

**START**

0713517.0765

B08MNO-TMA-547

0046227

2  
2

000001

**WESTINGHOUSE HANFORD COMPANY**

**Results of Analyses For:**

**FULL TCLP  
CASE NO. 06-092  
(TMA/ARLI Work Order # A3-06-092)**



Full TCLP results are presented  
for the following WHC WATER sample(s):

B08MNO

B08NL6

Norcal Work Order # N3-06-104

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

Date submitted:

9 / 0 8 / 9 3

9713517.10766

000002

PAGE 1

TMA/Norcal

CHAIN OF CUSTODY

ORD # N3-06-104

RCVD: 06/30/93 DUE: 07/30/93

07/01/93 14:27:10

KEEP: 07/30/94 DISP: S

DASH	SAMPLE IDENTIFICATION	STORED	TESTS for FRACTIONS with work in DEPT: SU and CATEGORY
01A-W	BOBMNO	ARLI	! WH126
*****			
02A-W	BOBNL6	ARLI	! WH126
.....			
02B	BOBNL6 MS	ARLI	! WH126
.....			
02C	BOBNL6 MSD	ARLI	! WH126
=====			

<u>RELEASED BY</u>	<u>DATE</u>	<u>TRANSFERRED TO</u>	<u>DATE</u>	<u>RECEIVED BY</u>	<u>DATE</u>
<u>tyanamoto</u>	<u>7-1-93</u>	<u>ARLI</u>	<u>7-1-93</u>	<u>C. Hume</u>	<u>7-2-93</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

9713517.0767

000002A

Westinghouse Hanford Company	CHAIN OF CUSTODY	004235
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Custody Form Initiator C.E. Zerby

Company Contact R.D. Belden/ W.E. Strohben Telephone 372-1226/372-3695

Project Designation/Sampling Locations SAF# 93-101. Soil Washing Test Collection Date 6-25-93

Work done to RCRA protocol. Collection Date \_\_\_\_\_

Ice Chest No. \_\_\_\_\_ Field Logbook No. WHC-N-205# 22

Bill of Lading/Airbill No. \_\_\_\_\_ Offsite Property No. \_\_\_\_\_

Method of Shipment Samples double-bagged, packed on wet ice in polycooler. Air freight.

Shipped to TMA/NORCAL Richmond, CA.

Possible Sample Hazards/Remarks \_\_\_\_\_

Sample Identification

✓ B08NL4	(3) Bottles	
✓ B08NL5	(3) Bottles	
✓ B08NL6	(3) Bottles	
✓ B08NL7	(3) Bottles	
<del>B08NL8</del>	<del>(3) Bottles</del>	<del>CZ 6-25-93</del>
<del>B08NL9</del>	<del>(3) Bottles</del>	<del>CZ 6-25-93</del>
✓ B08NMO	(1) Bottles	
✓ B08NM1	(1) Bottles	

Field Transfer of Custody		CHAIN OF POSSESSION			(Sign and Print Name)	
Relinquished By	Date	Time	Received By	Date	Time	
<u>C.E. Zerby</u>	<u>6-25-93</u>	<u>1800</u>	<u>R.Z. Stoff</u>	<u>6-29-93</u>	<u>0830</u>	
<u>R.Z. Stoff</u>	<u>6-29-93</u>	<u>11:00</u>	<u>Elby J. Yamamoto</u>	<u>6-30-93</u>	<u>10:55<sup>24</sup></u>	

Final Sample Disposition

Disposal Method: \_\_\_\_\_ Disposed by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments: \_\_\_\_\_



Westinghouse  
Hanford Company

SAMPLE ANALYSIS REQUEST

004235

Collector J.G. Hogan Date \_\_\_\_\_  
 Company Contact R.D. Belden/ W.E. Strohben Telephone (509) 372-1226/372-3695

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Requested
B08NL4	L	6-24-93	0920	(2) 1 L amber glass/ TCLP metals- Complete 1311
				ICP/GFAA metals
				Hg
				Semi-VOA
				Pesticides
				Herbicides
				(1) 250ml amber glass septum/ VOA 1311
B08NL5	L	6-25-93	0800	(2) 1 L amber glass/ TCLP metals- Complete 1311
				ICP/GFAA metals
				Hg
				Semi-VOA
				Pesticides
				Herbicides
				(1) 250ml amber glass septum/ VOA 1311
B08NL6	L		0840	(2) 1 L amber glass/ TCLP metals- Complete 1311
				ICP/GFAA metals
				Hg
				Semi-VOA
				Pesticides
				Herbicides
				(1) 250ml amber glass septum/ VOA 1311

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

Field Information SAF # 93-101. Soil Washing Test. 300-FF-1. Work done to RCRA protocol.

Special Handling and/or Storage Samples to be kept cooled to 4°C. prior to analysis.

