/4-79-020 March 1979 Method 353.2 (modified)

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

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

9213515.2271

TMA/Skinner & Sherman Labs SAMPLE LOG-IN
WORKORDER S304105 CLIENT Hanford Nev, No. SAMPLES:
PROTCL CLP TURNARND 33 Day / (Soil) (Water) (Specify Other)
COOLER TEMP: 3 oC, or NA
CUSTODIAN B.Prowell SDG/BATCH NA
CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N304059
SHIPER & # Fed Ex PO/CONTRACT# 1
TAGS: PRESENT/ABSENT/NA/SEE COC CONTACT D Sanchez
CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # NA COMMENTS: none

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 4/14/93
LIST ANY DATE WITH PAPERWORK/SHIPMENT PROBLEMS & SPECIFY THE PROBLEM:

NA

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	B088Z0	water	4/14/93	1.19	D.S NO3NO2	
2						
3						
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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: ~~[illegible]~~ 4/16/93

REVIEWED

* EPA/CLP required Rev 1.5 PAGE: 49

9713515.2272

TMA
Thermo Analytical Inc.

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

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JUN 1993
RECEIVED
SDLA

May 12, 1993

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

Quality Control Narrative

Scope
One (1) water sample was submitted to TMA/Skinner & Sherman Laboratories, Inc. on April 14, 1993 from TMA/Norcal. The sample was analyzed for the USEPA CLP metals and cyanide. The analysis was performed under TMA/Skinner and Sherman work order S304174.

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

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

The thallium and selenium digestion spike recoveries exceeded the control limit requirements.

The selenium laboratory duplicate exceeded the control limit requirements.

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

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

ISW 8/21/96

9713515.2275

WESTINGHOUSE/HANFORD

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

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

Lab Code: SKINER Case No.: N3-04-059 SAS No.: SDG No.: B088Z0

SOW No.: ILM02.1

SAMPLE NUMBER:	Lab Sample ID.
B088Z0	04174-01S
B088Z0D	04174-01S2
B088Z0S	04174-01DS

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: Steven Provencal Name: Steven R. Provencal

Date: 5/12/93 Title: Lead Chemist

L001

9713515.2274

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B088Z0

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

Lab Code: SKINER Case No.: N3-04-059SAS No.: SDG No.: B088Z0

Matrix (soil/water): WATER Lab Sample ID: 04174-01S

Level (low/med): LOW Date Received: 04/14/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	35.8	B		P
7440-36-0	Antimony	18.6	U		P
7440-38-2	Arsenic	5.4	B	W	F
7440-39-3	Barium	51.5	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.4	U		P
7440-70-2	Calcium	68900			P
7440-47-3	Chromium	5.6	B		P
7440-48-4	Cobalt	2.9	U		P
7440-50-8	Copper	2.8	B		P
7439-89-6	Iron	70.5	B		P
7439-92-1	Lead	2.5	B	W	F
7439-95-4	Magnesium	21200			P
7439-96-5	Manganese	64.0			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.4	B		P
7440-09-7	Potassium	7860			P
7782-49-2	Selenium	9.0		+N*	F
7440-22-4	Silver	3.3	U		P
7440-23-5	Sodium	74100			P
7440-28-0	Thallium	2.6	U	WN	F
7440-62-2	Vanadium	7.1	B		P
7440-66-6	Zinc	10.9	B		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

002

FORM I - IN ILM02.1

9713515.2275

Sampled 4/9/93

TMA/Skinner & Sherman Labs SAMPLE LOG-IN

WORKORDER S304174 CLIENT Hanford Nuc No. SAMPLES:

PROTCL CLP TURNARND 3 3 Day 1

COOLER TEMP: 3 oC, or NA (Soil) (Water) (Specify Other)

CUSTODIAN B. Brown SDG/BATCH N/A

CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N304059

SHIPER & # FedEx PO/CONTRACT# ✓

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

CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS: none

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 4/14/93

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	B088Z0	water	4/14/93	1.84/R09	D.S TM/CN	
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27						

135

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 _____ Cindy Sp 4/16/93

* EPA/CLP required Rev 1.6 PAGE: 48

PAGE 1 TMA/NORTH 15.2276 CHAIN OF CUSTODY ORD # N3-04-059
RCVD: 04/13/93 DUE: 05/12/93 04/13/93 14:58:30 KEEP: 08/16/93 DISP: S

DASH	SAMPLE IDENTIFICATION		STORED	TESTS for FRACTIONS with work in DEPT: BU and CATEGORY				
01B-W	B08820	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
01F-W	B08820 MS	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
01G-W	B08820 DUP	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
01H-W	L O B		S&S	WH007	WH008	WH010	WH137	
02A-W	B08821	FILTERED	S&S	WH007	WH008	WH010		
02B-W	B08821 MS	FILTERED	S&S	WH007	WH008	WH010		
02C-W	B08821 DUP	FILTERED	S&S	WH007	WH008	WH010		
02D-W	L O B		S&S	WH007	WH008	WH010		

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Eya Nakamoto	4-13-93	SKINNER	4-13-93	[illegible]	4/14/93

TMA 9713515.2277
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

JUN 1993
RECEIVED
SDLA

May 13, 1993

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

Quality Control Narrative

Scope
One (1) water sample was submitted to TMA/Skinner & Sherman Laboratories, Inc. on April 14, 1993. The sample was analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S304176.

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

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

The selenium and thallium digestion spike recoveries exceeded the control limit requirements.

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

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

i 8/21/96

9713515.2278

WESTINGHOUSE/HANFORD

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

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

Lab Code: SKINER Case No.: N3-04-059 SAS No.: SDG No.: B088Z1

SOW No.: ILM02.1

SAMPLE NUMBER:	Lab Sample ID.
B088Z1	04176-01S
B088Z1D	04176-01S2
B088Z1S	04176-01DS

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: Steven R Provencal Name: Steven R. Provencal 001

Date: 5/13/93 Title: Lead Chemist

9713515.2279

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B088Z1

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

Lab Code: SKINER Case No.: N3-04-059SAS No.: SDG No.: B088Z1

Matrix (soil/water): WATER Lab Sample ID: 04176-01S

Level (low/med): LOW Date Received: 04/14/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	25.9	B		P
7440-36-0	Antimony	18.6	U		P
7440-38-2	Arsenic	5.2	B		F
7440-39-3	Barium	53.8	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.4	U		P
7440-70-2	Calcium	71800			P
7440-47-3	Chromium	3.3	U		P
7440-48-4	Cobalt	2.9	U		P
7440-50-8	Copper	2.7	U		P
7439-89-6	Iron	28.2	B		P
7439-92-1	Lead	3.7			F
7439-95-4	Magnesium	22000			P
7439-96-5	Manganese	63.8			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	4.9	B		P
7440-09-7	Potassium	8120			P
7782-49-2	Selenium	5.2		+N	F
7440-22-4	Silver	3.3	U		P
7440-23-5	Sodium	76700			P
7440-28-0	Thallium	1.2	U	WN	F
7440-62-2	Vanadium	7.1	B		P
7440-66-6	Zinc	4.8	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

002

FORM I - IN ILM02.1

9713515.2280

Sampled 4/9/93

TMA/Skinner & Sherman Labs SAMPLE LOG-IN

WORKORDER S304176 CLIENT Hanford Nor No. SAMPLES:

PROTCL CLP TURNARND 33 Day 1

COOLER TEMP: 3 oC, or NA (Soil) (Water) (Specify Other)

CUSTODIAN B Brandl SDG/BATCH N/A

CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N304059

SHIPER & # fed Ex PO/CONTRACT# -

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

CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS: none

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 4/14/93

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

N/A filtered

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	B08821	water	4/14/93	1.94	DS TM	
2						
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Samples are from site known to have Rad-Contamination: YES ✓ NO

Samples have detectable amounts of Radioactive Material: YES NO 115

SUBCONTRACT: YES/NO, TO: DATE: 3p

REVIEWED Compleat 4/16/93

* EPA/CLP required Rev 1.6 PAGE: 50

9715515.2281

TMA

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JUN 1993
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SDLA

WESTINGHOUSE HANFORD COMPANY

Results of Analyses For:

ORGANICS & GENERAL CHEMISTRY
Case No. 04-044
(TMA/ARLI Work Order # A3-04-044)

METALS & NITRATE/NITRITE
Case No. N3-04-069
(TMA/Skinner & Sherman W.O. # S3-04-177, S3-04-178, & S3-04-179)

June 4, 1993

TMA Master Work Order N3-04-069

1 ea 8/16/96

9713515.2202

 TMA/Norcal CHAIN OF CUSTODY ORD # N3-84-069 000002

RCVD: 04/14/93 DUE: 05/19/93 04/14/93 15:31:17 KEEP: 08/17/93 DISP: S

BASN	SAMPLE IDENTIFICATION		STORED	TESTS for FRACTIONS with work in DEPT: SV and CATEGORY						
01A-W	B08825	UNFILTERED	ARLI	WH018	WH019	WH020	WH043	WH114	WH121	WH122
				WH132	WH140					
02A-W	B08920	UNFILTERED	ARLI	WH018	WH019	WH020	WH043	WH114	WH121	WH122
				WH128	WH131	WH132	WH140			
02C-W	B08920 MS	UNFILTERED	ARLI	WH018	WH019	WH020	WH043	WH114	WH140	
02D-W	B08920 MSD	UNFILTERED	ARLI	WH018	WH019	WH020				
02E-W	B08920 DUP	UNFILTERED	ARLI	WH043	WH114	WH121	WH122	WH128	WH131	WH132
				WH140						
05A-W	B08827		ARLI	WH018						
06A-W	B08922		ARLI	WH018						

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Signature ff	4-14-93	ARLI	4-14-93	Sandy Robell	4/15/93

9713515.2203

000002A

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Telephone (509) 376-5045

Project Designation/Sampling Locations 100-FR-3

Collection Date 4/12/93

Ice Chest No. SML-194

Field Logbook No. EFL 1054

Bill of Lading/Airbill No. 2536953397

Offsite Property No. W93-0420-07

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Sample Identification

B0BBZ5

3, 40ml, Gs, WATER; CLP-VOA
3, 2L, aG, WATER; CLP-SEMI VOA & PCB's/PEST
1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
1, 500ml, P, WATER; ANIONS/NO2-NO3 (H2SO4)
* ~~1, 1L, G, WATER; ALKALINITY/TOTAL DISSOLVED SOLIDS~~ K.T 4/12/93
1, 500ml, G, WATER; SULFIDE (Zink Acetate = NaOH pH>9)
1, 500ml, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)
1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) UNFILTERED
1, 1L, P, WATER; Cn(NaOH)
1, 4L, P & 1, 2L, P, WATER; GROSS ALPHA/GROSS BETA/GAMMA SPEC./ ALPHA SPEC.(to include U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)
1, 1L, G/P,WATER; Tc-99 (HCl)
1, 250ml, Gs, WATER; TRITIUM/C-14

B0BBZ6

1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) FILTERED

B0BBZ7

3, 40ml, Gs, WATER; CLP-VOA

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

Relinquished By	Date	Time	Received By	Date	Time
GG Hamilton	4/12/93	1345	PC Cole PC Cole	PC 4/13/93 0715 4/13/93	0715
PC Cole PC Cole	4/13/93	0715	Alfonso Gonzalez	4/14/93	1100

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:
* Bottle broken in Transport. Refrig 1 on 4/12/93 at 1345
* Bubbles present in 40ml, Gs, water, CLP VOA 4/13/93 PC

A-6000-407 (12/92) WEF061

9713515.2284

0000CQB

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, L. Walker Date Sampled 4/12/93 Time 1010 hours

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

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 8875	3; 40ml; Gs*;	WATER	CLP-VOA
	3; 2L; aG;	WATER	CLP-SEMI VOA & PCB's/PEST
	1; 1L; P;	WATER	ANIONS (IC) SO4, F, PO4, Cl/COND/pH
	1; 500ml; P;	WATER	ANIONS/NO3-NO2 (H2SO4)
	~~1; 1L; G;~~	~~WATER~~	~~ALK./TOT. DISSOLVED SOLIDS~~ KT 4/12/93
	1; 500ml; G;	WATER	SULFIDE (add Zinc Acetate+NaOH pH>9)
	1; 500ml; G;	WATER	AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)
	1; 1L; P;	WATER	CLP-ICP/AA METALS & Hg (HNO3) UNFILTERED
	1; 1L; P;	WATER	CLP-CN (NaOH)
	1; 4L; P; & 1; 2L; P	WATER	GROSS ALPHA/BETA, GAMMA SPEC, ALPHA SPEC
			(U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)
	1; 1L; G/P;	WATER	Tc-99 (HCl)
	1; 250ml; Gs;	WATER	TRITIUM/C-14
BO 8876	1; 1L; P;	WATER	CLP-ICP/AA METAL & Hg (HNO3) FILTERED
BO 8877	3; 40ml; Gs	WATER	CLP-VOA
			OPC: # W93-0420-07
			BOL: # 2536953397
			TASK#: 93-051

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by Monica Gately. Title Sample control tech Date 4/14/93

Analysis Required _____

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

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

A-6000-406(05/90)

9713515.2285

000002C

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator KD LEE/GG HAMILTON

Company Contact PH BUTCHER

Project Designation/Sampling Locations 100-FR-3

Ice Chest No. SML-265

Bill of Lading/Airbill No. 2536953397

Method of Shipment EMERY

Shipped to TMA

Possible Sample Hazards/Remarks

Telephone (509) 376-5045

Collection Date 4/12/93

Field Logbook No. EFL-1055

Offsite Property No. W93-0420-07

Sample Identification

B0 8920

3, 40ml, Gs, WATER; CLP-VOA
3, 2L, aG, WATER; CLP-SEMI VOA & PCB's/PEST
1, 1L, P, WATER; ANIONS(IC) SO4,F,PO4,Cl/COND./pH
1, 500ml, P, WATER; ANIONS/NO2-NO3 (H2SO4)
1, 1L, G, WATER; ALKALINITY/TOTAL DISSOLVED SOLIDS
1, 500ml, G, WATER; SULFIDE (Zink Acetate = NaOH pH>9)
1, 500ml, G, WATER; AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)
1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) UNFILTERED
1, 1L, P, WATER; Cn(NaOH)
1, 4L, P & 1, 2L, P, WATER; GROSS ALPHA/GROSS BETA/GAMMA SPEC./ ALPHA SPEC.(to include U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)
1, 1L, G/P,WATER; Tc-99 (HCl)
1, 250ml, Gs, WATER; TRITIUM/C-14

B0 8921

1, 1L, P, WATER; ICP/AA METALS + Hg (HNO3) FILTERED

B0 8922

3, 40ml, Gs, WATER; CLP-VOA

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

Relinquished By	Date	Time	Received By	Date	Time
AJ Simpson AJ SIMPSON	4/12/93	0910	PC Cole PC Cole	4/13/93	0715
PC Cole PC Cole	4/13/93	0715	[illegible] [illegible]	4/14/93	1100

