6045805

MAXWELL
S-CUBED Division

SORRENTO VALLEY OFFICE
3398 Carmel Mountain Road, San Diego, CA 92121-10
P.O. Box 1620, La Jolla, CA 92038-16

September 26, 1991

Ms. R. Owens
MSIN: T6-08
Office of Sample Management
Westinghouse Hanford Company
2355 Stevens Drive
Richland, WA 99352

NOV 1996
RECEIVED
EDMC

Reference No. 32359-04
P.O. No. MBH-SVV-230656

Dear Ms. Owens:

Enclosed are the results from the analysis of the Site Wide Soil samples, received by S-Cubed on September 16, 1991. The samples were analyzed for VOA, SVOA pesticides, TOC, metals, anions, ammonia, and alkalinity. Unfortunately, the pesticides are not included in this shipment. They will be shipped shortly as Volume 2.

The enclosed report contains a sample summary, narrative, copies of the chain-of-custody, and a full data package for each analysis. If you have any questions about the data, please give me a call.

Sincerely,

John DeWald
Manager, Commercial Analysis Section

/alb

encl: a/s

SEP 1991
RECEIVED
DATA RECEIPT

Telephone (619) 453-0060 - FAX (619) 755-0474 - Division Office

MAXWELL
S-CUBED Division

NARRATIVE

DATE: September 26, 1991

REFERENCE NO.: 32359-04

Volatiles

The samples were analyzed according to the CLP-VOA method. There were no difficulties with the analysis. There were no significant levels of any of the target analytes detected in the sample.

The quality control results were acceptable.

Semivolatiles

The samples were analyzed according to the CLP-SVOA method. There were no difficulties with the analysis. There were no significant levels of any of the target analytes detected in the sample.

The quality control results were acceptable.

TOC

The samples were analyzed according to Method 9060. There were no difficulties with the analysis. There were significant levels of TOC detected in the sample, which necessitated a 1:10 dilution.

The quality control results were acceptable.

Metals

The samples were analyzed according to the CLP-M methods. There were difficulties with the analysis because of the amount of iron in the samples, which necessitated a 1:11 dilution for the GFAA analytes. There were significant levels of Al, Ca, Fe, and Mg detected in the sample.

The quality control results were generally acceptable. The Hg curve was biased low, but no Hg was detected in the samples so the results should not be adversely affected. The matrix spike sample showed low recovery for Hg and Sb, though the post- digestion spike was good for Sb. It showed high recover. for Pb, Se, and Tl. The data for Al, Fe, V, and Zn did not meet quality control criteria in the replicate sample. The anomalies in the matrix spike and replicate samples can be attributed to matrix effects, since the soil samples are inhomogeneous.

ia 11-23-94

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01411

Lab Name: S-CUBED Contract: ~~68-D9-0027~~ 32359-024 9/26/91

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2597

Matrix: (soil/water) SOIL WIPE SOIL Lab Sample ID: 2597-1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C0923068

Level: (low/med) LOW Date Received: 09/16/91

% Moisture: not dec. 2 dec._____ Date Extracted: 09/17/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/25/91

GPC Cleanup: (Y/N) N pH: 9.0 Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.20	U
319-85-7	beta-BHC	8.20	U
319-86-8	delta-BHC	8.20	U
58-89-9	gamma-BHC (Lindane)	8.20	U
76-44-8	Heptachlor	8.20	U
309-00-2	Aldrin	8.20	U
1024-57-3	Heptachlor epoxide	8.20	U
959-98-8	Endosulfan I	8.20	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1031-07-8	Endosulfan sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	82.00	U
53494-70-5	Endrin ketone	16.00	U
5103-71-9	alpha-Chlordane	82.00	U
5103-74-2	gamma-Chlordane	82.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	82.00	U
11104-28-2	Aroclor-1221	82.00	U
11141-16-5	Aroclor-1232	82.00	U
53469-21-9	Aroclor-1242	82.00	U
12672-29-6	Aroclor-1248	82.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

MCB 10/3/91

004

FORM I PEST 1/87 Rev.

1b 11/23/94

SAMPLE SUMMARY

S-Cubed Reference No. 32359-04, SDG No. 2597, Project Name: Site Wide Soil

S-Cube Number	Sampl ID	Date Receive	Sampl Type	Analysis									
				A	B	C	D	E	F	G	H	I	J
BO1411	2597-1	9/17/91	Soil	1	1	1	1	1	1	1	1	1	1
BO1412	2597-2	9/17/91	Soil	1	1	1	1	1	1	1	1	1	1
BO1413	2597-3	9/17/91	Soil	1	1	1	1	1	1	1	1	1	1

Analysis Key:

A=VOACLP
B=SVOACLP
C=OCPCLP
D=TOC
E=ICPCLP-M
F=FURNCLP
G=HGCLP
H=ANIONS
I=N-NH3
J=ALK

1c Amr 11-23-91

Westinghouse Hanford Company

Hanford Operations and Engineering Contractor for the US Department of Energy
P.O. Box 1970 Richland, Wa. 99352

NONCONFORMANCE REPORT

NO. B 05175

1. MFR/ORG: MAXWELL S-CUBED DIVISION

ITEM/MATERIAL NAME: ENVIR. SAMPLE | PART NO.: N/A
DRAWING/SPEC. NO.: | REV.: N/A
PROGRAM/PROJECT: SITE-WIDE BACKGROUND | P.O./W.O. NO.:
SYSTEM/END USE: | DATE: 01/28/92

UNUSUAL OCCURRENCE REPORT REQUIRED: ☒ YES ☒ NO

2. DESCRIPTION OF NONCONFORMANCE

LABORATORY IS PERFORMING INORGANIC ANALYSIS (SOIL) WITHOUT UTILIZING A SOLID MATRIX LCS FOR CLP METALS ANALYSIS.

EXAMPLES: SDG # 2630 & 2633

NOTE: THE LAB INDICATES THAT ALL METAL ANALYSIS (CLP) HAVE BEEN PERFORMED WITHOUT A SOIL LCS.

3. REQUIREMENT VIOLATED: "ONE SOLID LCS MUST BE PREPARED & ANALYZED FOR EVERY GROUP OF SOLID SAMPLES IN A SAMPLE DELIVERY GROUP....."

DOCUMENT	REV	ZONE/PARA
CLP-SOW INORGANICS	2/88	PART E, SECTION V, ITEM #8

ORIGINATOR: M.A. Beck | ORGANIZATION: 12500/05M | DATE: 01/28/92

4. ASME CODE ITEM(s): ☐ NO ☐ YES. NOTIFY AUTHORIZED INSPECTOR.

WHC QAR:

5. CAUSE OF NONCONFORMANCE

☐ PROCEDURES ☐ PERSONNEL ☐ MATERIALS
☐ EQUIPMENT ☒ OTHERS

REMARKS: See 8A

PR-07, EQ-001-002

6. CORRECTIVE ACTION TO ELIMINATE CAUSE

- S³ has obtained and is currently using a solid LCS sample for the QC requirement (see S³ letter to T. Washington 3/20)

INITIATION DATE: | SERIAL NO.:

RESPONSIBLE ORG. REP. | TITLE | DATE

7. RECOMMENDED DISPOSITION: ☒ ACCEPT ☐ REJECT ☐ REPAIR ☐ REWORK ☐ OTHER

8A. DISPOSITION JUSTIFICATION AND INSTRUCTIONS

S³ did perform the LCS at the required frequency using an aqueous standard prior to receiving and testing the solid LCS. The aqueous LCS results were evaluated in the applicable data packages and performance was documented with the validation paperwork.

8. ADDITIONAL REVIEWS REQUIRED (WHC ONLY): ☐ YES ☒ NO
IF YES, IDENTIFY:

8B. SUPPLIER ENG.: | SUPPLIER QA:

10. DISPOSITION APPROVAL (WHC ONLY)

☒ APPROVED ☐ DISAPPROVED
☐ OTHER (SEE CONTINUATION SHEET)

J. Hoover — COGNIZANT ENGINEER — DATE 5/21/92
LW VANCE L.W. Vance — COGNIZANT QA ENGINEER — DATE 5/21/92
NA — AUTHORIZED INSPECTOR REVIEW — DATE

11. ADDITIONAL APPROVALS

NAME	TITLE	DATE	NAME	TITLE	DATE

12. DISPOSITION ACTION COMPLETE

L.W. Vance — NAME — DATE 5/21/92 — QTY. ACCEPT: NA — QTY. REJ.: NA — FOLLOW ON NCR

QA LOG NO.: QA-92-013

The issuance and acceptance of this request in no way limits or affects the warranty provisions of the order. This request shall not establish a precedent or obligation to accept similar conditions in the future.

FOLLOW-UP LEVEL: A ☐ B ☐ C ☐

7310-104 (4-87)

MAXWELL
S-CUBED Division

SORRENTO VALLEY OFFICE
3398 Carmel Mountain Road., San Diego, CA 92121-10
P.O. Box 1620, La Jolla, CA 92038-16

March 27, 1992

Ted Washington
MSIN: T6-08
Office of Sample Management
Westinghouse Hanford Company
2355 Stevens Drive
Richland, WA 99352

Dear Mr. Washington:

We have recently been able to validate and confirm true values for the ERA solid LCS source using the CLP method. The validation study was performed by preparing and analyzing ten solid LCS samples using the CLP method and determining the average value obtained for each analyte and the appropriate windows of acceptability. This validation study was required by the solid LCS source since the certified true value determinations were based on the method 3050, SW-846 (see attached sheet).

Prior to the availability of validated solid LCS for CLP soil analysis, EPA-approved aqueous LCS spike solution was spiked into a clean, empty beaker and then prepared and analyzed by the CLP soil method. Thus quality control requirements for preparation and analysis are acceptable and confirm the reliability and validity of the associated samples using the available LCS at that time.

Sincerely,

Wipawan Nisamaneepong

Wipawan Nisamaneepong, Ph.D.
Inorganics Laboratory Manager

Telephone (619) 453-0060 - FAX (619) 755-0474 - Division Office

Instructions for the use of

PriorityPollutnT™/CLP Quality Control Standards

Inorganics in Soil **Caution: Read instructions carefully before opening PriorityPollutnT™/CLP standards.**

PriorityPollutnT™/CLP Quality Control Standards are designed to test your complete inorganic priority pollutant and CLP analysis procedure. The Trace Metals solid standard contains 24 trace metals (refer to the back of this sheet for a complete list). The Cyanide solid standard is designed for cyanide analysis, either a simple or a complex cyanide, or both, may be present.

I. Standard Preparation

The standards must be prepared by the following directions before analysis.

A. Trace Metals

Digest the standard using Method 3050, SW-846. This digestion is essentially a hot acid leach of the standard and is not a total digestion. The standard should then be analyzed by ICP and/or atomic absorption. Results different from the certified values will be obtained if a total digestion using hydrofluoric acid, perchloric acid or fusion is employed. Digest and analyze the sample for mercury using Method 7471, SW-846.

B. Cyanide

Prepare the standard using Method 9010 or 9012, SW-846. The preparation quoted is intended for use with an aqueous waste. The only required modification is to place 10 grams of the soil standard into the appropriate aliquot of water in the distillation flask (step 7.2.1). All other preparation steps should be followed. The digestate obtained is then analyzed for cyanide using Method 9010 (manual) or 9012 (automated), SW-846.

II. Standard Storage

Store the standards in a cool, dark place. The stability and certified values are unconditionally guaranteed for one year. Due to possible sample contamination, the guarantee is void after the standards are opened.

III. Standard Analysis

Remember ... PriorityPollutnT™/CLP standards are designed to help you evaluate the accuracy of your routine laboratory procedures. Therefore, analyze PriorityPollutnT™/CLP standards using your regular methods.

IV. Certified Results

The ERA certified and advisory range of values are included. The advisory range is the range of values that an experienced laboratory can expect to attain using the most precise methods and equipment. Certified and advisory values for ERA inorganic quality control standards are based on analytical results from applicable EPA reference methods. Certified values represent 100% recoveries for the analyses. Since many inorganic analytical methods do not yield 100% recoveries, especially for soil samples, ERA advisory ranges reflect typical recoveries from samples for the applicable EPA methodologies. The advisory ranges for these standards are wider than for ERA aqueous standards due to the variability of the SW-846 preparation methods.

SW-846

Inorganics in Soil has been prepared using a cleaned, dried and sieved topsoil substrate. The final product was digested by a variety of methods, including the recommended 3050 (SW-846), to evaluate the effect of digestion variability on the results the laboratory should obtain. The certified values and advisory ranges shown on the accompanying certification sheet were arrived at after extensive evaluation of the experimental results. It should be noted that antimony and molybdenum are especially difficult to quantitatively recover using Method 3050. Low recoveries may also be experienced for arsenic, selenium, silver, thallium and vanadium. The advisory ranges for these elements have been adjusted to reflect this fact.

Experiments conducted by ERA using a "weak acid" digestion with only hydrochloric acid significantly improved the recovery of antimony. Digestion of Inorganics in Soil by a closed vessel microwave methodology also decreased the recovery of silver to <10% of the certified value. High recoveries of the metals native to the soil matrix (e.g. aluminum, calcium, manganese, iron and magnesium) indicate a too vigorous digestion procedure. In general, it should be noted that Method 3050 is not an extremely rugged methodology and close attention should be paid to the procedure to insure recovery of the listed elements within the advisory ranges. ERA stresses that it is the responsibility of the individual laboratory to determine acceptable levels of performance for a particular analytical result depending on the intended use of the data.

