2595-S cubed-009

0046065

MAXWELL
S-CUBED Division

SORRENTO VALLEY OFFI
3398 Carmel Mountain Road., San Diego, CA 92121-1
P.O. Box 1620, La Jolla, CA 92038-1

October 10, 1991

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

DEC 1996
RECEIVED
EDMC

Reference No. 32359-05

Dear Ms. Duncan:

Enclosed are the results from the analysis of the soil sample received by S-Cubed on September 13, 1991. The sample was analyzed for VOA, SVOA, and Pesticides/PCBs.

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 call.

Sincerely,

John DeWald
Manager, Commercial Analysis Section

/alb

encl: a/s

OCT 1991
RECEIVED
DWA RECEIPT

MAXWELL
S-CUBED Division

NARRATIVE

DATE: October 10, 1991

REFERENCE NO.: 32358, SDG 2959

WESTINGHOUSE HANFORD COMPANY 100-DR-1

One sample, BOOZS6 (S-CUBED 2595-1), was analyzed according to Methods 8240 (VOA), 8270 (SVOA), and CLP 2/88 (Pesticide/PCB). There were no difficulties with the analysis. The sample was generally clean; only extremely low levels of heavy polynuclear aromatic hydrocarbons were detected.

The quality control results were generally acceptable. For VOA surrogate 1,2-dichloroethene-d_4, percent recovery was high in 2595-1 and the MSD. The recovery for this surrogate was compliant in the MS.

John DeWald
Manager, Commercial Analysis Section

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator: Jonathan G. Lucas

Company Contact: Mike Stankovich — Telephone: (509) 376-2493

Project Designation/Sampling Locations: 100-DR-1 PCB Soil Sampling — Collection Date: 9-11-91

Ice Chest No.: RH # 35 — Field Logbook No.:

Bill of Lading/Airbill No.: 2474252242 — Offsite Property No.: W91-0-057

Method of Shipment: Emery

Shipped to: S-Cubed

Possible Sample Hazards/Remarks: —

Sample Identification

B00ZS6 - Soil

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

Relinquished by:	Received by:	Date/Time:
Jonathan G. Lucas	Rec'd for Lab	9/13/91 2pm
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:

A-6000-407 (12/90)

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector J.G. Lucas / C.E. Heiden Date Sampled 9-11-91 Time — hours

Company Contact Mike Stankovich Telephone (509) 376-2493

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B00Z S6	(1) 120 ml glass	Soil	VOA - Method 8240
↓	(1) 250 ml glass	Soil	Semi-VOA, PCBs - Methods 8270 & 8080

Field Information** —

Special Handling and/or Storage —

Possible Sample Hazards —

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

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

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

A-6000-406 (05/90)

"Next Day Service" Signature Security

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
Westinghouse Hanford Co.		1091-0-0512

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 – Glass jars of soil in packing material and blue ice Ice Chest # 35 – BOOZS6 (75 lbs)	

☐ 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 on site
Bill of Lading # 247425224 2

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release: Elmer R Kirk	RM Survey No 910763		Date 9-12-91
Location of Property (Area & Bldg.) 100-DR-1	Contact Mike Stankovich		Phone (509) 376-2493
Date Ready for Shipment 9-12-91	Cost Code to be Charged EB4C8	Approximate Date This Property will be Returned	NA
Originated By Jonathan G. Lucas	Date 9-12-91	Authorized By R.P. Henckel	Date 9/12/91
Signature and Name of Property Control	Custodian Date	Property Management Approval	Date 9/12/91

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
Mark U Bryant				
Date 9-12-91				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management Yellow – Retain Green – Property Control Custodian (Issuing Office) Pink – Originator

00003

54-3000-479 (09/89)

SAMPLE STATUS REPORT FOR E 7394. E-BLANK 800756 TIME: 9/12/91 8:25
DISPATCHED: 9/11/91 15:20 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 9/12/91 8:10

EXT.	DETCR.	RESULTS OR STATUS	OUT OF RANGE?	FLOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4271	TOT-ACT	< 5.00000E 01 PICI/G	N	Y	ERROR

END OF REPORT

EMERY WORLDWIDE

A CNF Company

(94)

DATE: 09-12-91 SHIPMENT NO.: NH 247425224 2

SHIPPER: WESTINGHOUSE SHIPPING DEPT (509) 376-6665

REFERENCE NO.: W91-0-0572

SIGNATURE AND TALLY RECORD

60029-46 (5/89) Litho USA

SHIPPER 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

CONSIGNEE NAME AND ADDRESS

JOHN DENALD
S-CUBED
3398 CARMEL MT. ROAD
SAN DIEGO CA 92121-1095

Pieces	Weight	Description/Marks	Emery Authorization No.
1	75 LBS	B00256 W91-0-0572 ICE CHEST #35 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
	MARK W BRYANT WESTINGHOUSE SHIPPING 1187/1100	RICHLAND WA		/09-12-91
2.				
3.				
4.				
5.				
6.	J. PRICE	SAN		
7.				
8.				

SPECIAL HANDLING INSTRUCTIONS

CONSIGNEE COPY

FORM OF PAYMENT

CASH ☐ GBL CBL ☐ FCCOD ☐

PPD [X] COL ☐ OTH ☐ COMAT ☐

EMERY WORLDWIDE

A GF Company

SERVICES

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

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

PULL FOR SHPT. NO. TAB

E Shipper's Account Number: 850281586

Date: 09-12-91 | Origin: PSC | Shipment Number: 247425224 2

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

To:
JOHN DEWALD
S-CUBED
3398 CARMEL MT. ROAD
SAN DIEGO CA
Hold for Pick Up ☐
Canada ☐

Tariff Dest. | Gateway

Check to Shipper $

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 Numbers: W81220 E84C8 W91-0-0572

Zip: 99352

E Consignee's Account Number

Zip: 92121-1095

Description	Pcs.	L	W	H	Total Pieces	Total Weight (In Lbs)
1 POLY ICE CHEST #35 BOOZS6 SOIL SAMPLES W91-0-0572	1	1	1	1	1	75

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

Declared Value $

2 4 7 4 2 5 2 2 4 2

TODSR ☐ Haz Mat ☐ Edi ☐ A B C D E F G H I J K

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

OVERNIGHT DELIVERY
SIGNATURE SECURITY SERVICE

Envelope 9X12 ☐ Pack 12X15 [X]

Shipper's Signature X Michael Wilhart

International Shipments: Free Domicile ☐ Commodity Code

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

International Customs Value | International Insurance

Base Charge

Total Transportation Charges | Other Charges/Advance at Origin ☐ COD/AO- $

SANA

Terms and Conditions on Back

CONSIGNEE — PACKAGE COPY — 4

MAXWELL
S-CUBED Division

Lot No. 2595

Sample Log-In Sheet

DC No. ____-____-____

Date Received 9/13/91 Date Sampled 9/11/91

Time Received 2pm

Received by (Sig.) [illegible]

Airbill No. 2474252224

Charge No. 32359-04

Client Code WHC

Custody Seals Present/Intact (Y) N

Chain of Custody Present (Y) N

Client Forms Present (Y) N

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

Turnaround Req'd: 45d (30d) 21d 14d 48hr Other ~~10 DF~~

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

Case No./Proj. Code ~~WHC Site Wide Soil~~ SDG No. 2595

S-Cubed No.	Sample Identification (100-DR-1)	Samp. Type	No. Cont.	Samp. Cond.	Samp. Stor.	A	B	C							All Info Agree	Notes
MS/2595-1	B00Z56	S	1/1	OK	RAD/LUA	X	X	X								
																C OCP 8080
																B SVOA 8270
																A VOA 8240
																~~C~~
																~~B = SVOA CLP~~
																~~A = VOA CLP~~

Container Types

Water ____

Soil 1x 120ml
1x 250ml

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

Water MS, MSD ____

Soil MS, MSD B00Z56

SDG Complete (Y) N

Review JD 9/13

SC-03, Rev. 7/91

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

```
:.......................... .....
:            Sample Number     :
                   B000ZS6     :
:.......................... ....:
                   (2595-1)
```

CLIENT : W H C
PROJECT: 100-DR-1
SDG No.: 2595

Concentration: Low Medium (Circle one)
Date Extracted/Prepared: 09-17-91
Date Analyzed: 09-17-91
pH: 8.52
Percent Moisture: 0.67
Percent Moisture (Decanted) : N.R

Lab File ID no: WR951
Sample Matrix: SOIL
Date Sample Received: 09-13-91
Data Release Authorized By: M
S-CUBED Reference Number: 32359-05

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	6 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 Samp
E : Exceed the Calibration Range.
D : Compound found in Diluted Run.
X : Matrix Spike added.

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

```
:..........................:
:          Sample Number   :
:                B00ZS6    :
:..........................:
          (2595-1)
```

CLIENT : W H C
PROJECT : 100-DR-1
SDG No : 2595

Date Sample Received: 09-13-91
Data Release Authorized By: RM
S-CUBED Reference Number: 32359-05

Lab File ID No: A5001
Sample Matrix: SOIL
INT.VOL/WGT(mL or G): 30 G
FV(mL): 2.00 DILT: 1
Percent Moisture: 0.67 pH: 8.52 Percent Moisture (Decanted): N.R
Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09-16-91
Date Analyzed: 09-24-91

CAS Number		ug/l or ug/kg (Circle one)	CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	660 U	83-32-9	ACENAPHTHENE	660 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	660 U	51-28-5	2,4-DINITROPHENOL	3200 U
95-57-8	2-CHLOROPHENOL	660 U	100-02-7	4-NITROPHENOL	3200 U
541-73-1	1-3,DICHLOROBENZENE	660 U	132-64-9	DIBENZOFURAN	660 U
106-46-7	1,4-DICHLOROBENZENE	660 U	121-14-2	2,4-DINITROTOLUENE	660 U
100-51-6	BENZYL ALCOHOL	660 U	606-20-2	2,6-DINITROTOLUENE	660 U
95-50-1	1,2-DICHLOROBENZENE	660 U	84-66-2	DIETHYLPHTHALATE	660 U
95-48-7	2-METHYLPHENOL	660 U	7005-72-3	4-CHLOROPHENYL-PHENYLETHER	660 U
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	660 U	86-73-7	FLUORENE	660 U
106-44-5	4-METHYLPHENOL	660 U	100-01-6	4-NITROANILINE	3200 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	660 U	534-52-1	4,6-DINITRO-2-METHYLPHENOL	3200 U
67-72-1	HEXACHLOROETHANE	660 U	86-30-6	N-NITROSODIPHENYLAMINE (1)	660 U
98-95-3	NITROBENZENE	660 U	101-55-3	4-BROMOPHENYL-PHENYLETHER	660 U
78-59-1	ISOPHORONE	660 U	118-74-1	HEXACHLOROBENZENE	660 U
88-75-5	2-NITROPHENOL	660 U	87-86-5	PENTACHLOROPHENOL	3200 U
105-67-9	2,4-DIMETHYLPHENOL	660 U	85-01-8	PHENANTHRENE	660 U
65-85-0	BENZOIC ACID	3200 U	120-12-7	ANTHRACENE	660 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	660 U	84-74-2	DI-N-BUTYLPHTHALATE	660 U
120-83-2	2,4-DICHLOROPHENOL	660 U	206-44-0	FLUORANTHENE	150 J
120-82-1	1,2,4-TRICHLOROBENZENE	660 U	129-00-0	PYRENE	93 J
91-20-3	NAPHTHALENE	660 U	85-68-7	BUTYLBENZYLPHTHALATE	660 U
106-47-8	4-CHLOROANILINE	660 U	91-94-1	3,3'-DICHLOROBENZIDINE	1300 U
87-68-3	HEXACHLOROBUTADIENE	660 U	56-55-3	BENZO(a)ANTHRACENE	120 J
59-50-7	4-CHLORO-3-METHYLPHENOL	660 U	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	660 U
91-57-6	2-METHYLNAPHTHALENE	660 U	218-01-9	CHRYSENE	660 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	660 U	117-84-0	DI-N-OCTYL PHTHALATE	660 U
88-06-2	2,4,6-TRICHLOROPHENOL	660 U	205-99-2	BENZO(b)FLUORANTHENE	91 J
95-95-4	2,4,5-TRICHLOROPHENOL	3200 U	207-08-9	BENZO(k)FLUORANTHENE	660 U
91-58-7	2-CHLORONAPHTHALENE	660 U	50-32-8	BENZO(a)PYRENE	660 U
88-74-4	2-NITROANILINE	3200 U	193-39-5	INDENO(1,2,3-CD)PYRENE	660 U
131-11-3	DIMETHYL PHTHALATE	660 U	53-70-3	DIBENZ(a,h)ANTHRACENE	660 U
208-96-8	ACENAPHTHYLENE	660 U	191-24-2	BENZO(g,h,i)PERYLENE	660 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
B00256
(2595-1

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. 123422	2-PENTANONE, 4-HYDROXY-4-METHYL-	BNA	7.45	4200 JB
2.				
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30.				

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B00ZS6

Lab Name: S-CUBED Contract: ~~68-D9-0027~~ 32354-05 pmc 10/02/91

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Matrix: (soil/water) SOIL Lab Sample ID: 2595-1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C0925030

Level: (low/med) LOW Date Received: 09/13/91

% Moisture: not dec. 1 dec._____ Date Extracted: 09/16/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/28/91

GPC Cleanup: (Y/N) N pH: 8.5 Dilution Factor: 0.500

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.00	U
319-85-7	beta-BHC	4.00	U
319-86-8	delta-BHC	4.00	U
58-89-9	gamma-BHC (Lindane)	4.00	U
76-44-8	Heptachlor	4.00	U
309-00-2	Aldrin	4.00	U
1024-57-3	Heptachlor epoxide	4.00	U
959-98-8	Endosulfan I	4.00	U
60-57-1	Dieldrin	8.10	U
72-55-9	4,4'-DDE	8.10	U
72-20-8	Endrin	8.10	U
33213-65-9	Endosulfan II	8.10	U
72-54-8	4,4'-DDD	8.10	U
1031-07-8	Endosulfan sulfate	8.10	U
50-29-3	4,4'-DDT	8.10	U
72-43-5	Methoxychlor	40.00	U
53494-70-5	Endrin ketone	8.10	U
5103-71-9	alpha-Chlordane	40.00	U
5103-74-2	gamma-Chlordane	40.00	U
8001-35-2	Toxaphene	81.00	U
12674-11-2	Aroclor-1016	40.00	U
11104-28-2	Aroclor-1221	40.00	U
11141-16-5	Aroclor-1232	40.00	U
53469-21-9	Aroclor-1242	40.00	U
12672-29-6	Aroclor-1248	40.00	U
11097-69-1	Aroclor-1254	81.00	U
11096-82-5	Aroclor-1260	81.00	U

VALIDATION SUMMARY

OSM ORGANIC DATA ASSESSMENT

DATE March 12, 1992

REVIEWED BY L.L. Ames LLA

LABORATORY S-Cubed

CASE # 100-DR-1

SDG # 2595 ~~SCU-009~~

SAMPLES/MATRIX B00Z56 (Soil sample)

DATA ASSESSMENT SUMMARY

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

NOTES :

Refer to the corresponding attachments for explanation of any problems.

ok to transmit
JJ 3/27/92

ORGANIC QC - Holding Times

Name L.L. Ames LLA Date 3/12/92

COMMENTS: Maximum holding times from collection to extraction and from extraction to analysis were met for sample B00Z56. In addition, shipping requirements and conditions (ice chest at 4±4°C) also were met.

ACTION: No action is required.