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: FRIG. #1 relinquish to frig by Kathy Tabree 4/12/93

A-6000-407 (12/92) WEF061

9713515.2286

000002D

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector K. Lee, L. Walker Date Sampled 4/12/93 Time 0815 hours

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

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
BO 8920	3; 40ml; Gs*;	WATER	CLP-VOA
	3; 2L; aG;	WATER	CLP-SEMI VOA & PCB's/PEST
	1; 1L; P;	WATER	ANIONS (IC) SO4, F, PO4, Cl/COND/pH
	1; 500ml; P;	WATER	ANIONS/NO3-NO2 (H2SO4)
	1; 1L; G;	WATER	ALK./TOT. DISSOLVED SOLIDS
	1; 500ml; G;	WATER	SULFIDE (add Zinc Acetate+NaOH pH>9)
	1; 500ml; G;	WATER	AMMONIA/CHEMICAL OXYGEN DEMAND (H2SO4 pH<2)
	1; 1L; P;	WATER	CLP-ICP/AA METALS & Hg (HNO3) UNFILTERED
	1; 1L; P;	WATER	CLP-CN (NaOH)
	1; 4L; P; & 1; 2L; P	WATER	GROSS ALPHA/BETA, GAMMA SPEC, ALPHA SPEC
			(U-235/238,Pu-239/240, Am-241), Sr-90 (HNO3)
	1; 1L; G/P;	WATER	Tc-99 (HCl)
	1; 250ml; Gs;	WATER	TRITIUM/C-14
BO 8921	1; 1L; P;	WATER	CLP-ICP/AA METAL & Hg (HNO3) FILTERED
BO 8922	3; 40ml; Gs	WATER	CLP-VOA
			OPC: # W93-0420-07
			BOL: # 253AS3347
			TASK#: 93-051

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by Alfonso Moreno Title SAMPLE CONTROL TECH Date 4/14/93

Analysis Required _____

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

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

A-6000-406(05/90)

SAMPLE LOG-IN SHEET

LAB NAME: TAA/MRI

PAGE: 1 OF 2

RECEIVED BY (PRINT NAME): Trudy Golub

LOG-IN-DATE: 4/15/93

RECEIVED BY (SIGNATURE): Trudy Golub

CASE NUMBER:

SAMPLE DELIVERY GROUP NO.:

SAS NUMBER:

REMARKS: SmL 194

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.: 2521033340

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: 4/15/93

12. Temp of ice chest 3 °C

13. Time Recieved: 1130

SAMPLE TRANSFER

Fraction:

Area #:

By:

On:

CODE SPECIFIC			
EPA SAMPLE #	SAMPLE TAG #	ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B-88027	A3-04-044-02	
	B-88025	A3-04-044-01	

* Contact SMO and attach record of resolution

Reviewed By: _____ Logbook No.: _____

Date: _____ Logbook Page No.: _____

FORM DC-1

9713515.2208

000004

SAMPLE LOG-IN SHEET

LAB NAME: TRA/NELL

PAGE: 2 OF 2

RECEIVED BY (PRINT NAME): Trudy Golub

LOG-IN DATE: 4/15/93

RECEIVED BY (SIGNATURE): [signature]

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

REMARKS: SMI 265

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.: 2523033340
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: 4/15/93
12. Temp of Ice chest 4 °C
13. Time Recieved: 1130

SAMPLE TRANSFER

Fraction:
Area #:
By:
On:

CPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	B089220	A3-04-044-03	
	B089222	A3-04-044-04	

* Contact SMO and attach record of resolution

Reviewed By: Logbook No.:

Date: Logbook Page No.:

FORM SC-1

000005

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE

AIRBILL PACKAGE TRACKING NUMBER 2521033340

212PM 2521033340

RECIPIENT'S COPY

Date 4-14-92

From (Your Name) Please Print: Sample Control

Your Phone Number (Very Important)

Company: TMA / Arli

Department/Floor No

Street Address: 2030 WRIGHT AVE

City: LOS ANGELES

State: CA

ZIP Required

To (Recipient's Name) Please Print: Carole Harris

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

Company: TMA / Arli

Department/Floor No

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

City: Monrovia

State: Ca

ZIP Required: 91016

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice): 2340-6405

IF HOLD FOR PICK-UP, Print FEDEX Address Here

Street Address

City

State

ZIP Required

PAYMENT 1 [ ] Bill Sender 2 [ ] Bill Recipient's FedEx Acct No 3 [ ] Bill 3rd Party FedEx Acct No 4 [ ] Bill Credit Card

[ ] Cash/Check

SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning)
- 11 [X] YOUR PACKAGING
- 16 [ ] FEDEX LETTER *
- 12 [ ] FEDEX PAK *
- 11 [ ] 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 (Delivery to authorized users only)
- 46 [ ] GOVT LETTER
- 41 [ ] GOVT PACKAGE

Freight Service
- [ ] OVERNIGHT FREIGHT **
- 80 [ ] TWO-DAY FREIGHT **

*Declared Value Limit $100
**Call for delivery schedule

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

PACKAGES | WEIGHT in Pounds Only | DECLARED VALUE

2 | 1½ | Total | Total | Total

DIM SHIPMENT (Chargeable Weight) [ ] _____ lbs

L x W x H = ____

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

Emp No | Date

[ ] Cash Received

[ ] Return Shipment

[ ] Third Party [ ] Chg To Dist [ ] Chg To Hold

Street Address

City | State | Zip

Received By: X

Date/Time Received | FedEx Employee Number

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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000006

TMA/ARLI
Thermo Analytical Inc.

RADIATION DOSE RATE SURVEY FORM

Date 4/15/93 COMPANY TMA/NOECAL (WHC) OTHER ORD # 25210333 40

Surveyor's Name

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

Serial Nos. 110289 / 02619 Serial Nos. 007776 / 02628

Calibration Date 12/02/93 Calibration Date 2/16/93

Instrument Calibration Factor 0.280 Instrument Calibration Factor 0.190

Sample	Location	HP-210 Grid	HP-210 Factor	HP-210 Dpm	AC-3-7 Grid	AC-3-7 Factor	AC-3-7 Dpm	Spillage or Breakage?	Activity pCi/gm or mR/hr
Background		55.0			9.97				
Consumer		7,520	0.2903		5,020	0.1845			
Sample SML 194		77.0			8.97			None	
SML 265		30.0			1.99			None	
Reported (WHC)	10 samples each < 50 pCi/gram								

Comments

All OK ✓ Approved MSM

Not OK Date 4/15/93

GENERAL CHEMISTRY RESULTS

CASE NO. 04-044

Water Sample #:

B088Z5 B08920

CASE NARRATIVE

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

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

Maureen Parrish

Maureen Parrish

9713515.2292

000010

TMA Inc. REPORT Work Order # A3-04-044

Received: 04/14/93

Results by Sample

SAMPLE ID B08825 FRACTION 01E TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	10.1	mg/L	0.2
Fluoride	300.0	0.4	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	150.1	7.8	pH	0.1
Sulfate	300.0	79	mg/L	1
Elect. Conductivity	120.1	821	umho/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-04-044

Received: 04/14/93

Results by Sample

SAMPLE ID B08825 FRACTION 01G TEST CODE VCCLPL NAME Anions & Wet Chem. - UN043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	<1	mg/L	1

FORM I

TMA Inc. REPORT Work Order # A3-04-044

Received: 04/14/93 Results by Sample

SAMPLE ID B08825 FRACTION 01I TEST CODE VCCLPL NAME Anions & Wet Chem. - VH043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.0	<5	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-04-044

Received: 04/14/93

Results by Sample

SAMPLE ID B08920 FRACTION 03E TEST CODE WCCLPL NAME Anions & Wet Chem. - WR043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	<0.2	mg/L	0.2
Fluoride	300.0	<0.1	mg/L	0.1
Phosphate	300.0	<0.4	mg/L	0.4
pH	150.1	6.1	pH	0.1
Sulfate	300.0	<1	mg/L	1
Elect. Conductivity	120.1	<6	umho/cm	6

FORM I

TMA Inc. REPORT Work Order # A3-04-044

Received: 04/14/93

Results by Sample

SAMPLE ID 808920 FRACTION 03G TEST CODE WCCLPL NAME Anions & Wet Chem. - WW043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	<2	mg/L	2
Tot. Dissolved Solids	160.1	<5	mg/L	5

FORM I

TMA Inc. REPORT Work Order # A3-04-044

Received: 04/14/93

Results by Sample

SAMPLE ID B08920 FRACTION 031 TEST CODE WCCLPL NAME Anions & Wet Chem. - WE043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	<1	mg/L	1

FORM I

9713515.2298

TMA Inc. REPORT Work Order # A3-04-044 000016

Received: 04/14/93

Results by Sample

SAMPLE ID B08920 FRACTION 03K TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05	mg/L	0.05
COD	410.0	<5	mg/L	5

FORM I

CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 04-044

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : April 14, 1993

1.0 DESCRIPTION OF CASE :

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

2.0 SAMPLE LIST :

WESTINGHOUSE ID	LAB ID	ANALYSIS REQUESTED	MATRIX	pH
B088Z5	A3-04-044-01A	V	WATER	7
B088Z5	A3-04-044-01B	SV & P	WATER	
B088Z5 MS	A3-04-044-01C	SV	WATER	
B088Z5 MSD	A3-04-044-01D	SV	WATER	
B088Z7	A3-04-044-02A	V	WATER	7
B088Z7 MS	A3-04-044-02B	V	WATER	7
B088Z7 MSD	A3-04-044-02C	V	WATER	7
B08920	A3-04-044-03A	V	WATER	7
B08920	A3-04-044-03B	SV & P	WATER	
B08920 MS	A3-04-044-03C	P	WATER	
B08920 MSD	A3-04-044-03D	P	WATER	
B08922	A3-04-044-04A	V	WATER	7

3.0 COMMENTS :

3.1 SHIPPING AND DOCUMENTATION :

All of the samples were received unbroken and properly documented.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were analyzed within the CLP SOW holding times.

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

TUNES :

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

3.2.2 SEMIVOLATILE ANALYSIS COMMENTS :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times. The matrix spike recoveries for 4-Nitrophenol, Pentachlorophenol and Pyrene in samples B088Z5MS and B088Z5MSD were above the QC limits. In accordance with protocol, no further action was required.

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

3.2.3 PESTICIDE/PCB ANALYSIS COMMENTS :

SEQUENCE NOTES :

The sequence was started on 04/29/93 and was analyzed according to the CLP SOW. The sequence was analyzed by single injection into a dual column system.

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

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

SAMPLE NOTES :

LOW LEVEL WATER :

The samples were extracted and analyzed within the CLP SOW holding times. Sample PBLK0416C1 had TCX and DCB surrogate recoveries slightly below the advisory limits. Sample B08920 had zero percent recoveries for TCX on both GC columns when the DCB surrogates were good. It appears that TCX was lost during the N-Evaporation process. For further confirmation, 1 mL of the original 10 mL extract for samples PBLK0416C1 and B08920 were re-florisiled and injected on a different sequence (5/06/93). The TCX surrogate recoveries for both of the re-florisiled samples were within the QC limits. However, the DCB surrogate recovery for the re-florisiled sample PBLK0416C1 remained below the advisory limit. There were no TCL analytes detected in any of the analyses of these samples. In accordance with protocol, no further action was required.

The chromatograms for the re-florisiled samples and the quantitation standards from the CLP90 sequence that was started on 5/06/93 have been included in the "Additional Raw Data" portion of this package.

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

We certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data in this hardcopy data package and in the computer-readable data submitted on diskette is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Nicole Roth

Nicole Roth 6/2/93
CLP Program Manager

Widayati

Wida Ang 6/3/93
Organics Manager

9713515.2302

000003

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Z5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B18

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

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

9713515.2303

000006

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B088Z5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B18

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2304

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

000007
EPA SAMPLE NO.

B088Z7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B19

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

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

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

9713515.2305

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

000003
EPA SAMPLE NO.

B088Z7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B19

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2306

000003

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08920

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B22

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

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

9713515.2307

000010

EPA SAMPLE NO.

B08920

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B22

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2308

000011

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08922

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B23

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

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

9713515.2309

000012

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B08922

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B23

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2310

000013

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Z5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30506I08

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 04/16/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/06/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

9713515.2311

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

000014
EPA SAMPLE NO.

B088Z5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30506I08

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 04/16/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/06/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

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

(1) - Cannot be separated from Diphenylamine

9713515.2312

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

000015
EPA SAMPLE NO.

B088Z5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30506I08

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 04/16/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/06/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	21.52	2	J
2.	UNKNOWN HYDROCARBON	23.28	78	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08920

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I22

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/16/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/05/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

9713515.2314

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

000017
EPA SAMPLE NO.

B08920

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I22

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 04/16/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/05/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	2	J
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

9713515.2315

000013
EPA SAMPLE NO.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B08920

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I22

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/16/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/05/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2316

000013

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Z5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-01B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/14/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 04/16/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/30/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

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

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000020

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08920

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-03B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/14/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 04/16/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/30/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

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

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

9713515.2318

 Skinner&Sherman REPORT Work Order # S3-04-178

Received: 04/15/93 05/12/93 15:57:03

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

ATTEN Dan Steurmer

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

ATTEN Client Services
PHONE (617) 890-7200

CERTIFIED BY

CONTACT DP

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

WORK ID N3-04-069
TAKEN By Client
TRANS Fed Ex
TYPE Water
P.O. # N3-04-069
INVOICE under separate cover

SAMPLE IDENTIFICATION

01 B08875
02 B08920
02 B08920 DUPL
02 B08920 SPIKE
03 LCSW

TEST CODES and NAMES used on this workorder

NO3NO2 Nitrate Plus Nitrite

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

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

300 Second Avenue P.O. Box 521 Waltham, Massachusetts 02254-0521 (617) 890-[illegible]
1-800-4LABTEST FAX (617) 890-3886

9713515.2319

 Skinner&Sherman REPORT Work Order # S3-04-178

Received: 04/15/93

Results by Sample

SAMPLE ID B08825 SAMPLE # 01 FRACTIONS: A
Date & Time Collected 04/12/93 Category WATER

NO3NO2 19.6

SAMPLE ID B08920 SAMPLE # 02 FRACTIONS: A
Date & Time Collected 04/12/93 Category WATER

NO3NO2 <0.25

SAMPLE ID B08920 DUPL SAMPLE # 02 FRACTIONS: B
Date & Time Collected 04/12/93 Category WATER

NO3NO2 <0.25

SAMPLE ID B08920 SPIKE SAMPLE # 02 FRACTIONS: C
Date & Time Collected 04/12/93 Category WATER

NO3NO2 2.07

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

NO3NO2 2.02

TMA Thermo Analytical Inc.