* CLP

V. Safety

ERA products may be hazardous and are intended for use by professional laboratory personnel trained in the competent handling of such materials. Responsibility for the safe use of these products rests entirely with the buyer and/or user. If you need a Material Safety Data Sheet for any ERA product, please call toll-free at 1-800-ERA-0122.

MAXWELL
S-CUBED Division

FAX

TO:	M. Beck
FROM:	J. Goodin
DATE:	January 22, 1992
FAX NO:	(509) 373-3992
Pages to follow:	0

At S-Cubed, we do not have access to the EPA's solid LCS sample described in the CLP protocols because we are not currently under CLP contract with them for inorganic analysis. It might be possible to obtain some other solid reference material, but we have not yet found one containing all or even most of the metals. In the Quality Assurance Project Plan for Westinghouse Hanford Company, no solid LCS is specified and no solid LCS is discussed in the SW-846 (RCRA) methods. The LCS is used to determine laboratory consistency, for which purpose the liquid LCS is sufficient and allows us to monitor all of the metals of interest. We have recently analyzed a purchased solid reference standard, containing five of the metals, and would be glad to furnish you with these results. I hope that this explanation will satisfy your client. If you have any other questions or comments, please call me at (619) 587-8409.

CORRESPONDENCE DISTRIBUTION COVERSHEET

To: Distribution

From: Environmental Quality Assurance
H4-16 / 6-8557 / 6-9490

Subject: DISTRIBUTION OF NCR #B06175 (EQA-92-013)

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	w/att
		M. A. Beck	T6-08	
		J. H. Kessner	T6-08	
		J. D. Hoover	H4-57	
		L. W. Vance	H4-16	
		APA	B5-20	
		QUEST	L4-86	
		EQA File	H4-16	

Jeanette
Fancy
Ford
Jeff

MAY 1992
RECEIVED
J.H. KESSNER

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: C. Kramer

Company Contact: C. Kramer — Telephone: 376-4186

Project Designation/Sampling Locations: Site-Wide Background Sampling Site #1 — Collection Date: 9/12/91

Ice Chest No.: RM #832 — Field Logbook No.: WHC-N-438

Bill of Lading/Airbill No.: 2474252319 — Offsite Property No.: W91-0-0579 #1

Method of Shipment: Emery

Shipped to: S-Cubed San Diego, CA

Possible Sample Hazards/Remarks: — None

Sample Identification

B01411	Soil	See JDI	
B01412	Soil	See JDI	
B01413	Soil	See JDI	

☐ Field Transfer of Custody — CHAIN OF POSSESSION — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
C.D. Kramer C.D. Kramer	John Dixon John Dixon	9/17/91 11:30AM
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

00001

A-6000-407 (12/90)

Weight: 27 lbs "Next Day Service" Signature Security

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
Westinghouse		W91-0-0579 #1

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Environmental Eng.	Technical Baseline	

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

Routing Emery ☒ Contractor ☐ Vendor

Shipped to S-Cubed
3398 Carmel Mt. Rd.
San Diego, CA 92121-1095

Off-site Custodian: John Dewald.

Full Title: Project Coor.

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1	Poly Ice Chest (RM # 32) -Glass jars of soil packed in verniculite and blue ice. -Sample # B01411, B01412, B01413	

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

Necessity for the Off-Site Use of this Property

Program not available onsite.

Bill of Lading # 2474252319

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]	910763	9-16-91

Location of Property (Area & Bldg.)	Contact	Phone
Bkg. Site #1	Chris Kramer	(509) 376-4186

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
	EK16A 81223	

Originated By	Date	Authorized By	Date
Chris Kramer	9/16/91	[signature]	9/16/91

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[signature]	9/16/91

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[signature]				
Date 9-16-91				

DISTRIBUTION

00002

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)

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector C. Kramer / J. Lucas / C. Heiden Date Sampled 9/12/91 Time 13:00 hours

Company Contact Chris Kramer Telephone (509) 376-4186

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B01411	(3) 120-ml	Soil	See attached Tables A-1, A-2
B01412	↓	↓	Each sample is to be analyzed
B01413	↓	↓	for all analytes by the method
			shown except for fluoride.
			Fluoride may be done by
			ion chromatography.

Field Information** Site #1

Special Handling and/or Storage Sieve samples. Use ≤2 mm size fraction in analytical aliquots. Exclude stones, etc larger than 2 mm.

Possible Sample Hazards None.

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

00003

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

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

A-6000-406 (05/90)

EMERY WORLDWIDE

SIGNATURE AND TALLY RECORD

60009-46 (8/89) Litho USA

DATE: 09-16-91 SHIPMENT NO.: 247425231 9
SHIPPER: WESTINGHOUSE SHIPPING DEPT (509) 376-6665
REFERENCE NO.: W91-0-057941

SHIPPER NAME AND ADDRESS	CONSIGNEE NAME AND ADDRESS
WESTINGHOUSE SHIPPING DEPT (509) 376-6665 G2-06 US DEPARTMENT OF ENERGY C/O WESTINGHOUSE HANFORD COMPANY 2355 STEVENS DRIVE 1163 BUILDING PO BOX 1970 RICHLAND WA 99352	S-CUBED 3398 CARMEL MT. RD. SAN DIEGO CA 92121-1095

Pieces	Weight	Description/Marks	Emery Authorization No.
1	27 LBS	BO1411, BO1412, BO1413 W91D-[illegible] POLY ICE CHEST RW#32 SOIL 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.	WESTINGHOUSE SHIPPING JOYCE DEMAREST1167/1100	RICHLAND WA		/09-16-91
2.				
3.				
4.				
5.	SWR	HDY	SWR	0338 9/17/91
6.	[illegible]	SAN	J. PRICE	0940/[illegible]
7.	[illegible]	X=AAI	[illegible]	9/17 1125
8.	John Dixon S-Cubed	Dock	[illegible]	9/17/91 1130

SPECIAL HANDLING INSTRUCTIONS

CONSIGNEE COPY

PLEASE TYPE OR USE BALL POINT PEN. BEAR DOWN FIRMLY!
KEEP MARKS WITHIN BOXES TO ASSURE ACCURACY

FORM NO. 60001-46

FORM OF PAYMENT

CASH ☐ GBL/CBL ☐ FCCOD ☐

PPD ☒ COL ☐ OTH ☐ COMAT ☐

EMERY WORLDWIDE — A UPS Company

SERVICES

UNITED STATES / CANADA: Same Day ☐ · AM ☒ · PM ☐ · Second Day ☐ · Saturday Delivery ☐

INTERNATIONAL: Express ☐ · Preferred ☐ · Standard ☐ · Business Documents ☐ · Customs Clearance ☐ · Delivery ☐

Shipper's Account Number: E 850281585

Date: 09-16-91 · Origin: PBC · Shipment Number: [redacted]425[redacted] 9

From:
WESTINGHOUSE SHIPPING DEPT (509) 376-6665
US DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD
BLDG 1163
2355 STEVENS DRIVE
RICHLAND WA

To:
JOHN DEWALD
S-CUBED
3398 CARMEL MT. ROAD
SAN D[redacted] CA

Lot #2547
32354-01

Tariff Dest. · Gateway

Check to Shipper $

Hold for Pick Up ☐ · Canada ☐

EMERY WORLDWIDE will collect consignee's check made payable only to the shipper for the value of the goods in the amount shown above.

Customer's Reference Number: W81223 EK16A W91-0-0579#1

Zip: 99352

Consignee's Account Number: E

Zip: 92121-1095

Description	Pcs	L	W	H	Total Pieces	Total Weight (in Lbs)
1 POLY ICE CHEST RM#32 SOIL SAMPLES B01411, B01412, B01413 W91-0-0579#1	1	[illegible]	17	16	1	27

Dimensions

TOBER ☐ Haz Mat ☐ Exp ☐ · A B C D E F G H I J K

1 2 3 4 5 6 / 7 8 9 0 1 2

Envelope 9X12 ☐ · Pack 12X16 ☒

OVERNIGHT DELIVERY
SIGNATURE SECURITY SERVICE

Shipper's Signature: X [signature] 9/16

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

Declared Value $

2 4 7 4 2 5 2 3 1 9

Additional Signature · Commodity Code · Free Domicile ☐

Third party Account Number mandatory for Third party billing. · Third Party Account Number: E

International Customs Value · International Insurance

Base Charge

Total Transportation Charges

Other Chgs. Advance at Origin ☐ · Qty. · $

SAD-A

Terms and Conditions on Back

FULL FOR SHIPT. NO. TAB

CONSIGNEE — PACKAGE COPY — 4

50000

MAXWELL S-CUBED Division

Lot No. 2597

Sample Log-In Sheet

DC No. ____-____-____

Date Received 9/17/91 Date Sampled 9/12/91

Client Code WHC

Time Received 11:30A

Received by (Sig.) T. Dixon

Custody Seals Present/Intact (Y) N

Reporting Format: Summ. CLP Summ. (Full CLP) Disk

Airbill No. 850281585

Chain of Custody Present (Y) N

Turnaround Req'd: 45d 30d 21d 14d 48hr Other 10D

Charge No. 32359-04

Client Forms Present (Y) N

Quality Control Req'd: Level 1(Low) (2(CLP)) 3(RCRA) 4(Other)

Case No./Proj. Code Site Wide Soil SDG No. 2597

S-Cubed No.	Sample Identification	Samp. Type	No. Cont.	Samp. Cond.	Samp. Stor.	A	B	C	D	E	F	G	H	I	J	All Info Agree	Notes
2597-1	~~B0~~ B01411	S	0/3	OK	WA	X	X	X	X	X	X	X	X	X	X		
-2	B01412	↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
-3	B01413	↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		Zinc, Silicon, Ti

J ALK
I N-NH3
H ANIONS
G HGCLP
F FURNCLP
E ICPCLP-M
D TOC
C OCPCLP
B SVOACLP
A VOACLP

Container Types

Water

Soil 9ea 125ml Amber

S = Soil/Sediment/Sludge
W = Aqueous
NAL = Non-Aqueous Liquid
NSS = Non-Soil Solid

Water MS, MSD ____

Soil MS, MSD ____

SDG Complete Y (N)

Review JD 9/17

SC-03, Rev. 7/91

MAXWELL
S-CUBED Division

SORRENTO VALLEY OFFICE
3398 Carmel Mountain Road., San Diego, CA 92121-1095
P.O. Box 1620, La Jolla, CA 92038-1620

September 27, 1991

Ms. Jeannette Duncan
MSIN: T6-08
Office of Sample Management
Westinghouse Hanford Company
2355 Stevens Drive
Richland, WA 99352

Reference No. 32359-04
P.O. No. MBH-SVV-230656

Dear Ms. Duncan:

Enclosed are the results from the pesticides analysis of the Site Wide Soil samples, received by S-Cubed on September 16, 1991. The samples were analyzed for VOA, SVOA, pesticides, TOC, metals, anions, ammonia, and alkalinity.

The enclosed report contains a sample summary, narrative, copies of the chain-of-custody, and a full data package for each analysis. If you have any questions about the data, please give me a call.

Sincerely,

John DeWald
Manager, Commercial Analysis Section

/alb

encl: a/s

SEP 1991
RECEIVED
DATA RECEIPT

Telephone (619) 453-0060 - FAX (619) 755-0474 - Division Office

11-23-94

```
* ****************************************************
*                                                    *
* S-CUBED  VOLATILE ORGANICS   ANALYSIS   DATA   SHEET *
*                                                    *
* ****************************************************
```

Sample Number
B01411
(2597-1)

CLIENT : WHC
PROJECT: SITE WIDE SOIL
SDG No.: 2597

Concentration: Low Medium (Circle one)
Date Extracted/Prepared: 09-18-91
Date Analyzed: 09-18-91
pH: 8.95
Percent Moisture: 2.00
Percent Moisture (Decanted) : N.R

Lab File ID no: WH701
Sample Matrix: SOIL
Date Sample Received: 09-16-91
Data Release Authorized By:
S-CUBED Reference Number: 32859-04

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
74-87-3	CHLOROMETHANE	10 U	78-87-5	1,2-DICHLOROPROPANE	5 U
74-83-9	BROMOMETHANE	10 U	10061-01-5	CIS-1,3-DICHLOROPROPENE	5 U
75-01-4	VINYL CHLORIDE	10 U	79-01-6	TRICHLOROETHENE	5 U
75-00-3	CHLOROETHANE	10 U	124-48-1	DIBROMOCHLOROMETHANE	5 U
75-09-2	METHYLENE CHLORIDE	5 B	79-00-5	1,1,2-TRICHLOROETHANE	5 U
67-64-1	ACETONE	10 U	71-43-2	BENZENE	5 U
75-15-0	CARBON DISULFIDE	5 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5 U
75-35-4	1,1-DICHLOROETHENE	5 U	75-25-2	BROMOFORM	5 U
75-34-3	1,1-DICHLOROETHANE	5 U	108-10-1	4-METHYL-2-PENTANONE	10 U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	5 U	591-78-6	2-HEXANONE	10 U
67-66-3	CHLOROFORM	5 U	127-18-4	TETRACHLOROETHENE	5 U
107-06-2	1,2-DICHLOROETHANE	5 U	79-34-5	1,1,2,2-TETRACHLOROETHANE	5 U
78-93-3	2-BUTANONE	10 U	108-88-3	TOLUENE	5 U
71-55-6	1,1,1-TRICHLOROETHANE	5 U	108-90-7	CHLOROBENZENE	5 U
56-23-5	CARBON TETRACHLORIDE	5 U	100-41-4	ETHYLBENZENE	5 U
108-05-4	VINYL ACETATE	10 U	100-42-5	STYRENE	5 U
75-27-4	BROMODICHLOROMETHANE	5 U	1330-20-7	XYLENE (TOTAL)	5 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

RE : Re-analyzed Sample.
DL : Sample analyzed at secondary dilution.
MS : Matrix Spike Sample. MSD : Matrix Spike Duplicate Sample
E : Exceed the Calibration Range.
D : Compound found in Diluted Run.
X : Matrix Spike added.