Possible Sample Hazards \_\_\_\_\_



Westinghouse  
Hanford Company

SAMPLE ANALYSIS REQUEST **004235**

Collector J.G. Hogan Date 6-25-93  
 Company Contact R.D. Belden / W.E. Strohben Telephone (509) 372-1226/372-3695

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Requested
B08NL7	L	6-25-93	0855	(2) 1 L amber glass/ TCLP metals- Complete 1311 ✓ ICP/GFAA metals Hg Semi-VOA Pesticides Herbicides
B08NL8	L			(2) 1 L amber glass/ TCLP metals- Complete 1311 ✓ ICP/GFAA metals Hg Semi-VOA Pesticides Herbicides (1) 250ml amber glass septum/ VOA 1311 ✓
B08NL9	L			(2) 1 L amber glass/ TCLP metals- Complete 1311 ✓ ICP/GFAA metals Hg Semi-VOA Pesticides Herbicides (1) 250ml amber glass septum/ VOA 1311 ✓
B08NM0	L	6-25-93	0930	(1) 250ml amber glass septum/ VOA 1311 ✓
B08NM1	L		0600	(1) 250ml amber glass septum/ VOA 1311 ✓

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

Field Information SAF# 93-101. Soil Washing Test. Work done to RCRA protocol.

Special Handling and/or Storage Samples to be kept cooled to 4°C. prior to analysis.

Possible Sample Hazards \_\_\_\_\_



9713517.0771

000002E



Westinghouse  
Hanford Company

SAMPLE ANALYSIS REQUEST 004212

Collector J.G. Hogan Date 6-24-93  
 Company Contact R.D. Belden/ W.E. Strohben Telephone (509) 372-1226/372-3695

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Requested	
B08MM8	L	6-24-93	0900	(2) 1 L amber glass/ TCLP metals- Complete	1311
				ICP/GFAA metals	
				Hg	
				Semi-VOA	
				Pesticides	
				Herbicides	
				(1) 250ml amber glass septum/ VOA	1311
B08MM9	L		1215	(2) 1 L amber glass/ TCLP metals- Complete	1311
				ICP/GFAA metals	
				Hg	
				Semi-VOA	
				Pesticides	
				Herbicides	
				(1) 250ml amber glass septum/ VOA	1311
B08MM0	L		1315	(2) 1 L amber glass/ TCLP metals- Complete	1311
				ICP/GFAA metals	
				Hg	
				Semi-VOA	
				Pesticides	
				Herbicides	
				(1) 250ml amber glass septum/ VOA	1311

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

Field Information SAF # 93-101. Soil Washing Test. 300-FF-1. Work done to RCRA protocol.

Special Handling and/or Storage Samples to be kept cooled to 4°C. prior to analysis.

Possible Sample Hazards \_\_\_\_\_



Westinghouse  
Hanford Company

SAMPLE ANALYSIS REQUEST

004212

Collector J.G. Hogan

Date 6-24-93

Company Contact R.D. Belden/ W.E. Strohben

Telephone ( 509 372-1226/372-3695 )

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Requested	
B08MN1	L	6-24-93	1340	(2) 1 L amber glass/ TCLP metals- Complete	1311 ✓
				ICP/GFAA metals	
				Hg	
				Semi-VOA	
				Pesticides	
				Herbicides	
				(1) 250ml amber glass septum/ VOA	1311 ✓
B08MN2	L			(2) 1 L amber glass/ TCLP metals- Complete	1311 ✓
				ICP/GFAA metals	
				Hg	
				Semi-VOA	
				Pesticides	
				Herbicides	
				(1) 250ml amber glass septum/ VOA	1311 ✓
B08MN3	L	6-24-93	1340	(2) 1 L amber glass/ TCLP metals- Complete	1311 ✓
				ICP/GFAA metals	
				Hg	
				Semi-VOA	
				Pesticides	
				Herbicides	
				(1) 250ml amber glass septum/ VOA	1311 ✓
B08MN4	L		1340	(1) 250ml amber glass septum/ VOA	1311 ✓
B08MN5	L		0600	(1) 250ml amber glass septum/ VOA	1311 ✓

C2 6-25-93

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

Field Information SAF# 93-101. Soil Washing Test. Work done to RCRA protocol.

Special Handling and/or Storage Samples to be kept cooled to 4°C. prior to analysis.

Possible Sample Hazards \_\_\_\_\_

9713517 0273

000002G

OFFICE OF SAMPLE MANAGEMENT

RECORD OF DISPOSITION

ROD-93-0160  
Record of Disposition No.

DATE: 7/12/93

LABORATORY: TMA

PROJECT TITLE/NO.: 300-FF-1/SAF# 93-101

NCR NO.: ~~051186~~ <sup>was</sup> 051886 7/15/93

SAMPLE IDENTIFICATION NUMBERS:

B08MNO

DESCRIPTION OF EVENT:

A nonrepresentative sample between the 1 liter and the 250 mL containers was documented by the laboratory.

Due to the above problem, the laboratory exceeded the VOA 14 day holding time by one day.

DISPOSITION OF SAMPLES:

With consent from R. D. Belden, proceed with the sample analysis for all TCLP fractions.

APPROVAL SIGNATURES:

W. E. Strohen / *W. E. Strohen*  
OSM Project Coordinator (Print/Sign Name)

*7/13/93*  
Date

R. D. Belden / *Ron Belden*  
Technical Representative (Print/Sign Name)

*7/14/93*  
Date

N/A  
Quality Assurance (Print/Sign Name)

Date

N3-06-104 9713517.0774

RECEIVED

0000024  
cc: Nicole Roth

OFFICE OF SAMPLE MANAGEMENT

JUL 13 1993

ROD-93-0150  
Record of Disposition No.