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

Skinner & Sherman Laboratories Inc. 200 Second Avenue P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200 1-800-4LAB TEST FAX (617) 890-3883

Received: 04/15/93 05/12/93 15:57:03

TMA/NORCAL Hanford

QUALITY CONTROL

MATRIX SPIKE

Sample ID	Sample Result	Spike Added	Spike Result	% Recovery
S304178-01	<0.25 mg/L	2.00 mg/L	2.07 mg/L	103.5

DUPLICATE

Sample ID	Sample result	Duplicate Result	Relative % Difference
S304178-01	<0.25 mg/L	<0.25 mg/L	not calculable

QUALITY CONTROL SAMPLES

Sample ID	True Value	Found Value	Percent Recovery
LCS	2.00 mg/L	2.02 mg/L	101.1
Prep blank	--	<0.25 mg/L	--

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

TMA Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc. 800 Second Avenue P.O. Box 521 Waltham, Massachusetts 02254-0521 (617) 890-7200
1-800-4 LAB TEST FAX (617) 890-3885

Received: 04/15/93

Test Methodology

TEST CODE NO3NO2 NAME Nitrate Plus Nitrite

Methods for Chemical Analysis of Water and Wastes
EPA - 600/4-79-020 March 1979 Method 353.2 (modified)

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

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

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

TMA/Skinner & Sherman Labs SAMPLE LOG-IN
WORKORDER 5304178 CLIENT Hanford Nar No. SAMPLES:
PROTCL CLP TURNARND 35 Day 2
COOLER TEMP: 3 oC, or NA (Soil) (Water) (Specify Other)
CUSTODIAN B. Prowell SDG/BATCH N/A
CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N304069
SHIPER & # FedEx PO/CONTRACT# 1
TAGS: PRESENT/ABSENT/NA/SEE COC CONTACT D. Sanchez
CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS: none

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 4/15/93
LIST ANY DATE WITH PAPERWORK/SHIPMENT PROBLEMS & SPECIFY THE PROBLEM:

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	B08825	water	4/15/93	1.88	NO3NO2	
2	B08920	1	1	1.89	D.S 1	
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 4/16/93 SP

* EPA/CLP required Rev 1.6 PAGE: 53

9713515.2323

PAGE 1 TMA/Norcal CHAIN OF CUSTODY ORD # N3-04-069

RCVD: 04/14/93 DUE: 05/19/93 04/14/93 15:30:46 KEEP: 08/17/93 DISP: S

DASH	SAMPLE IDENTIFICATION		STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY				
01B-W	B08825	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
02B-W	B08920	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
02F-W	B08920 MS	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
02G-W	B08920 DUP	UNFILTERED	S&S	WH007	WH008	WH010	WH011	WH137
02H-W	L C S		S&S	WH007	WH008	WH010	WH137	
03A-W	B08826	FILTERED	S&S	WH007	WH008	WH010		
04A-W	B08921	FILTERED	S&S	WH007	WH008	WH010		
04B-W	B08921 MS	FILTERED	S&S	WH007	WH008	WH010		
04C-W	B08921 DUP	FILTERED	S&S	WH007	WH008	WH010		
04D-W	L C S		S&S	WH007	WH008	WH010		

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
Eyamamoto	4-14-93	Skinner	4-14-93	[illegible]	4/15/93

TMA 9713515.2324
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

JUN 1993
RECEIVED
SDLA

May 13, 1993

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

Quality Control Narrative

Scope
Two (2) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on April 15, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals and cyanide as indicated on the chain of custody. The analysis was performed under TMA/Skinner and Sherman work order S304177.

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

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

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

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal

Steven R. Provencal
Lead Chemist

1 SWC 8/16/96

9713515.2325

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B088Z5

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

Lab Code: SKINER Case No.: N3-04-069SAS No.: SDG No.: B088Z5

Matrix (soil/water): WATER Lab Sample ID: 04177-01S

Level (low/med): LOW Date Received: 04/15/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	36.8	B		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	4.3	B	W	F
7440-39-3	Barium	45.0	B		P
7440-41-7	Beryllium	0.83	B		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	94300			P
7440-47-3	Chromium	5.8	U		P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	13.7	B		P
7439-92-1	Lead	2.8	B	W	F
7439-95-4	Magnesium	24600			P
7439-96-5	Manganese	1.8	U		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	7770			P
7782-49-2	Selenium	4.5	B	+	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	32000			P
7440-28-0	Thallium	2.6	U	W	F
7440-62-2	Vanadium	8.0	B		P
7440-66-6	Zinc	3.4	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

002

Comments:

FORM I - IN ILM02.1

9713515.2326

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B08920

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

Lab Code: SKINER Case No.: N3-04-069SAS No.: SDG No.: B08825

Matrix (soil/water): WATER Lab Sample ID: 04177-02S

Level (low/med): LOW Date Received: 04/15/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23.5	U		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	3.5	U		F
7440-39-3	Barium	2.5	U		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	42.3	U		P
7440-47-3	Chromium	5.8	U		P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	10.9	B		P
7439-92-1	Lead	2.6	B	W	F
7439-95-4	Magnesium	46.4	U		P
7439-96-5	Manganese	1.8	U		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	188	U		P
7782-49-2	Selenium	2.9	U		F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	193	B		P
7440-28-0	Thallium	2.6	U	W	F
7440-62-2	Vanadium	3.3	U		P
7440-66-6	Zinc	3.4	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

003

FORM I - IN ILM02.1

9713515.2327

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 2521033314

2126M 2521033314

RECIPIENT'S COPY

1 Date 4-11-95

From (Your Name) Please Print: SAMPLE CONTROL

Your Phone Number (Very important): (617) 235-2533

Company: T M A / NORCAL

Department/Floor No.:

Street Address: 2030 WRIGHT AVE

City: RICHMOND State: CA ZIP Required: 9 4 8 0 4

2 To (Recipient's Name) Please Print: ANTONIA

Recipient's Phone Number (Very important): (617) 890-7200

Company: SKINNER SHERMAN LAB.

Department/Floor No.:

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 300 SECOND AVE.

City: WALTHAM State: MA ZIP Required: 02254-9521

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

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

Street Address

City State ZIP Required

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

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning†)
- 11 [X] 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 1 | WEIGHT in Pounds only | YOUR DECLARED VALUE

Total 1 | Total 33 | Total

DIM SHIPMENT (Chargeable Weight) [ ] _____ lbs.

L x W x H = _____

Received At: 1 [ ] 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

Date/Time Received 4/15/93 10:00 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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141

9713515.2328

Sampled 4/12/93

TMA/Skinner & Sherman Labs SAMPLE LOG-IN

WORKORDER 5304177 CLIENT Hanford Nor No. SAMPLES:

PROTCL CLP TURNARND 33 Day 2

COOLER TEMP: 3 oC, or NA (Soil) (Water) (Specify Other)

CUSTODIAN B Powell SDG/BATCH NA

CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N304069

SHIPER & # Fed Ex PO/CONTRACT# ↓

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

CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS: none.

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 4/15/93

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

UNFILTERED

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	B08825	Water	4/15/93	1.90/13.10	TM/CN	
2	B08920	↓	↓	1.87/12.52	D.S ↓	
3						
4						
5						
6						
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9						
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11						
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13						
14						
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16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						142
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: BP

REVIEWED Comp 4/16/93

* EPA/CLP required Rev 1.6 PAGE: 51

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

9713515.2329

JUN 1993
RECEIVED
SDLA

May 13, 1993

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

Quality Control Narrative

Scope
Two (2) water samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on April 15, 1993 from TMA/Norcal. The samples were analyzed for the USEPA CLP metals. The analysis was performed under TMA/Skinner and Sherman work order S304179.

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

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

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

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

Steven Provencal
Steven R. Provencal
Lead Chemist

1 300 8/16/96

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B08826

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

Lab Code: SKINER Case No.: N3-04-069SAS No.: SDG No.: B08826

Matrix (soil/water): WATER Lab Sample ID: 04179-01S

Level (low/med): LOW Date Received: 04/15/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23.5	U		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	3.5	U		F
7440-39-3	Barium	44.9	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	94900			P
7440-47-3	Chromium	7.0	B		P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	4.8	U		P
7439-92-1	Lead	3.9		W	F
7439-95-4	Magnesium	24800			P
7439-96-5	Manganese	1.8	U		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	7920			P
7782-49-2	Selenium	3.6	B	+	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	32600			P
7440-28-0	Thallium	1.2	U	W	F
7440-62-2	Vanadium	6.4	B		P
7440-66-6	Zinc	3.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

Comments:

002

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B08921

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

Lab Code: SKINER Case No.: N3-04-069SAS No.: SDG No.: B08826

Matrix (soil/water): WATER Lab Sample ID: 04179-02S

Level (low/med): LOW Date Received: 04/15/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	29.5	B		P
7440-36-0	Antimony	19.1	B		P
7440-38-2	Arsenic	3.5	U		F
7440-39-3	Barium	2.5	U		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	42.3	U		P
7440-47-3	Chromium	5.8	U		P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	4.8	U		P
7439-92-1	Lead	3.4			F
7439-95-4	Magnesium	46.4	U		P
7439-96-5	Manganese	1.8	U		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	188	U		P
7782-49-2	Selenium	2.9	U		F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	139	B		P
7440-28-0	Thallium	1.2	U		F
7440-62-2	Vanadium	3.3	U		P
7440-66-6	Zinc	3.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

003

9713515.2312

Sampled 4/14/93

TMA/Skinner & Sherman Labs SAMPLE LOG-IN

WORKORDER 5304119 CLIENT Hanford Nav No. SAMPLES:

PROTCL CLP TURNAROUND 33 Days 2

COOLER TEMP: 3 oC, or NA (Soil) (Water) (Specify Other)

CUSTODIAN B Prasix SDG/BATCH NA

CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N304069

SHIPER & # Fed Ex PO/CONTRACT# ↓

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

CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # NA COMMENTS: none

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 4/15/93

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

filtered

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	B08826	water	4/15/93	1.87	TM	
2	B08921	↓	↓	1.82	D.S ↓	
3						
4						
5						
6						
7						
8						
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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:

122

Complete 4/16/93 BP

REVIEWED

* EPA/CLP required Rev 1.6 PAGE: 52

9713515.2393

VALIDATION SUMMARY

9713515.2334

000042

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08925

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04054 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304054-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30421B09

Level: (low/med) LOW Date Received: 04/15/93

% Moisture: not dec. ____ Date Analyzed: 04/21/93

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

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

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

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

NV 7-23-93 SL

BD

9713515.2335

1E

000043
EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B08925

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04054 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304054-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30421B09

Level: (low/med) LOW Date Received: 04/15/93

% Moisture: not dec. ____ Date Analyzed: 04/21/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

NV
7-23-93

9713515.2336

000049

EPA SAMPLE NO.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

B08927

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04054 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304054-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30421B11

Level: (low/med) LOW Date Received: 04/15/93

% Moisture: not dec. ____ Date Analyzed: 04/21/93

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

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

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

NV 7-23-93

9713515.2337

000050

EPA SAMPLE NO.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B08927

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04054 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304054-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30421B11

Level: (low/med) LOW Date Received: 04/15/93

% Moisture: not dec. ____ Date Analyzed: 04/21/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

NV 7-23-93

9713515.2338

1B

000117

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B08925

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04054 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304054-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30506I16

Level: (low/med) LOW Date Received: 04/15/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/17/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/06/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

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

NV 7-23-93 S'

9713515.2339

1C

000118

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B08925

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04054 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304054-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30506I16

Level: (low/med) LOW Date Received: 04/15/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/17/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/06/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	2	J
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

NV 7-23-93

9713515.2340

1F

000119

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B08925

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04054 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304054-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30506I16

Level: (low/med) LOW Date Received: 04/15/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/17/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/06/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	5.72	2	BJ
2.	UNKNOWN HYDROCARBON	12.28	3	J
3.	UNKNOWN HYDROCARBON	24.72	7	J

NV 1-25-93

9713515.2341

000233

EPA SAMPLE NO.

B08925

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04054 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304054-01B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/15/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 04/17/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/30/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

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

NW 1-23-93 SC

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B08925

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

Lab Code: SKINER Case No.: N3-04-080SAS No.: SDG No.: B08925

Matrix (soil/water): WATER Lab Sample ID: 04197-01S

Level (low/med): LOW Date Received: 04/16/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19.2	U		P
7440-36-0	Antimony	18.6	U		P
7440-38-2	Arsenic	3.5	U		F
7440-39-3	Barium	2.6	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.4	U		P
7440-70-2	Calcium	334	B		P
7440-47-3	Chromium	3.3	U		P
7440-48-4	Cobalt	2.9	U		P
7440-50-8	Copper	4.6	B		P
7439-89-6	Iron	67.2	B		P
7439-92-1	Lead	1.9	B		F
7439-95-4	Magnesium	133	B		P
7439-96-5	Manganese	3.2	B		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	4.2	U		P
7440-09-7	Potassium	176	B		P
7782-49-2	Selenium	2.9	U	W	F
7440-22-4	Silver	3.3	U		P
7440-23-5	Sodium	383	B		P
7440-28-0	Thallium	2.7	U		F
7440-62-2	Vanadium	2.1	U		P
7440-66-6	Zinc	66.5			P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

NV 7-23-93

002

9713515.2343

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B08926

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

ab Code: SKINER Case No.: N3-04-080SAS No.: SDG No.: B08926

atrix (soil/water): WATER Lab Sample ID: 04183-01S

evel (low/med): LOW Date Received: 04/16/93

Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19.2	U		P
7440-36-0	Antimony	18.6	U		P
7440-38-2	Arsenic	2.3	U		F
7440-39-3	Barium	1.1	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.4	U		P
7440-70-2	Calcium	93.7	U		P
7440-47-3	Chromium	3.3	U		P
7440-48-4	Cobalt	2.9	U		P
7440-50-8	Copper	2.7	U		P
7439-89-6	Iron	8.4	U		P
7439-92-1	Lead	4.0		M	F
7439-95-4	Magnesium	28.5	B		P
7439-96-5	Manganese	1.0	U		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	4.2	U		P
7440-09-7	Potassium	93.6	U		P
7782-49-2	Selenium	3.3	U		F
7440-22-4	Silver	3.3	U		P
7440-23-5	Sodium	90.8	B		P
7440-28-0	Thallium	1.2	U		F
7440-62-2	Vanadium	2.1	U		P
7440-66-6	Zinc	4.8	U		P
	Cyanide				NR

olor Before: COLORLESS Clarity Before: CLEAR Texture:

olor After: COLORLESS Clarity After: CLEAR Artifacts:

omments:

NV 4-23-93

002

FORM I - IN ILM02.1

9713515.2344

000009

TMA Inc. REPORT Work Order # A3-04-054

Received: 04/15/93

Results by Sample

SAMPLE ID B08925 FRACTION 01E TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	<0.2 U	mg/L	0.2
Fluoride	300.0	<0.1 U	mg/L	0.1
Phosphate	300.0	<0.4 U	mg/L	0.4
pH	150.1	5.5	pH	0.1
Sulfate	300.0	<1 U	mg/L	1
Elect. Conductivity	120.1	<6 U	umho/cm	6