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
B01411
(2597-1)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	NO TIC'S FOUND	VOA		
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.				
28.				
29.				
30.				

```
* ******************************************************
*                                                      *
* S-CUBED  VOLATILE ORGANICS   ANALYSIS   DATA   SHEET  *
*                                                      *
* ******************************************************
```

Sample Number
B01412
(2597-2)

CLIENT : WHC
PROJECT: SITE WIDE SOIL
SDG No.: 2597

Concentration: Low Medium (Circle one)
Date Extracted/Prepared: 09-20-91
Date Analyzed: 09-20-91
pH: 9.33
Percent Moisture: 1.00
Percent Moisture (Decanted) : N.R

Lab File ID no: WC702
Sample Matrix: SOIL
Date Sample Received: 09-16-91
Data Release Authorized By:
S-CUBED Reference Number: 32359-04

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
74-87-3	CHLOROMETHANE	10 U	78-87-5	1,2-DICHLOROPROPANE	5 U
74-83-9	BROMOMETHANE	10 U	10061-01-5	CIS-1,3-DICHLOROPROPENE	5 U
75-01-4	VINYL CHLORIDE	10 U	79-01-6	TRICHLOROETHENE	5 U
75-00-3	CHLOROETHANE	10 U	124-48-1	DIBROMOCHLOROMETHANE	5 U
75-09-2	METHYLENE CHLORIDE	9 B	79-00-5	1,1,2-TRICHLOROETHANE	5 U
67-64-1	ACETONE	26	71-43-2	BENZENE	5 U
75-15-0	CARBON DISULFIDE	5 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5 U
75-35-4	1,1-DICHLOROETHENE	5 U	75-25-2	BROMOFORM	5 U
75-34-3	1,1-DICHLOROETHANE	5 U	108-10-1	4-METHYL-2-PENTANONE	10 U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	5 U	591-78-6	2-HEXANONE	10 U
67-66-3	CHLOROFORM	5 U	127-18-4	TETRACHLOROETHENE	5 U
107-06-2	1,2-DICHLOROETHANE	5 U	79-34-5	1,1,2,2-TETRACHLOROETHANE	5 U
78-93-3	2-BUTANONE	10 U	108-88-3	TOLUENE	5 U
71-55-6	1,1,1-TRICHLOROETHANE	5 U	108-90-7	CHLOROBENZENE	5 U
56-23-5	CARBON TETRACHLORIDE	5 U	100-41-4	ETHYLBENZENE	5 U
108-05-4	VINYL ACETATE	10 U	100-42-5	STYRENE	5 U
75-27-4	BROMODICHLOROMETHANE	5 U	1330-20-7	XYLENE (TOTAL)	5 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

RE : Re-analyzed Sample.
DL : Sample analyzed at secondary dilution.
MS : Matrix Spike Sample. MSD : Matrix Spike Duplicate Sample
E : Exceed the Calibration Range.
D : Compound found in Diluted Run.
X : Matrix Spike added.

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
B01412
(2597-2)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	NO TIC'S FOUND	VOA		
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.				
28.				
29.				
30.				

```
* ****************************************************
*                                                    *
* S-CUBED  VOLATILE ORGANICS   ANALYSIS   DATA   SHEET *
*                                                    *
* ****************************************************
```

Sample Number
B01413
(2597-3)

CLIENT : WMC
PROJECT: SITE WIDE SOIL
SDG No.: 2597

Concentration: Low Medium (Circle one)
Date Extracted/Prepared: 09-18-91
Date Analyzed: 09-18-91
pH: 9.25
Percent Moisture: 1.00
Percent Moisture (Decanted) : N.R

Lab File ID no: WH703
Sample Matrix: SOIL
Date Sample Received: 09-16-91
Data Release Authorized By:
S-CUBED Reference Number: 32359-04

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
74-87-3	CHLOROMETHANE	10 U	78-87-5	1,2-DICHLOROPROPANE	5 U
74-83-9	BROMOMETHANE	10 U	10061-01-5	CIS-1,3-DICHLOROPROPENE	5 U
75-01-4	VINYL CHLORIDE	10 U	79-01-6	TRICHLOROETHENE	5 U
75-00-3	CHLOROETHANE	10 U	124-48-1	DIBROMOCHLOROMETHANE	5 U
75-09-2	METHYLENE CHLORIDE	5 B	79-00-5	1,1,2-TRICHLOROETHANE	5 U
67-64-1	ACETONE	10 U	71-43-2	BENZENE	5 U
75-15-0	CARBON DISULFIDE	5 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5 U
75-35-4	1,1-DICHLOROETHENE	5 U	75-25-2	BROMOFORM	5 U
75-34-3	1,1-DICHLOROETHANE	5 U	108-10-1	4-METHYL-2-PENTANONE	10 U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	5 U	591-78-6	2-HEXANONE	10 U
67-66-3	CHLOROFORM	5 U	127-18-4	TETRACHLOROETHENE	5 U
107-06-2	1,2-DICHLOROETHANE	5 U	79-34-5	1,1,2,2-TETRACHLOROETHANE	5 U
78-93-3	2-BUTANONE	10 U	108-88-3	TOLUENE	5 U
71-55-6	1,1,1-TRICHLOROETHANE	5 U	108-90-7	CHLOROBENZENE	5 U
56-23-5	CARBON TETRACHLORIDE	5 U	100-41-4	ETHYLBENZENE	5 U
108-05-4	VINYL ACETATE	10 U	100-42-5	STYRENE	5 U
75-27-4	BROMODICHLOROMETHANE	5 U	1330-20-7	XYLENE (TOTAL)	1 J

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

RE : Re-analyzed Sample.
DL : Sample analyzed at secondary dilution.
MS : Matrix Spike Sample. MSD : Matrix Spike Duplicate Sample
E : Exceed the Calibration Range.
D : Compound found in Diluted Run.
X : Matrix Spike added.

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
B01413
(2597-3)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	UNKNOWN	VOA	21.75	6 J
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.				
28.				
29.				
30.				

```
* ****************************************************
* S-CUBED  SEMIVOLATILE  ORGANIC  ANALYSIS  DATA  SHEET *
* ****************************************************
```

Sample Number: 801411 (2597-1)

CLIENT : WHC
PROJECT : SITE WIDE SOIL
SDG No : 2597

Date Sample Received: 09-16-91
Data Release Authorized By: [illegible]
S-CUBED Reference Number: 32859-04

Lab File ID No: A9701
Sample Matrix: SOIL
INT.VOL/WGT(mL or G): 30 G
FV(mL): 2.00 DILT: 1
Percent Moisture: 2.00 pH: 8.95 Percent Moisture (Decanted): N.R
Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09-17-91
Date Analyzed: 09-19-91

CAS Number		ug/l or ug/kg (Circle one)	CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	670 U	83-32-9	ACENAPHTHENE	670 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	670 U	51-28-5	2,4-DINITROPHENOL	3300 U
95-57-8	2-CHLOROPHENOL	670 U	100-02-7	4-NITROPHENOL	3300 U
541-73-1	1-3,DICHLOROBENZENE	670 U	132-64-9	DIBENZOFURAN	670 U
106-46-7	1,4-DICHLOROBENZENE	670 U	121-14-2	2,4-DINITROTOLUENE	670 U
100-51-6	BENZYL ALCOHOL	670 U	606-20-2	2,6-DINITROTOLUENE	670 U
95-50-1	1,2-DICHLOROBENZENE	670 U	84-66-2	DIETHYLPHTHALATE	670 U
95-48-7	2-METHYLPHENOL	670 U	7005-72-3	4-CHLOROPHENYL-PHENYLETHER	670 U
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	670 U	86-73-7	FLUORENE	670 U
106-44-5	4-METHYLPHENOL	670 U	100-01-6	4-NITROANILINE	3300 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	670 U	534-52-1	4,6-DINITRO-2-METHYLPHENOL	3300 U
67-72-1	HEXACHLOROETHANE	670 U	86-30-6	N-NITROSODIPHENYLAMINE (1)	670 U
98-95-3	NITROBENZENE	670 U	101-55-3	4-BROMOPHENYL-PHENYLETHER	670 U
78-59-1	ISOPHORONE	670 U	118-74-1	HEXACHLOROBENZENE	670 U
88-75-5	2-NITROPHENOL	670 U	87-86-5	PENTACHLOROPHENOL	3300 U
105-67-9	2,4-DIMETHYLPHENOL	670 U	85-01-8	PHENANTHRENE	670 U
65-85-0	BENZOIC ACID	3300 U	120-12-7	ANTHRACENE	670 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	670 U	84-74-2	DI-N-BUTYLPHTHALATE	670 U
120-83-2	2,4-DICHLOROPHENOL	670 U	206-44-0	FLUORANTHENE	670 U
120-82-1	1,2,4-TRICHLOROBENZENE	670 U	129-00-0	PYRENE	670 U
91-20-3	NAPHTHALENE	670 U	85-68-7	BUTYLBENZYLPHTHALATE	670 U
106-47-8	4-CHLOROANILINE	670 U	91-94-1	3,3'-DICHLOROBENZIDINE	1300 U
87-68-3	HEXACHLOROBUTADIENE	670 U	56-55-3	BENZO(a)ANTHRACENE	670 U
59-50-7	4-CHLORO-3-METHYLPHENOL	670 U	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	670 U
91-57-6	2-METHYLNAPHTHALENE	670 U	218-01-9	CHRYSENE	670 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	670 U	117-84-0	DI-N-OCTYL PHTHALATE	670 U
88-06-2	2,4,6-TRICHLOROPHENOL	670 U	205-99-2	BENZO(b)FLUORANTHENE	670 U
95-95-4	2,4,5-TRICHLOROPHENOL	3300 U	207-08-9	BENZO(k)FLUORANTHENE	670 U
91-58-7	2-CHLORONAPHTHALENE	670 U	50-32-8	BENZO(a)PYRENE	670 U
88-74-4	2-NITROANILINE	3300 U	193-39-5	INDENO(1,2,3-CD)PYRENE	670 U
131-11-3	DIMETHYL PHTHALATE	670 U	53-70-3	DIBENZ(a,h)ANTHRACENE	670 U
208-96-8	ACENAPHTHYLENE	670 U	191-24-2	BENZO(g,h,i)PERYLENE	670 U
99-09-2	3-NITROANILINE	3300 U			

(1)-Cannot be seperated from diphenylamine.

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
B01411
(2597-1)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 00123-42-2	2-PENTANONE, 4-HYDROXY-4-METH	BNA	7.59	3300 JB
2.	UNKNOWN ACID ESTER	"	33.35	750 J
3.	UNKNOWN	"	36.87	330 J
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

```
* ******************************************************
* S-CUBED  SEMIVOLATILE  ORGANIC  ANALYSIS  DATA  SHEET *
* ******************************************************
```

Sample Number : B01412 (2597-2)

CLIENT : WHC
PROJECT : SITE WIDE SOIL
SDG No : 2597

Date Sample Received: 09-16-91
Data Release Authorized By: [illegible]
S-CUBED Reference Number: 32359-04

Lab File ID No: A9702
Sample Matrix: SOIL
INT.VOL/WGT(mL or G): 30 G
FV(mL): 2.00 DILT: 1
Percent Moisture: 1.00 pH: 9.33 Percent Moisture (Decanted): N.R
Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09-17-91
Date Analyzed: 09-19-91