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

ORGANIC QC - Surrogate Recovery

Name L.L. Ames LLA Date 3/12/92

COMMENTS: The recovery of surrogate dibutylchlorendates were within QC limits for all samples run (B00Z56, B00Z56 MS, B00Z56 MSD, LCS2595 and EBS2595).

ACTION: No action is required.

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

ORGANIC QC - MS/MSD

Name L.L. Ames LLA Date 3/12/92

COMMENTS: Spike recovery and MSD % recoveries were all within QC limits. Relative percent differences were also within QC limits for B0Z56 MSD.

ACTION: No action is required.

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

ORGANIC QC - Blanks

Name L.L. Ames LRQ Date 3/12/92

COMMENTS: The method blank analyses criteria were met. Analysis of a soil blank (EB5259.5) indicated that all Pest/PCB target analytes were undetected as contaminants.

ACTION: No action is required.

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

ORGANIC QC - GC/MS Tune

Name L.L. Ames LLA Date 3/12/92

COMMENTS: Not applicable to Pest/PCB evaluation.

ACTION: No action is required.

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

ORGANIC QC - Calibrations

Name L.L. Ames LLA Date 3/12/92

COMMENTS: The initial calibration linearity checks were all less than 10% RSD. Evaluation checks for 4,4'-DDT/endrin % breakdown from Mix B were all within QC limits. The analytical sequence requirements were met. The %D criteria were met for both qualitative and quantitative GC columns.

ACTION: No action is required.

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

ORGANIC QC - Internal Standards

Name L.L. Ames LKO Date 3/12/92

COMMENTS: Not applicable to Pest/PCB evaluation.

ACTION: No action is required.

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

ORGANIC QC - Instrument Performance (pest)

Name L.L.Ames LLA Date 3/12/92

COMMENTS: The DDT retention time criteria (RT ≥ 12 minutes) were met. Total % breakdown of DDT and endrin did not exceed 20% for all Mix B analyses. DDT/endrin combined % breakdown did not exceed 20% from Mix B. DBC retention time %D from Mix A was within limits in all cases.

ACTION: No action is required.

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

ORGANIC QC - Other

Name L.L. Ames LLA Date 3/12/92

COMMENTS: Calculation checks were done for dieldrin on two GC columns. The %D given was 12.1% and 0.4% while the %D calculated was 12.08% and 0.43%, respectively, before rounding. An MS and MSD calculation check on % DDT recovered was reported as 51% and 45% and computed as 50.5% and 44.8%, respectively.

ACTION: No action is required.

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

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B00ZS6

Lab Name: S-CUBED Contract: ~~68-D9-0027~~ 32359-05 pm 10/2/91

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Matrix: (soil/water) SOIL Lab Sample ID: 2595-1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C0925030

Level: (low/med) LOW Date Received: 09/13/91

% Moisture: not dec. 1 dec._____ Date Extracted: 09/16/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/28/91

GPC Cleanup: (Y/N) N pH: 8.5 Dilution Factor: 0.500

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.00	U
319-85-7	beta-BHC	4.00	U
319-86-8	delta-BHC	4.00	U
58-89-9	gamma-BHC (Lindane)	4.00	U
76-44-8	Heptachlor	4.00	U
309-00-2	Aldrin	4.00	U
1024-57-3	Heptachlor epoxide	4.00	U
959-98-8	Endosulfan I	4.00	U
60-57-1	Dieldrin	8.10	U
72-55-9	4,4'-DDE	8.10	U
72-20-8	Endrin	8.10	U
33213-65-9	Endosulfan II	8.10	U
72-54-8	4,4'-DDD	8.10	U
1031-07-8	Endosulfan sulfate	8.10	U
50-29-3	4,4'-DDT	8.10	U
72-43-5	Methoxychlor	40.00	U
53494-70-5	Endrin ketone	8.10	U
5103-71-9	alpha-Chlordane	40.00	U
5103-74-2	gamma-Chlordane	40.00	U
8001-35-2	Toxaphene	81.00	U
12674-11-2	Aroclor-1016	40.00	U
11104-28-2	Aroclor-1221	40.00	U
11141-16-5	Aroclor-1232	40.00	U
53469-21-9	Aroclor-1242	40.00	U
12672-29-6	Aroclor-1248	40.00	U
11097-69-1	Aroclor-1254	81.00	U
11096-82-5	Aroclor-1260	81.00	U

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* ******************************************************
*                                                      *
* S-CUBED  VOLATILE ORGANICS   ANALYSIS   DATA   SHEET *
*                                                      *
* ******************************************************
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:........................ .....
:          Sample Number     :
                   B0K0ZS6   :
:........................ ....:
                   (2595-1)
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CLIENT : W H C
PROJECT: 100-DR-1
SDG No.: 2595

Concentration: Low Medium (Circle one)
Date Extracted/Prepared: 09-17-91
Date Analyzed: 09-17-91
pH: 8.52
Percent Moisture: 0.67
Percent Moisture (Decanted) : N.R

Lab File ID no: WR951
Sample Matrix: SOIL
Date Sample Received: 09-13-91
Data Release Authorized By: KM
S-CUBED Reference Number: 32359-05

10/19/92

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

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.

PBD 5/22/9

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.

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* ******************************************************
* S-CUBED  SEMIVOLATILE  ORGANIC  ANALYSIS  DATA  SHEET *
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:.......................:
:        Sample Number  :
:              BOOZS6   :
:.......................:
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(2595-1)

CLIENT : W H C
PROJECT : 100-DR-1
SDG No : 2595

Date Sample Received: 09-13-91
Data Release Authorized By: RO
S-CUBED Reference Number: 32359-05

Lab File ID No: A5001
Sample Matrix: SOIL
INT.VOL/WGT(mL or G): 30 G
FV(mL): 2.00 DILT: 1
Percent Moisture: 0.67 pH: 8.52 Percent Moisture (Decanted): N.R
Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09-16-91
Date Analyzed: 09-24-91

PHB 10/20/92

CAS Number		ug/l or ug/kg (Circle one)	CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	660 U	83-32-9	ACENAPHTHENE	660 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	660 U	51-28-5	2,4-DINITROPHENOL	3200 U
95-57-8	2-CHLOROPHENOL	660 U	100-02-7	4-NITROPHENOL	3200 U
541-73-1	1-3,DICHLOROBENZENE	660 U	132-64-9	DIBENZOFURAN	660 U
106-46-7	1,4-DICHLOROBENZENE	660 U	121-14-2	2,4-DINITROTOLUENE	660 U
100-51-6	BENZYL ALCOHOL	660 U	606-20-2	2,6-DINITROTOLUENE	660 U
95-50-1	1,2-DICHLOROBENZENE	660 U	84-66-2	DIETHYLPHTHALATE	660 U
95-48-7	2-METHYLPHENOL	660 U	7005-72-3	4-CHLOROPHENYL-PHENYLETHER	660 U
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	660 U	86-73-7	FLUORENE	660 U
106-44-5	4-METHYLPHENOL	660 U	100-01-6	4-NITROANILINE	3200 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	660 U	534-52-1	4,6-DINITRO-2-METHYLPHENOL	3200 U
67-72-1	HEXACHLOROETHANE	660 U	86-30-6	N-NITROSODIPHENYLAMINE (1)	660 U
98-95-3	NITROBENZENE	660 U	101-55-3	4-BROMOPHENYL-PHENYLETHER	660 U
78-59-1	ISOPHORONE	660 U	118-74-1	HEXACHLOROBENZENE	660 U
88-75-5	2-NITROPHENOL	660 U	87-86-5	PENTACHLOROPHENOL	3200 U
105-67-9	2,4-DIMETHYLPHENOL	660 U	85-01-8	PHENANTHRENE	660 U
65-85-0	BENZOIC ACID	3200 U	120-12-7	ANTHRACENE	660 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	660 U	84-74-2	DI-N-BUTYLPHTHALATE	660 U
120-83-2	2,4-DICHLOROPHENOL	660 U	206-44-0	FLUORANTHENE	150 J
120-82-1	1,2,4-TRICHLOROBENZENE	660 U	129-00-0	PYRENE	93 J
91-20-3	NAPHTHALENE	660 U	85-68-7	BUTYLBENZYLPHTHALATE	660 U
106-47-8	4-CHLOROANILINE	660 U	91-94-1	3,3'-DICHLOROBENZIDINE	1300 U
87-68-3	HEXACHLOROBUTADIENE	660 U	56-55-3	BENZO(a)ANTHRACENE	120 J
59-50-7	4-CHLORO-3-METHYLPHENOL	660 U	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	660 U
91-57-6	2-METHYLNAPHTHALENE	660 U	218-01-9	CHRYSENE	660 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	660 U	117-84-0	DI-N-OCTYL PHTHALATE	660 U
88-06-2	2,4,6-TRICHLOROPHENOL	660 U	205-99-2	BENZO(b)FLUORANTHENE	91 J
95-95-4	2,4,5-TRICHLOROPHENOL	3200 U	207-08-9	BENZO(k)FLUORANTHENE	660 U
91-58-7	2-CHLORONAPHTHALENE	660 U	50-32-8	BENZO(a)PYRENE	660 U
88-74-4	2-NITROANILINE	3200 U	193-39-5	INDENO(1,2,3-CD)PYRENE	660 U
131-11-3	DIMETHYL PHTHALATE	660 U	53-70-3	DIBENZ(a,h)ANTHRACENE	660 U
208-96-8	ACENAPHTHYLENE	660 U	191-24-2	BENZO(g,h,i)PERYLENE	660 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
B00256
(2595-1

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

RLB
10/20/92

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 123422	2-PENTANONE, 4-HYDROXY-4-METHYL-	BNA	7.45	4200 ~~JB~~
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1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B00ZS6

Lab Name: S-CUBED Contract: ~~68-D9-0027~~ 32359-05 pac 11/02/91

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Matrix: (soil/water) SOIL Lab Sample ID: 2595-1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C0925030

Level: (low/med) LOW Date Received: 09/13/91

% Moisture: not dec. 1 dec.____ Date Extracted: 09/16/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/28/91 10/21/92

GPC Cleanup: (Y/N) N pH: 8.5 Dilution Factor: 0.500

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.00	U
319-85-7	beta-BHC	4.00	U
319-86-8	delta-BHC	4.00	U
58-89-9	gamma-BHC (Lindane)	4.00	U
76-44-8	Heptachlor	4.00	U
309-00-2	Aldrin	4.00	U
1024-57-3	Heptachlor epoxide	4.00	U
959-98-8	Endosulfan I	4.00	U
60-57-1	Dieldrin	8.10	U
72-55-9	4,4'-DDE	8.10	U
72-20-8	Endrin	8.10	U
33213-65-9	Endosulfan II	8.10	U
72-54-8	4,4'-DDD	8.10	U
1031-07-8	Endosulfan sulfate	8.10	U
50-29-3	4,4'-DDT	8.10	UJ
72-43-5	Methoxychlor	40.00	U
53494-70-5	Endrin ketone	8.10	U
5103-71-9	alpha-Chlordane	40.00	U
5103-74-2	gamma-Chlordane	40.00	U
8001-35-2	Toxaphene	81.00	U
12674-11-2	Aroclor-1016	40.00	U
11104-28-2	Aroclor-1221	40.00	U
11141-16-5	Aroclor-1232	40.00	U
53469-21-9	Aroclor-1242	40.00	U
12672-29-6	Aroclor-1248	40.00	U
11097-69-1	Aroclor-1254	81.00	U
11096-82-5	Aroclor-1260	81.00	U

5/12/93

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOOZS6

Lab Name: S-CUBED Contract: ~~68-D9-0027~~ 32359-05 pm 11/02/91

Lab Code: S3 Case No.: 100-DR-I SAS No.: SDG No.: 2595

Matrix: (soil/water) SOIL Lab Sample ID: 2595-1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C0925030

Level: (low/med) LOW Date Received: 09/13/91

% Moisture: not dec. 1 dec. ____ Date Extracted: 09/16/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/28/91

GPC Cleanup: (Y/N) N pH: 8.5 Dilution Factor: 0.500

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.00	U
319-85-7	beta-BHC	4.00	U
319-86-8	delta-BHC	4.00	U
58-89-9	gamma-BHC (Lindane)	4.00	U
76-44-8	Heptachlor	4.00	U
309-00-2	Aldrin	4.00	U
1024-57-3	Heptachlor epoxide	4.00	U
959-98-8	Endosulfan I	4.00	U
60-57-1	Dieldrin	8.10	U
72-55-9	4,4'-DDE	8.10	U
72-20-8	Endrin	8.10	U
33213-65-9	Endosulfan II	8.10	U
72-54-8	4,4'-DDD	8.10	U
1031-07-8	Endosulfan sulfate	8.10	U
50-29-3	4,4'-DDT	8.10	UJ
72-43-5	Methoxychlor	40.00	U
53494-70-5	Endrin ketone	8.10	U
5103-71-9	alpha-Chlordane	40.00	U
5103-74-2	gamma-Chlordane	40.00	U
8001-35-2	Toxaphene	81.00	U
12674-11-2	Aroclor-1016	40.00	U
11104-28-2	Aroclor-1221	40.00	U
11141-16-5	Aroclor-1232	40.00	U
53469-21-9	Aroclor-1242	40.00	U
12672-29-6	Aroclor-1248	40.00	U
11097-69-1	Aroclor-1254	81.00	U
11096-82-5	Aroclor-1260	81.00	U

Due to %D of 4,4'-DDT being >15%, quantitation purposes

FORM I PEST 1/87 Rev.