RECORD OF DISPOSITION

DATE: 7/6/93

LABORATORY: TMA

PROJECT TITLE/NO.: 300-FF-1/SAF# 93-101

NCR NO.: N/A

SAMPLE IDENTIFICATION NUMBERS:

B08MNO, B08NL6, B08MM8, B08NL4, B08NL5, B08NL7, B08NM0, B08NM1, B08MM9,  
B08MN1, B08MN3, B08MN4, B08MN5

DESCRIPTION OF EVENT:

All of the above samples were shipped to TMA for TCLP extraction and analysis. Only samples B08MN0 and B08NL6 were to be analyzed at TMA.

Only samples B08MN0 and B08NL6 are under the management of Hanford Analytical Services Management (HASM).

DISPOSITION OF SAMPLES:

Analyze samples B08MN0 and B08NL6 according to the Chain-of-Custody/Sample Analysis Request for total TCLP extraction and analysis. Ship samples B08MM8 and B08NL4 to DataChem Laboratories at 960 West LeVoy Drive, Salt Lake City, Utah 84123, Attn: Kevin Griffiths. Ship samples B08NL5, B08NL7, B08NM0, B08NM1, ~~B08MM9~~, B08MN1, B08MN3, B08MN4, B08MN5 back to Westinghouse to the following address:

2355 Stevens Drive  
Richland, WA 99352  
200W/222S Laboratory Door 13  
ATTN: Marty Martin/Michelle Graves

B08MM9 WES  
7/8/93

APPROVAL SIGNATURES:

W. E. Strohben / *W.E. Strohben*  
OSM Project Coordinator (Print/Sign Name)

7/6/93  
Date

R. D. Belden / *Ron Belden*  
Technical Representative (Print/Sign Name)

7/8/93  
Date

N/A  
Quality Assurance (Print/Sign Name)

Date

SAMPLE LOG-IN SHEET

LAB NAME : TMA/ARLI

PAGE : 1 OF 1

RECEIVED BY (PRINT NAME): W. H. TAKER

LOG-IN-DATE : 7-2-93

RECEIVED BY (SIGNATURE): [Signature]

ICE CHEST NO. <u>SML-146</u>	CORRESPONDING			REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC
	EPA SAMPLE #	SAMPLE TAG #	ASSIGNED LAB #	
REMARKS:				
1. Custody Seal(s) <u>Present / Intact</u> / Absent* / Broken		B08M6 B08M0	A3-06-092-02 A3-06-092-01	
2. Custody Seal Nos: _____				
3. Chain of Custody Records <u>Present</u> / Absent*				
4. Traffic Reports or Packing List <u>Present</u> / Absent*				
5. Airbill <u>Airbill / Sticker Present</u> / Absent*				
6. Airbill No.: <u>7716414123</u>				
7. Sample Tags <u>Present</u> / Absent*				
8. Sample Tag Numbers <u>Listed</u> / Not Listed on Chain of Custody				
9. Sample Condition: <u>Intact</u> / Broken* / Leaking				
10. Does information on custody records, traffic reports, and sample tags agree? <u>Yes</u> / No*				
11. Date Received at Lab: <u>7-2-93</u>				
12. Temp of ice chest <u>50</u> <u>0930</u> °C				
13. Time Received: <u>0930</u>				
<b>SAMPLE TRANSFER</b>				
Fraction: _____				
Area #: _____				
By: _____				
On: _____				

\* Contact SMO and attach record of resolution

Reviewed By: \_\_\_\_\_ Logbook No.: \_\_\_\_\_

Date: \_\_\_\_\_ Logbook Page No.: \_\_\_\_\_

000004



QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL  
PACKAGE  
TRACKING NUMBER