CAS Number		ug/l or ug/kg (Circle one)	CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	670 U	83-32-9	ACENAPHTHENE	670 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	670 U	51-28-5	2,4-DINITROPHENOL	3200 U
95-57-8	2-CHLOROPHENOL	670 U	100-02-7	4-NITROPHENOL	3200 U
541-73-1	1-3,DICHLOROBENZENE	670 U	132-64-9	DIBENZOFURAN	670 U
106-46-7	1,4-DICHLOROBENZENE	670 U	121-14-2	2,4-DINITROTOLUENE	670 U
100-51-6	BENZYL ALCOHOL	670 U	606-20-2	2,6-DINITROTOLUENE	670 U
95-50-1	1,2-DICHLOROBENZENE	670 U	84-66-2	DIETHYLPHTHALATE	670 U
95-48-7	2-METHYLPHENOL	670 U	7005-72-3	4-CHLOROPHENYL-PHENYLETHER	670 U
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	670 U	86-73-7	FLUORENE	670 U
106-44-5	4-METHYLPHENOL	670 U	100-01-6	4-NITROANILINE	3200 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	670 U	534-52-1	4,6-DINITRO-2-METHYLPHENOL	3200 U
67-72-1	HEXACHLOROETHANE	670 U	86-30-6	N-NITROSODIPHENYLAMINE (1)	670 U
98-95-3	NITROBENZENE	670 U	101-55-3	4-BROMOPHENYL-PHENYLETHER	670 U
78-59-1	ISOPHORONE	670 U	118-74-1	HEXACHLOROBENZENE	670 U
88-75-5	2-NITROPHENOL	670 U	87-86-5	PENTACHLOROPHENOL	3200 U
105-67-9	2,4-DIMETHYLPHENOL	670 U	85-01-8	PHENANTHRENE	670 U
65-85-0	BENZOIC ACID	3200 U	120-12-7	ANTHRACENE	670 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	670 U	84-74-2	DI-N-BUTYLPHTHALATE	670 U
120-83-2	2,4-DICHLOROPHENOL	670 U	206-44-0	FLUORANTHENE	670 U
120-82-1	1,2,4-TRICHLOROBENZENE	670 U	129-00-0	PYRENE	670 U
91-20-3	NAPHTHALENE	670 U	85-68-7	BUTYLBENZYLPHTHALATE	670 U
106-47-8	4-CHLOROANILINE	670 U	91-94-1	3,3'-DICHLOROBENZIDINE	1300 U
87-68-3	HEXACHLOROBUTADIENE	670 U	56-55-3	BENZO(a)ANTHRACENE	670 U
59-50-7	4-CHLORO-3-METHYLPHENOL	670 U	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	670 U
91-57-6	2-METHYLNAPHTHALENE	670 U	218-01-9	CHRYSENE	670 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	670 U	117-84-0	DI-N-OCTYL PHTHALATE	670 U
88-06-2	2,4,6-TRICHLOROPHENOL	670 U	205-99-2	BENZO(b)FLUORANTHENE	670 U
95-95-4	2,4,5-TRICHLOROPHENOL	3200 U	207-08-9	BENZO(k)FLUORANTHENE	670 U
91-58-7	2-CHLORONAPHTHALENE	670 U	50-32-8	BENZO(a)PYRENE	670 U
88-74-4	2-NITROANILINE	3200 U	193-39-5	INDENO(1,2,3-CD)PYRENE	670 U
131-11-3	DIMETHYL PHTHALATE	670 U	53-70-3	DIBENZ(a,h)ANTHRACENE	670 U
208-96-8	ACENAPHTHYLENE	670 U	191-24-2	BENZO(g,h,i)PERYLENE	670 U
99-09-2	3-NITROANILINE	3200 U			

(1)-Cannot be seperated from diphenylamine.

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
B01412
(2597-2)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 00123-42-2	2-PENTANONE, 4-HYDROXY-4-METH	BNA	7.61	4000 JB
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.				
28.				
29.				
30.				

```
* ******************************************************
* S-CUBED  SEMIVOLATILE  ORGANIC  ANALYSIS  DATA  SHEET *
* ******************************************************
```

Sample Number: B01413 (2597-3)

CLIENT : WHC
PROJECT : SITE WIDE SOIL
SDG No : 2597

Date Sample Received: 09-16-91
Data Release Authorized By:
S-CUBED Reference Number: 32359-04

Lab File ID No: A9703
Sample Matrix: SOIL
INT.VOL/WGT(mL or G): 30 G
FV(mL): 2.00 DILT: 1
Percent Moisture: 1.00 pH: 9.25 Percent Moisture (Decanted): N.R
Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09-17-91
Date Analyzed: 09-19-91

CAS Number		ug/l or ug/kg (Circle one)	CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	670 U	83-32-9	ACENAPHTHENE	670 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	670 U	51-28-5	2,4-DINITROPHENOL	3200 U
95-57-8	2-CHLOROPHENOL	670 U	100-02-7	4-NITROPHENOL	3200 U
541-73-1	1-3,DICHLOROBENZENE	670 U	132-64-9	DIBENZOFURAN	670 U
106-46-7	1,4-DICHLOROBENZENE	670 U	121-14-2	2,4-DINITROTOLUENE	670 U
100-51-6	BENZYL ALCOHOL	670 U	606-20-2	2,6-DINITROTOLUENE	670 U
95-50-1	1,2-DICHLOROBENZENE	670 U	84-66-2	DIETHYLPHTHALATE	670 U
95-48-7	2-METHYLPHENOL	670 U	7005-72-3	4-CHLOROPHENYL-PHENYLETHER	670 U
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	670 U	86-73-7	FLUORENE	670 U
106-44-5	4-METHYLPHENOL	670 U	100-01-6	4-NITROANILINE	3200 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	670 U	534-52-1	4,6-DINITRO-2-METHYLPHENOL	3200 U
67-72-1	HEXACHLOROETHANE	670 U	86-30-6	N-NITROSODIPHENYLAMINE (1)	670 U
98-95-3	NITROBENZENE	670 U	101-55-3	4-BROMOPHENYL-PHENYLETHER	670 U
78-59-1	ISOPHORONE	670 U	118-74-1	HEXACHLOROBENZENE	670 U
88-75-5	2-NITROPHENOL	670 U	87-86-5	PENTACHLOROPHENOL	3200 U
105-67-9	2,4-DIMETHYLPHENOL	670 U	85-01-8	PHENANTHRENE	670 U
65-85-0	BENZOIC ACID	3200 U	120-12-7	ANTHRACENE	670 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	670 U	84-74-2	DI-N-BUTYLPHTHALATE	670 U
120-83-2	2,4-DICHLOROPHENOL	670 U	206-44-0	FLUORANTHENE	670 U
120-82-1	1,2,4-TRICHLOROBENZENE	670 U	129-00-0	PYRENE	670 U
91-20-3	NAPHTHALENE	670 U	85-68-7	BUTYLBENZYLPHTHALATE	670 U
106-47-8	4-CHLOROANILINE	670 U	91-94-1	3,3'-DICHLOROBENZIDINE	1300 U
87-68-3	HEXACHLOROBUTADIENE	670 U	56-55-3	BENZO(a)ANTHRACENE	670 U
59-50-7	4-CHLORO-3-METHYLPHENOL	670 U	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	670 U
91-57-6	2-METHYLNAPHTHALENE	670 U	218-01-9	CHRYSENE	670 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	670 U	117-84-0	DI-N-OCTYL PHTHALATE	670 U
88-06-2	2,4,6-TRICHLOROPHENOL	670 U	205-99-2	BENZO(b)FLUORANTHENE	670 U
95-95-4	2,4,5-TRICHLOROPHENOL	3200 U	207-08-9	BENZO(k)FLUORANTHENE	670 U
91-58-7	2-CHLORONAPHTHALENE	670 U	50-32-8	BENZO(a)PYRENE	670 U
88-74-4	2-NITROANILINE	3200 U	193-39-5	INDENO(1,2,3-CD)PYRENE	670 U
131-11-3	DIMETHYL PHTHALATE	670 U	53-70-3	DIBENZ(a,h)ANTHRACENE	670 U
208-96-8	ACENAPHTHYLENE	670 U	191-24-2	BENZO(g,h,i)PERYLENE	670 U
99-09-2	3-NITROANILINE	3200 U			

(1)-Cannot be seperated from diphenylamine.

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818, Alexandria, Virginia 22313 703/557-2490

Sample Number
B01413
(2597-3)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 00123-42-2	2-PENTANONE, 4-HYDROXY-4-METH	BNA	7.58	280 JB
2.	UNKNOWN	"	26.87	410 J
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.				
28.				
29.				
30.				

MAXWELL
S-CUBED Division

NARRATIVE

DATE: September 27, 1991

REFERENCE NO.: 32359-04

Organochlorine Pesticides

The samples were analyzed according to the CLP-PEST method. There were no difficulties with the analysis. There were no pesticides detected in the sample.

The quality control results were generally acceptable. The standards were within quality control limits except for DDT and β-BHC, which were slightly above 20% on the confirmation column. The DBC surrogate recoveries trended low. The matrix spike and the matrix spike duplicate samples met quality control criteria. The blanks were clean of pesticides.

John DeWald
Manager, Commercial Analysis Section

10 for 11-23-94

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01411

Lab Name: S-CUBED Contract: 32359-04 ~~68-D9-0027~~ DM 9/26/91

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2597

Matrix: (soil/water) SOIL wipe soil Lab Sample ID: 2597-1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C0923068

Level: (low/med) LOW Date Received: 09/16/91

% Moisture: not dec. 2 dec._____ Date Extracted: 09/17/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/25/91

GPC Cleanup: (Y/N) N pH: 9.0 Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.20	U
319-85-7	beta-BHC	8.20	U
319-86-8	delta-BHC	8.20	U
58-89-9	gamma-BHC (Lindane)	8.20	U
76-44-8	Heptachlor	8.20	U
309-00-2	Aldrin	8.20	U
1024-57-3	Heptachlor epoxide	8.20	U
959-98-8	Endosulfan I	8.20	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1031-07-8	Endosulfan sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	82.00	U
53494-70-5	Endrin ketone	16.00	U
5103-71-9	alpha-Chlordane	82.00	U
5103-74-2	gamma-Chlordane	82.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	82.00	U
11104-28-2	Aroclor-1221	82.00	U
11141-16-5	Aroclor-1232	82.00	U
53469-21-9	Aroclor-1242	82.00	U
12672-29-6	Aroclor-1248	82.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01412

Lab Name: S-CUBED Contract: ~~68-D9-0027~~ 32359-04 DMM 9/26/91

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2597

WIDE SOIL

Matrix: (soil/water) SOIL Lab Sample ID: 25972

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C0923071

Level: (low/med) LOW Date Received: 09/16/91

% Moisture: not dec. 1 dec._____ Date Extracted: 09/17/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/25/91

GPC Cleanup: (Y/N) N pH: 9.3 Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.10	U
319-85-7	beta-BHC	8.10	U
319-86-8	delta-BHC	8.10	U
58-89-9	gamma-BHC (Lindane)	8.10	U
76-44-8	Heptachlor	8.10	U
309-00-2	Aldrin	8.10	U
1024-57-3	Heptachlor epoxide	8.10	U
959-98-8	Endosulfan I	8.10	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1031-07-8	Endosulfan sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	81.00	U
53494-70-5	Endrin ketone	16.00	U
5103-71-9	alpha-Chlordane	81.00	U
5103-74-2	gamma-Chlordane	81.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	81.00	U
11104-28-2	Aroclor-1221	81.00	U
11141-16-5	Aroclor-1232	81.00	U
53469-21-9	Aroclor-1242	81.00	U
12672-29-6	Aroclor-1248	81.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01413

Lab Name: S-CUBED Contract: ~~68-D9-0027~~ 32359-04 PAL 9/26/91

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2597

WIRE SOIL

Matrix: (soil/water) SOIL Lab Sample ID: 25973

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C0923065

Level: (low/med) LOW Date Received: 09/16/91

% Moisture: not dec. 1 dec._____ Date Extracted: 09/17/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/25/91

GPC Cleanup: (Y/N) N pH: 9.3 Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.10	U
319-85-7	beta-BHC	8.10	U
319-86-8	delta-BHC	8.10	U
58-89-9	gamma-BHC (Lindane)	8.10	U
76-44-8	Heptachlor	8.10	U
309-00-2	Aldrin	8.10	U
1024-57-3	Heptachlor epoxide	8.10	U
959-98-8	Endosulfan I	8.10	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1031-07-8	Endosulfan sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	81.00	U
53494-70-5	Endrin ketone	16.00	U
5103-71-9	alpha-Chlordane	81.00	U
5103-74-2	gamma-Chlordane	81.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	81.00	U
11104-28-2	Aroclor-1221	81.00	U
11141-16-5	Aroclor-1232	81.00	U
53469-21-9	Aroclor-1242	81.00	U
12672-29-6	Aroclor-1248	81.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2597-1

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.:

Matrix (soil/water): SOIL Lab Sample ID: 2597-1

Level (low/med): LOW Date Received: 09/16/91

% Solids: 98.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5960		*	P
7440-36-0	Antimony	5.7	U	N	P
7440-38-2	Arsenic	4.1			F
7440-39-3	Barium	99.9			P
7440-41-7	Beryllium	1.2			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	5800			P
7440-47-3	Chromium	4.5			P
7440-48-4	Cobalt	14.6			P
7440-50-8	Copper	17.2			P
7439-89-6	Iron	26000		*	P
7439-92-1	Lead	5.0		N	F
7439-95-4	Magnesium	4680			P
7439-96-5	Manganese	338			P
7439-97-6	Mercury	0.10	U	N	CV
7440-02-0	Nickel	12.2			P
7440-09-7	Potassium	649			P
7782-49-2	Selenium	4.5	U	N	F
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	265.8			P
7440-28-0	Thallium	3.4	U	N	F
7440-62-2	Vanadium	59.9		*	P
7440-66-6	Zinc	49.2		*	P
	Cyanide				NO