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*                                                    *
* S-CUBED  VOLATILE ORGANICS   ANALYSIS   DATA   SHEET *
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* ****************************************************
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.......................... .....
:          Sample Number     :
                8000Z56      :
:......................... ....:
                (2595-1)
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CLIENT : W H C
PROJECT: 100-DR-1
SDG No.: 2595

Concentration: Low Medium (Circle one)
Date Extracted/Prepared: 09-17-91
Date Analyzed: 09-17-91
pH: 8.52
Percent Moisture: 0.67
Percent Moisture (Decanted) : N.R

Lab File ID no: WR951
Sample Matrix: SOIL
Date Sample Received: 09-13-91
Data Release Authorized By: KM
S-CUBED Reference Number: 32359-05

10/19/92

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

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 Sa
E : Exceed the Calibration Range.
D : Compound found in Diluted Run.
X : Matrix Spike added.

```
* ****************************************************
* S-CUBED  SEMIVOLATILE  ORGANIC  ANALYSIS  DATA  SHEET *
* ****************************************************
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```
:..........................:
:          Sample Number   :
:                B00ZS6    :
:..........................:
          (2595-1)
```

CLIENT : W H C
PROJECT : 100-DR-1
SDG No : 2595

Date Sample Received: 09-13-91
Data Release Authorized By: AM
S-CUBED Reference Number: 32359-05

Lab File ID No: A5001
Sample Matrix: SOIL
INT.VOL/WGT(mL or G): 30 G
FV(mL): 2.00 DILT: 1
Percent Moisture: 0.67 pH: 8.52 Percent Moisture (Decanted): N.R
Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09-16-91
Date Analyzed: 09-24-91

PMG 10/20/92

CAS Number		ug/l or ug/kg (circle one)	CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	660 U	83-32-9	ACENAPHTHENE	660 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	660 U	51-28-5	2,4-DINITROPHENOL	3200 U
95-57-8	2-CHLOROPHENOL	660 U	100-02-7	4-NITROPHENOL	3200 U
541-73-1	1-3,DICHLOROBENZENE	660 U	132-64-9	DIBENZOFURAN	660 U
106-46-7	1,4-DICHLOROBENZENE	660 U	121-14-2	2,4-DINITROTOLUENE	660 U
100-51-6	BENZYL ALCOHOL	660 U	606-20-2	2,6-DINITROTOLUENE	660 U
95-50-1	1,2-DICHLOROBENZENE	660 U	84-66-2	DIETHYLPHTHALATE	660 U
95-48-7	2-METHYLPHENOL	660 U	7005-72-3	4-CHLOROPHENYL-PHENYLETHER	660 U
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	660 U	86-73-7	FLUORENE	660 U
106-44-5	4-METHYLPHENOL	660 U	100-01-6	4-NITROANILINE	3200 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	660 U	534-52-1	4,6-DINITRO-2-METHYLPHENOL	3200 U
67-72-1	HEXACHLOROETHANE	660 U	86-30-6	N-NITROSODIPHENYLAMINE (1)	660 U
98-95-3	NITROBENZENE	660 U	101-55-3	4-BROMOPHENYL-PHENYLETHER	660 U
78-59-1	ISOPHORONE	660 U	118-74-1	HEXACHLOROBENZENE	660 U
88-75-5	2-NITROPHENOL	660 U	87-86-5	PENTACHLOROPHENOL	3200 U
105-67-9	2,4-DIMETHYLPHENOL	660 U	85-01-8	PHENANTHRENE	660 U
65-85-0	BENZOIC ACID	3200 U	120-12-7	ANTHRACENE	660 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	660 U	84-74-2	DI-N-BUTYLPHTHALATE	660 U
120-83-2	2,4-DICHLOROPHENOL	660 U	206-44-0	FLUORANTHENE	150 J
120-82-1	1,2,4-TRICHLOROBENZENE	660 U	129-00-0	PYRENE	93 J
91-20-3	NAPHTHALENE	660 U	85-68-7	BUTYLBENZYLPHTHALATE	660 U
106-47-8	4-CHLOROANILINE	660 U	91-94-1	3,3'-DICHLOROBENZIDINE	1300 U
87-68-3	HEXACHLOROBUTADIENE	660 U	56-55-3	BENZO(a)ANTHRACENE	120 J
59-50-7	4-CHLORO-3-METHYLPHENOL	660 U	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	660 U
91-57-6	2-METHYLNAPHTHALENE	660 U	218-01-9	CHRYSENE	660 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	660 U	117-84-0	DI-N-OCTYL PHTHALATE	660 U
88-06-2	2,4,6-TRICHLOROPHENOL	660 U	205-99-2	BENZO(b)FLUORANTHENE	91 J
95-95-4	2,4,5-TRICHLOROPHENOL	3200 U	207-08-9	BENZO(k)FLUORANTHENE	660 U
91-58-7	2-CHLORONAPHTHALENE	660 U	50-32-8	BENZO(a)PYRENE	660 U
88-74-4	2-NITROANILINE	3200 U	193-39-5	INDENO(1,2,3-CD)PYRENE	660 U
131-11-3	DIMETHYL PHTHALATE	660 U	53-70-3	DIBENZ(a,h)ANTHRACENE	660 U
208-96-8	ACENAPHTHYLENE	660 U	191-24-2	BENZO(g,h,i)PERYLENE	660 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
B00256
(2595-1

Organics Analysis Data Sheet
(Page 4)

RMS
10/20/92

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 123422	2-PENTANONE, 4-HYDROXY-4-METHYL-	BNA	7.45	4200 ~~SB~~
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3.				
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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOOZS6

Lab Name: S-CUBED Contract: ~~68-D9-0027~~ 32354-05 pmc 11/22/91

Lab Code: S3 Case No.: 100-DR-I SAS No.: SDG No.: 2595

Matrix: (soil/water) SOIL Lab Sample ID: 2595-1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C0925030

Level: (low/med) LOW Date Received: 09/13/91

% Moisture: not dec. 1 dec._____ Date Extracted: 09/16/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/28/91 10/21/92

GPC Cleanup: (Y/N) N pH: 8.5 Dilution Factor: 0.500

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.00	U
319-85-7	beta-BHC	4.00	U
319-86-8	delta-BHC	4.00	U
58-89-9	gamma-BHC (Lindane)	4.00	U
76-44-8	Heptachlor	4.00	U
309-00-2	Aldrin	4.00	U
1024-57-3	Heptachlor epoxide	4.00	U
959-98-8	Endosulfan I	4.00	U
60-57-1	Dieldrin	8.10	U
72-55-9	4,4'-DDE	8.10	U
72-20-8	Endrin	8.10	U
33213-65-9	Endosulfan II	8.10	U
72-54-8	4,4'-DDD	8.10	U
1031-07-8	Endosulfan sulfate	8.10	U
50-29-3	4,4'-DDT	8.10	UJ
72-43-5	Methoxychlor	40.00	U
53494-70-5	Endrin ketone	8.10	U
5103-71-9	alpha-Chlordane	40.00	U
5103-74-2	gamma-Chlordane	40.00	U
8001-35-2	Toxaphene	81.00	U
12674-11-2	Aroclor-1016	40.00	U
11104-28-2	Aroclor-1221	40.00	U
11141-16-5	Aroclor-1232	40.00	U
53469-21-9	Aroclor-1242	40.00	U
12672-29-6	Aroclor-1248	40.00	U
11097-69-1	Aroclor-1254	81.00	U
11096-82-5	Aroclor-1260	81.00	U

WORKING COPY

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: NA SDG No.: 2595

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	B002SG	103	100	124*		1
02	B002SG-MS	100	98	94		0
03	B002SG-MSD	99	102	124*		1
04	VBS2595-1	103	101	108		0
05	LCS2595	101	101	111		0
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QC LIMITS

S1 (TOL) = Toluene-d8 (81-117)
S2 (BFB) = Bromofluorobenzene (74-121)
S3 (DCE) = 1,2-Dichloroethane-d4 (70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

QUE 10/19/92

FORM II VOA-2

00068

1/87 Re

JB

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: N.A SDG No.: 2595

Matrix Spike - EPA Sample No.: B09256 Level: (low/med) Low

(2595-1)

DHP 3/21/92

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50.34	0	47.17	94	59-172
Trichloroethene	50.34	0	51.84	103	62-137
Benzene	50.34	0	49.30	98	66-142
Toluene	50.34	0	51.95	103	59-139
Chlorobenzene	50.34	0	52.12	104	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50.34	38.89	77	19	22	59-172
Trichloroethene	50.34	51.09	101	1	24	62-137
Benzene	50.34	50.54	100	2	21	66-142
Toluene	50.34	50.75	101	2	21	59-139
Chlorobenzene	50.34	54.31	108	4	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS:

00009

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 00-DR-1 SAS No.: _____ SDG No.: 2595

Lab File ID: LBS17 Lab Sample ID: VBS2595-1

Date Analyzed: 09/17/91 Time Analyzed: 11:44

Matrix: (soil/water) Soil Level: (low/med) Low

Instrument ID: HP2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS2595	LCS 2595	LCS17	12:24
02	B00256 MS	2595-1 MS	MS957	18:07
03	B00256 MSD	2595-1 MSD	MD957	18:45
04	B00256	2595-1	WR957	19:23
05				
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DLB 10/19/92

COMMENTS: _____

FORM IV VOA

5A
VOLATILE ORGANIC GC/MS TUNING AND MASS
CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Lab File ID: BFG28 BFB Injection Date: 8/28/91

Instrument ID: HP2 BFB Injection Time: 1012

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) PACK

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% OF MASS 95	16.4
75	30.0 - 60.0% OF MASS 95	40.5
95	Base peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	78.1
175	5.0 - 9.0% of mass 174	6.1 (7.8)1
176	Greater than 95.0%, but less than 101.0% of mass 174	76.9 (98.6)1
177	5.0 - 9.0% of mass 176	5.0 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD020	STT20	STT20	8/28/91	1219
02	VSTD100	ST100	ST100	8/28/91	1404
03	VSTD150	ST150	ST150	8/28/91	1447
04	VSTD200	ST200	ST200	8/28/91	1528
05	VSTD050	STT50	STT50	8/28/91	1650
06					

FORM V VOA 1/87 Rev.

5A
VOLATILE ORGANIC GC/MS TUNING AND MASS
CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Lab File ID: BFS17 BFB Injection Date: 9/17/91

Instrument ID: HP2 BFB Injection Time: 0915

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) PACK

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% OF MASS 95	17.2
75	30.0 - 60.0% OF MASS 95	42.9
95	Base peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	7.3
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	80.1
175	5.0 - 9.0% of mass 174	5.7 (7.2)1
176	Greater than 95.0%, but less than 101.0% of mass 174	76.3 (95.2)1
177	5.0 - 9.0% of mass 176	5.1 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD050	CCS17	CCS17	9/17/91	0951
02	VBS2595-1	~~LBS17~~ VBS2595-1	LBS17	9/17/91	1144
03	LCS2595	~~LCS17~~ LCS2595	LCS17	9/17/91	1224
04	BOOZS6MS	2595-1MS	MS951	9/17/91	1807
05	BOOZS6MSD	2595-1MSD	MD951	9/17/91	1845
06	BOOZS6	2595-1	WR951	9/17/91	1923
07					

pm 10/24/91

PMD 10/19/91

FORM V VOA 1/87 Rev.

8A
VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Lab File ID (Standard): CCS17 Date Analyzed: 9/17/91

Instrument ID: HP2 Time Analyzed: 0951

Matrix (soil/water) SOIL Level (low/med) LOW Column (pack/cap) PACK

	IS1(BCM) AREA	#	RT	IS2(DFB) AREA	#	RT	IS3(CBZ) AREA	#	RT
12 HOUR STD	28163.		8.96	118894.		19.22	93974.		24.07
UPPER LIMIT	56326.			237788.			187948.		
LOWER LIMIT	14082.			59447.			46987.		
EPA SAMPLE NO.									
01 VBS2595-1	26388.		8.95	112127.		19.18	89443.		24.02
02 LCS2595	26756.		8.99	112974.		19.30	91280.		24.14
03 BOOZS6MS	21125.		8.89	82966.		19.15	66495.		24.04
04 BOOZS6MSD	15337.		8.88	56781.		19.18	48002..		24.02
05 BOOZS6	20594.		8.92	80967..		19.22	65547.		24.06
06									

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

10/19/92

Column used to flag internal standard area values with an asterisk

FORM VIII VOA 1/87 Rev.

LAB CONTROL SAMPLE PERCENT RECOVERY

(LAB FILE ID: LCS17)

CLIENT : W H C
PROJECT : 100-DR-1
SDG No : 2595

LAB NAME: S-CUBED.
LAB CODE: S3

COMPOUND	SPIKE (UG/KG)	LCS CONC. (UG/KG)	LCS % REC
1,1-DICHLOROETHENE	50.00	52.80	106
TRICHLOROETHENE	50.00	53.00	106
BENZENE	50.00	50.95	102
TOLUENE	50.00	52.54	105
CHLOROBENZENE	50.00	53.77	108

COMMENTS:

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

Sample Number
B0002S6
(2595-1)

CLIENT : W H C
PROJECT: 100-DR-1
SDG No.: 2595

Concentration: Low Medium (Circle one)
Date Extracted/Prepared: 09-17-91
Date Analyzed: 09-17-91
pH: 8.52
Percent Moisture: 0.67
Percent Moisture (Decanted) : N.R

Lab File ID no: WR951
Sample Matrix: SOIL
Date Sample Received: 09-13-91
Data Release Authorized By: KM
S-CUBED Reference Number: 32359-05

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

10/19/92

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.
* : Matrix Spike added.

Acetone
Continuing Calibration out of QC limits.
Methylene chloride
Lab blank contaminated.
Rest of compounds flagged w/ "J"s due to surrogate out of QC limits.

6A
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Instrument ID: HP2 Calibration Date(s): 08/28/91 08/28/91

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) PACK

Min RRF for SPCC(#) = 0.300 (0.250 for Bromoform) Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF20 =>ST20 RRF50 =>ST50
RRF100=>ST100 RRF150=>ST150 RRF200=>ST200

COMPOUND	RRF20	RRF50	RRF100	RRF150	RRF200	RRF	RSD
Chloromethane #	1.028	1.019	1.018	1.005	1.045	1.023	1.4#
Bromomethane	1.112	1.059	1.007	1.033	1.020	1.046	4.0
Vinyl Chloride *	1.139	1.156	1.075	1.086	1.034	1.098	4.5*
Chloroethane	0.753	0.751	0.731	0.734	0.730	0.740	1.5
Methylene Chloride	1.281	1.234	1.102	1.141	1.098	1.171	7.0
Acetone	0.156	0.157	0.112	0.144	0.108	0.135	17.7
Carbon Disulfide	3.281	3.422	3.470	3.716	3.825	3.543	6.3
1,1-Dichloroethene *	1.179	1.179	1.196	1.261	1.247	1.212	3.2*
1,1-Dichloroethane #	2.374	2.353	2.381	2.569	2.484	2.432	3.8#
1,2-Dichloroethene (total)	1.273	1.283	1.294	1.373	1.332	1.311	3.1
Chloroform *	2.746	2.739	2.791	3.004	2.853	2.826	3.9*
1,2-Dichloroethane	1.863	1.841	1.875	2.002	1.919	1.900	3.4
2-Butanone	0.077	0.082	0.083	0.082	0.073	0.079	5.5
1,1,1-Trichloroethane	0.524	0.518	0.527	0.585	0.565	0.544	5.4
Carbon Tetrachloride	0.438	0.451	0.461	0.521	0.503	0.475	7.5
Vinyl Acetate	0.561	0.613	0.626	0.702	0.690	0.638	9.1
Bromodichloromethane	0.495	0.516	0.530	0.607	0.587	0.547	8.7
1,2-Dichloropropane *	0.336	0.344	0.351	0.389	0.378	0.360	6.3*
cis-1,3-Dichloropropene	0.497	0.509	0.520	0.583	0.570	0.536	7.2
Trichloroethene	0.413	0.419	0.416	0.462	0.441	0.430	4.9
Dibromochloromethane	0.424	0.450	0.481	0.537	0.526	0.484	10.0
1,1,2-Trichloroethane	0.309	0.310	0.318	0.348	0.338	0.325	5.4
Benzene	0.837	0.841	0.840	0.931	0.903	0.870	5.0
trans-1,3-Dichloropropene	0.479	0.485	0.490	0.548	0.535	0.507	6.2
Bromoform #	0.342	0.384	0.424	0.478	0.474	0.420	13.9#
4-Methyl-2-Pentanone	0.327	0.334	0.343	0.380	0.372	0.351	6.6
2-Hexanone	0.206	0.179	0.184	0.222	0.205	0.199	8.9
Tetrachloroethene	0.496	0.496	0.491	0.520	0.513	0.503	2.5
1,1,2,2-Tetrachloroethane #	0.578	0.581	0.597	0.652	0.645	0.610	5.8#
Toluene *	0.692	0.695	0.674	0.744	0.726	0.706	4.0*
Chlorobenzene #	0.923	0.924	0.908	0.989	0.975	0.944	3.8#
Ethylbenzene *	0.443	0.446	0.442	0.478	0.471	0.456	3.8*
Styrene	0.896	0.928	0.931	1.008	0.990	0.951	4.9
Xylene (total)	0.558	0.565	0.547	0.602	0.594	0.573	4.2
Toluene-d8	1.051	1.041	1.046	1.173	1.126	1.088	5.5
Bromofluorobenzene	0.862	0.875	0.847	0.968	0.926	0.896	5.6
1,2-Dichloroethane-d4	1.564	1.567	1.599	1.779	1.689	1.640	5.7

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Instrument ID: HP2 Calibration Date: 9/17/91 Time: 0951