FORM I

NW 4-23-93

9713515.2345

000010

TMA Inc. REPORT Work Order # A3-04-054

Received: 04/15/93

Results by Sample

SAMPLE ID B08925 FRACTION 01N TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	3	mg/L	2
Tot. Dissolved Solids	160.1	~~<5~~ U	mg/L	5

FORM I

9713515.2346

000011

TMA Inc. REPORT Work Order # A3-04-054

Received: 04/15/93

Results by Sample

SAMPLE ID 808925 FRACTION 01J TEST CODE WCCLPL NAME Anions & Wet Chem. - WK043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	~~<1~~ U	mg/L	1

FORM I

NW 4-23-93

TMA Inc. REPORT Work Order # A3-04-054

Received: 04/15/93

Results by Sample

SAMPLE ID B08925 FRACTION 01M TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05 U	mg/L	0.05
COD	410.0	<5 U	mg/L	5

FORM I

NV 4-23-93

Page 2 Skinner&Sherman REPORT Work Order # S3-04-196

Received: 04/16/93 Results by Sample

SAMPLE ID B08925 SAMPLE # 01 FRACTIONS: A

Date & Time Collected 04/12/93 Category WATER

NO3NO2 ~~<~~0.25 U
mgN/L

SAMPLE ID B08925 DUPL SAMPLE # 01 FRACTIONS: B

Date & Time Collected 04/12/93 Category WATER

NO3NO2 <0.25
mgN/L

SAMPLE ID B08925 SPIKE SAMPLE # 01 FRACTIONS: C

Date & Time Collected 04/12/93 Category WATER

NO3NO2 2.20
mgN/L

SAMPLE ID LCSW SAMPLE # 02 FRACTIONS: A

Date & Time Collected not specified Category WATER

NO3NO2 2.02
mgN/L

NW 7-23-93

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

9713515.2349

000077

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088R0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B06

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

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

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

NW 4-23-93

PBD

9713515.2350

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

000078
EPA SAMPLE NO.

B088R0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B06

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2351

000088

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088R2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B07

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

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

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	7	J
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	4	BJ
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	2	J
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

NW 7-23-93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B088R2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B07

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2353

000103

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088S5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B09

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	10	
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	6	BJ
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	2	J
591-78-6	2-Hexanone	3	J
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

NW 7-23-93

9713515.2354

1E

000104

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B088S5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B09

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2355

000118

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088S7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B18

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	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

NV 7-23-93

9713515.2356

000119

EPA SAMPLE NO.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B088S7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B18

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2357

000127

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088W5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B13

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

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

NV 7-23-93

9713515.2358

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

000128
EPA SAMPLE NO.

B088W5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B13

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2360

000138

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088W7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-06A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B19

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

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

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

NV 2395C

9713515.2361

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

000139
EPA SAMPLE NO.

B088W7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-06A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B19

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2362

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

000145
EPA SAMPLE NO.

B08915

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-07A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B15

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

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

NV 7-23-93

9713515.2363

IE

000146

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B08915

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-07A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B15

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2364

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

000152
EPA SAMPLE NO.

B08917

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-08A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B16

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	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

NV 7-23-93

9713515.2365

IE

EPA SAMPLE NO.

B08917

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-08A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30413B16

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: not dec. ____ Date Analyzed: 04/13/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2366

000231

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088R0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30423S10

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/23/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	1	J
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

NN 7-23-93

9713515.2367

000232

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088R0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30423S10

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/23/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

(1) - Cannot be separated from Diphenylamine

NV 7-23-93

9713515.2368

000233

1F

EPA SAMPLE NO.

B088R0

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30423S10

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/23/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 7

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	8.25	15	J
2.	UNKNOWN HYDROCARBON	8.77	16	J
3. 872-50-4	1-METHYL-2-PYRROLIDINONE	9.08	190	JN
4.	UNKNOWN HYDROCARBON	17.42	4	J
5.	UNKNOWN HYDROCARBON	18.57	2	J
6.	UNKNOWN HYDROCARBON	21.32	7	J
7.	UNKNOWN HYDROCARBON	22.17	2	J

9713515.2369

000254

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088S5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30423S13

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/23/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

NW 7-23-93

9713515.2370

1c

000255

EPA SAMPLE NO.

B088S5

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30423S13

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/23/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

(1) - Cannot be separated from Diphenylamine

NV 7-23-93

9713515.2371

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

000256
EPA SAMPLE NO.

B088S5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30423S13

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/23/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN PHOSPHORIC ACID ESTE	10.28	4	J
2.	UNKNOWN HYDROCARBON	22.40	6	J
3.	HEXADECANOIC ACID ESTER ISOM	23.22	2	J
4.	UNKNOWN HYDROCARBON	26.10	2	J

9713515.2372

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

000272
EPA SAMPLE NO.

B088W5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-05B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30423S14

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/24/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

NV 7-23-93

9713515.2373

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

000273
EPA SAMPLE NO.

B088W5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-05B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30423S14

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/24/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

(1) - Cannot be separated from Diphenylamine

NV 7-23-93

9713515.2374

1F

000274

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B088W5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-05B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30423S14

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/24/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	5.70	14	J
2.	UNKNOWN HYDROCARBON	21.27	3	J
3.	OCTADECANOIC ACID ESTER ISOM	24.85	2	J
4.	UNKNOWN ALKANE	24.95	2	J

9713515.2375

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

000291
EPA SAMPLE NO.

B088W5RE

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-05B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I13

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/04/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

NV 7-23-93

9713515.2376

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

000292
EPA SAMPLE NO.

B088W5RE

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-05B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I13

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/04/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

(1) - Cannot be separated from Diphenylamine

NV 7-23-93

9713515.2377

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

000293
EPA SAMPLE NO.

B088W5RE

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-05B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I13

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/04/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 8

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	HEXADECANOIC ACID ESTER ISOM	23.30	5	J
2.	UNKNOWN ALKANE	24.23	2	J
3.	OCTADECANOIC ACID ESTER ISOM	24.88	5	J
4.	UNKNOWN ALKANE	25.00	4	J
5.	UNKNOWN ALKANE	25.73	3	J
6.	UNKNOWN ALKANE	26.43	3	J
7.	UNKNOWN ALKANE	27.12	2	J
8.	UNKNOWN ALKANE	27.87	2	J

9713515.2378

000313

EPA SAMPLE NO.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B08915

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-07B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30426S16

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/26/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

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

NV 7-23-

9713515.2379

000314
EPA SAMPLE NO.

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B08915

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-07B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30426S16

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/26/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

(1) - Cannot be separated from Diphenylamine

NW 7-23-93

9713515.2380

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

000315
EPA SAMPLE NO.

B08915

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-07B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30426S16

Level: (low/med) LOW Date Received: 04/09/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/12/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/26/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 13

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	21.22	4	J
2.	HEXADECANOIC ACID ESTER ISOM	23.17	5	J
3.	UNKNOWN ALKANE	23.28	3	J
4.	UNKNOWN HYDROCARBON	23.35	3	J
5.	UNKNOWN ALKANE	24.08	5	J
6.	OCTADECANOIC ACID ESTER ISOM	24.75	5	J
7.	UNKNOWN ALKANE	24.85	8	J
8.	UNKNOWN ALKANE	25.58	7	J
9.	UNKNOWN ALKANE	26.27	7	J
10.	UNKNOWN ALKANE	26.95	6	J
11.	UNKNOWN ALKANE	27.67	6	J
12.	UNKNOWN ALKANE	28.45	5	J
13.	UNKNOWN ALKANE	29.32	3	J

9713515.2381

000555
EPA SAMPLE NO.

B088R0

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-01B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/09/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 04/12/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/18/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

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

NV 1-23-93

9713515.2302

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

000560

EPA SAMPLE NO.

B088S5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-03B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/09/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 04/12/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

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

NV 7-23-93 SL

9713515.2383

000565

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

B088W5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-05B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/09/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 04/12/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

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

NV 7-23-93

9713515.2304

000572

EPA SAMPLE NO.

B08915

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04030 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304030-07B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/09/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 04/12/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

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

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

NV 7-23-93

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B088R0

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

Lab Code: SKINER Case No.: N3-04-043SAS No.: SDG No.: B088R0

Matrix (soil/water): WATER Lab Sample ID: 04138-01S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	41.3	B		P
7440-36-0	Antimony	18.6	U		P
7440-38-2	Arsenic	2.3	U		F
7440-39-3	Barium	15.9	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.4	U		P
7440-70-2	Calcium	46300			P
7440-47-3	Chromium	30.6			P
7440-48-4	Cobalt	2.9	U		P
7440-50-8	Copper	2.7	U		P
7439-89-6	Iron	11200			P
7439-92-1	Lead	3.2			F
7439-95-4	Magnesium	11400			P
7439-96-5	Manganese	96.0			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	36.3	B		P
7440-09-7	Potassium	4700	B		P
7782-49-2	Selenium	3.3	U	+*	F
7440-22-4	Silver	3.3	U		P
7440-23-5	Sodium	6810			P
7440-28-0	Thallium	2.7	U	W	F
7440-62-2	Vanadium	2.1	U		P
7440-66-6	Zinc	4.8	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

Comments:

NL 7-23-93

002

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B088S5

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

Lab Code: SKINER Case No.: N3-04-043SAS No.: SDG No.: B088R0

Matrix (soil/water): WATER Lab Sample ID: 04138-02S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	57.7	B		P
7440-36-0	Antimony	18.6	U		P
7440-38-2	Arsenic	2.3	U		F
7440-39-3	Barium	19.1	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.4	U		P
7440-70-2	Calcium	22300			P
7440-47-3	Chromium	6.3	B		P
7440-48-4	Cobalt	2.9	U		P
7440-50-8	Copper	14.7	B		P
7439-89-6	Iron	14400			P
7439-92-1	Lead	3.4			F
7439-95-4	Magnesium	6480			P
7439-96-5	Manganese	42.6			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	4.2	U		P
7440-09-7	Potassium	4630	B		P
7782-49-2	Selenium	3.3	U	*	F
7440-22-4	Silver	3.3	U		P
7440-23-5	Sodium	23700			P
7440-28-0	Thallium	2.7	U	W	F
7440-62-2	Vanadium	2.1	U		P
7440-66-6	Zinc	33.4			P
	Cyanide	10.0	U		CA

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

NV 7-23-93

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B088W5

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

Lab Code: SKINER Case No.: N3-04-043SAS No.: SDG No.: B088R0

Matrix (soil/water): WATER Lab Sample ID: 04138-03S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	24.4	B		P
7440-36-0	Antimony	18.6	U		P
7440-38-2	Arsenic	3.6	B	W	F
7440-39-3	Barium	58.4	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.4	U		P
7440-70-2	Calcium	104000			P
7440-47-3	Chromium	20.4			P
7440-48-4	Cobalt	2.9	U		P
7440-50-8	Copper	2.7	U		P
7439-89-6	Iron	48.7	B		P
7439-92-1	Lead	2.2	B		F
7439-95-4	Magnesium	23600			P
7439-96-5	Manganese	23.9			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	5.4	B		P
7440-09-7	Potassium	6150			P
7782-49-2	Selenium	5.2		S*	F
7440-22-4	Silver	3.3	U		P
7440-23-5	Sodium	34500			P
7440-28-0	Thallium	2.7	U		F
7440-62-2	Vanadium	3.7	B		P
7440-66-6	Zinc	4.8	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

NV 7-23-93

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B08915

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

Lab Code: SKINER Case No.: N3-04-043SAS No.: SDG No.: B088R0

Matrix (soil/water): WATER Lab Sample ID: 04138-04S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19.2	U		P
7440-36-0	Antimony	18.6	U		P
7440-38-2	Arsenic	2.6	B	W	F
7440-39-3	Barium	58.4	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.4	U		P
7440-70-2	Calcium	105000			P
7440-47-3	Chromium	20.7			P
7440-48-4	Cobalt	2.9	U		P
7440-50-8	Copper	2.7	U		P
7439-89-6	Iron	112			P
7439-92-1	Lead	2.3	B		F
7439-95-4	Magnesium	23800			P
7439-96-5	Manganese	28.0			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	4.2	U		P
7440-09-7	Potassium	6100			P
7782-49-2	Selenium	3.3	U	W*	F
7440-22-4	Silver	3.3	U		P
7440-23-5	Sodium	34000			P
7440-28-0	Thallium	2.7	U	W	F
7440-62-2	Vanadium	4.0	B		P
7440-66-6	Zinc	4.8	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

NV 7-23-93

Comments:

9713515.2369

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER:

B088R1

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

ab Code: SKINER Case No.: N3-04-043SAS No.: SDG No.: B088R1

atrix (soil/water): WATER Lab Sample ID: 04140-01S

evel (low/med): LOW Date Received: 04/13/93

Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23.5	U		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	3.5	U		F
7440-39-3	Barium	12.0	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	45600			P
7440-47-3	Chromium	5.8	U		P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	66.5	B		P
7439-92-1	Lead	1.2	U	N	F
7439-95-4	Magnesium	11500			P
7439-96-5	Manganese	28.0			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	4850	B		P
7782-49-2	Selenium	5.3		SN*	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	6980			P
7440-28-0	Thallium	2.6	U	WN	F
7440-62-2	Vanadium	3.3	U		P
7440-66-6	Zinc	3.6	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

NV 7-23-93

Comments:

002

FORM I - IN ILM02.1

9713515.2390

WESTINGHOUSE/HANFORD

SAMPLE NUMBER:

B088S6

INORGANIC ANALYSIS DATA SHEET

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

ab Code: SKINER Case No.: N3-04-043SAS No.: SDG No.: B088R1

atrix (soil/water): WATER Lab Sample ID: 04140-02S

evel (low/med): LOW Date Received: 04/13/93

Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23.5	U		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	3.5	U		F
7440-39-3	Barium	8.0	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	23200			P
7440-47-3	Chromium	5.8	U		P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	10.5	B		P
7439-92-1	Lead	1.6	B	N	F
7439-95-4	Magnesium	6590			P
7439-96-5	Manganese	8.3	B		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	4690	B		P
7782-49-2	Selenium	2.9	U	N*	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	23400			P
7440-28-0	Thallium	2.6	U	WN	F
7440-62-2	Vanadium	3.3	U		P
7440-66-6	Zinc	3.4	U		P
	Cyanide				NR