7290260552

7290260552

3004 PA

RECIPIENT'S COPY

From (Your Name) Please Print <b>Sample Control</b>		Your Phone Number (Very Important) <b>(110)-235-2633</b>	To (Recipient's Name) Please Print <b>Carole Harris</b>		Recipient's Phone Number (Very Important) <b>(818) 357-3247</b>		
Company <b>TMA / NOCAL</b>		Department/Floor No.	Company <b>TMA / SRLI</b>		Department/Floor No.		
Street Address <b>2000 WRIGHT AVE</b>			Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.) <b>160 Taylor Street</b>				
City <b>RICHMOND</b>	State <b>CA</b>	ZIP Required <b>94804</b>	City <b>Monrovia</b>	State <b>Ca</b>	ZIP Required <b>91016</b>		
OUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on Invoice.) <b>2340 = 6406</b>			IF HOLD FOR PICK-UP, Print FEDEX Address Here Street Address City State ZIP Required				
PAYMENT 1 <input type="checkbox"/> Bill Sender 2 <input type="checkbox"/> Bill Recipient's FedEx Acct. No. 3 <input type="checkbox"/> Bill 3rd Party FedEx Acct. No. 4 <input type="checkbox"/> Bill Credit Card			5 <input type="checkbox"/> Cash/Check				
4 SERVICES (Check only one box)		5 DELIVERY AND SPECIAL HANDLING (Check services required)		6 PACKAGES WEIGHT In Pounds Only YOUR DECLARED VALUE (See right)			
Priority Overnight (Delivery by next business morning) 11 <input checked="" type="checkbox"/> OTHER PACKAGING 16 <input type="checkbox"/> FEDEX LETTER 12 <input type="checkbox"/> FEDEX PAK* 13 <input type="checkbox"/> FEDEX BOX 14 <input type="checkbox"/> FEDEX TUBE Economy Two-Day (Delivery by second business day) 30 <input type="checkbox"/> ECONOMY* 70 <input type="checkbox"/> OVERNIGHT FREIGHT** <small>*Economy Letter rate not available. Minimum charge. One pound economy rate.</small> <small>**Confirmed reservation required. †Delivery commitment may be later in some areas.</small>		Standard Overnight (Delivery by next business afternoon. No Saturday delivery) 5 <input type="checkbox"/> OTHER PACKAGING 56 <input type="checkbox"/> FEDEX LETTER** 52 <input type="checkbox"/> FEDEX PAK* 53 <input type="checkbox"/> FEDEX BOX 54 <input type="checkbox"/> FEDEX TUBE Government Overnight (Restricted for authorized stores only) 46 <input type="checkbox"/> GOVT LETTER 41 <input type="checkbox"/> GOVT PACKAGE Freight Service (for packages over 150 lbs.) 80 <input type="checkbox"/> TWO-DAY FREIGHT** <small>**Declared Value Limit \$500. **Call for delivery schedule.</small>		1 <input type="checkbox"/> HOLD FOR PICK-UP (Fill in Box H) 2 <input checked="" type="checkbox"/> DELIVER WEEKDAY 3 <input type="checkbox"/> DELIVER SATURDAY (Extra charge) (Not available to all locations) 4 <input type="checkbox"/> DANGEROUS GOODS (Extra charge) 5 <input type="checkbox"/> 6 <input type="checkbox"/> DRY ICE (Dangerous Goods Shipper's Declaration not required) 7 <input type="checkbox"/> OTHER SPECIAL SERVICE 8 <input type="checkbox"/> 9 <input type="checkbox"/> SATURDAY PICK-UP (Extra charge) 12 <input type="checkbox"/> HOLIDAY DELIVERY (if offered) (Extra charge)		Total: 1 55 DIM SHIPMENT (Chargeable Weight) L x W x H Received At: 1 <input checked="" type="checkbox"/> Regular Stop 3 <input type="checkbox"/> Drop Box 2 <input type="checkbox"/> On-Call Stop 4 <input type="checkbox"/> B.S.C. s <input type="checkbox"/> Station 7 Release Signature:	
Emp. No.		Date		Federal Express Use			
<input type="checkbox"/> Cash Received		<input type="checkbox"/> Return Shipment		Base Charges			
<input type="checkbox"/> Third Party <input type="checkbox"/> Chg. To Del. <input type="checkbox"/> Chg. To Hold		Street Address		Declared Value Charge			
City State Zip		Received By: <b>X</b>		Other 1			
Date/Time Received FedEx Employee Number		Total Charges		Other 2			
REVISION DATE 11/92 PART #137204 FXEM 3/93 FORMAT #155		155		© 1992-93 FEDEX, PRINTED IN U.S.A.			

9713517-0776

TMA/ARU  
The one Analytical Inc.

RADIATION DOSE RATE SURVEY FORM

Date 7/02/93 COMPANY TMA/NORCAL (WHC) OTHER ORD # 7290260552

Surveyor's Name MARK S. MCCRAY

Model No. HP-210 / ESP-1 Model No. AC-37 / ESP-1

Serial No. 710289 / 02619 Serial No. 40776 / 02628

Calibration Date 4/26/93 Calibration Date 2/16/93

Instrumental Calibration Factor 0.280 Instrumental Calibration Factor 0.190

Sample	Location	HP-210 CPM	HP-210 Factor	HP-210 DPM	AC-37 CPM	AC-37 Factor	AC-37 DPM	Source of Exposure?	Activity in CPM or DPM
Background		61.0			0				
Consistency		7320	0.2826		4,097	0.1506			
SMALL GWS 029		50.0			3.0			None	
<p>Reported (WHC) (2) samples one sample is &lt; 50cpm/gm and the other is 6.12000E 01 DCP/gm</p>									
<p><i>(Large scribbled-out area)</i></p>									

Comments

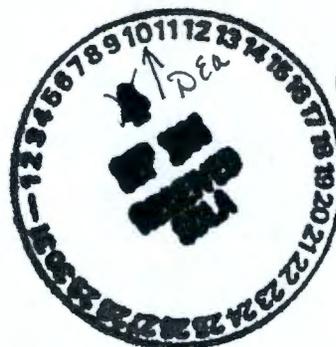
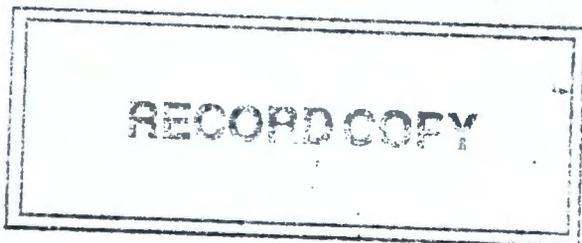
All OK