Lab File ID: CCS17 Init. Calib. Date(s): 08/28/91 08/28/91

Matrix: (soil/water) SOIL Level: (low/med) LOW Column: (pack/cap) PACK

Min RRF50 for SPCC(#) = 0.300 (0.250 for Bromoform) Max %D for CCC(*) = 25.0%

COMPOUND		RRF	RRF50	%D	
Chloromethane	#	1.023	0.956	6.6	#
Bromomethane		1.046	1.040	0.6	
Vinyl Chloride	*	1.098	1.090	0.7	*
Chloroethane		0.740	0.745	0.7	
Methylene Chloride		1.171	1.149	1.9	
Acetone		0.135	0.184	35.7	
Carbon Disulfide		3.543	3.527	0.4	
1,1-Dichloroethene	*	1.212	1.251	3.2	*
1,1-Dichloroethane	#	2.432	2.532	4.1	#
1,2-Dichloroethene (total)		1.311	1.376	5.0	
Chloroform	*	2.826	2.937	3.9	*
1,2-Dichloroethane		1.900	1.812	4.7	
2-Butanone		0.079	0.091	14.7	
1,1,1-Trichloroethane		0.544	0.556	2.1	
Carbon Tetrachloride		0.475	0.479	1.0	
Vinyl Acetate		0.638	0.584	8.6	
Bromodichloromethane		0.547	0.545	0.3	
1,2-Dichloropropane	*	0.360	0.362	0.6	*
cis-1,3-Dichloropropene		0.536	0.538	0.4	
Trichloroethene		0.430	0.432	0.5	
Dibromochloromethane		0.484	0.462	4.5	
1,1,2-Trichloroethane		0.325	0.300	7.7	
Benzene		0.870	0.861	1.1	
trans-1,3-Dichloropropene		0.507	0.490	3.5	
Bromoform	#	0.420	0.376	10.6	#
4-Methyl-2-Pentanone		0.351	0.317	9.7	
2-Hexanone		0.199	0.249	25.1	
Tetrachloroethene		0.503	0.515	2.4	
1,1,2,2-Tetrachloroethane	#	0.610	0.559	8.5	#
Toluene	*	0.706	0.717	1.5	*
Chlorobenzene	#	0.944	0.956	1.3	#
Ethylbenzene	*	0.456	0.464	1.8	*
Styrene		0.951	0.979	3.0	
Xylene (total)		0.573	0.586	2.2	
Toluene-d8		1.088	1.191	9.5	
Bromofluorobenzene		0.896	0.987	10.2	
1,2-Dichloroethane-d4		1.640	1.603	2.2	

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* S-CUBED  VOLATILE ORGANICS   ANALYSIS   DATA   SHEET *
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Sample Number
VBS2595-1
(LAB BLANK)

CLIENT : W H C
PROJECT: 100-DR-1
SDG No.: 2595

Concentration: Low Medium (Circle one)
Date Extracted/Prepared: 09-17-91
Date Analyzed: 09-17-91
pH: N.R
Percent Moisture: N.R
Percent Moisture (Decanted) : N.R

Lab File ID no: LBS17
Sample Matrix: SOIL
Date Sample Received: N.R
Data Release Authorized By:
S-CUBED Reference Number: 32359-05

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	6	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.

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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.

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* S-CUBED  VOLATILE ORGANICS   ANALYSIS   DATA   SHEET *
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:.......................... .....:
:            Sample Number        :
:                B000ZS6 MS       :
:.......................... .....:
                (2595-1MS)
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CLIENT : W H C
PROJECT: 100-DR-1
SDG No.: 2595

Concentration: Low Medium (Circle one)
Date Extracted/Prepared: 09-17-91
Date Analyzed: 09-17-91
pH: 8.52
Percent Moisture: 0.67
Percent Moisture (Decanted) : N.R

Lab File ID no: MS951
Sample Matrix: SOIL
Date Sample Received: 09-13-91
Data Release Authorized By: KM
S-CUBED Reference Number: 32359-05

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	52	X
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	38		71-43-2	BENZENE	49	X
75-15-0	CARBON DISULFIDE	5 U		10061-02-6	TRANS-1,3-DICHLOROPROPENE	5 U	
75-35-4	1,1-DICHLOROETHENE	47	X	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	52	X
71-55-6	1,1,1-TRICHLOROETHANE	5 U		108-90-7	CHLOROBENZENE	52	X
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

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MS : Matrix Spike Sample. MSD : Matrix Spike Duplicate Sample
E : Exceed the Calibration Range.
D : Compound found in Diluted Run.
X : Matrix Spike added.

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* S-CUBED  VOLATILE ORGANICS   ANALYSIS   DATA   SHEET *
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.......................... .....
:            Sample Number     :
             B0002S6 MSD       :
:......................... ....:
                (2595-1MSD)
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CLIENT : W H C
PROJECT: 100-DR-1
SDG No.: 2595

Concentration: Low Medium (Circle one)
Date Extracted/Prepared: 09-17-91
Date Analyzed: 09-17-91
pH: 8.52
Percent Moisture: 0.67
Percent Moisture (Decanted) : N.R

Lab File ID no: MD951
Sample Matrix: SOIL
Date Sample Received: 09-13-91
Data Release Authorized By: MM
S-CUBED Reference Number: 32359-05

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	51	X
75-00-3	CHLOROETHANE	10 U		124-48-1	DIBROMOCHLOROMETHANE	5 U	
75-09-2	METHYLENE CHLORIDE	8	B	79-00-5	1,1,2-TRICHLOROETHANE	5 U	
67-64-1	ACETONE	10 U		71-43-2	BENZENE	51	X
75-15-0	CARBON DISULFIDE	5 U		10061-02-6	TRANS-1,3-DICHLOROPROPENE	5 U	
75-35-4	1,1-DICHLOROETHENE	39	X	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	51	X
71-55-6	1,1,1-TRICHLOROETHANE	5 U		108-90-7	CHLOROBENZENE	54	X
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	

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MS : Matrix Spike Sample. MSD : Matrix Spike Duplicate Sample
E : Exceed the Calibration Range.
D : Compound found in Diluted Run.
X : Matrix Spike added.

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* S-CUBED  VOLATILE ORGANICS   ANALYSIS   DATA   SHEET *
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.......................... .....
:          Sample Number     :
                  LCS2595    :
:......................... ....:
      (LAB CONTROL SAMPLE)
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CLIENT : W H C
PROJECT: 100-DR-1
SDG No.: 2595

Concentration: Low Medium (Circle one)
Date Extracted/Prepared: 09-17-91
Date Analyzed: 09-17-91
pH: N.R
Percent Moisture: N.R
Percent Moisture (Decanted) : N.R

Lab File ID no: LCS17
Sample Matrix: SOIL
Date Sample Received: N.R
Data Release Authorized By: KM
S-CUBED Reference Number: 32359-05

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	53 X
75-00-3	CHLOROETHANE	10 U	124-48-1	DIBROMOCHLOROMETHANE	5 U
75-09-2	METHYLENE CHLORIDE	4 J B	79-00-5	1,1,2-TRICHLOROETHANE	5 U
67-64-1	ACETONE	10 U	71-43-2	BENZENE	51 X
75-15-0	CARBON DISULFIDE	5 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5 U
75-35-4	1,1-DICHLOROETHENE	53 X	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	53 X
71-55-6	1,1,1-TRICHLOROETHANE	5 U	108-90-7	CHLOROBENZENE	54 X
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

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2D

SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: N.A SDG No.: 2595

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	OTHER	TOT OUT
01	B002SG	61	65	64	70	65	66		0
02	B002SG MS	68	69	67	73	70	73		0
03	B002SG MSD	64	67	67	67	67	71		0
04	EBS2595	63	68	66	72	69	69		0
05	LCS2595	69	70	67	73	74	68		0
06									
07									
08									
09									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(23-120)
S2 (FBP)	= 2-Fluorobiphenyl	(30-115)
S3 (TPH)	= Terphenyl-d14	(18-137)
S4 (PHL)	= Phenol-d6	(24-113)
S5 (2FP)	= 2-Fluorophenol	(25-121)
S6 (TBP)	= 2,4,6-Tribromophenol	(19-122)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

L A B C O N T R O L S A M P L E P E R C E N T - R E C O V E R Y

CLIENT : W H C
PROJECT : 100-DR-1
SDG No : 2595
LAB.FILE ID: LSS95

LAB NAME: S-CUBED
LAB CODE: S3

COMPOUND	SPIKE (UG/KG)	LCS CONC. (UG/KG)	LCS % REC
PHENOL	13000	8800	68
2-CHLOROPHENOL	13000	7800	60
1,4-DICHLOROBENZENE	6700	4000	60
N-NITROSO-DI-N-PROPYLAMINE	6700	4600	69
1,2,4-TRICHLOROBENZENE	6700	4100	61
4-CHLORO-3-METHYLPHENOL	13000	8400	65
ACENAPHTHENE	6700	4400	66
4-NITROPHENOL	13000	11000	85
2,4-DINITROTOLUENE	6700	4500	67
PENTACHLOROPHENOL	13000	8300	64
PYRENE	6700	3800	57

COMMENTS: SAMPLE SIZE 30G, AMT MATRIX ADDED
400 (ACID)
200 (BN)

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: S-CUBED Contract: 32359-05 10/20/92

Lab Code: S3 Case No.: 100-DR-1 SAS No.: N/A SDG No.: 2595

Matrix Spike - EPA Sample No.: B002S6 Level: (low/med) Low

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMI REC
Phenol	13000	0	8700	67	26-
2-Chlorophenol	13000	0	7800	60	25-1
1,4-Dichlorobenzene	6700	0	4000	60	28-1
N-Nitroso-di-n-prop.(1)	6700	0	4900	73	41-1
1,2,4-Trichlorobenzene	6700	0	4100	61	38-1
4-Chloro-3-methylphenol	13000	0	8800	68	26-1
Acenaphthene	6700	0	4500	67	31-1
4-Nitrophenol	13000	0	10000	77	11-1
2,4-Dinitrotoluene	6700	0	4800	72	28-
Pentachlorophenol	13000	0	8800	68	17-1
Pyrene	6700	93	3900	57	35-1

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC
Phenol	13000	8100	62	7	35	26-
2-Chlorophenol	13000	7200	55	8	50	25-1
1,4-Dichlorobenzene	6700	3800	57	5	27	28-1
N-Nitroso-di-n-prop.(1)	6700	4600	69	6	38	41-1
1,2,4-Trichlorobenzene	6700	3800	57	8	23	38-1
4-Chloro-3-methylphenol	13000	8000	62	10	33	26-1
Acenaphthene	6700	4300	64	5	19	31-1
4-Nitrophenol	13000	10000	77	0	50	11-1
2,4-Dinitrotoluene	6700	4700	70	2	47	28-
Pentachlorophenol	13000	8700	67	1	47	17-1
Pyrene	6700	4000	58	3	36	35-1

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

COMMENTS: SAMPLE SIZE 30G, MATRIX ADDED 400 (ACID), 200 (BNA)

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: N.A SDG No.: 2595

Lab File ID: BS916 Lab Sample ID: EBS2595

Date Extracted: 09/18/91 Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 09/24/91 Time Analyzed: 17:58

Matrix: (soil/water) SOIL Level: (low/med) Low

Instrument ID: HP3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	B0Z5G	2595-1	A5001	09/24/91
02	B0Z5G MS	2595-1 MS	MS001	"
03	B0Z5G MSD	2595-1 MSD	MSDD1	"
04	LCS2595	LCS 2595	LSS95	09/25/91
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PW 10/20/91

COMMENTS:

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS NO.: SDG No.: 2595

Lab File ID: T917A DFTPP Injection Date: 9/17/91

Instrument ID: HP3 DFTPP Injection Time: 1450

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	47.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	59.2
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	40.3
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100
199	5.0 - 9.0% of mass 198	6.6
275	10.0 - 30.0% of mass 198	18.7
365	Greater than 1.00% of mass 198	1.57
441	Present, but less than mass 443	7.4
442	Greater than 40.0% of mass 198	49.7
443	17.0 - 23.0% of mass 442	9.5 (19.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050	LG102	LG102	9/17/91	1520
02	SSTD160	LG105	LG105	9/17/91	1618
03	SSTD020	LG101	LG101	9/17/91	1716
04	SSTD080	LG103	LG103	9/17/91	1814
05	SSTD120	LG104	LG104	9/17/91	1912
06					

FORM V SV 1/87 Rev.

PAB 10/20/92

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Lab File ID: T924A DFTPP Injection Date: 9/24/91

Instrument ID: HP3 DFTPP Injection Time: 1537

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	39.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	53.6
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	40.2
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100
199	5.0 - 9.0% of mass 198	7.5
275	10.0 - 30.0% of mass 198	20.3
365	Greater than 1.00% of mass 198	1.95
441	Present, but less than mass 443	11.2
442	Greater than 40.0% of mass 198	73.3
443	17.0 - 23.0% of mass 442	14.3 (19.6)2

1-Value is % mass 69 2-Value is % mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050	DC924	DC924	9/24/91	1600
02	EBS2595	EBS2595	BS916	9/24/91	1758
03	BOOZS6	2595-1	AS001	9/24/91	1856
04	BOOZS6MS	2595-1MS	MS001	9/24/91	1954
05	BOOZS6MSD	2595-1MSD	MSDD1	9/24/91	2052
06	LCS2595	LCS2595	LSS95	9/25/91	434
07					

FORM V SV 1/87 Rev.

PMS 10/20/92

8B
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Lab File ID (Standard): DC924 Date Analyzed: 9/24/91

Instrument ID: HP3 Time Analyzed: 1600

	IS1(DCB) AREA	#	RT	IS2(NPT) AREA	#	RT	IS3(ANT) AREA	#	RT
12 HOUR STD	23769.		11.86	99244.		15.70	59936.		21.24
UPPER LIMIT	47538.			198488.			119872.		
LOWER LIMIT	11884.			49622.			29968.		
EPA SAMPLE NO.									
01 EBS2595	27154.		11.85	112873.		15.67	67961.		21.22
02 BOOZS6	26482.		11.85	110237.		15.68	67588.		21.22
03 BOOZS6MS	25429.		11.86	106419.		15.69	67075.		21.23
04 BOOZS6MSD	28006.		11.86	115128.		15.70	69315.		21.22
05 LCS2595	25967.		11.86	106738.		15.70	64538.		21.23
06									

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d8

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

FORM VIII SV-1 1/87 Rev.

PLL 10/20/92

8C
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Lab File ID (Standard): DC924 Date Analyzed: 9/24/91

Instrument ID: HP3 Time Analyzed: 1600

	IS4(PHN) AREA	#	RT	IS5(CRY) AREA	#	RT	IS6(PRY) AREA	#	RT
12 HOUR STD	103292.		25.87	75267.		34.28	98369.		38.46
UPPER LIMIT	206584.			150534.			196738.		
LOWER LIMIT	51646.			37634.			49185.		
EPA SAMPLE NO.									
01 EBS2595	113640.		25.83	104931.		34.22	114324.		38.43
02 BOOZS6	111196.		25.83	103644.		34.22	108745.		38.43
03 BOOZS6MS	108031.		25.85	100868.		34.22	107080.		38.42
04 BOOZS6MSD	110326.		25.85	100393.		34.23	104371.		38.43
05 LCS2595	103876.		25.84	93551.		34.22	97701.		38.43
06									

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

Column used to flag internal standard area values with an asterisk

FORM VIII SV-2 1/87 Rev.