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:
801411

FORM I - IN

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2597-2

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No. SDG No.: 2597

Matrix (soil/water): SOIL Lab Sample ID: 2597-2

Level (low/med): LOW Date Received: 09/16/91

% Solids: 99.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11000		*	P
7440-36-0	Antimony	5.7	U	N	P
7440-38-2	Arsenic	5.2			F
7440-39-3	Barium	118			P
7440-41-7	Beryllium	1.3			P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	18700			P
7440-47-3	Chromium	17.6			P
7440-48-4	Cobalt	13.3			P
7440-50-8	Copper	21.3			P
7439-89-6	Iron	26700		*	P
7439-92-1	Lead	9.0		N	F
7439-95-4	Magnesium	6800			P
7439-96-5	Manganese	433			P
7439-97-6	Mercury	0.10	U	N	CV
7440-02-0	Nickel	18.5			P
7440-09-7	Potassium	1690			P
7782-49-2	Selenium	4.4	U	N	F
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	264	B		P
7440-28-0	Thallium	3.3	U	N	F
7440-62-2	Vanadium	66.6		*	P
7440-66-6	Zinc	55.4		*	P
	Cyanide				NR

Color Before: Clarity Before: Texture: STIFF

Color After: Clarity After: Artifacts

Comments:
R01412

FORM I - IN

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2597-3

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: STIE SAS No.: SDG No.: 2597

Matrix (soil/water): SOIL Lab Sample ID: 2597-3

Level (low/med): LOW Date Received: 09/16/91

% Solids: 99.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8670		*	P
7440-36-0	Antimony	5.7	U	N	P
7440-38-2	Arsenic	2.7			F
7440-39-3	Barium	83.4			P
7440-41-7	Beryllium	1.2			P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	3970			P
7440-47-3	Chromium	12.3			P
7440-48-4	Cobalt	11.1			P
7440-50-8	Copper	12.0			P
7439-89-6	Iron	25500		*	P
7439-92-1	Lead	7.4		N	F
7439-95-4	Magnesium	4870			P
7439-96-5	Manganese	369			P
7439-97-6	Mercury	0.10	U	N	CV
7440-02-0	Nickel	12.7			P
7440-09-7	Potassium	1700			P
7782-49-2	Selenium	4.4	U	N	F
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	361	B		P
7440-28-0	Thallium	3.3	U	N	F
7440-62-2	Vanadium	60.6		*	P
7440-66-6	Zinc	49.9		*	P
	Cyanide				NR

Color Before: Clarity Before: Texture: INR

Color After: Clarity After: Artifacts:

Comments:
B01413

FORM I - IN

MAXWELL
S-CUBED Division

Anions (F, Cl, NO2, NO3, o-PO4, SO4)

The samples were analyzed according to Method 300.0. There were no difficulties with the analysis. There were significant levels of F, Cl, NO3, and SO4 detected in the samples.

The quality control results were acceptable.

Ammonia

The samples were analyzed according to Method 310.1. There were no difficulties with the analysis. There were no significant levels of N-NH3 detected in the sample.

The quality control results were acceptable.

Alkalinity

The samples were analyzed according to Method 350.3. There were no difficulties with the analysis. There were high levels of alkalinity detected in the sample.

The quality control results were acceptable.

John DeWald
Manager, Commercial Analysis Section

VALIDATION SUMMARY

Chemical Company

OSM RCRA LEVEL C DATA ASSESSMENT

DATE 10/9/91

SAMPLES/MATRIX B01411 B01412 B01413

REVIEWED BY Mark A. Beckman

all soil matrix

LABORATORY S-Cubed

CASE # Site Wide Soil

SOG # 2597

DATA ASSESSMENT SUMMARY

QUALITY CONTROL CHECK	ANALYSIS	Anions by Ion chromatography EPA 300.0	Alkalinity	NH_3
1.	Holding Times	X	O	O
2.	Blanks	O	O	O
3.	Matrix Spikes	O	O	O
4.	Duplicate analyses	O	O	O
5.	Calibrations	O	O	O
6.	Other	O	O	O
7.				
8.				
9.				
10.				

O = data had no problems
X = data qualified due to minor problems
M = data qualified due to major problems/some data may be unusable

OVERALL ASSESSSMENT: The data are acceptable with the attached qualifiers. 2/6/92 m.g.

NOTES: HEIS numbers written on summary sheets
Qualifiers written in result boxes.

o Refer to the corresponding attachments for explanation of any problems.

RCRA LEVEL C QC

Name Mark C. Beck Date 10/8/91 mcB 2/6/92

QC Check: Holding Times

COMMENTS: (Anions IC) Holding times were missed for nitrate, nitrite and phosphate. All other anions met holding time requirements. Nitrite (NO_2^-) is especially likely to be biased low. Alkalinity - The holding time was met. NH_3 - The holding time was met

ACTION: IC - qualify nitrate, nitrite or phosphate as estimated (J or UJ if not detected). Alkalinity - no action, none needed. NH_3 - no action, none needed.

sample #	constituent	value/qual
B01411	nitrate	UJ
B01412	nitrite	or
B01413	phosphate	J

sample #	constituent	value/qual

RCRA LEVEL C QC

Name Mark A. Beckman Date 10/8/91

QC Check: Blank Analyses

COMMENTS: IC- All ~~as~~ initial ~~and~~ and continuing calibration blanks were free from detectable contamination. Alkalinity - all blanks were free from contamination to the limit of detection. NH_3 - appropriate blanks were analyzed, and were free from contamination.

ACTION: IC- None - none needed. Alkalinity none, none needed. NH_3 - none, none needed.

sample #	constituent	value/qual	sample #	constituent	value/qual

RCRA LEVEL C QC

Name Mark A. Beckman Date 10/9/91

QC Check: Matrix Spikes

COMMENTS: Anions by IC ~~All~~ The matrix spike analysis had all analytes with recoveries within acceptance limits. No matrix spike duplicate was performed, however a replicate of the original sample was analyzed. Alkalinity: a matrix spike was done and had acceptable recovery.

ACTION: IC - none, none needed

Alkalinity - none, none needed.

NH_3 - none, none needed

sample #	constituent	value/qual

sample #	constituent	value/qual

Comments (cont.)

NH_3 - a matrix spike was run on a sample in this SDG. The spike showed acceptable recovery.

RCRA LEVEL C QC

Name Mark A. Beckman Date 10/8/91

QC Check: Duplicate Analyses

COMMENTS: IC- Duplicate analyses were performed on a sample in this SDG. all analyses fell within the acceptance limits.
Alkalinity- Duplicate analysis was performed on a sample in this SDG. The analysis had a value within 20% of the original analysis, and is acceptable

ACTION: Anions IC- none none needed.
Alkalinity- none, none needed.
NH_3 - none, none needed.

sample #	constituent	value/qual

sample #	constituent	value/qual

comments (cont):
NH_3 — a Duplicate analysis was ~~were~~ performed on a sample in this SDG. The duplicate gave the same (less than) results the original analysis.

RCRA LEVEL C QC

Name Mark G. Beckman Date 10/9/91

QC Check: Calibrations

Amiensky IC

COMMENTS: All initial and continuing calibrations necessary were performed ~~in~~ and met acceptance criteria.
Alkalinity - Standards run, only one, ~~both~~ but it had acceptable % recovery. NH_3 - All initial and continuing calibration checks had acceptable % recovery.

Amiensky IC

ACTION: None - none needed
Alkalinity - none, none needed.
NH_3 - none, none needed.

sample #	constituent	value/qual	sample #	constituent	value/qual

RCRA LEVEL C QC

Name Mark A. Beckman Date 10/9/91

QC Check: Other

COMMENTS: Anions by IC - No major problems.
Alkalinity - No calculation shown to explain difference between values on ~~ex~~ raw data worksheet and the summary page.
N NH3 - no problem noticed

ACTION: Anions - none none needed
Alkalinity - explained by S-used in phone communication
NH3 - none none needed

sample #	constituent	value/qual	sample #	constituent	value/qual

for 90 an
ie incorrect value
fraction
solids
No action

Form I-A1

Page ____ of ____

S-CUBED

Trace Inorganics Report

Client: WHC Hanford

Project: Site Wipe Soil

Sample Receipt Date: 9-16-91

Matrix: Soil

Analyst: PG / MT

Review:

Units: ug/L or ug/kg mg/kg

S-CUBED Sample No.	Sample ID	Analyte			
		NO_2	NO_3	O-PO_4	SO_4
2597-1		<0.5 UJ	5.36 J	<1 UJ	13.5
-2		<0.5 UJ	30.2 J	<1 UJ	4.79
-3		<0.5 UJ	7.47 J	<1 UJ	3.32
Method Detection Limit		0.1	0.2	0.2	0.2
Preparation Method		←	300.0	→	→
Analytical Method		←	300.0	→	→
Preparation Date		←	9-20-91	→	→
Analysis Date		←	9-20-91	→	→

Comments

2/6/92

MAB

00149

Form I-A1

Page ____ of ____

S-CUBED

Trace Inorganics Report

Client: WHC Site (Handford)

Project: Site wipe soil

Sample Receipt Date: 9-16-91

Matrix: Soil

Analyst: PG / MT

Review:

Units: µg/L or mg/kg mg/kg

S-CUBED Sample No.	Sample ID	Analyte			
		N-NH3	Alkalinity	F	Cl
2597-1		<0.5	203	2.11	8.11
-2		1.06	16460	2.86	8.13
-3		<0.5	804		
Method Detection Limit		0.1	20	0.1	0.1
Preparation Method		350.3	310.1	300.0	300.0
Analytical Method		350.3	310.1	300.0	300.0
Preparation Date		9-25-91	9-20-91	9-20-91	9-20-91
Analysis Date		9-25-91	9-20-91	9-20-91	9-20-91

Comments

2/6/92
mdb

00150

OSM INORGANIC DATA ASSESSMENT

DATE 10/9/91 2/6/92 mab SAMPLES/MATRIX B01412 B01411 B01413

REVIEWED BY Mark G. Beck all soils

LABORATORY S-Cubed

CASE # Site Wide Soil

SDG # 2597

DATA ASSESSMENT SUMMARY

	ICP	AA	Hg	CN
1. Calibrations (Form II)	O	O	O	not requested
2. Blanks (III)	O	O	X	
3. ICS (IV)	O			
4. Matrix Spike (V)	X	X	X	
5. Duplicate Analysis (VI)	O	O	O	
6. LCS (VII)	O	O		
7. Serial Dilution (IX)	O			
8. GFAA		X		
9. Holding Times (XIV)	O	O	O	
10. Other QC	O	O	O	

O = data had no problems
X = data qualified due to minor problems
M = data qualified due to major problems/some data may be unusable

OVERALL ASSESSSMENT: The data are acceptable with the attached qualifiers.

NOTES: Ti, Si, Zr results to be validated separately. HEIS and numbers at bottom of Form I sheets
2/6/92 - Ti Si, Zr, Li, no results not reported with this SDG.

o Refer to the corresponding attachments for explanation of any problems.

INORGANIC QC - Calibrations

Name Mark A. Beck Date 10/4/91

COMMENTS: appropriate standard and blanks were run, including those for ICP (CLP target list), As, Se, Tl, Pb, Hg. Correlation coefficent for Hg was 0.9962. All % recovery requirements for ICV (Initial) and CCV (continuing calibration verification) were met except for mercury.

ACTION: Since all mercury results are < Instrument Detection Limit (IDL) no qualification of mercury results is necessary.

sample #	constituent	value/qual

sample #	constituent	value/qual

Comments (cont.)
mercury had CCV at 122% and 124% recovery.

INORGANIC QC - Blanks

Name Mark A. Beck Date 10/9/91

COMMENTS: Contaminants were detected in blanks. Lead was detected in the preparation blank. Mercury had significant negative results in all the blank analyses. Molybdenum ~~was~~ (a non CLP me was not found in the blanks.

ACTION: No qualification for lead, prep blank concentration < IDL. Qualify mercury as undetected estimated (UJ).

sample #	constituent	value/qual	sample #	constituent	value/qual
2597-1 (B01411)	Hg	UJ			
2597-2 (B01412)	Hg	UJ			
2597-3 (B01413	Hg	UJ			

INORGANIC QC - ICS

Name Mark A. Beckman Date 10/9/91

COMMENTS: an ICS was run at the ~~begin~~ beginning and end of the sample analysis run. All ICS ~~recovery w~~ % recoveries were within QC limits. No values found for analytes not present in the ICS solution

ACTION: none - none needed

sample #	constituent	value/qual	sample #	constituent	value/qual

INORGANIC QC - Matrix Spike

Name Mark G. Beck Date 10/9/91

COMMENTS: Antimony had a spike recovery that was out of control and biased low. Manganese, selenium, lead, and thallium were out of control and were biased high. Mercury was out of control and biased low.

ACTION: Qualify mercury as undetected estimated, antimony as undetected estimated (UJ). Manganese and lead qualifies as estimated. Thallium and selenium are not to be qualified as they are biased high, but undetected in the samples

sample #	constituent	value/qual
B01411 (2597-1), B01412 (2597-2), B01413 (2597-3)	Hg (mercury)	UJ
	Sb (antimony)	UJ
B01411, B01412, B01413	Mn (manganese)	J
	Pb (lead)	J

sample #	constituent	value/qual

INORGANIC QC - Duplicate Analysis

Name Mark A. Beck MAB 3/6/92 Date 10/9/91

COMMENTS: ~~Vand~~ Vanadium had and %RPD greater than 35% but the values reported for concentrations were < 5x CRDL (5 Silver was also out of control with respect to %RPD, but fell within control limits of ± CRDL as the results were very close to the I.