Approved MDM

Not OK

Date 7/02/93

9713517.0778



000006

*CASE NO. 06-092*

*TCLP DATA PACKAGE*

*PREPARED BY:*

*TMA ARLI  
160 TAYLOR ST.  
MONROVIA CA 91016*

## CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 06-092

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE : June 30, 1993

## 1.0 DESCRIPTION OF CASE :

Two water samples were analyzed for TCLP Organics - Volatiles, Semivolatiles, Pesticides, and Herbicides in accordance with the USEPA SW-846 Methods 8240, 8270, 8080, and 8150 respectively. As well as TCLP Metals according to SW-846 Methods 6010, 7471, 7421, 7740, and 7060.

## 2.0 SAMPLE LIST :

<u>WESTINGHOUSE ID</u>	<u>LAB ID</u>	<u>ANALYSIS REQUESTED</u>	<u>MATRIX</u>
B08MNO	A3-06-092-01A	V	WATER
B08MNO MS	A3-06-092-01B	V	WATER
B08MNO MSD	A3-06-092-01F	V	WATER
B08MNO	A3-06-092-01C	SV, P, H, M	WATER
B08MNO MS	A3-06-092-01D	SV, P, H, M	WATER
B08MNO MSD	A3-06-092-01E	SV, P, H, M	WATER
B08NL6	A3-06-092-02A	V	WATER
B08NL6 MS	A3-06-092-02E	V	WATER
B08NL6 MSD	A3-06-092-02F	V	WATER
B08NL6	A3-06-092-02B	SV, P, H, M	WATER
B08NL6 MS	A3-06-092-02C	SV, P, H, M	WATER
B08NL6 MSD	A3-06-092-02D	SV, P, H, M	WATER

## 3.0 COMMENTS :

## 3.1 SHIPPING AND DOCUMENTATION :

All of the samples were received by TMA/ARLI unbroken and properly documented.

## 3.2 TCLP EXTRACTION COMMENTS:

The percent solids of each sample dictated the they were to be processed differently to meet the requirements of Method 1311. Therefore, since each sample was processed differently resulting in different matrices (water and leachate) the proper QC was performed on each sample.

### 3.2.1 TCLP EXTRACTION FOR VOLATILES:

Sample B08LN6 contained less than 0.5% solids and therefore did not require the Zero Headspace Extraction. The sample was filtered on 7/8/93 within the required holding time.

The sample containers for sample B08MN0 that were submitted by WHC were not visually comparable. The 250 ml. bottle for the Volatile analysis was composed of a fine silty material and the percent solids visually appeared to be approximately 2%. Due to the non-homogeneity of the sample, the percent solids was required to be determined directly from the volatile aliquot. The sample was homogenized by gently shaking the container and measuring out 100 mls. The percent solids was determined to be 1.2%. From that measurement, 100 mls. of the sample was then filtered through the Zero Headspace Extractor with the solids being collected and then the buffer solution #1 was added. The Zero Headspace extraction was performed on 7/9/93 (1 day beyond the holding time) with prior approval from Westinghouse Hanford Company.

### 3.2.2 TCLP EXTRACTION FOR SEMIVOLATILE ORGANICS AND METALS:

Sample B08LN6 contained less than 0.5% solids and therefore did not require the TCLP Extraction. The sample was filtered on 7/8/93 within the required holding time.

The sample containers for sample B08MN0 that were submitted by WHC were not visually comparable. The 2 1-liter bottles for the non-volatile analyses were composed of granular sand-like particles and the percent solids were determined to be approximately 50%. The filtered solids were extracted in accordance with the TCLP Method 1311 on 7/8/93 within holding time and combined with the sample filtrate.

Sample B08MN0 was re-extracted on 08/23/93 for reanalysis of the metals.

## 3.3 ANALYSIS COMMENTS :

### 3.3.1 VOLATILE ANALYSIS COMMENTS:

#### SAMPLE NOTES:

The samples were analyzed using 1 ml of sample B08NL6 and 1 ml of the leachate/filtrate for sample B08MN0. The samples were analyzed by ambient purge within the required holding times. Since the matrix for each sample was different, each were spiked with all of the target analytes. All of the recoveries were within the limits established by SW-846 method 8240.

All of the QC results were within the limits specified by the SW-846 Method 8240.

## TUNES:

All of the BFB tunes were injected directly into the GCMS instrument.

## 3.3.2 SEMIVOLATILE ANALYSIS COMMENTS:

## SAMPLE NOTES:

100 mls. of the sample and extracts were extracted by liquid-liquid continuous extraction within the required holding times. Both of the samples were spiked with all of the target analytes with the exception of 1,4-Dichlorobenzene which was not present in the matrix spiking mix. All of the recoveries were within the limits established by SW-846 method 8270.