NV 7-23-95

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

003

9713515.2391

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B088W6

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

Lab Code: SKINER Case No.: N3-04-043SAS No.: SDG No.: B088R1

Matrix (soil/water): WATER Lab Sample ID: 04140-03S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23.5	U		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	3.5	U		F
7440-39-3	Barium	64.1	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	103000			P
7440-47-3	Chromium	20.7			P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	23.0	B		P
7439-92-1	Lead	1.2	B	WN	F
7439-95-4	Magnesium	23600			P
7439-96-5	Manganese	24.8			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	6160			P
7782-49-2	Selenium	2.9	U	SN*	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	33400			P
7440-28-0	Thallium	2.6	U	WN	F
7440-62-2	Vanadium	5.5	B		P
7440-66-6	Zinc	3.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

NW 7-23-93

Comments:

004

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

808916

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

Lab Code: SKINER Case No.: N3-04-043SAS No.: SDG No.: B088R1

Matrix (soil/water): WATER Lab Sample ID: 04140-04S

Level (low/med): LOW Date Received: 04/13/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	28.8	B		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	3.5	U		F
7440-39-3	Barium	64.1	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	104000			P
7440-47-3	Chromium	17.9			P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	14.5	B		P
7439-92-1	Lead	5.7		WN	F
7439-95-4	Magnesium	23800			P
7439-96-5	Manganese	25.0			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	6240			P
7782-49-2	Selenium	4.4	B	SN*	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	33800			P
7440-28-0	Thallium	2.6	U	WN	F
7440-62-2	Vanadium	5.0	B		P
7440-66-6	Zinc	3.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

NV 7-23

Comments:

005

9713515.2393

000013

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B0B8R0 FRACTION 01E TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	5.0	mg/L	0.2
Fluoride	300.0	~~<~~0.1 U	mg/L	0.1
Phosphate	300.0	~~<~~0.4 U	mg/L	0.4
pH	150.1	8.0	pH	0.1
Sulfate	300.0	69	mg/L	1
Elect. Conductivity	120.1	348	umho/cm	6

FORM I

NV 7-23-93

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93 Results by Sample

SAMPLE ID B088R0 FRACTION 016 TEST CODE WCCLPL NAME Anions & Wet Chem. - WR043
Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	98	mg/L	2
Tot. Dissolved Solids	160.1	254	mg/L	5

FORM I

NV 7-22-96

9713515.2395

TMA Inc. REPORT Work Order # A3-04-030 000015

Received: 04/09/93

Results by Sample

SAMPLE ID B088R0 FRACTION 01I TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	<1 U	mg/L	1

FORM I

NV 7-23-93

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B08820 FRACTION 01K TEST CODE WCCLPL NAME Anions & Wet Chem. - WW043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05 U	mg/L	0.05
COD	410.0	<5 U	mg/L	5

FORM I

NW 7-23-93

9713515.2397

000017

TNA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B088S5 FRACTION 03E TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	10.0	mg/L	0.2
Fluoride	300.0	0.4	mg/L	0.1
Phosphate	300.0	<0.4 U	mg/L	0.4
pH	150.1	8.3	pH	0.1
Sulfate	300.0	20	mg/L	1
Elect. Conductivity	120.1	257	umho/cm	6

FORM I

NV 7-23-93

9713515.2398

000018

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B088S5 FRACTION 03G TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	93	mg/L	2
Tot. Dissolved Solids	160.1	183	mg/L	5

FORM I

NW T23 R25E

9713515.2399

000019

TMA Inc. REPORT Work Order # A3-04-038

Received: 04/09/93

Results by Sample

SAMPLE ID B08855 FRACTION 03W TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	<1 U	mg/L	1

FORM I

NV 7-23-93

9713515.2400

000020

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B088S5 FRACTION 03J TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	0.13	mg/L	0.05
COD	410.0	~~<5~~ U	mg/L	5

FORM I

NV 7-23-93

9713515.2401

000021

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B088W5 FRACTION 05C TEST CODE WCCLPL NAME Anions & Wet Chem. - WK043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	34.5	mg/L	0.4
Fluoride	300.0	0.4	mg/L	0.1
Phosphate	300.0	~~<~~0.4 U	mg/L	0.4
pH	150.1	7.7	pH	0.1
Sulfate	300.0	102	mg/L	2
Elect. Conductivity	120.1	827	umho/cm	6

FORM I

NV 1-23-93

TMA Inc. REPORT Work Order # A3-04-038

Received: 04/09/93 Results by Sample

SAMPLE ID B088W5 FRACTION 05D TEST CODE WCCLPL NAME Anions & Wet Chem. - WM043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	212	mg/L	2
Tot. Dissolved Solids	160.1	554	mg/L	5

FORM I

NV
7-23-93

9713515.2403

TMA Inc. REPORT Work Order # A3-04-030 000023

Received: 04/09/93

Results by Sample

SAMPLE ID B088V5 FRACTION 05E TEST CODE VCCLPL NAME Anions & Wet Chem. - VK043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	~~1~~ U	mg/L	1

FORM I

9713515.2404

000024

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B088W5 FRACTION 05F TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05 U	mg/L	0.05
COD	410.0	<5 U	mg/L	5

FORM I

NV 7-23-93

9713515.2405

000025

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B08915 FRACTION 07C TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	35.4	mg/L	0.4
Fluoride	300.0	0.3	mg/L	0.1
Phosphate	300.0	~~<~~0.4 U	mg/L	0.4
pH	150.1	7.7	pH	0.1
Sulfate	300.0	102	mg/L	2
Elect. Conductivity	120.1	830	umho/cm	6

FORM I

NV 7-23-93

9713515.2406

000026

TNA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B08915 FRACTION 07D TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	212	mg/L	2
Tot. Dissolved Solids	160.1	572	mg/L	5

FORM I

NV 7-23-93

9713515.2407

000027

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID B08915 FRACTION 07E TEST CODE WCCLPL NAME Anions & Wet Chem. - UN043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	~~<1~~ U	mg/L	1

FORM I

NV 7-23-93

9713515.2408

000028

TMA Inc. REPORT Work Order # A3-04-030

Received: 04/09/93

Results by Sample

SAMPLE ID 808915 FRACTION 07F TEST CODE WCCLPL NAME Anions & Wet Chem. - WW043

Date & Time Collected 04/07/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05 U	mg/L	0.05
COD	410.0	<5 U	mg/L	5

FORM I

NW 7-23-93 SC

Page 2 Skinner&Sherman REPORT Work Order # S3-04-139

Received: 04/13/93 Results by Sample

SAMPLE ID B088R0 SAMPLE # 01 FRACTIONS: A

Date & Time Collected 04/07/93 Category WATER

NO3NO2 ~~<~~0.25 U
mg N/L

SAMPLE ID B088S5 SAMPLE # 02 FRACTIONS: A

Date & Time Collected 04/07/93 Category WATER

NO3NO2 0.33
mg N/L

SAMPLE ID B088W5 SAMPLE # 03 FRACTIONS: A

Date & Time Collected 04/07/93 Category WATER

NO3NO2 20.4
mg N/L

SAMPLE ID B08915 SAMPLE # 04 FRACTIONS: A

Date & Time Collected 04/07/93 Category WATER

NO3NO2 21.7
mg N/L

SAMPLE ID B08915 DUPL SAMPLE # 04 FRACTIONS: B

Date & Time Collected 04/07/93 Category WATER

NO3NO2 20.3
mg N/L

SAMPLE ID B08915 SPIKE SAMPLE # 04 FRACTIONS: C

Date & Time Collected 04/07/93 Category WATER

NO3NO2 22.3
mg N/L

SAMPLE ID LCSW SAMPLE # 05 FRACTIONS: A

Date & Time Collected not specified Category WATER

NO3NO2 2.03
mg N/L

NW 7-23-93

TMA Thermo Analytical Inc.

[illegible]

9713515.2410

2239

TMA NORCAL
REPORTING GROUP 7183

N304046-01

DATA SHEET

B088R0

SDG 7183
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304046-01
Dept sample id 7183-001
Received 04/09/93

Client sample id B088R0
Matrix LIQUID
Collected 04/07/93
Chain of custody id EFL-1055

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALIFIERS	TEST	
Gross Alpha	Alpha	-7.8	2.4	2	3	U J	80A	2
Gross Beta	Beta	480	8.5	2	4		80B	
Uranium 233/234		0.097	0.098	0.1	0.2	U	U	
Uranium 235	15117-96-1	0.029	0.030	0.1	0.2	U	U	
Uranium 238	7440-61-1	0.085	0.074	0.09	0.2	U	U	
Plutonium 238	13981-16-3	0.003	0.013	0.02	0.05	~~U~~ R	PU	3
Plutonium 239/240		0.003	0.006	0.02	0.05	~~U~~ R	PU	3
Americium 241	14596-10-2	-0.015	0.015	0.04	0.05	U	AM	
Strontium 90	10098-97-2	220	13	0.8	2		Y	
Technetium 99	14133-76-7	0.47	2.2	4	5	U	TC	
Tritium	10028-17-8	810	170	200	400		H	
Carbon 14	14762-75-5	-47	58	100	50	U J	C	2
GAMMA SCAN ANALYTES								
Potassium 40	13966-00-2	U		100		U	GAM	
Iron 59	14596-12-4	U		20	30	U	GAM	
Chromium 51	14392-02-0	U		80		U	GAM	
Cobalt 60	10198-40-0	U		10	30	U	GAM	
Zinc 65	13982-39-3	U		20		U	GAM	
Ruthenium 106	13967-48-1	U		80		U	GAM	
Cesium 134	13967-70-9	U		9		U	GAM	
Cesium 137	10045-97-3	U		9	20	U	GAM	
Cerium 144	14762-78-8	U		40		U	GAM	
Europium 152	14683-23-9	U		20	40	U	GAM	
Europium 154	15585-10-1	U		10	40	U	GAM	
Radium 226	13982-63-3	U		20		U	GAM	
Thorium 228	14274-82-9	U		10		U	GAM	
Thorium 232	7440-29-1	U		40		U	GAM	

~~1= Calibration~~
2= LCS Recovery
3= % Yield

RB
7/27/93

DKW 7/22/93

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 05/26/93

9713515.2411

TMA NORCAL
REPORTING GROUP 7183

DATA SHEET

N304046-02

B088S5

SDG 7183
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304046-02
Dept sample id 7183-002
Received 04/09/93

Client sample id B088S5
Matrix LIQUID
Collected 04/07/93
Chain of custody id EFL-1054

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	
Gross Alpha	Alpha	0.15	1.2	2	3	U J	80A	2
Gross Beta	Beta	9.0	1.5	2	4		80B	
Uranium 233/234		0.25	0.12	0.1	0.2		U	
Uranium 235	15117-96-1	0	0.028	0.1	0.2	U	U	
Uranium 238	7440-61-1	0.16	0.093	0.09	0.2	J	U	
Plutonium 238	13981-16-3	-0.005	0.011	0.04	0.05	~~U~~ R	PU	.3
Plutonium 239/240		0.005	0.011	0.04	0.05	~~U~~ R	PU	.3
Americium 241	14596-10-2	0.011	0.016	0.02	0.05	U	AM	
Strontium 90	10098-97-2	1.1	0.34	0.9	2	J	Y	
Technetium 99	14133-76-7	1.8	0.93	3	5	U	TC	
Tritium	10028-17-8	500	170	200	400		H	
Carbon 14	14762-75-5	-25	38	60	50	U J	C	2
GAMMA SCAN ANALYTES								
Potassium 40	13966-00-2	U		200		U	GAM	
Iron 59	14596-12-4	U		30	30	U	GAM	
Chromium 51	14392-02-0	U		100		U	GAM	
Cobalt 60	10198-40-0	U		10	30	U	GAM	
Zinc 65	13982-39-3	U		20		U	GAM	
Ruthenium 106	13967-48-1	U		100		U	GAM	
Cesium 134	13967-70-9	U		10		U	GAM	
Cesium 137	10045-97-3	U		10	20	U	GAM	
Cerium 144	14762-78-8	U		50		U	GAM	
Europium 152	14683-23-9	U		20	40	U	GAM	
Europium 154	15585-10-1	U		10	40	U	GAM	
Radium 226	13982-63-3	U		20		U	GAM	
Thorium 228	14274-82-9	U		20		U	GAM	
Thorium 232	7440-29-1	U		40		U	GAM	

~~1=Calibration~~
2=LCS Recovery
3=% Yield

RB 7/21/93

DEW 7/22/93

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 05/26/93

9713515.2412

N304046-03

TMA NORCAL
REPORTING GROUP 7183

DATA SHEET

B088W5

SDG	7183	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304046-03	Client sample id	B088W5
Dept sample id	7183-003	Matrix	LIQUID
Received	04/09/93	Collected	04/07/93
		Chain of custody id	EFL-1054

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	
Gross Alpha	Alpha	2.0	3.3	5	3	U J	80A	2
Gross Beta	Beta	11	1.6	2	4		80B	
Uranium 233/234		3.6	0.51	0.1	0.2		U	
Uranium 235	15117-96-1	0.21	0.10	0.09	0.2		U	
Uranium 238	7440-61-1	3.4	0.50	0.1	0.2		U	
Plutonium 238	13981-16-3	-0.005	0.010	0.04	0.05	U	PU	
Plutonium 239/240		0	0.010	0.04	0.05	U	PU	
Americium 241	14596-10-2	0.002	0.007	0.01	0.05	U	AM	
Strontium 90	10098-97-2	0.95	0.43	1	2	U	Y	
Technetium 99	14133-76-7	0.93	1.1	3	5	U	TC	
Tritium	10028-17-8	12000	440	200	400		H	
Carbon 14	14762-75-5	-14	26	40	50	U J	C	2
GAMMA SCAN ANALYTES								
Potassium 40	13966-00-2	U		100		U	GAM	
Iron 59	14596-12-4	U		20	30	U	GAM	
Chromium 51	14392-02-0	U		90		U	GAM	
Cobalt 60	10198-40-0	U		10	30	U	GAM	
Zinc 65	13982-39-3	U		20		U	GAM	
Ruthenium 106	13967-48-1	U		80		U	GAM	
Cesium 134	13967-70-9	U		9		U	GAM	
Cesium 137	10045-97-3	U		9	20	U	GAM	
Cerium 144	14762-78-8	U		40		U	GAM	
Europium 152	14683-23-9	U		20	40	U	GAM	
Europium 154	15585-10-1	U		10	40	U	GAM	
Radium 226	13982-63-3	17	17				GAM	
Thorium 228	14274-82-9	U		20		U	GAM	
Thorium 232	7440-29-1	U		30		U	GAM	

~~1 = Calibration~~ RB 7/27/93 DKW 7/22/93

2 = LCS recovery

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	05/26/93

9713515.2413

N304046-05

TMA NORCAL
REPORTING GROUP 7183

DATA SHEET

B088Y5

SDG 7183
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304046-05
Dept sample id 7183-005
Received 04/12/93