10/20/92

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* ******************************************************
* S-CUBED SEMIVOLATILE ORGANIC ANALYSIS DATA SHEET *
* ******************************************************
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:.......................:
:        Sample Number  :
:            800ZS6     :
:.......................:
        (2595-1)
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Rejd 10/20/92

CLIENT : N H C
PROJECT : 100-DR-1
SDG No : 2595

Date Sample Received: 09-13-91
Data Release Authorized By: RM
S-CUBED Reference Number: 32359-05

Lab File ID No: A5001
Sample Matrix: SOIL
INT.VOL/WGT(mL or G): 30 G
FV(mL): 2.00 DILT: 1
Percent Moisture: 0.67 pH: 8.52 Percent Moisture (Decanted): N.R
Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09-16-91
Date Analyzed: 09-24-91

CAS Number		ug/l or ug/kg (Circle one)	CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	660 U	83-32-9	ACENAPHTHENE	660 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	660 U	51-28-5	2,4-DINITROPHENOL	3200 U
95-57-8	2-CHLOROPHENOL	660 U	100-02-7	4-NITROPHENOL	3200 U
541-73-1	1-3,DICHLOROBENZENE	660 U	132-64-9	DIBENZOFURAN	660 U
106-46-7	1,4-DICHLOROBENZENE	660 U	121-14-2	2,4-DINITROTOLUENE	660 U
100-51-6	BENZYL ALCOHOL	660 U	606-20-2	2,6-DINITROTOLUENE	660 U
95-50-1	1,2-DICHLOROBENZENE	660 U	84-66-2	DIETHYLPHTHALATE	660 U
95-48-7	2-METHYLPHENOL	660 U	7005-72-3	4-CHLOROPHENYL-PHENYLETHER	660 U
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	660 U	86-73-7	FLUORENE	660 U
106-44-5	4-METHYLPHENOL	660 U	100-01-6	4-NITROANILINE	3200 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	660 U	534-52-1	4,6-DINITRO-2-METHYLPHENOL	3200 U
67-72-1	HEXACHLOROETHANE	660 U	86-30-6	N-NITROSODIPHENYLAMINE (1)	660 U
98-95-3	NITROBENZENE	660 U	101-55-3	4-BROMOPHENYL-PHENYLETHER	660 U
78-59-1	ISOPHORONE	660 U	118-74-1	HEXACHLOROBENZENE	660 U
88-75-5	2-NITROPHENOL	660 U	87-86-5	PENTACHLOROPHENOL	3200 U
105-67-9	2,4-DIMETHYLPHENOL	660 U	85-01-8	PHENANTHRENE	660 U
65-85-0	BENZOIC ACID	3200 U	120-12-7	ANTHRACENE	660 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	660 U	84-74-2	DI-N-BUTYLPHTHALATE	660 U
120-83-2	2,4-DICHLOROPHENOL	660 U	206-44-0	FLUORANTHENE	150 J
120-82-1	1,2,4-TRICHLOROBENZENE	660 U	129-00-0	PYRENE	93 J
91-20-3	NAPHTHALENE	660 U	85-68-7	BUTYLBENZYLPHTHALATE	660 U
106-47-8	4-CHLOROANILINE	660 U	91-94-1	3,3'-DICHLOROBENZIDINE	1300 U
87-68-3	HEXACHLOROBUTADIENE	660 U	56-55-3	BENZO(a)ANTHRACENE	120 J
59-50-7	4-CHLORO-3-METHYLPHENOL	660 U	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	660 U
91-57-6	2-METHYLNAPHTHALENE	660 U	218-01-9	CHRYSENE	660 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	660 U	117-84-0	DI-N-OCTYL PHTHALATE	660 U
88-06-2	2,4,6-TRICHLOROPHENOL	660 U	205-99-2	BENZO(b)FLUORANTHENE	91 J
95-95-4	2,4,5-TRICHLOROPHENOL	3200 U	207-08-9	BENZO(k)FLUORANTHENE	660 U
91-58-7	2-CHLORONAPHTHALENE	660 U	50-32-8	BENZO(a)PYRENE	660 U
88-74-4	2-NITROANILINE	3200 U	193-39-5	INDENO(1,2,3-CD)PYRENE	660 U
131-11-3	DIMETHYL PHTHALATE	660 U	53-70-3	DIBENZ(a,h)ANTHRACENE	660 U
208-96-8	ACENAPHTHYLENE	660 U	191-24-2	BENZO(g,h,i)PERYLENE	660 U
99-09-2	3-NITROANILINE	3200 U			

(1)-Cannot be seperated from diphenylamine.

Flag 10/20/92

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

Sample Number
B00256

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

This compound (2595-1) analyzed because blank contain at

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 123422	2-PENTANONE, 4-HYDROXY-4-METHYL-	BNA	7.45	4200 ~~JB~~
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6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Instrument ID: HP3 Calibration Date(s): 09/17/91 09/17/91

Min RRF for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF20 =>LG101 RRF50 =>LG102
RRF80 =>LG103 RRF120=>LG104 RRF160=>LG105

COMPOUND		RRF20	RRF50	RRF80	RRF120	RRF160	RRF	%RSD
Phenol	*	1.998	1.991	1.816	1.679	1.781	1.853	7.5*
bis(2-Chloroethyl)ether		1.858	1.761	1.614	1.477	1.411	1.624	11.5
2-Chlorophenol		1.559	1.545	1.425	1.348	1.322	1.440	7.6
1,3-Dichlorobenzene		1.610	1.541	1.438	1.316	1.292	1.439	9.6
1,4-Dichlorobenzene	*	1.681	1.568	1.447	1.314	1.254	1.453	12.1*
Benzyl alcohol		1.047	1.017	0.987	0.978	1.037	1.013	3.0
1,2-Dichlorobenzene		1.599	1.439	1.351	1.248	1.193	1.366	11.8
2-Methylphenol		1.508	1.453	1.289	1.236	1.195	1.336	10.3
bis(2-chloroisopropyl)ether		2.329	2.287	2.101	2.082	2.173	2.194	5.0
4-Methylphenol		1.500	1.380	1.293	1.345	1.413	1.386	5.6
N-Nitroso-di-n-propylamine	#	1.544	1.362	1.377	1.673	1.640	1.519	9.5#
Hexachloroethane		0.667	0.611	0.603	0.567	0.557	0.601	7.3
Nitrobenzene		0.454	0.445	0.430	0.417	0.427	0.435	3.4
Isophorone		1.074	1.044	1.017	0.999	1.028	1.033	2.7
2-Nitrophenol	*	0.256	0.257	0.249	0.251	0.247	0.252	1.6*
2,4-Dimethylphenol		0.428	0.399	0.396	0.404	0.410	0.408	3.1
Benzoic acid		0.333	0.291	0.352	0.349	0.382	0.341	9.8
bis(2-Chloroethoxy)methane		0.584	0.557	0.528	0.525	0.519	0.543	5.0
2,4-Dichlorophenol	*	0.346	0.335	0.314	0.309	0.304	0.322	5.6*
1,2,4-Trichlorobenzene		0.388	0.350	0.330	0.319	0.315	0.340	8.8
Naphthalene		1.159	1.032	0.979	0.897	0.862	0.986	12.0
4-Chloroaniline		0.475	0.420	0.468	0.465	0.453	0.456	4.8
Hexachlorobutadiene	*	0.191	0.178	0.169	0.156	0.145	0.168	10.6*
4-Chloro-3-methylphenol	*	0.429	0.404	0.396	0.386	0.387	0.400	4.3*
2-Methylnaphthalene		0.763	0.671	0.641	0.598	0.577	0.650	11.3
Hexachlorocyclopentadiene	#	0.238	0.301	0.280	0.274	0.257	0.270	8.9#
2,4,6-Trichlorophenol	*	0.425	0.414	0.402	0.432	0.399	0.414	3.4*
2,4,5-Trichlorophenol		0.496	0.472	0.445	0.401	0.386	0.440	10.5
2-Chloronaphthalene		1.292	1.208	1.135	1.077	0.995	1.141	10.0
2-Nitroaniline		0.554	0.554	0.546	0.554	0.555	0.553	0.6
Dimethylphthalate		1.742	1.551	1.397	1.336	1.310	1.467	12.3
Acenaphthylene		2.130	1.690	1.609	1.482	1.342	1.651	18.1
2,6-Dinitrotoluene		0.465	0.462	0.451	0.452	0.444	0.455	1.9
3-Nitroaniline		0.225	0.288	0.401	0.404	0.391	0.342	23.7
Acenaphthene	*	1.288	1.149	1.090	0.994	0.889	1.082	14.0*
2,4-Dinitrophenol	#	0.168	0.223	0.279	0.302	0.304	0.255	22.9#
4-Nitrophenol	#	0.216	0.226	0.226	0.228	0.230	0.225	2.5#

00072

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Instrument ID: HP3 Calibration Date(s): 09/17/91 09/17/91

Min RRF for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF20 =>LG101 RRF50 =>LG102
RRF80 =>LG103 RRF120=>LG104 RRF160=>LG105

COMPOUND	RRF20	RRF50	RRF80	RRF120	RRF160	RRF	%RSD
Dibenzofuran	1.855	1.704	1.588	1.490	1.390	1.606	11.3
2,4-Dinitrotoluene	0.634	0.640	0.627	0.624	0.617	0.628	1.4
Diethylphthalate	1.880	1.669	1.476	1.242	1.116	1.477	21.0
4-Chlorophenyl-phenylether	0.720	0.640	0.564	0.467	0.395	0.557	23.4
Fluorene	1.426	1.298	1.196	1.118	1.013	1.210	13.2
4-Nitroaniline	0.268	0.265	0.257	0.398	0.463	0.330	28.6
4,6-Dinitro-2-methylphenol	0.182	0.195	0.214	0.204	0.177	0.194	7.8
N-Nitrosodiphenylamine (1) *	0.590	0.507	0.497	0.438	0.392	0.485	15.5*
4-Bromophenyl-phenylether	0.247	0.231	0.209	0.192	0.193	0.214	11.3
Hexachlorobenzene	0.307	0.279	0.261	0.241	0.237	0.265	10.9
Pentachlorophenol *	0.190	0.194	0.182	0.184	0.188	0.188	2.6*
Phenanthrene	1.266	1.129	1.034	0.982	0.974	1.077	11.4
Anthracene	1.290	1.144	1.040	0.972	0.932	1.076	13.4
Di-n-butylphthalate	2.128	1.937	1.711	1.639	1.579	1.799	12.7
Fluoranthene *	1.499	1.336	1.214	1.152	1.136	1.267	12.0*
Pyrene	1.613	2.021	1.513	1.548	2.237	1.787	18.1
Butylbenzylphthalate	1.063	1.319	1.036	1.079	1.533	1.206	17.9
3,3'-Dichlorobenzidine	0.233	0.298	0.257	0.273	0.443	0.301	27.6
Benzo(a)anthracene	1.396	1.647	1.301	1.373	2.017	1.547	19.0
Chrysene	1.309	1.607	1.171	1.148	1.563	1.360	15.8
bis(2-Ethylhexyl)phthalate	1.537	1.831	1.380	1.394	1.927	1.614	15.6
Di-n-octylphthalate *	2.572	2.485	2.102	2.048	2.079	2.257	11.1*
Benzo(b)fluoranthene	1.338	1.617	1.337	1.028	1.124	1.289	17.7
Benzo(k)fluoranthene	1.272	0.836	0.717	0.976	0.885	0.937	22.3
Benzo(a)pyrene *	1.252	1.199	1.092	1.036	1.049	1.126	8.4*
Indeno(1,2,3-cd)pyrene	1.424	1.307	1.138	1.092	1.058	1.204	12.9
Dibenz(a,h)anthracene	1.199	1.089	0.951	0.901	0.882	1.004	13.5
Benzo(g,h,i)perylene	1.240	1.095	0.985	0.942	0.889	1.030	13.6
Nitrobenzene-d5	0.413	0.407	0.431	0.429	0.426	0.421	2.6
2-Fluorobiphenyl	1.323	1.231	1.190	1.152	1.044	1.188	8.6
Terphenyl-d14	0.927	1.047	0.914	0.924	1.292	1.021	15.8
Phenol-d6	1.732	1.744	1.802	1.731	1.663	1.734	2.9
2-Fluorophenol	1.139	1.223	1.264	1.250	1.264	1.228	4.3
2,4,6-Tribromophenol	0.225	0.217	0.236	0.241	0.216	0.227	4.9

(1) Cannot be separated from Diphenylamine

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Instrument ID: HP3 Calibration Date: 9/24/91 Time: 1600

Lab File ID: DC924 Init. Calib. Date(s): 09/17/91 09/17/91

Min RRF50 for SPCC(#) = 0.050 Max %D for CCC(*) = 25.0%

COMPOUND		RRF	RRF50	%D	
Phenol	*	1.853	2.082	12.4	*
bis(2-Chloroethyl)ether		1.624	1.878	15.6	
2-Chlorophenol		1.440	1.578	9.6	
1,3-Dichlorobenzene		1.439	1.619	12.5	
1,4-Dichlorobenzene	*	1.453	1.642	13.1	*
Benzyl alcohol		1.013	1.002	1.2	
1,2-Dichlorobenzene		1.366	1.504	10.1	
2-Methylphenol		1.336	1.461	9.4	
bis(2-chloroisopropyl)ether		2.194	2.212	0.8	
4-Methylphenol		1.386	1.452	4.7	
N-Nitroso-di-n-propylamine	#	1.519	1.414	6.9	#
Hexachloroethane		0.601	0.680	13.2	
Nitrobenzene		0.435	0.460	5.8	
Isophorone		1.033	1.072	3.8	
2-Nitrophenol	*	0.252	0.257	2.0	*
2,4-Dimethylphenol		0.408	0.407	0.2	
Benzoic acid		0.341	0.334	2.3	
bis(2-Chloroethoxy)methane		0.543	0.571	5.3	
2,4-Dichlorophenol	*	0.322	0.329	2.2	*
1,2,4-Trichlorobenzene		0.340	0.356	4.5	
Naphthalene		0.986	1.118	13.4	
4-Chloroaniline		0.456	0.423	7.4	
Hexachlorobutadiene	*	0.168	0.182	8.3	*
4-Chloro-3-methylphenol	*	0.400	0.419	4.6	*
2-Methylnaphthalene		0.650	0.714	9.8	
Hexachlorocyclopentadiene	#	0.270	0.301	11.4	#
2,4,6-Trichlorophenol	*	0.414	0.393	5.1	*
2,4,5-Trichlorophenol		0.440	0.463	5.3	
2-Chloronaphthalene		1.141	1.220	6.9	
2-Nitroaniline		0.553	0.549	0.7	
Dimethylphthalate		1.467	1.553	5.9	
Acenaphthylene		1.651	1.876	13.6	
2,6-Dinitrotoluene		0.455	0.466	2.5	
3-Nitroaniline		0.342	0.156	54.2	
Acenaphthene	*	1.082	1.183	9.3	*
2,4-Dinitrophenol	#	0.255	0.233	8.5	#
4-Nitrophenol	#	0.225	0.240	6.6	#

10/20/92

7C
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Instrument ID: HP3 Calibration Date: 9/24/91 Time: 1600