ACTION: No action needed, analyses met QC requirements.

sample #	constituent	value/qual	sample #	constituent	value/qual

INORGANIC QC - LCS

Name Mark A. Beck MAB Date 10/9/91

COMMENTS: All analytes on the LCS had recoveries that met QC criteria for acceptance.

ACTION: None - none needed.

sample #	constituent	value/qual	sample #	constituent	value/qual

INORGANIC QC - Serial Dilution

Name Mark A. Beck Date 10/9/91

COMMENTS: Sodium, potassium, nickel, beryllium all had % differences greater than ~~the~~ the 10% allowed, however all initial samples results were less than 10X the IDL.

ACTION: none - none required.

sample #	constituent	value/qual	sample #	constituent	value/qual

INORGANIC QC - Holding Times

Name Mark A. Beckman. Date 10/9/91

COMMENTS: All analytes were analyzed well within the required holding time for water samples. Soil samples currently have no formal holding time requirement.

ACTION: none - none needed.

sample #	constituent	value/qual	sample #	constituent	value/qual

INORGANIC QC - GFAA

Name Mark A. Beck Date 10/9/91

COMMENTS: Se (selenium) had all replicate injections with the ± 20% RSD ~~control~~ control limits. ~~As~~, or else had concentration < CRDL, below which no control limits apply. As (arsenic) also meets replicate injection criteria as does Tl and Pb. The post digest spike recovery did not meet for As, Se, but was met for Pb, and no MSA analyses run.

ACTION: Qualify all As and Se analyses as estimated recovery biased low on post digest spike.

sample #	constituent	value/qual
B0\0411	~~Pb~~	~~U~~
B01412	As (arsenic) and	J
B01413	Se (selenium)	UJ

sample #	constituent	value/qual

INORGANIC QC - other

Name Mark A. Beckman. Date 10/9/91

COMMENTS: Calculations for concentration correction not provided as actual calculations or notes on examples, making determination of IDL and other needed data difficult for the validator.

ACTION: ~~Disc~~ Discussed these problems with the laboratory 10/7/-10/8/91 no further action needed.

sample #	constituent	value/qual	sample #	constituent	value/qual

U.S. EPA - CLP

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2597-1

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2597

Matrix (soil/water): SOIL Lab Sample ID: 2597-1

Level (low/med): LOW Date Received: 09/16/9

% Solids: 98.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5960		*	P
7440-36-0	Antimony	5.7	~~U~~	~~N~~ UJ	P
7440-38-2	Arsenic	4.1		J	F
7440-39-3	Barium	99.9			P
7440-41-7	Beryllium	1.2			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	5800			P
7440-47-3	Chromium	4.5			P
7440-48-4	Cobalt	14.6			P
7440-50-8	Copper	17.2			P
7439-89-6	Iron	26000		*	P
7439-92-1	Lead	5.0		~~N~~ J	F
7439-95-4	Magnesium	4680			P
7439-96-5	Manganese	338		J	P
7439-97-6	Mercury	0.10	~~U~~	~~N~~ UJ	CV
7440-02-0	Nickel	12.2			P
7440-09-7	Potassium	649			P
7782-49-2	Selenium	4.5	~~U~~	~~N~~ UJ	F
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	265	B		P
7440-28-0	Thallium	3.4	U	N	F
7440-62-2	Vanadium	59.9		*	P
7440-66-6	Zinc	49.2		*	P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:
B01411 - WHC sample #

FORM I - IN

U.S. EPA - CLP

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2597-2

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2597

Matrix (soil/water): SOIL Lab Sample ID: 2597-2

Level (low/med): LOW Date Received: 09/16/91

% Solids: 99.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11000		*	P
7440-36-0	Antimony	5.7	~~U~~	~~N~~ UJ	P
7440-38-2	Arsenic	5.2		J	F
7440-39-3	Barium	118			P
7440-41-7	Beryllium	1.3			P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	18700			P
7440-47-3	Chromium	17.6			P
7440-48-4	Cobalt	13.3			P
7440-50-8	Copper	21.3			P
7439-89-6	Iron	26700		*	P
7439-92-1	Lead	9.0		~~N~~ J	F
7439-95-4	Magnesium	6800			P
7439-96-5	Manganese	433		J	P
7439-97-6	Mercury	0.10	~~U~~	~~N~~ UJ	CV
7440-02-0	Nickel	18.5			P
7440-09-7	Potassium	1690			P
7782-49-2	Selenium	4.4	U	~~N~~ UJ	F
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	264	B		P
7440-28-0	Thallium	3.3	U	N	F
7440-62-2	Vanadium	66.6		*	P
7440-66-6	Zinc	55.4		*	P
	Cyanide				NR

Color Before: Clarity Before: Texture: FINE

Color After: Clarity After: Artifacts:

Comments:
B01412 WHC Sample #

FORM I - IN

MAB 10/9/91

7/88

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2597-3

Lab Name: S CUBED Contract: 32359-04

Lab Code: S3 Case No.: STIE SAS No.: SDG No.: 2597

Matrix (soil/water): SOIL Lab Sample ID: 2597-3

Level (low/med): LOW Date Received: 09/16/91

% Solids: 99.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8670		*	P
7440-36-0	Antimony	5.7		~~N~~ UJ	P
7440-38-2	Arsenic	2.7		J	F
7440-39-3	Barium	83.4			P
7440-41-7	Beryllium	1.2			P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	3970			P
7440-47-3	Chromium	12.3			P
7440-48-4	Cobalt	11.1			P
7440-50-8	Copper	12.0			P
7439-89-6	Iron	25500		*	P
7439-92-1	Lead	7.4		~~N~~ J	F
7439-95-4	Magnesium	4870			P
7439-96-5	Manganese	369		J	P
7439-97-6	Mercury	0.10		~~N~~ UJ	CV
7440-02-0	Nickel	12.7			P
7440-09-7	Potassium	1700			P
7782-49-2	Selenium	4.4		~~N~~ UJ	F
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	361	B		P
7440-28-0	Thallium	3.3	U	N	F
7440-62-2	Vanadium	60.6		*	P
7440-66-6	Zinc	49.9		*	P
	Cyanide				NR

Color Before: Clarity Before: Texture: INP

Color After: Clarity After: Artifacts:

Comments:
B01413 WMC sample #

FORM I - IN

mg 10/9

7/88

00003

OSM ORGANIC DATA ASSESSMENT

DATE 10/3/91

REVIEWED BY Mark A. Beck

LABORATORY S-Cubed

CASE # Site Wide Soil

SDG # 2597

SAMPLES/MATRIX B01411 B01412 B01413

all soil matrix

DATA ASSESSMENT SUMMARY

	VOA	ABN	PEST
1. Holding Times (Form I)	O	O	O
2. Surrogate Recovery (II)	O	O	M
3. Matrix Spike/ MSD (III)	O	O	O
4. Blanks (IV)	X	X	O
5. GC/MS Tune (V)	O	O	
6. Calibration (VI-VII; VIII pest)	O	O	O
7. Internal Standards (VIII)	O	O	
8. Instr. Perform. (IX pest)			O
9. Other ( )	O	O	O

O = data had no problems
X = data qualified due to minor problems
M = data qualified due to major problems, some data may be unusable

OVERALL ASSESSMENT: Major problems with Pest analyses one sample qualified unusable. all other data acceptable with attached qualifiers.

NOTES :

Refer to the corresponding attachments for explanation of any problems.

ORGANIC QC - Holding Times

Name Mark O. Beckmann Date 10/3/91

COMMENTS: VOA - sampled 9/12 analyzed 9/14 and 9/20 and so met the VOA holding times requirements. SemiVOA - All samples were collected 9/12, extracted on 9/17, and analyzed on 9/19. All holding times were therefore met. PCB/Pest - Sampled 9/12 ~~analy~~ extracted 9/17 analyzed 9/25. Both extraction and analysis holding time requirements were met.

ACTION: VOA - none SemiVOA - none, none needed. PCB/Pest - none none needed

sample #	constituent	value/qual	sample #	constituent	value/qual

ORGANIC QC - Surrogate Recovery

Name Mark O. Beck MDB Date 10/3/91

COMMENTS: VOA all surrogate compounds met QC limits for all samples, matrix spikes ~~and~~ blanks and standards. Semi/VOA - All surrogate compounds met QC limits for all samples, matrix spike and blanks. PCB/Pest - The surrogate recovery was out of control for 2 samples, a spike, and a blank. B01411 had a recovery <10% all the out-of ~~control~~ control (continued)

ACTION: VOA - none - none needed. Semi/VOA - none, none needed. PCB/Pest - Qualify sample B01411 as unusable for all compounds. Qualify sample B01413 as estimated undetected for all compounds.

sample #	constituent	value/qual
B01411	all	R
B01413	all	UJ

comments (cont.) were biased low and the ~~samp~~ analyses not out of control were barely within the lower QC limit.

ORGANIC QC - MS/MSD

Name Mark A. Beck MAB. Date 10/3/91

COMMENTS: VOA All matrix spike compounds met recovery and % RPD requirements. SemiVOA - All matrix spikes and duplicates met recovery and % RPD requirements ~~except~~ with all matrix spike compounds. PCB/Pest - All compounds ~~were~~ had recoveries and % RPD within acceptable limits

ACTION: VOA - none, none needed, SemiVOA - none, none needed. PCB/Pest - none none needed.

sample #	constituent	value/qual	sample #	constituent	value/qual

ORGANIC QC - Blanks

Name Mark A. Beck MAB Date 10/3/91

COMMENTS: VOA - appropriate method blanks were run. Contaminants were detected in the blanks. These contaminants were methylene chloride and 4-methyl-2 pentanone. Methylene chloride is a common laboratory contaminant. 4-methyl-2 pentanone ~~is~~ was not detected ~~with~~ in the samples. SemiVOA Blanks contamina were found, 4-hydroxy-4 methyl-2 pentanone. The blank includes all samples (c

ACTION: VOA - qualify methylene chloride as undetected. 4-methyl-2 pentan needs no qualification, since it was not detected.
SemiVOA - 4-hydroxy-4-methyl-2-pentanone qualified undetected for all sampe

sample #	constituent	value/qual
B01411 B01412 B01413	methylene chloride	U
B01410 B0142 B01413	4 hydroxy-4-methyl-2-pentanone	U

sample #	constituent	value/qual
comments (cont.) ~~as opp~~ and ~~ft~~ spikes as associated analyses. ~~Unknown~~		

ORGANIC QC - Blanks

Name Mark A. Beckman Date 10/3/91

COMMENTS: PCB/Pest + appropriate blank analyses were performed. No contaminants were detected in the blank. ~~However~~ However, the surrogate recovery on the blank was below the lower control limit, so extraction may not have been sufficient to ~~to~~ enable the detection of any contaminant.

ACTION: PCB/Pest - no action except the above note.

sample #	constituent	value/qual	sample #	constituent	value/qual

ORGANIC QC - GC/MS Tune

Name Mark A. Beckman Date 10/3/91

COMMENTS: VOA - All samples, standards spikes had a GC/MS tune associated with them. All GC/MS Tunes met acceptance criteria. SemiVOA - All samples, standards had a GC/MS tune associated with them. All GC/MS Tunes met acceptance criteria.

ACTION: VOA - none none needed. SemiVOA - none, none needed.

sample #	constituent	value/qual	sample #	constituent	value/qual

ORGANIC QC - Calibrations

Name Mark A. Beck MAB Date 10/3/91

COMMENTS: VOA All initial and continuing calibrations met acceptance criteria for ~~RRF~~ RRF50 (System Performance Check Compounds, SPCC) and %D (~~contract~~ Continuing Calibration compounds). Semi VOA - all initial and continuing calibrations met acceptance criteria for ~~RRF~~ RRF50 (SPCC) and % (CCC). ~~in appropriate~~

ACTION: VOA - no actions, none needed. Semi VOA - none - none needed.

sample #	constituent	value/qual	sample #	constituent	value/qual

ORGANIC QC - Calibrations

Name Mark A. Beck MAB Date 10/3/91

COMMENTS: PCB/Pest - The %RSD of calibration factors for the relevant compounds were exceeded 18%, (acceptance criteria met) The analytical sequence met all acceptance criteria. The calibration factor %RSD met acceptance criteria for both quantitation and confirmation columns.

ACTION: none - none required or needed.

sample #	constituent	value/qual	sample #	constituent	value/qual

ORGANIC QC - Internal Standards

Name Mark A. Bertman, Date 10/3/91

COMMENTS: VOA- ~~Ave~~ all internal standards met area and retention time criteria for all samples, blanks and spikes. Sem VOA- all internal standard compounds met retention time and area criteria for all samples, spikes and blanks.

ACTION: VOA- none, none needed. Sem VOA- none - none needed.

sample #	constituent	value/qual	sample #	constituent	value/qual

ORGANIC QC - Instrument Performance (pest)

Name Mark A. Beck MAB Date 10/3/91

COMMENTS: All standards fell within the prescribed retention time window for both columns used. % breakdown never exceeded 20% for Endrin & B analyses. DBC retention time % D never exceeded 0.3%.