Client sample id B088Y5
Matrix LIQUID
Collected 04/08/93
Chain of custody id EFL-1055

working copy

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	
Gross Alpha	Alpha	0.71	2.3	3	3	U J	80A	2
Gross Beta	Beta	8.5	1.6	2	4		80B	
Uranium 233/234		3.3	0.48	0.1	0.2		U	
Uranium 235	15117-96-1	0.13	0.095	0.09	0.2	J	U	
Uranium 238	7440-61-1	2.4	0.38	0.07	0.2		U	
Plutonium 238	13981-16-3	0	0.008	0.03	0.05	~~U~~ R	PU	3
Plutonium 239/240		0.004	0.008	0.03	0.05	~~U~~ R	PU	3
Americium 241	14596-10-2	0	0.015	0.03	0.05	U	AM	
Strontium 90	10098-97-2	-0.13	0.82	0.9	2	U	Y	
Technetium 99	14133-76-7	2.0	1.2	3	5	U	TC	
Tritium	10028-17-8	430	160	200	400		H	
Carbon 14	14762-75-5	150	28	40	50	J	C	2
GAMMA SCAN ANALYTES								
Potassium 40	13966-00-2	U		400		U	GAM	
Iron 59	14596-12-4	U		30	30	U	GAM	
Chromium 51	14392-02-0	U		100		U	GAM	
Cobalt 60	10198-40-0	U		20	30	U	GAM	
Zinc 65	13982-39-3	U		30		U	GAM	
Ruthenium 106	13967-48-1	U		100		U	GAM	
Cesium 134	13967-70-9	U		20		U	GAM	
Cesium 137	10045-97-3	U		10	20	U	GAM	
Cerium 144	14762-78-8	U		70		U	GAM	
Europium 152	14683-23-9	U		30	40	U	GAM	
Europium 154	15585-10-1	U		20	40	U	GAM	
Radium 226	13982-63-3	U		30		U	GAM	
Thorium 228	14274-82-9	U		20		U	GAM	
Thorium 232	7440-29-1	U		60		U	GAM	

~~1 = Calibration~~
2 = LCS Recovery
3 = % Yield

RB 7/29/93

DKW 7/22/93

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 05/26/93

9713515.2414

TMA NORCAL
REPORTING GROUP 7183

DATA SHEET

N304046-07

B088Z0

SDG 7183
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304046-07
Dept sample id 7183-007
Received 04/13/93

Client sample id B088Z0
Matrix LIQUID
Collected 04/09/93
Chain of custody id EFL-1055

working copy

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALIFIERS	TEST	
Gross Alpha	Alpha	1.4	2.8	4	3	U J	80A	2
Gross Beta	Beta	8.3	1.6	2	4		80B	
Uranium 233/234		2.4	0.36	0.1	0.2		U	
Uranium 235	15117-96-1	0.11	0.068	0.09	0.2	J	U	
Uranium 238	7440-61-1	2.0	0.33	0.09	0.2		U	
Plutonium 238	13981-16-3	0.006	0.012	0.05	0.05	~~U~~ R	PU	3
Plutonium 239/240		0	0.012	0.05	0.05	~~U~~ R	PU	3
Americium 241	14596-10-2	-0.003	0.013	0.04	0.05	U	AM	
Strontium 90	10098-97-2	0.082	0.27	1	2	U	Y	
Technetium 99	14133-76-7	1.6	1.2	4	5	U	TC	
Tritium	10028-17-8	1400	200	200	400		H	
Carbon 14	14762-75-5	110	30	40	50	J	C	2
GAMMA SCAN ANALYTES								
Potassium 40	13966-00-2	U		80		U	GAM	
Iron 59	14596-12-4	U		20	30	U	GAM	
Chromium 51	14392-02-0	U		70		U	GAM	
Cobalt 60	10198-40-0	U		10	30	U	GAM	
Zinc 65	13982-39-3	U		20		U	GAM	
Ruthenium 106	13967-48-1	U		60		U	GAM	
Cesium 134	13967-70-9	U		7		U	GAM	
Cesium 137	10045-97-3	U		7	20	U	GAM	
Cerium 144	14762-78-8	U		30		U	GAM	
Europium 152	14683-23-9	U		10	40	U	GAM	
Europium 154	15585-10-1	U		8	40	U	GAM	
Radium 226	13982-63-3	U		10		U	GAM	
Thorium 228	14274-82-9	U		10		U	GAM	
Thorium 232	7440-29-1	U		30		U	GAM	

~~1 = Calibration~~
2 = LCS Recovery
3 = % Yield

RB 7/27/93

DKW 7/22/93

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 05/26/93

9713515.2415

N304046-08

TMA NORCAL
REPORTING GROUP 7183

DATA SHEET

B088Z5

SDG 7183
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304046-08
Dept sample id 7183-008
Received 04/14/93

Client sample id B088Z5
Matrix LIQUID
Collected 04/12/93
Chain of custody id EFL-1054

water only

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALIFIERS	TEST	
Gross Alpha	Alpha	7.8	3.8	4	3	J	80A	2
Gross Beta	Beta	12	1.8	2	4		80B	
Uranium 233/234		8.8	0.98	0.1	0.2		U	
Uranium 235	15117-96-1	0.44	0.14	0.09	0.2		U	
Uranium 238	7440-61-1	8.7	0.97	0.1	0.2		U	
Plutonium 238	13981-16-3	0.006	0.012	0.05	0.05	~~U~~ R	PU	3
Plutonium 239/240		0	0.012	0.05	0.05	~~U~~ R	PU	3
Americium 241	14596-10-2	-0.010	0.020	0.05	0.05	U	AM	
Strontium 90	10098-97-2	-0.061	1.1	0.9	2	U	Y	
Technetium 99	14133-76-7	0.76	2.1	6	5	~~U~~ R	TC	3
Tritium	10028-17-8	1700	210	200	400		H	
Carbon 14	14762-75-5	2.5	21	30	50	U J	C	2
GAMMA SCAN ANALYTES								
Potassium 40	13966-00-2	U		200		U	GAM	1
Iron 59	14596-12-4	U		20	30	U	GAM	1
Chromium 51	14392-02-0	U		70		U	GAM	1
Cobalt 60	10198-40-0	U		10	30	U	GAM	1
Zinc 65	13982-39-3	U		20		U	GAM	1
Ruthenium 106	13967-48-1	U		70		U	GAM	1
Cesium 134	13967-70-9	U		9		U	GAM	1
Cesium 137	10045-97-3	U		9	20	U	GAM	1
Cerium 144	14762-78-8	U		40		U	GAM	1
Europium 152	14683-23-9	U		20	40	U	GAM	1
Europium 154	15585-10-1	U		10	40	U	GAM	1
Radium 226	13982-63-3	U		20		U	GAM	1
Thorium 228	14274-82-9	U		10		U	GAM	1
Thorium 232	7440-29-1	U		40		U	GAM	1

~~1= Calibration~~
2= LCS Recovery
3= % Yield

RB 7/29/93

DFW 7/22/93

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 05/26/93

9713515.2416

TMA NORCAL
REPORTING GROUP 7183

DATA SHEET

N304046-06

B08905

SDG	7183	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304046-06	Client sample id	B08905
Dept sample id	7183-006	Matrix	LIQUID
Received	04/12/93	Collected	04/08/93
		Chain of custody id	EFL-1055

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALIFIERS	TEST	
Gross Alpha	Alpha	2.4	2.7	4	3	U J	80A	2
Gross Beta	Beta	6.9	1.6	2	4		80B	
Uranium 233/234		4.3	0.54	0.1	0.2		U	
Uranium 235	15117-96-1	0.20	0.11	0.08	0.2		U	
Uranium 238	7440-61-1	3.1	0.42	0.08	0.2		U	
Plutonium 238	13981-16-3	0	0.007	0.03	0.05	~~U~~ R	PU	3
Plutonium 239/240		-0.003	0.007	0.03	0.05	~~U~~ R	PU	3
Americium 241	14596-10-2	0	0.015	0.04	0.05	U	AM	
Strontium 90	10098-97-2	-0.045	0.59	0.9	2	U	Y	
Technetium 99	14133-76-7	1.0	1.2	3	5	U	TC	
Tritium	10028-17-8	11000	420	200	400		H	
Carbon 14	14762-75-5	22	22	40	50	U J	C	2
GAMMA SCAN ANALYTES								
Potassium 40	13966-00-2	U		100		U	GAM	
Iron 59	14596-12-4	U		30	30	U	GAM	
Chromium 51	14392-02-0	U		100		U	GAM	
Cobalt 60	10198-40-0	U		10	30	U	GAM	
Zinc 65	13982-39-3	U		20		U	GAM	
Ruthenium 106	13967-48-1	U		100		U	GAM	
Cesium 134	13967-70-9	U		10		U	GAM	
Cesium 137	10045-97-3	U		10	20	U	GAM	
Cerium 144	14762-78-8	U		60		U	GAM	
Europium 152	14683-23-9	U		20	40	U	GAM	
Europium 154	15585-10-1	U		10	40	U	GAM	
Radium 226	13982-63-3	U		30		U	GAM	
Thorium 228	14274-82-9	U		20		U	GAM	
Thorium 232	7440-29-1	U		50		U	GAM	

~~1 = Calibration~~
2 = LCS Recovery
3 = % Yield

RL 7/27/93

DKW 7/22/93

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	05/26/93

9713515.2417

TMA NORCAL
REPORTING GROUP 7183

N304046-04

DATA SHEET

B08915

SDG 7183
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N304046-04
Dept sample id 7183-004
Received 04/09/93

Client sample id B08915
Matrix LIQUID
Collected 04/07/93
Chain of custody id EFL-1054

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALIFIERS	TEST	
Gross Alpha	Alpha	5.5	3.5	4	3	J	80A	2
Gross Beta	Beta	10	1.6	2	4		80B	
Uranium 233/234		5.1	0.70	0.1	0.2		U	
Uranium 235	15117-96-1	0.21	0.11	0.1	0.2		U	
Uranium 238	7440-61-1	3.8	0.56	0.1	0.2		U	
Plutonium 238	13981-16-3	0	0.009	0.03	0.05	~~U~~ R	PU	3
Plutonium 239/240		0.017	0.017	0.03	0.05	~~U~~ R	PU	3
Americium 241	14596-10-2	0	0.005	0.02	0.05	U	AM	
Strontium 90	10098-97-2	1.5	0.39	1	2	J	Y	
Technetium 99	14133-76-7	0.71	1.1	3	5	U	TC	
Tritium	10028-17-8	12000	430	200	400		H	
Carbon 14	14762-75-5	350	29	40	50	J	C	2
GAMMA SCAN ANALYTES								
Potassium 40	13966-00-2	U		100		U	GAM	
Iron 59	14596-12-4	U		30	30	U	GAM	
Chromium 51	14392-02-0	U		100		U	GAM	
Cobalt 60	10198-40-0	U		10	30	U	GAM	
Zinc 65	13982-39-3	U		20		U	GAM	
Ruthenium 106	13967-48-1	U		100		U	GAM	
Cesium 134	13967-70-9	U		10		U	GAM	
Cesium 137	10045-97-3	U		10	20	U	GAM	
Cerium 144	14762-78-8	U		60		U	GAM	
Europium 152	14683-23-9	U		30	40	U	GAM	
Europium 154	15585-10-1	U		10	40	U	GAM	
Radium 226	13982-63-3	U		20		U	GAM	
Thorium 228	14274-82-9	U		20		U	GAM	
Thorium 232	7440-29-1	U		60		U	GAM	

~~1 = Calibration~~
2 = LCS Recovery
3 = % Yield

RB 7/27/93

DKW 7/22/93

Lab id TMAN
Protocol WHC-HASM
Version Ver 1.0
Form DVD-DS
Version 2.23
Report date 05/26/93

9713515.2418

TMA NORCAL
REPORTING GROUP 7183

DATA SHEET

N304046-09

B08920

SDG	7183	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304046-09	Client sample id	B08920
Dept sample id	7183-009	Matrix	LIQUID
Received	04/14/93	Collected	04/12/93
		Chain of custody id	EFL-1055

EB

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALIFIERS	TEST	
Gross Alpha	Alpha	-0.62	1.1	2	3	U ~~J~~	80A	2
Gross Beta	Beta	0.38	1.3	2	4	U	80B	
Uranium 233/234		0.015	0.060	0.1	0.2	U	U	
Uranium 235	15117-96-1	0	0.036	0.1	0.2	U	U	
Uranium 238	7440-61-1	0.030	0.030	0.1	0.2	U	U	
Plutonium 238	13981-16-3	0.005	0.010	0.04	0.05	U	PU	
Plutonium 239/240		0	0.010	0.04	0.05	U	PU	
Americium 241	14596-10-2	0.008	0.024	0.04	0.05	U	AM	
Strontium 90	10098-97-2	0.084	0.23	0.9	2	U	Y	
Technetium 99	14133-76-7	2.2	1.2	3	5	U	TC	
Tritium	10028-17-8	88	140	200	400	U	H	
Carbon 14	14762-75-5	-33	24	40	50	U ~~J~~	C	2
GAMMA SCAN ANALYTES								
Potassium 40	13966-00-2	U		90		U	GAM	
Iron 59	14596-12-4	U		20	30	U	GAM	
Chromium 51	14392-02-0	U		60		U	GAM	
Cobalt 60	10198-40-0	U		7	30	U	GAM	
Zinc 65	13982-39-3	U		10		U	GAM	
Ruthenium 106	13967-48-1	U		60		U	GAM	
Cesium 134	13967-70-9	U		6		U	GAM	
Cesium 137	10045-97-3	U		7	20	U	GAM	
Cerium 144	14762-78-8	U		30		U	GAM	
Europium 152	14683-23-9	U		10	40	U	GAM	
Europium 154	15585-10-1	U		8	40	U	GAM	
Radium 226	13982-63-3	U		10		U	GAM	
Thorium 228	14274-82-9	U		10		U	GAM	
Thorium 232	7440-29-1	U		30		U	GAM	

~~1=Calibration~~ KB 7/27/93

2= LCS Recovery

DKW 7/22/93

RB 7/28/93

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	05/26/93

9713515.2419

TMA NORCAL
REPORTING GROUP 7183

DATA SHEET

N304046-10

B08925

SDG	7183	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N304046-10	Client sample id	B08925
Dept sample id	7183-010	Matrix	LIQUID
Received	04/15/93	Collected	04/13/93
		Chain of custody id	EFL-1055

EB

PARAMETER	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALIFIERS	TEST	
Gross Alpha	Alpha	-0.64	1.1	2	3	U ~~J~~	80A	2
Gross Beta	Beta	0.30	1.0	2	4	U	80B	
Uranium 233/234		0.047	0.093	0.2	0.2	U	U	
Uranium 235	15117-96-1	-0.019	0.038	0.1	0.2	U	U	
Uranium 238	7440-61-1	0.031	0.062	0.1	0.2	U	U	
Plutonium 238	13981-16-3	-0.013	0.017	0.05	0.05	U ~~J~~	PU	3
Plutonium 239/240		0.004	0.009	0.03	0.05	U ~~J~~	PU	3
Americium 241	14596-10-2	0	0.005	0.02	0.05	U ~~J~~	AM	3
Strontium 90	10098-97-2	0.10	0.22	0.8	2	U	Y	
Technetium 99	14133-76-7	1.2	0.92	2	5	U	TC	
Tritium	10028-17-8	170	150	200	400	U	H	
Carbon 14	14762-75-5	-10	26	40	50	U ~~J~~	C	2
GAMMA SCAN ANALYTES								
Potassium 40	13966-00-2	U		100		U	GAM	
Iron 59	14596-12-4	U		20	30	U	GAM	
Chromium 51	14392-02-0	U		100		U	GAM	
Cobalt 60	10198-40-0	U		10	30	U	GAM	
Zinc 65	13982-39-3	U		20		U	GAM	
Ruthenium 106	13967-48-1	U		100		U	GAM	
Cesium 134	13967-70-9	U		9		U	GAM	
Cesium 137	10045-97-3	U		10	20	U	GAM	
Cerium 144	14762-78-8	U		60		U	GAM	
Europium 152	14683-23-9	U		20	40	U	GAM	
Europium 154	15585-10-1	U		10	40	U	GAM	
Radium 226	13982-63-3	U		20		U	GAM	
Thorium 228	14274-82-9	U		30		U	GAM	
Thorium 232	7440-29-1	U		50		U	GAM	

~~1= Calibration~~ RB 7/27/93

2= LCS Recovery

3= % Yield

RB 7/28/93

DKW 7/22/93

Lab id	TMAN
Protocol	WHC-HASM
Version	Ver 1.0
Form	DVD-DS
Version	2.23
Report date	05/26/93

9713515.2420

000061

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Y5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30420B04

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/20/93

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

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

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

NV 7-23-93 SC

PBD

9713515.2421

000062

EPA SAMPLE NO.