Lab File ID: DC924 Init. Calib. Date(s): 09/17/91 09/17/91

Min RRF50 for SPCC(#) = 0.050 Max %D for CCC(*) = 25.0%

COMPOUND		RRF	RRF50	%D	
Dibenzofuran		1.606	1.741	8.4	
2,4-Dinitrotoluene		0.628	0.623	0.9	
Diethylphthalate		1.477	1.754	18.8	
4-Chlorophenyl-phenylether		0.557	0.633	13.5	
Fluorene		1.210	1.353	11.9	
4-Nitroaniline		0.330	0.301	8.7	
4,6-Dinitro-2-methylphenol		0.194	0.201	3.5	
N-Nitrosodiphenylamine (1)	*	0.485	0.529	9.1	*
4-Bromophenyl-phenylether		0.214	0.211	1.5	
Hexachlorobenzene		0.265	0.263	0.7	
Pentachlorophenol	*	0.188	0.178	5.2	*
Phenanthrene		1.077	1.121	4.1	
Anthracene		1.076	1.143	6.3	
Di-n-butylphthalate		1.799	1.974	9.7	
Fluoranthene	*	1.267	1.328	4.8	*
Pyrene		1.787	1.835	2.7	
Butylbenzylphthalate		1.206	1.286	6.6	
3,3'-Dichlorobenzidine		0.301	0.318	5.9	
Benzo(a)anthracene		1.547	1.537	0.6	
Chrysene		1.360	1.569	15.4	
bis(2-Ethylhexyl)phthalate		1.614	1.772	9.8	
Di-n-octylphthalate	*	2.257	2.535	12.3	*
Benzo(b)fluoranthene		1.289	1.414	9.7	
Benzo(k)fluoranthene		0.937	1.062	13.3	
Benzo(a)pyrene	*	1.126	1.213	7.8	*
Indeno(1,2,3-cd)pyrene		1.204	1.322	9.8	
Dibenz(a,h)anthracene		1.004	1.106	10.2	
Benzo(g,h,i)perylene		1.030	1.141	10.7	
Nitrobenzene-d5		0.421	0.425	0.9	
2-Fluorobiphenyl		1.188	1.209	1.8	
Terphenyl-d14		1.021	0.947	7.2	
Phenol-d6		1.734	1.813	4.5	
2-Fluorophenol		1.228	1.272	3.6	
2,4,6-Tribromophenol		0.227	0.200	11.8	

PJL 10/20/92

(1) Cannot be separated from Diphenylamine

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* ****************************************************
* S-CUBED  SEMIVOLATILE  ORGANIC  ANALYSIS  DATA  SHEET *
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Sample Number
EBS2595
(LAB BLANK)

CLIENT : W H C
PROJECT : 100-DR-1
SDG NO : 2595

Date Sample Received: N.R
Data Release Authorized BY: pm
S-CUBED Reference Number: 32359-05

Lab File ID No: BS916
Sample Matrix: SOIL
INT.VOL/WGT(mL or G): 30 G
FV(mL): 2.00 DILT: 1
Percent Moisture: N.R pH: N.R Percent Moisture (Decanted): N.R
Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09-16-91
Date Analyzed: 09-24-91

CAS Number		ug/l or ug/kg (Circle one)	CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	660 U	83-32-9	ACENAPHTHENE	660 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	660 U	51-28-5	2,4-DINITROPHENOL	3200 U
95-57-8	2-CHLOROPHENOL	660 U	100-02-7	4-NITROPHENOL	3200 U
541-73-1	1-3,DICHLOROBENZENE	660 U	132-64-9	DIBENZOFURAN	660 U
106-46-7	1,4-DICHLOROBENZENE	660 U	121-14-2	2,4-DINITROTOLUENE	660 U
100-51-6	BENZYL ALCOHOL	660 U	606-20-2	2,6-DINITROTOLUENE	660 U
95-50-1	1,2-DICHLOROBENZENE	660 U	84-66-2	DIETHYLPHTHALATE	660 U
95-48-7	2-METHYLPHENOL	660 U	7005-72-3	4-CHLOROPHENYL-PHENYLETHER	660 U
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	660 U	86-73-7	FLUORENE	660 U
106-44-5	4-METHYLPHENOL	660 U	100-01-6	4-NITROANILINE	3200 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	660 U	534-52-1	4,6-DINITRO-2-METHYLPHENOL	3200 U
67-72-1	HEXACHLOROETHANE	660 U	86-30-6	N-NITROSODIPHENYLAMINE (1)	660 U
98-95-3	NITROBENZENE	660 U	101-55-3	4-BROMOPHENYL-PHENYLETHER	660 U
78-59-1	ISOPHORONE	660 U	118-74-1	HEXACHLOROBENZENE	660 U
88-75-5	2-NITROPHENOL	660 U	87-86-5	PENTACHLOROPHENOL	3200 U
105-67-9	2,4-DIMETHYLPHENOL	660 U	85-01-8	PHENANTHRENE	660 U
65-85-0	BENZOIC ACID	3200 U	120-12-7	ANTHRACENE	660 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	660 U	84-74-2	DI-N-BUTYLPHTHALATE	660 U
120-83-2	2,4-DICHLOROPHENOL	660 U	206-44-0	FLUORANTHENE	660 U
120-82-1	1,2,4-TRICHLOROBENZENE	660 U	129-00-0	PYRENE	660 U
91-20-3	NAPHTHALENE	660 U	85-68-7	BUTYLBENZYLPHTHALATE	660 U
106-47-8	4-CHLOROANILINE	660 U	91-94-1	3,3'-DICHLOROBENZIDINE	1300 U
87-68-3	HEXACHLOROBUTADIENE	660 U	56-55-3	BENZO(a)ANTHRACENE	660 U
59-50-7	4-CHLORO-3-METHYLPHENOL	660 U	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	660 U
91-57-6	2-METHYLNAPHTHALENE	660 U	218-01-9	CHRYSENE	660 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	660 U	117-84-0	DI-N-OCTYL PHTHALATE	660 U
88-06-2	2,4,6-TRICHLOROPHENOL	660 U	205-99-2	BENZO(b)FLUORANTHENE	660 U
95-95-4	2,4,5-TRICHLOROPHENOL	3200 U	207-08-9	BENZO(k)FLUORANTHENE	660 U
91-58-7	2-CHLORONAPHTHALENE	660 U	50-32-8	BENZO(a)PYRENE	660 U
88-74-4	2-NITROANILINE	3200 U	193-39-5	INDENO(1,2,3-CD)PYRENE	660 U
131-11-3	DIMETHYL PHTHALATE	660 U	53-70-3	DIBENZ(a,h)ANTHRACENE	660 U
208-96-8	ACENAPHTHYLENE	660 U	191-24-2	BENZO(g,h,i)PERYLENE	660 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
EBS 2595

(lab blank

PH 10/26/5

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.	123422	2-PENTANONE, 4-HYDROXY-4-METHYL-	BNA-	7.43	1200 J
2.		UNKNOWN ACID	"	33.76	630 J
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* S-CUBED  SEMIVOLATILE  ORGANIC  ANALYSIS  DATA  SHEET *
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Sample Number
B00ZS0 MS
(2595-1MS)

CLIENT : W H C
PROJECT : 100-DR-1
SDG No : 2595

Date Sample Received: 09-13-91
Lab File ID No: MS001
Data Release Authorized By: AM
Sample Matrix: SOIL
S-CUBED Reference Number: 32359-05
INT.VOL/WGT(mL or G): 30 G
FV(mL): 2.00 DILT: 1
Percent Moisture: 0.67 pH: 8.52 Percent Moisture (Decanted): N.R.
Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09-16-91
Date Analyzed: 09-24-91

CAS Number		ug/l or ug/kg (Circle one)		CAS Number		ug/l or ug/kg (circle one)	
108-95-2	PHENOL	8700	X	83-32-9	ACENAPHTHENE	4500	X
111-44-4	BIS(2-CHLOROETHYL)ETHER	660 U		51-28-5	2,4-DINITROPHENOL	3200 U	
95-57-8	2-CHLOROPHENOL	7800	X	100-02-7	4-NITROPHENOL	10000	X
541-73-1	1-3,DICHLOROBENZENE	660 U		132-64-9	DIBENZOFURAN	660 U	
106-46-7	1,4-DICHLOROBENZENE	4000	X	121-14-2	2,4-DINITROTOLUENE	4800	X
100-51-6	BENZYL ALCOHOL	660 U		606-20-2	2,6-DINITROTOLUENE	660 U	
95-50-1	1,2-DICHLOROBENZENE	660 U		84-66-2	DIETHYLPHTHALATE	660 U	
95-48-7	2-METHYLPHENOL	660 U		7005-72-3	4-CHLOROPHENYL-PHENYLETHER	660 U	
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	660 U		86-73-7	FLUORENE	660 U	
106-44-5	4-METHYLPHENOL	660 U		100-01-6	4-NITROANILINE	3200 U	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	4900	X	534-52-1	4,6-DINITRO-2-METHYLPHENOL	3200 U	
67-72-1	HEXACHLOROETHANE	660 U		86-30-6	N-NITROSODIPHENYLAMINE (1)	660 U	
98-95-3	NITROBENZENE	660 U		101-55-3	4-BROMOPHENYL-PHENYLETHER	660 U	
78-59-1	ISOPHORONE	660 U		118-74-1	HEXACHLOROBENZENE	660 U	
88-75-5	2-NITROPHENOL	660 U		87-86-5	PENTACHLOROPHENOL	8800	X
105-67-9	2,4-DIMETHYLPHENOL	660 U		85-01-8	PHENANTHRENE	660 U	
65-85-0	BENZOIC ACID	3200 U		120-12-7	ANTHRACENE	660 U	
111-91-1	BIS(2-CHLOROETHOXY)METHANE	660 U		84-74-2	DI-N-BUTYLPHTHALATE	660 U	
120-83-2	2,4-DICHLOROPHENOL	660 U		206-44-0	FLUORANTHENE	200 J	
120-82-1	1,2,4-TRICHLOROBENZENE	4100	X	129-00-0	PYRENE	3900	X
91-20-3	NAPHTHALENE	660 U		85-68-7	BUTYLBENZYLPHTHALATE	660 U	
106-47-8	4-CHLOROANILINE	660 U		91-94-1	3,3'-DICHLOROBENZIDINE	1300 U	
87-68-3	HEXACHLOROBUTADIENE	660 U		56-55-3	BENZO(a)ANTHRACENE	150 J	
59-50-7	4-CHLORO-3-METHYLPHENOL	8800	X	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	660 U	
91-57-6	2-METHYLNAPHTHALENE	660 U		218-01-9	CHRYSENE	660 U	
77-47-4	HEXACHLOROCYCLOPENTADIENE	660 U		117-84-0	DI-N-OCTYL PHTHALATE	660 U	
88-06-2	2,4,6-TRICHLOROPHENOL	660 U		205-99-2	BENZO(b)FLUORANTHENE	140 J	
95-95-4	2,4,5-TRICHLOROPHENOL	3200 U		207-08-9	BENZO(k)FLUORANTHENE	660 U	
91-58-7	2-CHLORONAPHTHALENE	660 U		50-32-8	BENZO(a)PYRENE	660 U	
88-74-4	2-NITROANILINE	3200 U		193-39-5	INDENO(1,2,3-CD)PYRENE	660 U	
131-11-3	DIMETHYL PHTHALATE	660 U		53-70-3	DIBENZ(a,h)ANTHRACENE	660 U	
208-96-8	ACENAPHTHYLENE	660 U		191-24-2	BENZO(g,h,i)PERYLENE	660 U	
99-09-2	3-NITROANILINE	3200 U					

(1)-Cannot be seperated from diphenylamine.

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* S-CUBED SEMIVOLATILE ORGANIC ANALYSIS DATA SHEET *
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Sample Number
BOOZS6.MSD
(2595-1MSD)

CLIENT : W H C
PROJECT : 100-OR-1
SDG NO : 2595

Date Sample Received: 09-13-91
Data Release Authorized By: [illegible]
S-CUBED Reference Number: 32359-05

Lab File ID No: MSD01
Sample Matrix: SOIL
INT.VOL/WGT(mL or G): 30 G
FV(mL): 2.00 DILT: 1
Percent Moisture: 0.67 pH: 8.52 Percent Moisture (Decanted): N.R
Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09-16-91
Date Analyzed: 09-24-91

CAS Number		ug/l or ug/kg (circle one)		CAS Number		ug/l or ug/kg (circle one)	
108-95-2	PHENOL	8100	X	83-32-9	ACENAPHTHENE	4300	X
111-44-4	BIS(2-CHLOROETHYL)ETHER	660 U		51-28-5	2,4-DINITROPHENOL	3200 U	
95-57-8	2-CHLOROPHENOL	7200	X	100-02-7	4-NITROPHENOL	10000	X
541-73-1	1-3,DICHLOROBENZENE	660 U		132-64-9	DIBENZOFURAN	660 U	
106-46-7	1,4-DICHLOROBENZENE	3800	X	121-14-2	2,4-DINITROTOLUENE	4700	X
100-51-6	BENZYL ALCOHOL	660 U		606-20-2	2,6-DINITROTOLUENE	660 U	
95-50-1	1,2-DICHLOROBENZENE	660 U		84-66-2	DIETHYLPHTHALATE	660 U	
95-48-7	2-METHYLPHENOL	660 U		7005-72-3	4-CHLOROPHENYL-PHENYLETHER	660 U	
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	660 U		86-73-7	FLUORENE	660 U	
106-44-5	4-METHYLPHENOL	660 U		100-01-6	4-NITROANILINE	3200 U	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	4600	X	534-52-1	4,6-DINITRO-2-METHYLPHENOL	3200 U	
67-72-1	HEXACHLOROETHANE	660 U		86-30-6	N-NITROSODIPHENYLAMINE (1)	660 U	
98-95-3	NITROBENZENE	660 U		101-55-3	4-BROMOPHENYL-PHENYLETHER	660 U	
78-59-1	ISOPHORONE	660 U		118-74-1	HEXACHLOROBENZENE	660 U	
88-75-5	2-NITROPHENOL	660 U		87-86-5	PENTACHLOROPHENOL	8700	X
105-67-9	2,4-DIMETHYLPHENOL	660 U		85-01-8	PHENANTHRENE	660 U	
65-85-0	BENZOIC ACID	3200 U		120-12-7	ANTHRACENE	660 U	
111-91-1	BIS(2-CHLOROETHOXY)METHANE	660 U		84-74-2	DI-N-BUTYLPHTHALATE	660 U	
120-83-2	2,4-DICHLOROPHENOL	660 U		206-44-0	FLUORANTHENE	220 J	
120-82-1	1,2,4-TRICHLOROBENZENE	3800	X	129-00-0	PYRENE	4000	X
91-20-3	NAPHTHALENE	660 U		85-68-7	BUTYLBENZYLPHTHALATE	660 U	
106-47-8	4-CHLOROANILINE	660 U		91-94-1	3,3'-DICHLOROBENZIDINE	1300 U	
87-68-3	HEXACHLOROBUTADIENE	660 U		56-55-3	BENZO(a)ANTHRACENE	160 J	
59-50-7	4-CHLORO-3-METHYLPHENOL	8000	X	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	660 U	
91-57-6	2-METHYLNAPHTHALENE	660 U		218-01-9	CHRYSENE	660 U	
77-47-4	HEXACHLOROCYCLOPENTADIENE	660 U		117-84-0	DI-N-OCTYL PHTHALATE	660 U	
88-06-2	2,4,6-TRICHLOROPHENOL	660 U		205-99-2	BENZO(b)FLUORANTHENE	71 J	
95-95-4	2,4,5-TRICHLOROPHENOL	3200 U		207-08-9	BENZO(k)FLUORANTHENE	660 U	
91-58-7	2-CHLORONAPHTHALENE	660 U		50-32-8	BENZO(a)PYRENE	660 U	
88-74-4	2-NITROANILINE	3200 U		193-39-5	INDENO(1,2,3-CD)PYRENE	660 U	
131-11-3	DIMETHYL PHTHALATE	660 U		53-70-3	DIBENZ(a,h)ANTHRACENE	660 U	
208-96-8	ACENAPHTHYLENE	660 U		191-24-2	BENZO(g,h,i)PERYLENE	660 U	
99-09-2	3-NITROANILINE	3200 U					

(1)-Cannot be seperated from diphenylamine.