ACTION: None - none needed.

sample #	constituent	value/qual	sample #	constituent	value/qual

ORGANIC QC - Other

Name Mark A. Beckmann Date 10/3/91

COMMENTS: VOA - ~~some~~ none SPCC, and CCC fell below an RRF of 0.300, ~~This presents no major problem, as all had~~ SemiVOA - Tentively Identified Compounds (TIC's) found in samples seem to be examples of humic acids. PEST/Pest - ~~no~~ major problems in surrogate recovery are ~~also~~ mitigated somewhat by the excellent recovery in matrix spk

ACTION: VOA - none, none required ~~or~~ or needed in reviewer's professional judgment. SemiVOA - none ~~except~~ for the above note.

sample #	constituent	value/qual	sample #	constituent	value/qual

```
* ****************************************************
*                                                    *
* S-CUBED  VOLATILE ORGANICS   ANALYSIS   DATA   SHEET *
*                                                    *
* ****************************************************
```

Sample Number
801413

(2597-3)

CLIENT : WHC
PROJECT: SITE WIDE SOIL
SDG No.: 2597

Concentration: Low Medium (Circle one)
Date Extracted/Prepared: 09-18-91
Date Analyzed: 09-18-91
pH: 9.25
Percent Moisture: 1.00
Percent Moisture (Decanted) : N.R

Lab File ID no: WH703
Sample Matrix: SOIL
Date Sample Received: 09-16-91
Data Release Authorized By:
S-CUBED Reference Number: 32359-04

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
74-87-3	CHLOROMETHANE	10 U	78-87-5	1,2-DICHLOROPROPANE	5 U
74-83-9	BROMOMETHANE	10 U	10061-01-5	CIS-1,3-DICHLOROPROPENE	5 U
75-01-4	VINYL CHLORIDE	10 U	79-01-6	TRICHLOROETHENE	5 U
75-00-3	CHLOROETHANE	10 U	124-48-1	DIBROMOCHLOROMETHANE	5 U
75-09-2	METHYLENE CHLORIDE	5 ~~B~~ U	79-00-5	1,1,2-TRICHLOROETHANE	5 U
67-64-1	ACETONE	10 U	71-43-2	BENZENE	5 U
75-15-0	CARBON DISULFIDE	5 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5 U
75-35-4	1,1-DICHLOROETHENE	5 U	75-25-2	BROMOFORM	5 U
75-34-3	1,1-DICHLOROETHANE	5 U	108-10-1	4-METHYL-2-PENTANONE	10 U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	5 U	591-78-6	2-HEXANONE	10 U
67-66-3	CHLOROFORM	5 U	127-18-4	TETRACHLOROETHENE	5 U
107-06-2	1,2-DICHLOROETHANE	5 U	79-34-5	1,1,2,2-TETRACHLOROETHANE	5 U
78-93-3	2-BUTANONE	10 U	108-88-3	TOLUENE	5 U
71-55-6	1,1,1-TRICHLOROETHANE	5 U	108-90-7	CHLOROBENZENE	5 U
56-23-5	CARBON TETRACHLORIDE	5 U	100-41-4	ETHYLBENZENE	5 U
108-05-4	VINYL ACETATE	10 U	100-42-5	STYRENE	5 U
75-27-4	BROMODICHLOROMETHANE	5 U	1330-20-7	XYLENE (TOTAL)	1 J

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .if limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

RE : Re-analyzed Sample.
DL : Sample analyzed at secondary dilution.
MS : Matrix Spike Sample. MSD : Matrix Spike Duplicate Samp
E : Exceed the Calibration Range.
D : Compound found in Diluted Run.
X : Matrix Spike added.

mab
10/2/91

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
B01413
(2597-3)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	UNKNOWN	VOA	21.75	6 J
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.				
28.				
29.				
30.				

MAB
10/2/91

```
* ****************************************************
*                                                    *
* S-CUBED  VOLATILE ORGANICS   ANALYSIS   DATA   SHEET *
*                                                    *
* ****************************************************
```

Sample Number
B01412
(2597-2)

CLIENT : WHC
PROJECT: SITE WIDE SOIL
SDG No.: 2597

Concentration: Low Medium (Circle one)
Date Extracted/Prepared: 09-20-91
Date Analyzed: 09-20-91
pH: 9.33
Percent Moisture: 1.00
Percent Moisture (Decanted) : N.R

Lab File ID no: WC702
Sample Matrix: SOIL
Date Sample Received: 09-16-91
Data Release Authorized By:
S-CUBED Reference Number: 32359-04

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
74-87-3	CHLOROMETHANE	10 U	78-87-5	1,2-DICHLOROPROPANE	5 U
74-83-9	BROMOMETHANE	10 U	10061-01-5	CIS-1,3-DICHLOROPROPENE	5 U
75-01-4	VINYL CHLORIDE	10 U	79-01-6	TRICHLOROETHENE	5 U
75-00-3	CHLOROETHANE	10 U	124-48-1	DIBROMOCHLOROMETHANE	5 U
75-09-2	METHYLENE CHLORIDE	9 B	79-00-5	1,1,2-TRICHLOROETHANE	5 U
67-64-1	ACETONE	26	71-43-2	BENZENE	5 U
75-15-0	CARBON DISULFIDE	5 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5 U
75-35-4	1,1-DICHLOROETHENE	5 U	75-25-2	BROMOFORM	5 U
75-34-3	1,1-DICHLOROETHANE	5 U	108-10-1	4-METHYL-2-PENTANONE	10 U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	5 U	591-78-6	2-HEXANONE	10 U
67-66-3	CHLOROFORM	5 U	127-18-4	TETRACHLOROETHENE	5 U
107-06-2	1,2-DICHLOROETHANE	5 U	79-34-5	1,1,2,2-TETRACHLOROETHANE	5 U
78-93-3	2-BUTANONE	10 U	108-88-3	TOLUENE	5 U
71-55-6	1,1,1-TRICHLOROETHANE	5 U	108-90-7	CHLOROBENZENE	5 U
56-23-5	CARBON TETRACHLORIDE	5 U	100-41-4	ETHYLBENZENE	5 U
108-05-4	VINYL ACETATE	10 U	100-42-5	STYRENE	5 U
75-27-4	BROMODICHLOROMETHANE	5 U	1330-20-7	XYLENE (TOTAL)	5 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

RE : Re-analyzed Sample.
DL : Sample analyzed at secondary dilution.
MS : Matrix Spike Sample. MSD : Matrix Spike Duplicate Sam
E : Exceed the Calibration Range.
D : Compound found in Diluted Run.
X : Matrix Spike added.

mab
10/2/91

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
B014I2
(2597-2)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	NO TIC'S FOUND	VOA		
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.				
28.				
29.				
30.				

MAB
10/2/91

```
* ****************************************************
*                                                    *
* S-CUBED  VOLATILE ORGANICS   ANALYSIS   DATA   SHEET *
*                                                    *
* ****************************************************
```

```
.......................... .....
:            Sample Number     :
                    B01411     :
:......................... ....:
                   (2597-1)
```

CLIENT : WHC
PROJECT: SITE WIDE SOIL
SDG No.: 2597

Concentration: Low Medium (Circle one)
Date Extracted/Prepared: 09-18-91
Date Analyzed: 09-18-91
pH: 8.95
Percent Moisture: 2.00
Percent Moisture (Decanted) : N.R

Lab File ID no: WH701
Sample Matrix: SOIL
Date Sample Received: 09-16-91
Data Release Authorized By:
S-CUBED Reference Number: 32859-04

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
74-87-3	CHLOROMETHANE	10 U	78-87-5	1,2-DICHLOROPROPANE	5 U
74-83-9	BROMOMETHANE	10 U	10061-01-5	CIS-1,3-DICHLOROPROPENE	5 U
75-01-4	VINYL CHLORIDE	10 U	79-01-6	TRICHLOROETHENE	5 U
75-00-3	CHLOROETHANE	10 U	124-48-1	DIBROMOCHLOROMETHANE	5 U
75-09-2	METHYLENE CHLORIDE	5 ~~8~~ 54	79-00-5	1,1,2-TRICHLOROETHANE	5 U
67-64-1	ACETONE	10 U	71-43-2	BENZENE	5 U
75-15-0	CARBON DISULFIDE	5 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5 U
75-35-4	1,1-DICHLOROETHENE	5 U	75-25-2	BROMOFORM	5 U
75-34-3	1,1-DICHLOROETHANE	5 U	108-10-1	4-METHYL-2-PENTANONE	10 U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	5 U	591-78-6	2-HEXANONE	10 U
67-66-3	CHLOROFORM	5 U	127-18-4	TETRACHLOROETHENE	5 U
107-06-2	1,2-DICHLOROETHANE	5 U	79-34-5	1,1,2,2-TETRACHLOROETHANE	5 U
78-93-3	2-BUTANONE	10 U	108-88-3	TOLUENE	5 U
71-55-6	1,1,1-TRICHLOROETHANE	5 U	108-90-7	CHLOROBENZENE	5 U
56-23-5	CARBON TETRACHLORIDE	5 U	100-41-4	ETHYLBENZENE	5 U
108-05-4	VINYL ACETATE	10 U	100-42-5	STYRENE	5 U
75-27-4	BROMODICHLOROMETHANE	5 U	1330-20-7	XYLENE (TOTAL)	5 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides) or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

RE : Re-analyzed Sample.
DL : Sample analyzed at secondary dilution.
MS : Matrix Spike Sample. MSD : Matrix Spike Duplicate Sam
E : Exceed the Calibration Range.
D : Compound found in Diluted Run.
X : Matrix Spike added.

mah
10/2/91

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
B01441
(2697-1)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	NO TIC'S FOUND	VOA		
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.				
28.				
29.				
30.				

MCG
10/2/91

```
* ******************************************************
* S-CUBED  SEMIVOLATILE  ORGANIC  ANALYSIS  DATA  SHEET *
* ******************************************************
```

Sample Number: B01413

(2597-3)

CLIENT : WHC
PROJECT : SITE WIDE SOIL
SDG No : 2597

Date Sample Received: 09-16-91
Data Release Authorized By: [illegible]
S-CUBED Reference Number: 32359-04

Lab File ID No: A9703
Sample Matrix: SOIL
INT.VOL/WGT(mL or G): 30 G
FV(mL): 2.00 DILT: 1
Percent Moisture: 1.00 pH: 9.25 Percent Moisture (Decanted): N.R
Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09-17-91
Date Analyzed: 09-19-91

CAS Number		ug/l or ug/kg (Circle one)	CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	670 U	83-32-9	ACENAPHTHENE	670 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	670 U	51-28-5	2,4-DINITROPHENOL	3200 U
95-57-8	2-CHLOROPHENOL	670 U	100-02-7	4-NITROPHENOL	3200 U
541-73-1	1-3,DICHLOROBENZENE	670 U	132-64-9	DIBENZOFURAN	670 U
106-46-7	1,4-DICHLOROBENZENE	670 U	121-14-2	2,4-DINITROTOLUENE	670 U
100-51-6	BENZYL ALCOHOL	670 U	606-20-2	2,6-DINITROTOLUENE	670 U
95-50-1	1,2-DICHLOROBENZENE	670 U	84-66-2	DIETHYLPHTHALATE	670 U
95-48-7	2-METHYLPHENOL	670 U	7005-72-3	4-CHLOROPHENYL-PHENYLETHER	670 U
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	670 U	86-73-7	FLUORENE	670 U
106-44-5	4-METHYLPHENOL	670 U	100-01-6	4-NITROANILINE	3200 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	670 U	534-52-1	4,6-DINITRO-2-METHYLPHENOL	3200 U
67-72-1	HEXACHLOROETHANE	670 U	86-30-6	N-NITROSODIPHENYLAMINE (1)	670 U
98-95-3	NITROBENZENE	670 U	101-55-3	4-BROMOPHENYL-PHENYLETHER	670 U
78-59-1	ISOPHORONE	670 U	118-74-1	HEXACHLOROBENZENE	670 U
88-75-5	2-NITROPHENOL	670 U	87-86-5	PENTACHLOROPHENOL	3200 U
105-67-9	2,4-DIMETHYLPHENOL	670 U	85-01-8	PHENANTHRENE	670 U
65-85-0	BENZOIC ACID	3200 U	120-12-7	ANTHRACENE-	670 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	670 U	84-74-2	DI-N-BUTYLPHTHALATE	670 U
120-83-2	2,4-DICHLOROPHENOL	670 U	206-44-0	FLUORANTHENE	670 U
120-82-1	1,2,4-TRICHLOROBENZENE	670 U	129-00-0	PYRENE	670 U
91-20-3	NAPHTHALENE	670 U	85-68-7	BUTYLBENZYLPHTHALATE	670 U
106-47-8	4-CHLOROANILINE	670 U	91-94-1	3,3'-DICHLOROBENZIDINE	1300 U
87-68-3	HEXACHLOROBUTADIENE	670 U	56-55-3	BENZO(a)ANTHRACENE	670 U
59-50-7	4-CHLORO-3-METHYLPHENOL	670 U	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	670 U
91-57-6	2-METHYLNAPHTHALENE	670 U	218-01-9	CHRYSENE	670 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	670 U	117-84-0	DI-N-OCTYL PHTHALATE	670 U
88-06-2	2,4,6-TRICHLOROPHENOL	670 U	205-99-2	BENZO(b)FLUORANTHENE	670 U
95-95-4	2,4,5-TRICHLOROPHENOL	3200 U	207-08-9	BENZO(k)FLUORANTHENE	670 U
91-58-7	2-CHLORONAPHTHALENE	670 U	50-32-8	BENZO(a)PYRENE	670 U
88-74-4	2-NITROANILINE	3200 U	193-39-5	INDENO(1,2,3-CD)PYRENE	670 U
131-11-3	DIMETHYL PHTHALATE	670 U	53-70-3	DIBENZ(a,h)ANTHRACENE	670 U
208-96-8	ACENAPHTHYLENE	670 U	191-24-2	BENZO(g,h,i)PERYLENE	670 U
99-09-2	3-NITROANILINE	3200 U			

(1)-Cannot be seperated from diphenylamine.