B088Y5

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30420B04

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/20/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Y7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B10

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

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

NW 7-23-93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B088Y7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B10

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08905

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30420B07

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/20/93

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

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

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

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

NV 7-23-93 SC

9713515.2425

000084

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B08905

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30420B07

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/20/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2426

000092

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08907

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B15

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

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

NV 7-23-93 SC

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B08907

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B15

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2428

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE No. 000453

B08934

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B16

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	53	
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	3	J
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

NV 7-23-93

9713515.2429

000100

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B08934

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-05A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B16

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2430

000110

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08935

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-06A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B17

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	18	
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	3	J
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

NW 7-23-93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B08935

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-06A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B17

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

9713515.2432

000195

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Y5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I17

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/13/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/04/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

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

NW 7-23-93

9713515.2433

000196

EPA SAMPLE NO.

B088Y5

SDG No.: NA

e ID: A304034-01B

D: 30504I17

ed: 04/12/93

ed: 04/13/93

l: 05/04/93

r: 1.0

	Q
	U
	U
	U
	U
	U
	U
	U
	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B088Y5

ab Name: TMA/ARLI Contract: WHC

ab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

atrix: (soil/water) WATER Lab Sample ID: A304034-01B

ample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I17

evel: (low/med) LOW Date Received: 04/12/93

Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/13/93

oncentrated Extract Volume: 1000 (uL) Date Analyzed: 05/04/93

njection Volume: 2.0(uL) Dilution Factor: 1.0

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

umber TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	8.80	5	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08905

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304034-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I20

Level: (low/med) LOW Date Received: 04/12/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/13/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/05/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

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

NW 7-23-93

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08905

ıb Name: TMA/ARLI Contract: WHC

ıb Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

ıtrix: (soil/water) WATER Lab Sample ID: A304034-03B

ımple wt/vol: 1000 (g/mL) ML Lab File ID: 30504I20

evel: (low/med) LOW Date Received: 04/12/93

Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/13/93

oncentrated Extract Volume: 1000 (uL) Date Analyzed: 05/05/93

ıjection Volume: 2.0 (uL) Dilution Factor: 1.0

PC 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	58	
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

NW 7-23-93

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B08905

ab Name: TMA/ARLI Contract: WHC

ab Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

atrix: (soil/water) WATER Lab Sample ID: A304034-03B

ample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I20

evel: (low/med) LOW Date Received: 04/12/93

Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/13/93

oncentrated Extract Volume: 1000 (uL) Date Analyzed: 05/05/93

ajection Volume: 2.0 (uL) Dilution Factor: 1.0

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

umber TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	21.35	7	J

9713515.2438

000319

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Y5

) Name: TMA/ARLI Contract: WHC

) Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

:rix: (soil/water) WATER Lab Sample ID: A304034-01B

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

Moisture: _____ decanted: (Y/N) ___ Date Received: 04/12/93

:raction: (SepF/Cont/Sonc) CONT Date Extracted: 04/13/93

ıcentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/93

ection Volume: 1.00 (uL) Dilution Factor: 1.00

: 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

NW 7-23-93

9713515.2439

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

000324

EPA SAMPLE NO.

B08905

) Name: TMA/ARLI Contract: WHC

) Code: TMALA Case No.: 04034 SAS No.: NA SDG No.: NA

:rix: (soil/water) WATER Lab Sample ID: A304034-03B

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

loisture: _____ decanted: (Y/N) ___ Date Received: 04/12/93

:raction: (SepF/Cont/Sonc) CONT Date Extracted: 04/13/93

ıcentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/93

ection Volume: 1.00 (uL) Dilution Factor: 1.00

: 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

NW 7-23-93

9713515.2440

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B088Y5

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

b Code: SKINER Case No.: N3-04-048SAS No.: SDG No.: B088Y5

trix (soil/water): WATER Lab Sample ID: 04141-01S

vel (low/med): LOW Date Received: 04/13/93

Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	41.9	B		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	5.3	B		F
7440-39-3	Barium	25.2	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	58400			P
7440-47-3	Chromium	5.8	U		P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	40.6	B	EN*	P
7439-92-1	Lead	3.2			F
7439-95-4	Magnesium	17500			P
7439-96-5	Manganese	1.8	U		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	6430			P
7782-49-2	Selenium	3.3	U	WN	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	53200			P
7440-28-0	Thallium	1.2	U	WN	F
7440-62-2	Vanadium	15.4	B		P
7440-66-6	Zinc	9.2	B		P
	Cyanide	10.0	U		CA

olor Before: COLORLESS Clarity Before: CLEAR Texture:

olor After: COLORLESS Clarity After: CLEAR Artifacts:

NV SL 7-23-93

omments:

9213515.2441

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B08905

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

.ab Code: SKINER Case No.: N3-04-048SAS No.: SDG No.: B088Y5

latrix (soil/water): WATER Lab Sample ID: 04141-02S

.evel (low/med): LOW Date Received: 04/13/93

: Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	145	B		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	3.5	B		F
7440-39-3	Barium	39.8	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	66500			P
7440-47-3	Chromium	17.6			P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	261		EN*	P
7439-92-1	Lead	2.0	B		F
7439-95-4	Magnesium	16900			P
7439-96-5	Manganese	13.0	B		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	5640			P
7782-49-2	Selenium	3.3	U	WN	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	48400			P
7440-28-0	Thallium	1.2	U	WN	F
7440-62-2	Vanadium	11.1	B		P
7440-66-6	Zinc	12.1	B		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

NW 4/23/93

Comments:

6003

FORM I - IN ILM02.I-

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B088Y6

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

Code: SKINER Case No.: N3-04-048SAS No.: SDG No.: B088Y6

ix (soil/water): WATER Lab Sample ID: 04142-01S

el (low/med): LOW Date Received: 04/13/93

olids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	45.3	B		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	7.7	B		F
7440-39-3	Barium	24.4	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	58200			P
7440-47-3	Chromium	5.8	U		P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	15.6	B		P
7439-92-1	Lead	3.9		W	F
7439-95-4	Magnesium	17500			P
7439-96-5	Manganese	1.8	U		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	6410			P
7782-49-2	Selenium	3.5	B	SN	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	52900			P
7440-28-0	Thallium	1.2	U	W	F
7440-62-2	Vanadium	15.1	B		P
7440-66-6	Zinc	3.4	U		P
	Cyanide				NR

or Before: COLORLESS Clarity Before: CLEAR Texture:

or After: COLORLESS Clarity After: CLEAR Artifacts:

NV 7-23-93

ments:

002

9213515.2443

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B08906

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

Code: SKINER Case No.: N3-04-048SAS No.: SDG No.: B088Y6

rix (soil/water): WATER Lab Sample ID: 04142-02S

el (low/med): LOW Date Received: 04/13/93

olids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23.5	U		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	5.5	B		F
7440-39-3	Barium	40.6	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	64700			P
7440-47-3	Chromium	11.9			P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	26.2	B		P
7439-92-1	Lead	3.9			F
7439-95-4	Magnesium	16300			P
7439-96-5	Manganese	1.8	U		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	5490			P
7782-49-2	Selenium	3.3	U	WN	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	47200			P
7440-28-0	Thallium	1.2	U	W	F
7440-62-2	Vanadium	9.0	B		P
7440-66-6	Zinc	3.4	U		P
	Cyanide				NR

or Before: COLORLESS Clarity Before: CLEAR Texture:

or After: COLORLESS Clarity After: CLEAR Artifacts:

NV 7/28/93

ments:

003

FORM I - IN ILM02.1

9713515.2444

000011

TMA Inc. REPORT Work Order # A3-04-034

Received: 044/12/93

Results by Sample

SAMPLE ID B088Y5 FRACTION 01E TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/08/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	13.4	mg/L	0.2
Fluoride	300.0	0.4	mg/L	0.1
Phosphate	300.0	<0.4U	mg/L	0.4
pH	150.1	8.0	pH	0.1
Sulfate	300.0	64	mg/L	1
Elect. Conductivity	120.1	673	umho/cm	6

FORM I

NW 7234

TMA Inc. REPORT Work Order # A3-04-034

Received: 04/12/93 Results by Sample

SAMPLE ID B088Y5 FRACTION 01G TEST CODE WCCLPL NAME Anions & Wet Chem. - WK043

Date & Time Collected 04/08/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	209	mg/L	2
Tot. Dissolved Solids	160.1	414	mg/L	5

FORM I

NV 7-23-93

9713515.2446

TMA Inc. REPORT Work Order # A3-04-034

Received: 04/12/93

Results by Sample

SAMPLE ID B088Y5 FRACTION 011 TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/08/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	<1 U	mg/L	1

FORM I

NW 7-23-93

9713515.2447

TMA Inc. REPORT Work Order # A3-04-034

Received: 04/12/93

Results by Sample

SAMPLE ID B088Y5 FRACTION 01K TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/08/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05 U	mg/L	0.05
COD	410.0	<5 U	mg/L	5

FORM I

NV 7-23-93

TMA Inc. REPORT Work Order # A3-04-034

Received: 04/12/93

Results by Sample

SAMPLE ID B08905 FRACTION 03E TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/08/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	10.3	mg/L	0.2
Fluoride	300.0	0.5	mg/L	0.1
Phosphate	300.0	~~<~~0.4 U	mg/L	0.4
pH	150.1	7.9	pH	0.1
Sulfate	300.0	59	mg/L	1
Elect. Conductivity	120.1	707	umho/cm	6

FORM I

NW 7-23-93

TMA Inc. REPORT Work Order # A3-04-034

Received: 04/12/93 Results by Sample

SAMPLE ID B08905 FRACTION 03G TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/08/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	200	mg/L	2
Tot. Dissolved Solids	160.1	446	mg/L	5

FORM I

NU 7-23-93

9713515.2450

000017

TMA Inc. REPORT Work Order # A3-04-034

Received: 04/12/93

Results by Sample

SAMPLE ID B08905 FRACTION 03N TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/08/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	~~<1~~ U	mg/L	1

FORM I

9713515.2451

000018

TNA Inc. REPORT Work Order # A3-04-034

Received: 04/12/93

Results by Sample

SAMPLE ID B08905 FRACTION 03J TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/08/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05 U	mg/L	0.05
COD	410.0	<5 U	mg/L	5

FORM I

Page 2 Skinner&Sherman REPORT Work Order # S3-04-143

Received: 04/13/93 Results by Sample

SAMPLE ID B088Y5 SAMPLE # 01 FRACTIONS: A

Date & Time Collected 04/08/93 Category WATER

NO3NO2 15.7

SAMPLE ID B08905 SAMPLE # 02 FRACTIONS: A

Date & Time Collected 04/08/93 Category WATER

NO3NO2 24.0

SAMPLE ID B08905 DUPL SAMPLE # 02 FRACTIONS: B

Date & Time Collected 04/08/93 Category WATER

NO3NO2 24.2

SAMPLE ID B08905 SPIKE SAMPLE # 02 FRACTIONS: C

Date & Time Collected 04/08/93 Category WATER

NO3NO2 26.7

SAMPLE ID LCSW SAMPLE # 03 FRACTIONS: A

Date & Time Collected not specified Category WATER

NO3NO2 2.02

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.

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300 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7200

9713515.2453

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: 000049

B088Z0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04040 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304040-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419R14

Level: (low/med) LOW Date Received: 04/13/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

NV 7-23-93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B088Z0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04040 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304040-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419R14

Level: (low/med) LOW Date Received: 04/13/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

9713515.2455

000060

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Z2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04040 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304040-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30417R16

Level: (low/med) LOW Date Received: 04/13/93

% Moisture: not dec. ____ Date Analyzed: 04/17/93

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	10	U
67-64-1	Acetone	11	
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	2	J
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

NV 1-23-93

9713515.2456

IE

000061

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B088Z2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04040 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304040-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30417R16

Level: (low/med) LOW Date Received: 04/13/93

% Moisture: not dec. ____ Date Analyzed: 04/17/93

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

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B088Z0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04040 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304040-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30506I12

Level: (low/med) LOW Date Received: 04/13/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/14/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/06/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

WV 7-23-93

EPA SAMPLE NO.

B088Z0

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04040 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304040-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30506I12

Level: (low/med) LOW Date Received: 04/13/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/14/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/06/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

(1) - Cannot be separated from Diphenylamine

NV 7/23/93

EPA SAMPLE NO.