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: S-CUBED Contract: 68-D9-0027

Lab Code: S3 Case No. 100-DR-1 SAS No.: SDG No.: 2595

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (DBC)#	OTHER
01	BOOZS6	41	
02	BOOZS6 MS	54	
03	BOOZS6 MSD	50	
04	LCS2595	60	
05	EBS2595	52	
06			
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10/21/92

ADVISORY QC LIMITS (24-150)

S1 (DBC) = Dibutylchlorendate

Column to be used to flag recovery values

* Values outside of contract required QC limits
D Surrogates diluted out

FORM II PEST-2 1/87 Rev.

LCS RECOVERY FORM

LAB: S-WOED CASE: WHC 100-DR-1

LCS #: WS 2595 CONTRACT: 32351-05

SDG: 2595

COMPOUND	CONC. SPIKE	CONC. LCS	% RECOVERY
g-BHC	27 ug/Kg	28 ug/Kg	104
Heptachlor	27 ug/Kg	23 ug/Kg	85
Aldrin	27 ug/Kg	30 ug/Kg	111
Dieldrin	67 ug/Kg	63 ug/Kg	94
Endrin	67 ug/Kg	66 ug/Kg	99
DDT	67 ug/Kg	41 ug/Kg	61

COMMENTS: _____

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: S-CUBED Contract: ~~68-D9-0027~~ 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Matrix Spike - EPA Sample No.: B00ZS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
gamma-BHC (Lindane)	26.847	0.000	27.560	103	46-127
Heptachlor	26.847	0.000	21.780	81	35-130
Aldrin	26.847	0.000	27.667	103	34-132
Dieldrin	67.116	0.000	59.398	89	31-134
Endrin	67.116	0.000	59.734	89	42-139
4,4' DDT	67.116	0.000	33.894	51	23-134

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	26.847	26.560	99	4	50	46-127
Heptachlor	26.847	19.918	74	9	31	35-130
Aldrin	26.847	26.932	100	3	43	34-132
Dieldrin	67.116	55.707	83	7	38	31-134
Endrin	67.116	53.022	79	12	45	42-139
4,4' DDT	67.116	30.031	45	12	50	23-134

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 0 out of 12 outside limits

10/21/92
PMB

Comments:

4C
PESTICIDE METHOD BLANK SUMMARY

Lab Name: S-CUBED Contract: ~~68-D9-0027~~ 32359-05 pm 10/02/91

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Lab Sample ID: EBS2595 Lab File ID: C0925028

Matrix:(soil/water) SOIL Level:(low/med) LOW

Date Extracted: 09/16/91 Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed (1): 09/28/91 Date Analyzed (2): 09/28/91

Time Analyzed (1): 0403 Time Analyzed (2): 0323

Instrument ID (1): 1 Instrument ID (2): 1

GC Column ID (1): DB-1701 GC Column ID (2): DB-608

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	BOOZS6	25951	09/28/91	09/28/91
02	LCS2595	LCS2595	09/28/91	09/28/91
03	BOOZS6 MS	2695-1MS	09/28/91	09/28/91
04	BOOZS6 MSD	2695-1MSD	09/28/91	09/28/91
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

PMB 10/21/

COMMENTS:

FORM IV PEST 1/87 Rev.

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOOZS6

Lab Name: S-CUBED Contract: ~~68-D9-0027~~ 32359-05 pm 10/2/91

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Matrix: (soil/water) SOIL Lab Sample ID: 2595-1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 00925030

Level: (low/med) LOW Date Received: 09/13/91

% Moisture: not dec. 1 dec. Date Extracted: 09/16/91

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 09/28/91

GPC Cleanup: (Y/N) N pH: 8.5 Dilution Factor: 0.500

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
319-84-6	alpha-BHC	4.00	U	
319-85-7	beta-BHC	4.00	U	
319-86-8	delta-BHC	4.00	U	
58-89-9	gamma-BHC (Lindane)	4.00	U	
76-44-8	Heptachlor	4.00	U	
309-00-2	Aldrin	4.00	U	
1024-57-3	Heptachlor epoxide	4.00	U	
959-98-8	Endosulfan I	4.00	U	
60-57-1	Dieldrin	8.10	U	
72-55-9	4,4'-DDE	8.10	U	
72-20-8	Endrin	8.10	U	
33213-65-9	Endosulfan II	8.10	U	
72-54-8	4,4'-DDD	8.10	U	
1031-07-8	Endosulfan sulfate	8.10	U	
50-29-3	4,4'-DDT	8.10	UJ	Due to %DD 4,4'-DDT being >15% quantitation purposes
72-43-5	Methoxychlor	40.00	U	
53494-70-5	Endrin ketone	8.10	U	
5103-71-9	alpha-Chlordane	40.00	U	
5103-74-2	gamma-Chlordane	40.00	U	
8001-35-2	Toxaphene	81.00	U	
12674-11-2	Aroclor-1016	40.00	U	
11104-28-2	Aroclor-1221	40.00	U	
11141-16-5	Aroclor-1232	40.00	U	
53469-21-9	Aroclor-1242	40.00	U	
12672-29-6	Aroclor-1248	40.00	U	
11097-69-1	Aroclor-1254	81.00	U	
11096-82-5	Aroclor-1260	81.00	U	

8D
PESTICIDE EVALUATION STANDARDS SUMMARY

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Instrument ID: 1 GC Column ID: DB-1701

Dates of Analyses: 09/27/91 to 09/28/91

Evaluation Check for Linearity

PESTICIDE	CALIBRATION FACTOR EVAL MIX A	CALIBRATION FACTOR EVAL MIX B	CALIBRATION FACTOR EVAL MIX C	%RSD (< 10.0%)
ALDRIN	12770000	13520000	12670000	8.5
ENDRIN	10810000	11350000	11200000	2.5
4,4'-DDT	9452000	10460000	10400000	5.6 (1)
DBC	9183000	8934000	8916000	1.7

(1) If > 10.0% RSD, plot a standard curve and determine the ng for each sample in that set from the curve.

Evaluation Check for 4,4'-DDT/Endrin Breakdown
(percent breakdown expressed as total degradation)

		DATE ANALYZED	TIME ANALYZED	ENDRIN	4,4'-DDT	COMBINED (2)
	INITIAL	09/27/91	1520	2.3	0.0	
01	EVAL MIX B	09/28/91	0247	2.3	0.0	
02	EVAL MIX B	09/28/91	1218	2.2	0.0	
03	EVAL MIX B	/ /				
04	EVAL MIX B	/ /				
05	EVAL MIX B	/ /				
06	EVAL MIX B	/ /				
07	EVAL MIX B	/ /				
08	EVAL MIX B	/ /				
09	EVAL MIX B	/ /				
10	EVAL MIX B	/ /				
11	EVAL MIX B	/ /				
12	EVAL MIX B	/ /				
13	EVAL MIX B	/ /				

(2) See Form instructions.

8D
PESTICIDE EVALUATION STANDARDS SUMMARY

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Instrument ID: 1 GC Column ID: DB-608

Dates of Analyses: 09/27/91 to 09/28/91

Evaluation Check for Linearity

PESTICIDE	CALIBRATION FACTOR EVAL MIX A	CALIBRATION FACTOR EVAL MIX B	CALIBRATION FACTOR EVAL MIX C	%RSD (< 10.0%)
ALDRIN	8712000	8614000	8635000	0.6
ENDRIN	7348000	7601000	7583000	1.9
4,4'-DDT	7570000	7203000	6980000	4.1 (1)
DBC	7050000	6700000	6442000	4.5

(1) If > 10.0% RSD, plot a standard curve and determine the ng for each sample in that set from the curve.

Evaluation Check for 4,4'-DDT/Endrin Breakdown
(percent breakdown expressed as total degradation)

		DATE ANALYZED	TIME ANALYZED	ENDRIN	4,4'-DDT	COMBINED (2)
	INITIAL	09/27/91	1440	6.4	0.8	
01	EVAL MIX B	09/28/91	0206	5.9	0.8	
02	EVAL MIX B	09/28/91	1137	5.5	0.8	
03	EVAL MIX B	/ /				
04	EVAL MIX B	/ /				
05	EVAL MIX B	/ /				
06	EVAL MIX B	/ /				
07	EVAL MIX B	/ /				
08	EVAL MIX B	/ /				
09	EVAL MIX B	/ /				
10	EVAL MIX B	/ /				
11	EVAL MIX B	/ /				
12	EVAL MIX B	/ /				
13	EVAL MIX B	/ /				

(2) See Form instructions.

8E

PESTICIDE EVALUATION STANDARDS SUMMARY

Evaluation of Retention Time Shift for Dibutylchlorendate

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Instrument ID: 1 GC Column ID: DB-1701

Dates of Analyses: 09/27/91 to 09/28/91

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	% D	*
01	EVALA	EVALA	09/27/91	1442	0.0	
02	EVALB	EVALB INT	09/27/91	1520	0.0	
03	EVALC	EVALC	09/27/91	1559	0.0	
04	INDA	INDA INT	09/27/91	1637	0.1	
05	INDB	INDB INT	09/27/91	1715	0.1	
06	TOXAPH	TOXAPH	09/27/91	1753	0.1	
07	AR1660	AR1660	09/27/91	1831	0.2	
08	AR1221	AR1221	09/27/91	1910	0.2	
09	AR1232	AR1232	09/27/91	1948	0.2	
10	AR1242	AR1242	09/27/91	2026	0.2	
11	AR1248	AR1248	09/27/91	2104	0.2	
12	AR1254	AR1254	09/27/91	2142	0.2	
13	CHLORDANE	CHLORDANE	09/27/91	2220	0.0	
14	ZZZZZ	ZZZZZ	09/27/91	2258	0.3	
15	ZZZZZ	ZZZZZ	09/27/91	2336	0.3	
16	ZZZZZ	ZZZZZ	09/28/91	0015	0.3	
17	ZZZZZ	ZZZZZ	09/28/91	0053	0.3	
18	ZZZZZ	ZZZZZ	09/28/91	0131	0.3	
19	EVALB	EVALB C1	09/28/91	0247	0.3	
20	ZZZZZ	ZZZZZ	09/28/91	0325	0.3	
21	EBS2595	EBS2595	09/28/91	0403	0.3	
22	LCS2595	LCS2595	09/28/91	0441	0.3	
23	B00ZS6	2595-1	09/28/91	0519	0.3	
24	B00ZS6MS	2595-1MS	09/28/91	0557	0.3	
25	INDA	INDA C1	09/28/91	0713	0.3	
26	B00ZS6MSD	2595-1MSD	09/28/91	0830	0.3	
27	ZZZZZ	ZZZZZ	09/28/91	0908	0.3	
28	ZZZZZ	ZZZZZ	09/28/91	0946	0.2	
29	ZZZZZ	ZZZZZ	09/28/91	1024	0.2	
30	ZZZZZ	ZZZZZ	09/28/91	1102	0.2	
31	EVALB	EVALB C2	09/28/91	1218	0.2	
32	INDA	INDA C2	09/28/91	1256	0.2	
33	INDB	INDB C3	09/28/91	1334	0.2	
34			/ /			
35			/ /			
36			/ /			
37			/ /			
38			/ /			

* Values outside of QC limits (2.0% for packed columns, 0.3% for capillary columns)

8E

PESTICIDE EVALUATION STANDARDS SUMMARY

Evaluation of Retention Time Shift for Dibutylchlorendate

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Instrument ID: 1 GC Column ID: DB-608

Dates of Analyses: 09/27/91 to 09/28/91

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	% D	*
01	EVALA	EVALA	09/27/91	1402	0.0	
02	EVALB	EVALB INT	09/27/91	1440	0.0	
03	EVALC	EVALC	09/27/91	1519	0.0	
04	INDA	INDA INT	09/27/91	1557	0.0	
05	INDB	INDB INT	09/27/91	1635	0.0	
06	TOXAPH	TOXAPH	09/27/91	1713	0.0	
07	AR1660	AR1660	09/27/91	1751	0.1	
08	AR1221	AR1221	09/27/91	1829	0.1	
09	AR1232	AR1232	09/27/91	1907	0.1	
10	AR1242	AR1242	09/27/91	1946	0.1	
11	AR1248	AR1248	09/27/91	2024	0.1	
12	AR1254	AR1254	09/27/91	2102	0.1	
13	CHLORDANE	CHLORDANE	09/27/91	2140	0.0	
14	ZZZZZ	ZZZZZ	09/27/91	2218	0.1	
15	ZZZZZ	ZZZZZ	09/27/91	2256	0.1	
16	ZZZZZ	ZZZZZ	09/27/91	2334	0.1	
17	ZZZZZ	ZZZZZ	09/28/91	0012	0.2	
18	ZZZZZ	ZZZZZ	09/28/91	0050	0.2	
19	EVALB	EVALB C1	09/28/91	0206	0.2	
20	ZZZZZ	ZZZZZ	09/28/91	0245	0.2	
21	EBS2595	EBS2595	09/28/91	0323	0.2	*
22	LCS2595	LCS2595	09/28/91	0401	0.2	*
23	BOOZS6	2595-1	09/28/91	0439	0.2	*
24	BOOZS6MS	2595-1MS	09/28/91	0517	0.2	*
25	INDA	INDA C1	09/28/91	0633	0.2	
26	BOOZS6MSD	2595-1MSD	09/28/91	0749	0.2	*
27	ZZZZZ	ZZZZZ	09/28/91	0827	0.1	
28	ZZZZZ	ZZZZZ	09/28/91	0905	0.1	
29	ZZZZZ	ZZZZZ	09/28/91	0943	0.1	
30	ZZZZZ	ZZZZZ	09/28/91	1021	0.1	
31	EVALB	EVALB C2	09/28/91	1137	0.1	
32	INDA	INDA C2	09/28/91	1215	0.1	
33	INDB	INDB C3	09/28/91	1254	0.1	
34			/ /			
35			/ /			
36			/ /			
37			/ /			
38			/ /			

* Values outside of QC limits (2.0% for packed columns, 0.3% for capillary columns)

10/21/92

PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Instrument ID: 1 GC Column ID: DB-1701

DATE(S) OF ANALYSIS	FROM: 09/27/91 TO: 09/27/91	DATE OF ANALYSIS: 09/28/91 TIME OF ANALYSIS: 0713	
TIME(S) OF ANALYSIS	FROM: 1637 TO: 2142	EPA SAMPLE NO. (STANDARD)	INDA G1