All of the QC results were within the limits specified by the SW-846 Method 8270.

## 3.3.3 PESTICIDE ANALYSIS COMMENTS:

## SAMPLE NOTES:

100 mls. of the sample and extracts were extracted by liquid-liquid continuous extraction within the required holding times. Both of the samples were spiked with all of the single response target analytes. All of the recoveries were acceptable.

All of the QC results were within the limits specified by the SW-846 Method 8080.

## 3.3.4 HERBICIDE ANALYSIS COMMENTS:

## SAMPLE NOTES:

100 mls. of the sample and extracts were extracted within required holding times. Both of the samples were spiked with the target analytes. All of the recoveries were acceptable.

All of the QC results were within the limits specified by the SW-846 Method 8150.

## 3.3.5 METALS ANALYSIS COMMENTS:

## AA NOTES:

Four (4) elements were run by Atomic Absorption. The elements and the methods were: Arsenic (7060), Selenium (7740), Mercury (7471), and Lead (7421). The use of AA methods as an alternative to ICP was done to provide greater sensitivity. The use of Graphite Furnace AA was designated by an "F" on the

forms, and Cold Vapor Atomic Absorption was designated by "CV".

ICP NOTES:

The sample was digested using EPA Method 3010 for ICP metals.

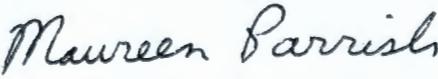
Sample B08NL6 indicated a Silver concentration of 0.037 ppm. In the re-extracted preparation blank, Barium was above the guidelines for the instrument detection limit.

For the ICP Interference Check Sample, Silver was outside the +/- 20% control criteria.

The matrix spike percent recovery for Selenium on sample B08NL6 was 76%. A slightly high recovery was evident for the matrix spike duplicate. The LCS had a 88% recovery which indicated that the low recoveries on the MS and MSD were due to matrix interferences.

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 is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

  
Nicole Roth  
CLP Program Manager  
9/9/93

  
Maureen Parrish  
Program Manager

9713517.0793  
TMA Inc.

000016

Received: 06/30/93

REPORT

Work Order # A3-06-092

Results by Sample

SAMPLE ID B08MNO

FRACTION 01A

TEST CODE ICV1

NAME TCLP Volatiles Form 1

Date & Time Collected 06/24/93

Category \_\_\_\_\_

TCLP VOLATILE ORGANICS

Sample Matrix (soil/water): WATER

Lab File ID: 30712R05

Leachate vol analyzed (mL): 1.0

TCLP Extraction Date: 07/09/93

Date Received: 06/30/93

Date Leachate Extracted: \_\_\_\_\_

Date Analyzed: 07/12/93

Dilution Factor: 5.0

Instrument ID: 4500

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
71-43-2	Benzene	ND	0.025
56-23-5	Carbon Tetrachloride	ND	0.025
108-90-7	Chlorobenzene	ND	0.025
67-66-3	Chloroform	0.014	0.025
107-06-2	1,2-Dichloroethane	ND	0.025
75-35-4	1,1-Dichloroethylene	ND	0.025
78-93-3	Methyl Ethyl Ketone	ND	0.05
127-18-4	Tetrachloroethylene	ND	0.025
79-01-6	Trichloroethylene	ND	0.025
75-01-4	Vinyl Chloride	ND	0.05

% RECOVERY SURROGATE COMPOUND

d8-Toluene 107

Bromofluorobenzene 106

1,2-Dichloroethane-d4 107

FORM I

000023

9713517 10784  
TMA Inc.

REPORT

Work Order # A3-06-092

Received: 06/30/93

Results by Sample

SAMPLE ID B08ML6FRACTION 02ATEST CODE TCV1NAME TCLP Volatiles Form 1Date & Time Collected 06/24/93

Category \_\_\_\_\_

TCLP VOLATILE ORGANICSSample Matrix (soil/water): WATERLab File ID: 30709R05Leachate vol analyzed (mL): 1.0TCLP Extraction Date: 07/08/93Date Received: 06/30/93

Date Leachate Extracted: \_\_\_\_\_

Date Analyzed: 07/09/93Dilution Factor: 5.0Instrument ID: 4500

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
71-43-2	Benzene	ND	0.025
56-23-5	Carbon Tetrachloride	ND	0.025
108-90-7	Chlorobenzene	ND	0.025
67-66-3	Chloroform	0.006	0.025
107-06-2	1,2-Dichloroethane	ND	0.025
75-35-4	1,1-Dichloroethylene	ND	0.025
78-93-3	Methyl Ethyl Ketone	ND	0.05
127-18-4	Tetrachloroethylene	ND	0.025
79-01-6	Trichloroethylene	ND	0.025
75-01-4	Vinyl Chloride	ND	0.05

## % RECOVERY SURROGATE COMPOUND

d8-Toluene 98Bromofluorobenzene 1051,2-Dichloroethane-d4 106

FORM I

9713517.0785

000102

RECORD COPY



*TCLP  
SEMIVOLATILES*

9713517, 0786

TMA Inc.