B088Z0

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04040 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304040-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30506I12

Level: (low/med) LOW Date Received: 04/13/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/14/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/06/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	5.72	3	BJ

9713515.2460

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Z0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04040 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304040-01B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/13/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 04/14/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/18/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

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

NV 7-23-93

9713515.2461

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B088Z0

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

Lab Code: SKINER Case No.: N3-04-059SAS No.: SDG No.: B088Z0

Matrix (soil/water): WATER Lab Sample ID: 04174-01S

Level (low/med): LOW Date Received: 04/14/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	35.8	B		P
7440-36-0	Antimony	18.6	U		P
7440-38-2	Arsenic	5.4	B	W	F
7440-39-3	Barium	51.5	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.4	U		P
7440-70-2	Calcium	68900			P
7440-47-3	Chromium	5.6	B		P
7440-48-4	Cobalt	2.9	U		P
7440-50-8	Copper	2.8	B		P
7439-89-6	Iron	70.5	B		P
7439-92-1	Lead	2.5	B	W	F
7439-95-4	Magnesium	21200			P
7439-96-5	Manganese	64.0			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.4	B		P
7440-09-7	Potassium	7860			P
7782-49-2	Selenium	9.0		+N*	F
7440-22-4	Silver	3.3	U		P
7440-23-5	Sodium	74100			P
7440-28-0	Thallium	2.6	U	WN	F
7440-62-2	Vanadium	7.1	B		P
7440-66-6	Zinc	10.9	B		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

NV 1/23

Comments:

002

FORM I - IN ILM02.1

9713515.2462

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B088Z1

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

Lab Code: SKINER Case No.: N3-04-059SAS No.: SDG No.: B088Z1

Matrix (soil/water): WATER Lab Sample ID: 04176-01S

Level (low/med): LOW Date Received: 04/14/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	25.9	B		P
7440-36-0	Antimony	18.6	U		P
7440-38-2	Arsenic	5.2	B		F
7440-39-3	Barium	53.8	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.4	U		P
7440-70-2	Calcium	71800			P
7440-47-3	Chromium	3.3	U		P
7440-48-4	Cobalt	2.9	U		P
7440-50-8	Copper	2.7	U		P
7439-89-6	Iron	28.2	B		P
7439-92-1	Lead	3.7			F
7439-95-4	Magnesium	22000			P
7439-96-5	Manganese	63.8			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	4.9	B		P
7440-09-7	Potassium	8120			P
7782-49-2	Selenium	5.2		+N	F
7440-22-4	Silver	3.3	U		P
7440-23-5	Sodium	76700			P
7440-28-0	Thallium	1.2	U	WN	F
7440-62-2	Vanadium	7.1	B		P
7440-66-6	Zinc	4.8	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

002

FORM I - IN ILM02.1

TMA Inc. REPORT Work Order # A3-04-040

Received: 04/13/93 Results by Sample

SAMPLE ID B088Z0 FRACTION 01E TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/09/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	32.6	mg/L	0.4
Fluoride	300.0	0.6	mg/L	0.1
Phosphate	300.0	<0.4 U	mg/L	0.4
pH	150.1	8.0	pH	0.1
Sulfate	300.0	106	mg/L	2
Elect. Conductivity	120.1	879	umho/cm	6

FORM I

NV 7-23-93

TMA Inc. REPORT Work Order # A3-04-040

Received: 04/13/93

Results by Sample

SAMPLE ID B08BZ0 FRACTION 01M TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/09/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	200	mg/L	2
Tot. Dissolved Solids	160.1	628	mg/L	5

FORM I

NW 7-23-93 SC

9713515.2465

000012

TMA Inc. REPORT Work Order # A3-04-040

Received: 04/13/93

Results by Sample

SAMPLE ID B088Z0 FRACTION 01J TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/09/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	<1 U	mg/L	1

FORM I

NV 7-23-93

9713515.2466

000013

TMA Inc. REPORT Work Order # A3-04-040

Received: 04/13/93

Results by Sample

SAMPLE ID B088Z0 FRACTION 01M TEST CODE UCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/09/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05 U	mg/L	0.05
COD	410.0	<5 U	mg/L	5

FORM I

NV 7-23-93 SC

9713515.2467

 Skinner&Sherman REPORT Work Order # S3-04-175

Received: 04/14/93 Results by Sample

SAMPLE ID B088Z0 SAMPLE # 01 FRACTIONS: A
Date & Time Collected 04/09/93 Category WATER

NO3NO2 26.9
mg N/L

SAMPLE ID B088Z0 DUPL SAMPLE # 01 FRACTIONS: B
Date & Time Collected 04/09/93 Category WATER

NO3NO2 27.4
mg N/L

SAMPLE ID B088Z0 SPIKE SAMPLE # 01 FRACTIONS: C
Date & Time Collected 04/09/93 Category WATER

NO3NO2 29.2
mg N/L

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

NO3NO2 2.02
mg N/L

NV 7-23-93 SC

TMA Thermo Analytical Inc.

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

9713515.2468

000003

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Z5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B18

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

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

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

7/19/93

8/2/93

9713515.2469

000006

EPA SAMPLE NO.

B088Z5

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B18

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

KWG 7/19/93

9713515.2470

000007
EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

B088Z7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B19

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

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

FORM I VOA 3/90

7/19/95

8/20/92

9713515.2471

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

000003
EPA SAMPLE NO.

B088Z7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-02A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B19

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

KLW 7/19/93

9713515.2472

000003

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08920

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B22

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

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

FORM I VOA 3/90

Kell 9/11/93

PBD 8/20/93

9713515.2473

000010
EPA SAMPLE NO.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B08920

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-03A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B22

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

KLG 4/19/93

9713515.2474

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

000011
EPA SAMPLE NO.

B08922

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B23

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

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

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

KWG 4/19/93 3/90 PBD 8/2/93

FORM I VOA

9713515.2475

000012

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B08922

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30419B23

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: not dec. ____ Date Analyzed: 04/19/93

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

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

KWD 7/19/93

9713515.2476

000013

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Z5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30506I08

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 04/16/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/06/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

7/14/93

8/2/93

9713515.2477

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

000014
EPA SAMPLE NO.

B088Z5

ıb Name: TMA/ARLI Contract: WHC

ıb Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

ıtrix: (soil/water) WATER Lab Sample ID: A304044-01B

ımple wt/vol: 1000 (g/mL) ML Lab File ID: 30506I08

ɜvel: (low/med) LOW Date Received: 04/14/93

Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/16/93

ɔncentrated Extract Volume: 1000 (uL) Date Analyzed: 05/06/93

ıjection Volume: 2.0(uL) Dilution Factor: 1.0

ᵊC 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

KEH 7/19/93

FORM I SV-2 3/90

8/2/93

9713515.2478

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

000015
EPA SAMPLE NO.

B088Z5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-01B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30506I08

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: ____ decanted: (Y/N) ___ Date Extracted: 04/16/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/06/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	21.52	2	J N
2.	UNKNOWN HYDROCARBON	23.28	78	J N

KLS 7/19/93

9713515.2479

000018

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08920

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I22

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/16/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/05/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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

7/14/93 8/2/93

9713515.2480

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

000017
EPA SAMPLE NO.

B08920

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I22

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/16/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/05/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	2	J
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

7/14/93

8/2/93

9713515.2481

000013

EPA SAMPLE NO.

B08920

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-03B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30504I22

Level: (low/med) LOW Date Received: 04/14/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 04/16/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/05/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

KEG 7/19/93

9713515.2482

000013

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B088Z5

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-01B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/14/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 04/16/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/30/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

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

KLG 7/19/93

9713515.2483

000020

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08920

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04044 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304044-03B

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/14/93

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 04/16/93

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/30/93

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U R
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 R

KLY 7/19/93

9713515.2484

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B088Z5

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

Lab Code: SKINER Case No.: N3-04-069SAS No.: SDG No.: B088Z5

Matrix (soil/water): WATER Lab Sample ID: 04177-01S

Level (low/med): LOW Date Received: 04/15/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	36.8	B	U	P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	4.3	B	WJ	F
7440-39-3	Barium	45.0	B		P
7440-41-7	Beryllium	0.83	B		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	94300			P
7440-47-3	Chromium	5.8	U		P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	13.7	B	U	P
7439-92-1	Lead	2.8	B	WJ	F
7439-95-4	Magnesium	24600			P
7439-96-5	Manganese	1.8	U		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	7770			P
7782-49-2	Selenium	4.5	B	+J	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	32000			P
7440-28-0	Thallium	2.6	U	WJ	F
7440-62-2	Vanadium	8.0	B		P
7440-66-6	Zinc	3.4	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

7/19/93

002

Comments:

9713515.2485

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B08920

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

Lab Code: SKINER Case No.: N3-04-069SAS No.: SDG No.: B088Z5

Matrix (soil/water): WATER Lab Sample ID: 04177-02S

Level (low/med): LOW Date Received: 04/15/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23.5	U		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	3.5	U		F
7440-39-3	Barium	2.5	U		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	42.3	U		P
7440-47-3	Chromium	5.8	U		P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	10.9	~~B~~	u	P
7439-92-1	Lead	2.6	~~B~~	WJ	F
7439-95-4	Magnesium	46.4	U		P
7439-96-5	Manganese	1.8	U		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	188	U		P
7782-49-2	Selenium	2.9	U		F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	193	B		P
7440-28-0	Thallium	2.6	U	WJ	F
7440-62-2	Vanadium	3.3	U		P
7440-66-6	Zinc	3.4	U		P
	Cyanide	10.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR 7/19/93 Artifacts:

Comments:

1: 003

FORM I - IN ILM02.1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B088Z6

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

Lab Code: SKINER Case No.: N3-04-069SAS No.: SDG No.: B088Z6

Matrix (soil/water): WATER Lab Sample ID: 04179-01S

Level (low/med): LOW Date Received: 04/15/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23.5	U		P
7440-36-0	Antimony	17.9	U		P
7440-38-2	Arsenic	3.5	U		F
7440-39-3	Barium	44.9	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	94900			P
7440-47-3	Chromium	7.0	B		P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	4.8	U		P
7439-92-1	Lead	3.9		WJ	F
7439-95-4	Magnesium	24800			P
7439-96-5	Manganese	1.8	U		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	7920			P
7782-49-2	Selenium	3.6	B	+J	F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	32600			P
7440-28-0	Thallium	1.2	U	WJ	F
7440-62-2	Vanadium	6.4	B		P
7440-66-6	Zinc	3.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

Comments:

KEG 7/16/93

002

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B08921

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

Lab Code: SKINER Case No.: N3-04-069SAS No.: SDG No.: B088Z6

Matrix (soil/water): WATER Lab Sample ID: 04179-02S

Level (low/med): LOW Date Received: 04/15/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	29.5	~~B~~	U	P
7440-36-0	Antimony	19.1	B		P
7440-38-2	Arsenic	3.5	U		F
7440-39-3	Barium	2.5	U		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.7	U		P
7440-70-2	Calcium	42.3	U		P
7440-47-3	Chromium	5.8	U		P
7440-48-4	Cobalt	3.8	U		P
7440-50-8	Copper	4.2	U		P
7439-89-6	Iron	4.8	U		P
7439-92-1	Lead	3.4		J	F
7439-95-4	Magnesium	46.4	U		P
7439-96-5	Manganese	1.8	U		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	6.1	U		P
7440-09-7	Potassium	188	U		P
7782-49-2	Selenium	2.9	U		F
7440-22-4	Silver	3.8	U		P
7440-23-5	Sodium	139	~~B~~	U	P
7440-28-0	Thallium	1.2	U		F
7440-62-2	Vanadium	3.3	U		P
7440-66-6	Zinc	3.4	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

KED 7/16/93

003

9713515.2488

000010

TMA Inc. REPORT Work Order # A3-04-044

Received: 04/14/93

Results by Sample

SAMPLE ID B08825 FRACTION 01E TEST CODE WCCLPL NAME Anions & Wet Chem. - WW043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	10.1	mg/L	0.2
Fluoride	300.0	0.4	mg/L	0.1
Phosphate	300.0	<0.4 UJ	mg/L	0.4
pH	150.1	7.8 J	pH	0.1
Sulfate	300.0	79	mg/L	1
Elect. Conductivity	120.1	821	umho/cm	6

FORM I

KWJ 7/20/93

TNA Inc. REPORT Work Order # A3-04-044

Received: 04/14/93

Results by Sample

SAMPLE ID B08825 FRACTION 01G TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	<1 U	mg/L	1

FORM I

RWG 7/20/93

TMA Inc. REPORT Work Order # A3-04-044

Received: 04/14/93

Results by Sample

SAMPLE ID B08825 FRACTION 01I TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05 U	mg/L	0.05
COD	410.0	<5 U	mg/L	5

FORM I

KEW 7/20/93

TMA Inc. REPORT Work Order # A3-04-044

Received: 04/14/93

Results by Sample

SAMPLE ID B08920 FRACTION 03E TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Chloride	300.0	<0.2 U	mg/L	0.2
Fluoride	300.0	<0.1 U	mg/L	0.1
Phosphate	300.0	<0.4 U	mg/L	0.4
pH	150.1	6.1 J	pH	0.1
Sulfate	300.0	<1 U	mg/L	1
Elect. Conductivity	120.1	<6 U	umho/cm	6

FORM I

KWS 7/20/93

TMA Inc. REPORT Work Order # A3-04-044

Received: 04/14/93

Results by Sample

SAMPLE ID 808920 FRACTION 03G TEST CODE WCCLPL NAME Anions & Wet Chem. - WH043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Alkalinity	310.1	~~<2~~ U	mg/L	2
Tot. Dissolved Solids	160.1	~~<5~~ U	mg/L	5

FORM I

KWG 7/20/93

TMA Inc. REPORT Work Order # A3-04-044

Received: 04/14/93

Results by Sample

SAMPLE ID B08920 FRACTION 031 TEST CODE WCCLPL NAME Anions & Wet Chem. - WB043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Sulfide	376.1	<1 U	mg/L	1

FORM I

KWS 7/30/93

9713515.2494

TMA Inc. REPORT Work Order # A3-04-044 000016

Received: 04/14/93

Results by Sample

SAMPLE ID B08920 FRACTION 03K TEST CODE WCCLPL NAME Anions & Wet Chem. - WN043

Date & Time Collected 04/12/93 Category

ANIONS AND WET CHEMISTRY - LIQUIDS

ANALYSIS	METHOD	RESULT	UNITS	LIMIT
Ammonia Nitrogen	350.3	<0.05 U	mg/L	0.05
COD	410.0	<5 U	mg/L	5

FORM I

KW 9/30/93

9713515.2495

 Skinner&Sherman REPORT Work Order # S3-04-178

Received: 04/15/93 Results by Sample

SAMPLE ID B08825 SAMPLE # 01 FRACTIONS: A
Date & Time Collected 04/12/93 Category WATER

NO3NO2 19.6

SAMPLE ID B08920 SAMPLE # 02 FRACTIONS: A
Date & Time Collected 04/12/93 Category WATER

NO3NO2 <0.25 U

SAMPLE ID B08920 DUPL SAMPLE # 02 FRACTIONS: B
Date & Time Collected 04/12/93 Category WATER

NO3NO2 <0.25

SAMPLE ID B08920 SPIKE SAMPLE # 02 FRACTIONS: C
Date & Time Collected 04/12/93 Category WATER

NO3NO2 2.07

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

NO3NO2 2.02

KWB 4/20/93

TMA
Thermo Analytical Inc.
Skinner & Sherman Laboratories Inc.
88 Second Avenue, P.O. Box 521, Waltham, Massachusetts 02254-0521 (617) 890-7400
1-800-4-LAB TEST FAX (617) 890-5883