MAB 10/3/91

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
B01413
(2597-3)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 00123-42-2	2-PENTANONE, 4-HYDROXY-4-METH	BNA	7.58	280 JB
2.	UNKNOWN	"	36.87	410 J
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.				
28.				
29.				
30.				

mak
10/3/91

```
* ******************************************************
* S-CUBED  SEMIVOLATILE  ORGANIC  ANALYSIS  DATA  SHEET *
* ******************************************************
```

Sample Number : B01412 (2597-2)

CLIENT : WHC
PROJECT : SITE WIDE SOIL
SDG No : 2597

Date Sample Received: 09-16-91
Data Release Authorized By: [illegible]
S-CUBED Reference Number: 32359-04

Lab File ID No: A9702
Sample Matrix: SOIL
INT.VOL/WGT(mL or G): 30 G
FV(mL): 2.00 DILT: 1
Percent Moisture: 1.00 pH: 9.33 Percent Moisture (Decanted): N.R
Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09-17-91
Date Analyzed: 09-19-91

CAS Number		ug/l or ug/kg (Circle one)	CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	670 U	83-32-9	ACENAPHTHENE	670 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	670 U	51-28-5	2,4-DINITROPHENOL	3200 U
95-57-8	2-CHLOROPHENOL	670 U	100-02-7	4-NITROPHENOL	3200 U
541-73-1	1-3,DICHLOROBENZENE	670 U	132-64-9	DIBENZOFURAN	670 U
106-46-7	1,4-DICHLOROBENZENE	670 U	121-14-2	2,4-DINITROTOLUENE	670 U
100-51-6	BENZYL ALCOHOL	670 U	606-20-2	2,6-DINITROTOLUENE	670 U
95-50-1	1,2-DICHLOROBENZENE	670 U	84-66-2	DIETHYLPHTHALATE	670 U
95-48-7	2-METHYLPHENOL	670 U	7005-72-3	4-CHLOROPHENYL-PHENYLETHER	670 U
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	670 U	86-73-7	FLUORENE	670 U
106-44-5	4-METHYLPHENOL	670 U	100-01-6	4-NITROANILINE	3200 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	670 U	534-52-1	4,6-DINITRO-2-METHYLPHENOL	3200 U
67-72-1	HEXACHLOROETHANE	670 U	86-30-6	N-NITROSODIPHENYLAMINE (1)	670 U
98-95-3	NITROBENZENE	670 U	101-55-3	4-BROMOPHENYL-PHENYLETHER	670 U
78-59-1	ISOPHORONE	670 U	118-74-1	HEXACHLOROBENZENE	670 U
88-75-5	2-NITROPHENOL	670 U	87-86-5	PENTACHLOROPHENOL	3200 U
105-67-9	2,4-DIMETHYLPHENOL	670 U	85-01-8	PHENANTHRENE	670 U
65-85-0	BENZOIC ACID	3200 U	120-12-7	ANTHRACENE	670 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	670 U	84-74-2	DI-N-BUTYLPHTHALATE	670 U
120-83-2	2,4-DICHLOROPHENOL	670 U	206-44-0	FLUORANTHENE	670 U
120-82-1	1,2,4-TRICHLOROBENZENE	670 U	129-00-0	PYRENE	670 U
91-20-3	NAPHTHALENE	670 U	85-68-7	BUTYLBENZYLPHTHALATE	670 U
106-47-8	4-CHLOROANILINE	670 U	91-94-1	3,3'-DICHLOROBENZIDINE	1300 U
87-68-3	HEXACHLOROBUTADIENE	670 U	56-55-3	BENZO(a)ANTHRACENE	670 U
59-50-7	4-CHLORO-3-METHYLPHENOL	670 U	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	670 U
91-57-6	2-METHYLNAPHTHALENE	670 U	218-01-9	CHRYSENE	670 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	670 U	117-84-0	DI-N-OCTYL PHTHALATE	670 U
88-06-2	2,4,6-TRICHLOROPHENOL	670 U	205-99-2	BENZO(b)FLUORANTHENE	670 U
95-95-4	2,4,5-TRICHLOROPHENOL	3200 U	207-08-9	BENZO(k)FLUORANTHENE	670 U
91-58-7	2-CHLORONAPHTHALENE	670 U	50-32-8	BENZO(a)PYRENE	670 U
88-74-4	2-NITROANILINE	3200 U	193-39-5	INDENO(1,2,3-CD)PYRENE	670 U
131-11-3	DIMETHYL PHTHALATE	670 U	53-70-3	DIBENZ(a,h)ANTHRACENE	670 U
208-96-8	ACENAPHTHYLENE	670 U	191-24-2	BENZO(g,h,i)PERYLENE	670 U
99-09-2	3-NITROANILINE	3200 U			

(1)-Cannot be seperated from diphenylamine.

mab 10/3/91

00106

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
B01412
(2597-2)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-METH	BNA	7.61	1000 JB
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.				
28.				
29.				
30.				

mak
10/3/91

```
* ******************************************************
* S-CUBED  SEMIVOLATILE  ORGANIC  ANALYSIS  DATA  SHEET *
* ******************************************************
```

Sample Number: B01411 (2597-1)

CLIENT : WHC
PROJECT : SITE WIDE SOIL
SDG No : 2597

Date Sample Received: 09-16-91
Data Release Authorized By: [illegible]
S-CUBED Reference Number: 32859-04

Lab File ID No: A9701
Sample Matrix: SOIL
INT.VOL/WGT(mL or G): 30 G
FV(mL): 2.00 DILT: 1
Percent Moisture: 2.00 pH: 8.95 Percent Moisture (Decanted): N.R
Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09-17-91
Date Analyzed: 09-19-91

CAS Number		ug/l or ug/kg (Circle one)	CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	670 U	83-32-9	ACENAPHTHENE	670 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	670 U	51-28-5	2,4-DINITROPHENOL	3300 U
95-57-8	2-CHLOROPHENOL	670 U	100-02-7	4-NITROPHENOL	3300 U
541-73-1	1-3,DICHLOROBENZENE	670 U	132-64-9	DIBENZOFURAN	670 U
106-46-7	1,4-DICHLOROBENZENE	670 U	121-14-2	2,4-DINITROTOLUENE	670 U
100-51-6	BENZYL ALCOHOL	670 U	606-20-2	2,6-DINITROTOLUENE	670 U
95-50-1	1,2-DICHLOROBENZENE	670 U	84-66-2	DIETHYLPHTHALATE	670 U
95-48-7	2-METHYLPHENOL	670 U	7005-72-3	4-CHLOROPHENYL-PHENYLETHER	670 U
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	670 U	86-73-7	FLUORENE	670 U
106-44-5	4-METHYLPHENOL	670 U	100-01-6	4-NITROANILINE	3300 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	670 U	534-52-1	4,6-DINITRO-2-METHYLPHENOL	3300 U
67-72-1	HEXACHLOROETHANE	670 U	86-30-6	N-NITROSODIPHENYLAMINE (1)	670 U
98-95-3	NITROBENZENE	670 U	101-55-3	4-BROMOPHENYL-PHENYLETHER	670 U
78-59-1	ISOPHORONE	670 U	118-74-1	HEXACHLOROBENZENE	670 U
88-75-5	2-NITROPHENOL	670 U	87-86-5	PENTACHLOROPHENOL	3300 U
105-67-9	2,4-DIMETHYLPHENOL	670 U	85-01-8	PHENANTHRENE	670 U
65-85-0	BENZOIC ACID	3300 U	120-12-7	ANTHRACENE	670 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	670 U	84-74-2	DI-N-BUTYLPHTHALATE	670 U
120-83-2	2,4-DICHLOROPHENOL	670 U	206-44-0	FLUORANTHENE	670 U
120-82-1	1,2,4-TRICHLOROBENZENE	670 U	129-00-0	PYRENE	670 U
91-20-3	NAPHTHALENE	670 U	85-68-7	BUTYLBENZYLPHTHALATE	670 U
106-47-8	4-CHLOROANILINE	670 U	91-94-1	3,3'-DICHLOROBENZIDINE	1300 U
87-68-3	HEXACHLOROBUTADIENE	670 U	56-55-3	BENZO(a)ANTHRACENE	670 U
59-50-7	4-CHLORO-3-METHYLPHENOL	670 U	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	670 U
91-57-6	2-METHYLNAPHTHALENE	670 U	218-01-9	CHRYSENE	670 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	670 U	117-84-0	DI-N-OCTYL PHTHALATE	670 U
88-06-2	2,4,6-TRICHLOROPHENOL	670 U	205-99-2	BENZO(b)FLUORANTHENE	670 U
95-95-4	2,4,5-TRICHLOROPHENOL	3300 U	207-08-9	BENZO(k)FLUORANTHENE	670 U
91-58-7	2-CHLORONAPHTHALENE	670 U	50-32-8	BENZO(a)PYRENE	670 U
88-74-4	2-NITROANILINE	3300 U	193-39-5	INDENO(1,2,3-CD)PYRENE	670 U
131-11-3	DIMETHYL PHTHALATE	670 U	53-70-3	DIBENZ(a,h)ANTHRACENE	670 U
208-96-8	ACENAPHTHYLENE	670 U	191-24-2	BENZO(g,h,i)PERYLENE	670 U
99-09-2	3-NITROANILINE	3300 U			

(1)-Cannot be seperated from diphenylamine.

mak 10/3/91

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
B01411
(2597-1)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 00123-42-2	2-PENTANONE, 4-HYDROXY-4-METH	BNA	7.59	3300 JB
2.	UNKNOWN ACID ESTER	"	33.35	750J
3.	UNKNOWN	"	36.87	330J
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

mak
10/3/91

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01413

Lab Name: S-CUBED Contract: ~~68-D9-0027~~ 32359-04 PAL 9/26/91

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2597

Matrix: (soil/water) SOIL WIPE SOIL Lab Sample ID: 25973

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C0923065

Level: (low/med) LOW Date Received: 09/16/91

% Moisture: not dec. 1 dec._____ Date Extracted: 09/17/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/25/91

GPC Cleanup: (Y/N) N pH: 9.3 Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.10	U J
319-85-7	beta-BHC	8.10	U
319-86-8	delta-BHC	8.10	U
58-89-9	gamma-BHC (Lindane)	8.10	U
76-44-8	Heptachlor	8.10	U
309-00-2	Aldrin	8.10	U
1024-57-3	Heptachlor epoxide	8.10	U
959-98-8	Endosulfan I	8.10	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1031-07-8	Endosulfan sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	81.00	U
53494-70-5	Endrin ketone	16.00	U
5103-71-9	alpha-Chlordane	81.00	U
5103-74-2	gamma-Chlordane	81.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	81.00	U
11104-28-2	Aroclor-1221	81.00	U
11141-16-5	Aroclor-1232	81.00	U
53469-21-9	Aroclor-1242	81.00	U
12672-29-6	Aroclor-1248	81.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U J

MAS. 10/3/91

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01412

Lab Name: S-CUBED Contract: ~~68-D9-0027~~ 32359-04 DMM 9/26/91

Lab Code: S3 Case No.: SITE SAS No.: SDG No.: 2597

WIDE SOIL

Matrix: (soil/water) SOIL Lab Sample ID: 25972

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C0923071

Level: (low/med) LOW Date Received: 09/16/91

% Moisture: not dec. 1 dec._____ Date Extracted: 09/17/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/25/91

GPC Cleanup: (Y/N) N pH: 9.3 Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.10	U
319-85-7	beta-BHC	8.10	U
319-86-8	delta-BHC	8.10	U
58-89-9	gamma-BHC (Lindane)	8.10	U
76-44-8	Heptachlor	8.10	U
309-00-2	Aldrin	8.10	U
1024-57-3	Heptachlor epoxide	8.10	U
959-98-8	Endosulfan I	8.10	U
60-57-1	Dieldrin	16.00	U
72-55-9	4,4'-DDE	16.00	U
72-20-8	Endrin	16.00	U
33213-65-9	Endosulfan II	16.00	U
72-54-8	4,4'-DDD	16.00	U
1031-07-8	Endosulfan sulfate	16.00	U
50-29-3	4,4'-DDT	16.00	U
72-43-5	Methoxychlor	81.00	U
53494-70-5	Endrin ketone	16.00	U
5103-71-9	alpha-Chlordane	81.00	U
5103-74-2	gamma-Chlordane	81.00	U
8001-35-2	Toxaphene	160.00	U
12674-11-2	Aroclor-1016	81.00	U
11104-28-2	Aroclor-1221	81.00	U
11141-16-5	Aroclor-1232	81.00	U
53469-21-9	Aroclor-1242	81.00	U
12672-29-6	Aroclor-1248	81.00	U
11097-69-1	Aroclor-1254	160.00	U
11096-82-5	Aroclor-1260	160.00	U

10/3/91
MAB

FORM I PEST 1/87 Rev.