REPORT

000107

Work Order # A3-06-092

Received: 06/30/93

Results by Sample

SAMPLE ID B08MMOFRACTION 01C TEST CODE TCS1NAME TCLP Semi-Volatiles Form 1Date & Time Collected 06/24/93

Category \_\_\_\_\_

TCLP SEMI-VOLATILE ORGANICS

Sample Matrix: WATER  
 Leachate vol (mL): 100  
 Date Received: 06/30/93  
 Conc. Extract Vol.(mL): 2  
 Injection Volume (uL): 1  
 Instrument ID: SHERMA

Lab File ID: 30720S16  
 TCLP Extraction Date: 07/07/93  
 Date Leachate Extracted: 07/08/93  
 Date Analyzed: 07/20/93  
 Dilution Factor: 20

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
1319-77-3	Cresol (Total)	ND	0.1
87-86-5	Pentachlorophenol	ND	0.5
95-95-4	2,4,5-Trichlorophenol	ND	0.1
88-06-2	2,4,6-Trichlorophenol	ND	0.1
106-46-7	1,4-Dichlorobenzene	ND	0.1
121-14-2	2,4-Dinitrotoluene	ND	0.1
118-74-1	Hexachlorobenzene	ND	0.1
87-68-3	Hexachlorobutadiene	ND	0.1
67-72-1	Hexachloroethane	ND	0.1
98-95-3	Nitrobenzene	ND	0.1
110-86-1	Pyridine	ND	0.2

## % RECOVERY SURROGATE COMPOUND

2-Fluorophenol 94  
 Phenol-d5 99  
 2,4,6-Tribromophenol 93  
 Nitrobenzene-d5 95  
 2-Fluorobiphenyl 84  
 Terphenyl-d14 90

FORM I

9713517.0787

TMA Inc.

REPORT

000112

Work Order # A3-06-092

Received: 06/30/93

Results by Sample

SAMPLE ID B08NL6

FRACTION 02B

TEST CODE TCS1

NAME TCLP Semi-Volatiles Form 1

Date & Time Collected 06/24/93

Category \_\_\_\_\_

TCLP SEMI-VOLATILE ORGANICS

Sample Matrix: WATER  
 Leachate vol (mL): 100  
 Date Received: 06/30/93  
 Conc. Extract Vol.(mL): 2  
 Injection Volume (uL): 1  
 Instrument ID: SHERMA

Lab File ID: 30720S20  
 TCLP Extraction Date: 07/08/93  
 Date Leachate Extracted: 07/08/93  
 Date Analyzed: 07/20/93  
 Dilution Factor: 20

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
1319-77-3	Cresol (Total)	ND	0.1
87-86-5	Pentachlorophenol	ND	0.5
95-95-4	2,4,5-Trichlorophenol	ND	0.1
88-06-2	2,4,6-Trichlorophenol	ND	0.1
106-46-7	1,4-Dichlorobenzene	ND	0.1
121-14-2	2,4-Dinitrotoluene	ND	0.1
118-74-1	Hexachlorobenzene	ND	0.1
87-68-3	Hexachlorobutadiene	ND	0.1
67-72-1	Hexachloroethane	ND	0.1
98-95-3	Nitrobenzene	ND	0.1
110-86-1	Pyridine	ND	0.2

% RECOVERY SURROGATE COMPOUND

2-Fluorophenol	<u>85</u>
Phenol-d5	<u>87</u>
2,4,6-Tribromophenol	<u>80</u>
Nitrobenzene-d5	<u>100</u>
2-Fluorobiphenyl	<u>94</u>
Terphenyl-d14	<u>98</u>

FORM I

9713517.0788

000184

RECORD COPY



*TCLP PESTICIDES*

9713517.0789

000189

Received: 06/30/93

TMA Inc.

REPORT

Work Order # A3-06-092

Results by Sample

SAMPLE ID B08MM0

FRACTION 01C

TEST CODE TCP1

NAME TCLP Pesticides Form 1

Date & Time Collected 06/24/93

Category \_\_\_\_\_

TCLP CHLORINATED PESTICIDES

Sample Matrix: WATER  
 Leachate vol (mL): 100  
 Date Received: 06/30/93  
 Conc. Extract Vol.(mL): 10  
 Injection Volume (uL): 1  
 Column ID: DB-17

Lab File ID: AG12025  
 TCLP Extraction Date: 07/07/93  
 Date Leachate Extracted: 07/08/93  
 Date Analyzed: 07/12/93  
 Dilution Factor: 10

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
57-74-9	Chlordane	ND	0.005
72-20-8	Endrin	ND	0.001
76-44-8	Heptachlor	ND	0.0005
1024-57-3	Heptachlor Epoxide	ND	0.0005
58-89-9	Lindane	ND	0.0005
72-43-5	Methoxychlor	ND	0.005
8001-35-2	Toxaphene	ND	0.020

% RECOVERY SURROGATE COMPOUND

TCX 85

DCB 73

000194

9713517 10790  
TMA Inc.

Received: 06/30/93

REPORT  
Results by Sample

Work Order # A3-06-092

SAMPLE ID BOBNL6FRACTION 02B TEST CODE TCP1 NAME TCLP Pesticides Form 1  
Date & Time Collected 06/24/93 Category \_\_\_\_\_TCLP CHLORINATED PESTICIDESSample Matrix: WATER  
Leachate vol (mL): 100  
Date Received: 06/30/93  
Conc. Extract Vol.(mL): 10  
Injection Volume (uL): 1  
Column ID: DB-17Lab File ID: AG12028  
TCLP Extraction Date: 07/08/93  
Date Leachate Extracted: 07/08/93  
Date Analyzed: 07/13/93  
Dilution Factor: 10

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
57-74-9	Chlordane	ND	0.005
72-20-8	Endrin	ND	0.001
76-44-8	Heptachlor	ND	0.0005
1024-57-3	Heptachlor Epoxide	ND	0.0005
58-89-9	Lindane	ND	0.0005
72-43-5	Methoxychlor	ND	0.005
8001-35-2	Toxaphene	ND	0.020

## % RECOVERY SURROGATE COMPOUND

TCX 83DCB 77

FORM 1

9713517.0791

000364

RECORD COPY



# *TCLP HERBICIDES*

9713517-0792  
TMA Inc.

000369

Work Order # A3-06-092

Received: 06/30/93

REPORT  
Results by Sample

SAMPLE ID B08MNO

FRACTION 01C TEST CODE TCH1  
Date & Time Collected 06/24/93

NAME TCLP Herbicides Form 1  
Category \_\_\_\_\_

TCLP CHLORINATED HERBICIDES

Sample Matrix (soil/water): WATER

Lab File ID: AG12012

Leachate vol (mL): 100

TCLP Extraction Date: 07/07/93

Date Received: 06/30/93

Date Leachate Extracted: 07/09/93

Conc.Extract Vol.(mL): 5

Date Analyzed: 07/13/93

Injection Volume (uL): 1

Dilution Factor: 5

Column ID: DB-608

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
94-75-7	2,4-D	ND	0.010
93-72-1	2,4,5-TP	ND	0.0010

% RECOVERY SURROGATE COMPOUND

DCAA 93

FORM I

9713517.0793

000374

TMA Inc.

REPORT

Work Order # A3-06-092

Received: 06/30/93

Results by Sample

SAMPLE ID B08ML6

FRACTION 02B

TEST CODE ICH1

NAME TCLP Herbicides Form 1

Date & Time Collected 06/24/93

Category \_\_\_\_\_

TCLP CHLORINATED HERBICIDES

Sample Matrix (soil/water): WATER

Lab File ID: AG12015

Leachate vol (mL): 100

TCLP Extraction Date: 07/08/93

Date Received: 06/30/93

Date Leachate Extracted: 07/09/93

Conc. Extract Vol.(mL): 5

Date Analyzed: 07/13/93

Injection Volume (uL): 1

Dilution Factor: 5

Column ID: DB-608

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)
94-75-7	2,4-D	ND	0.010
93-72-1	2,4,5-TP	ND	0.0010

% RECOVERY SURROGATE COMPOUND

DCAA 105

9713517.0794

000485

RECORD COPY



*TCLP METALS*

9713517.0795

TMA Inc.

REPORT

000486

Work Order # A3-06-092

Received: 06/30/93

Results by Sample

SAMPLE ID B08MNOFRACTION 01C TEST CODE TCM1 NAME TCLP Metals Form 1Date & Time Collected 06/24/93

Category \_\_\_\_\_

TCLP METALSSample Matrix: WATERTCLP Extraction Date: 08/23/93Date Received: 06/30/93

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)	METHOD
7440-38-2	Arsenic	0.006	0.001	F
7440-39-3	Barium	3.49	0.001	P
7440-43-9	Cadmium	ND	0.007	P
7440-47-3	Chromium	0.078	0.006	P
7439-92-1	Lead	0.017	0.001	F
7439-97-6	Mercury	0.0012	0.0002	CV
7782-49-2	Selenium	0.011	0.002	F
7440-22-4	Silver	0.005	0.003	P

## Analytical Methods Used:

P = ICP      A = Flame AA      F = Furnace AA  
 CV = Cold Vapor AA

9713517.0796

000489

TMA Inc.

REPORT

Work Order # A3-06-092

Received: 06/30/93

Results by Sample

SAMPLE ID B08NL6FRACTION 02BTEST CODE ICM1NAME TCLP Metals Form 1Date & Time Collected 06/24/93

Category \_\_\_\_\_

TCLP METALSSample Matrix: WATER  
Date Received: 06/30/93TCLP Extraction Date: 07/08/93

CAS No.	COMPOUND	RESULT (mg/L)	PQL (mg/L)	METHOD
7440-38-2	Arsenic	0.001	0.001	F
7440-39-3	Barium	0.567	0.001	P
7440-43-9	Cadmium	0.001	0.003	P
7440-47-3	Chromium	0.107	0.007	P
7439-92-1	Lead	0.008	0.001	F
7439-97-6	Mercury	0.0024	0.0002	CV
7782-49-2	Selenium	ND	0.002	F
7440-22-4	Silver	0.078	0.004	P

## Analytical Methods Used:

P = ICP      A = Flame AA      F = Furnace AA  
CV = Cold Vapor AA