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
ALPHA-BHC	9.20	9.15	9.25				N	
BETA-BHC	13.36	13.30	13.42				N	
DELTA-BHC	14.14	14.09	14.19				N	
GAMMA-BHC	10.59	10.53	10.65	9875000	10.54	11380000	N	15.2
HEPTACHLOR	11.24	11.18	11.30	17090000	11.19	18720000	N	9.5
ALDRIN	12.16	12.10	12.22	12080000	12.11	13320000	N	10.3
HEPT. EPOXIDE	14.56	14.49	14.63	14400000	14.51	16000000	N	11.1
ENDOSULFAN I	15.48	15.41	15.56	11420000	15.42	13520000	N	18.4
DIELDRIN	16.74	16.68	16.80	10180000	16.69	11410000	N	12.1
4,4'-DDE	16.32	16.26	16.38				N	
ENDRIN	17.41	17.35	17.47				N	
ENDOSULFAN II	19.14	19.08	19.20	10400000	19.09	11790000	N	13.4
4,4'-DDD	19.07	19.02	19.12				N	
ENDO. SULFATE	21.64	21.59	21.69				N	
4,4'-DDT	19.60	19.53	19.67	7743000	19.54	9003000	N	16.3
METHOXYCHLOR	21.72	21.66	21.78	5803000	21.67	6762000	N	16.5
ENDRIN KETONE	22.92	22.86	22.98				N	
A. CHLORDANE	15.91	15.86	15.96				N	
G. CHLORDANE	15.72	15.67	15.77				N	
TOXAPHENE	15.11	15.08	15.14				N	
AROCLOR-1016	10.24	10.21	10.27				N	
AROCLOR-1221	10.18	10.15	10.21				N	
AROCLOR-1232	11.51	11.48	11.54				N	
AROCLOR-1242	11.03	11.00	11.06				N	
AROCLOR-1248	13.01	12.98	13.04				N	
AROCLOR-1254	17.05	17.02	17.08				N	
AROCLOR-1260	20.20	20.17	20.23				N	

Under QNT Y/N: enter Y if quantitation was performed, N if not performed.
%D must be less than or equal to 15.0% for quantitation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRQL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

9

PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Instrument ID: 1 GC Column ID: DB-1701

DATE(S) OF ANALYSIS FROM: 09/27/91 TO: 09/27/91	DATE OF ANALYSIS: 09/28/91
TIME(S) OF ANALYSIS FROM: 1637 TO: 2142	TIME OF ANALYSIS: 1256
	EPA SAMPLE NO. (STANDARD) INDA C2

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
ALPHA-BHC	9.20	9.15	9.25				N	
BETA-BHC	13.36	13.30	13.42				N	
DELTA-BHC	14.14	14.09	14.19				N	
GAMMA-BHC	10.59	10.53	10.65	9875000	10.56	10940000	N	10.8
HEPTACHLOR	11.24	11.18	11.30	17090000	11.21	18160000	N	6.3
ALDRIN	12.16	12.10	12.22	12080000	12.13	12930000	N	7.0
HEPT. EPOXIDE	14.56	14.49	14.63	14400000	14.53	15530000	N	7.8
ENDOSULFAN I	15.48	15.41	15.56	11420000	15.44	12430000	N	8.8
DIELDRIN	16.74	16.68	16.80	10180000	16.71	11170000	N	9.7
4,4'-DDE	16.32	16.26	16.38				N	
ENDRIN	17.41	17.35	17.47				N	
ENDOSULFAN II	19.14	19.08	19.20	10400000	19.11	11650000	N	12.0
4,4'-DDD	19.07	19.02	19.12				N	
ENDO. SULFATE	21.64	21.59	21.69				N	
4,4'-DDT	19.60	19.53	19.67	7743000	19.57	8705000	N	12.4
METHOXYCHLOR	21.72	21.66	21.78	5803000	21.69	6526000	N	12.5
ENDRIN KETONE	22.92	22.86	22.98				N	
A. CHLORDANE	15.91	15.86	15.96				N	
G. CHLORDANE	15.72	15.67	15.77				N	
TOXAPHENE	15.11	15.08	15.14				N	
AROCLOR-1016	10.24	10.21	10.27				N	
AROCLOR-1221	10.18	10.15	10.21				N	
AROCLOR-1232	11.51	11.48	11.54				N	
AROCLOR-1242	11.03	11.00	11.06				N	
AROCLOR-1248	13.01	12.98	13.04				N	
AROCLOR-1254	17.05	17.02	17.08				N	
AROCLOR-1260	20.20	20.17	20.23				N	

Under QNT Y/N: enter Y if quantitation was performed, N if not performed.
%D must be less than or equal to 15.0% for quantitation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRQL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

9

PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-0R-1 SAS No.: SDG No.: 2595

Instrument ID: 1 GC Column ID: DB-1701

DATE(S) OF ANALYSIS FROM: 09/27/91 TO: 09/27/91	DATE OF ANALYSIS: 09/28/91
TIME(S) OF ANALYSIS FROM: 1637 TO: 2142	TIME OF ANALYSIS: 1334
	EPA SAMPLE NO. (STANDARD) INDB C3

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
ALPHA-BHC	9.20	9.15	9.25	10740000	9.18	11160000	N	3.9
BETA-BHC	13.36	13.30	13.42	6581000	13.33	6935000	N	5.7
DELTA-BHC	14.14	14.09	14.19	8516000	14.12	9039000	N	6.1
GAMMA-BHC	10.59	10.53	10.65				N	
HEPTACHLOR	11.24	11.18	11.30				N	
ALDRIN	12.16	12.10	12.22	12140000	12.13	12650000	N	4.2
HEPT. EPOXIDE	14.56	14.49	14.63				N	
ENDOSULFAN I	15.48	15.41	15.56				N	
DIELDRIN	16.74	16.68	16.80				N	
4,4'-DDE	16.32	16.26	16.38	9846000	16.30	10380000	N	5.4
ENDRIN	17.41	17.35	17.47	9922000	17.39	10490000	N	5.7
ENDOSULFAN II	19.14	19.08	19.20				N	
4,4'-DDD	19.07	19.02	19.12	7281000	19.05	7754000	N	6.5
ENDO. SULFATE	21.64	21.59	21.69	10110000	21.62	10020000	N	0.9
4,4'-DDT	19.60	19.53	19.67				N	
METHOXYCHLOR	21.72	21.66	21.78				N	
ENDRIN KETONE	22.92	22.86	22.98	11020000	22.90	11490000	N	4.3
A. CHLORDANE	15.91	15.86	15.96	10810000	15.89	11310000	N	4.6
G. CHLORDANE	15.72	15.67	15.77	13090000	15.70	13700000	N	4.7
TOXAPHENE	15.11	15.08	15.14				N	
AROCLOR-1016	10.24	10.21	10.27				N	
AROCLOR-1221	10.18	10.15	10.21				N	
AROCLOR-1232	11.51	11.48	11.54				N	
AROCLOR-1242	11.03	11.00	11.06				N	
AROCLOR-1248	13.01	12.98	13.04				N	
AROCLOR-1254	17.05	17.02	17.08				N	
AROCLOR-1260	20.20	20.17	20.23				N	

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRQL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

9

PESTICIDE/PCB STANDARDS SUMMARY

PJA 10/21/92

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-OR-1 SAS No.: SDG No.: 2595

Instrument ID: 1 GC Column ID: DB-608

DATE(S) OF ANALYSIS FROM: 09/27/91 TO: 09/27/91	DATE OF ANALYSIS: 09/28/91
TIME(S) OF ANALYSIS FROM: 1557 TO: 2102	TIME OF ANALYSIS: 0633
	EPA SAMPLE NO. (STANDARD) INDA CI

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
ALPHA-BHC	9.42	9.39	9.45				Y	
BETA-BHC	11.20	11.17	11.23				Y	
DELTA-BHC	12.56	12.52	12.60				Y	
GAMMA-BHC	10.89	10.85	10.93	8111000	10.86	8169000	Y	0.7
HEPTACHLOR	12.06	12.02	12.10	11040000	12.03	11050000	Y	0.1
ALDRIN	13.26	13.22	13.30	8565000	13.23	8584000	Y	0.2
HEPT. EPOXIDE	15.39	15.35	15.43	10100000	15.36	10100000	Y	0.0
ENDOSULFAN I	16.67	16.63	16.71	8671000	16.64	8672000	Y	0.0
DIELDRIN	17.81	17.77	17.85	7662000	17.77	7629000	Y	0.4
4,4'-DDE	17.63	17.60	17.66				Y	
ENDRIN	19.13	19.09	19.17				Y	
ENDOSULFAN II	19.82	19.78	19.86	8078000	19.79	8151000	Y	0.9
4,4'-DDD	19.68	19.65	19.71				Y	
ENDO. SULFATE	21.48	21.44	21.52				Y	
4,4'-DDT	20.76	20.72	20.80	7014000	20.73	7094000	Y	1.1
METHOXYCHLOR	23.98	23.94	24.02	4215000	23.95	4208000	Y	0.2
ENDRIN KETONE	24.20	24.16	24.24				Y	
A. CHLORDANE	16.60	16.56	16.64				Y	
G. CHLORDANE	15.99	15.95	16.03				Y	
TOXAPHENE	18.30	18.27	18.33				Y	
AROCLOR-1016	11.91	11.88	11.94				Y	
AROCLOR-1221	12.17	12.14	12.20				Y	
AROCLOR-1232	12.77	12.74	12.80				Y	
AROCLOR-1242	13.53	13.50	13.56				Y	
AROCLOR-1248	15.50	15.47	15.53				Y	
AROCLOR-1254	18.59	18.56	18.62				Y	
AROCLOR-1260	22.11	22.08	22.14				Y	

Under QNT Y/N: enter Y if quantitation was performed, N if not performed.
%D must be less than or equal to 15.0% for quantitation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRQL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

9

PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Instrument ID: 1 GC Column ID: DB-608

DATE(S) OF ANALYSIS FROM: 09/27/91 TO: 09/27/91	DATE OF ANALYSIS: 09/28/91
TIME(S) OF ANALYSIS FROM: 1557 TO: 2102	TIME OF ANALYSIS: 1215
	EPA SAMPLE NO. (STANDARD) INDA C2

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
ALPHA-BHC	9.42	9.39	9.45				Y	
BETA-BHC	11.20	11.17	11.23				Y	
DELTA-BHC	12.56	12.52	12.60				Y	
GAMMA-BHC	10.89	10.85	10.93	8111000	10.87	7930000	Y	2.2
HEPTACHLOR	12.06	12.02	12.10	11040000	12.04	10730000	Y	2.8
ALDRIN	13.26	13.22	13.30	8565000	13.24	8385000	Y	2.1
HEPT. EPOXIDE	15.39	15.35	15.43	10100000	15.37	9819000	Y	2.8
ENDOSULFAN I	16.67	16.63	16.71	8671000	16.65	8408000	Y	3.0
DIELDRIN	17.81	17.77	17.85	7662000	17.78	7435000	Y	3.0
4,4'-DDE	17.63	17.60	17.66				Y	
ENDRIN	19.13	19.09	19.17				Y	
ENDOSULFAN II	19.82	19.78	19.86	8078000	19.80	7805000	Y	3.4
4,4'-DDD	19.68	19.65	19.71				Y	
ENDO. SULFATE	21.48	21.44	21.52				Y	
4,4'-DDT	20.76	20.72	20.80	7014000	20.74	5871000	Y	16.3
METHOXYCHLOR	23.98	23.94	24.02	4215000	23.96	4069000	Y	3.5
ENDRIN KETONE	24.20	24.16	24.24				Y	
A. CHLORDANE	16.60	16.56	16.64				Y	
G. CHLORDANE	15.99	15.95	16.03				Y	
TOXAPHENE	18.30	18.27	18.33				Y	
AROCLOR-1016	11.91	11.88	11.94				Y	
AROCLOR-1221	12.17	12.14	12.20				Y	
AROCLOR-1232	12.77	12.74	12.80				Y	
AROCLOR-1242	13.53	13.50	13.56				Y	
AROCLOR-1248	15.50	15.47	15.53				Y	
AROCLOR-1254	18.59	18.56	18.62				Y	
AROCLOR-1260	22.11	22.08	22.14				Y	

Under QNT Y/N: enter Y if quantitation was performed, N if not performed.
%D must be less than or equal to 15.0% for quantitation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRQL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

9

PESTICIDE/PCB STANDARDS SUMMARY

PLA 10/21/92

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-002-1 SAS No.: SDG No.: 2595

Instrument ID: 1 GC Column ID: DB-608

DATE(S) OF ANALYSIS	FROM: 09/27/91 TO: 09/27/91	DATE OF ANALYSIS: 09/28/91
TIME(S) OF ANALYSIS	FROM: 1557 TO: 2102	TIME OF ANALYSIS: 1254
		EPA SAMPLE NO. (STANDARD) INDB C3

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
ALPHA-BHC	9.42	9.39	9.45	7829000	9.41	7848000	Y	0.2
BETA-BHC	11.20	11.17	11.23	5526000	11.19	5573000	Y	0.9
DELTA-BHC	12.56	12.52	12.60	7357000	12.54	7337000	Y	0.5
GAMMA-BHC	10.89	10.85	10.93				Y	
HEPTACHLOR	12.06	12.02	12.10				Y	
ALDRIN	13.26	13.22	13.30	8240000	13.24	8176000	Y	0.8
HEPT. EPOXIDE	15.39	15.35	15.43				Y	
ENDOSULFAN I	16.67	16.63	16.71				Y	
DIELDRIN	17.81	17.77	17.85				Y	
4,4'-DDE	17.63	17.60	17.66	6553000	17.62	6516000	Y	0.6
ENDRIN	19.13	19.09	19.17	6866000	19.11	6761000	Y	1.5
ENDOSULFAN II	19.82	19.78	19.86				Y	
4,4'-DDD	19.68	19.65	19.71	5432000	19.67	5439000	Y	0.1
ENDO. SULFATE	21.48	21.44	21.52	8976000	21.46	9039000	Y	0.7
4,4'-DDT	20.76	20.72	20.80				Y	
METHOXYCHLOR	23.98	23.94	24.02				Y	
ENDRIN KETONE	24.20	24.16	24.24	8268000	24.19	8316000	Y	0.6
A. CHLORDANE	16.60	16.56	16.64	7081000	16.58	7069000	Y	0.2
G. CHLORDANE	15.99	15.95	16.03	9015000	15.97	8978000	Y	0.4
TOXAPHENE	18.30	18.27	18.33				Y	
AROCLOR-1016	11.91	11.88	11.94				Y	
AROCLOR-1221	12.17	12.14	12.20				Y	
AROCLOR-1232	12.77	12.74	12.80				Y	
AROCLOR-1242	13.53	13.50	13.56				Y	
AROCLOR-1248	15.50	15.47	15.53				Y	
AROCLOR-1254	18.59	18.56	18.62				Y	
AROCLOR-1260	22.11	22.08	22.14				Y	

Under QNT Y/N: enter Y if quantitation was performed, N if not performed.
%D must be less than or equal to 15.0% for quantitation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRQL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

10

PESTICIDE/PCB IDENTIFICATION

EPA SAMPLE NO.

LCS2595

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

GC Column ID (1): DB-1701 GC Column ID (2): DB-608

Instrument ID (1): 1 Instrument ID (2): 1

Lab Sample ID: LCS2595

Lab File ID: (only if confirmed by GC/MS)

PESTICIDE/PCB	RETENTION TIME		RT WINDOW OF STANDARD From	To	QUANT? (Y/N)	GC/MS? (Y/N)
01GAMMA-BHC	Column 1	10.52	10.53	10.65	N	N
02	Column 2	10.86	10.85	10.93	Y	N
03HEPTACHLOR	Column 1	11.19	11.18	11.30	N	N
04	Column 2	12.03	12.02	12.10	Y	N
05ALDRIN	Column 1	12.11	12.10	12.22	N	N
06	Column 2	13.23	13.22	13.30	Y	N
07DIELDRIN	Column 1	16.68	16.68	16.80	N	N
08	Column 2	17.77	17.77	17.85	Y	N
09ENDRIN	Column 1	17.36	17.35	17.47	N	N
10	Column 2	19.10	19.09	19.17	Y	N
114,4'-DDT	Column 1	19.54	19.53	19.67	N	N
12	Column 2	20.72	20.72	20.80	Y	N

Comments:

10

PESTICIDE/PCB IDENTIFICATION

EPA SAMPLE NO.

B00ZS6MS

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

GC Column ID (1): DB-1701 GC Column ID (2): DB-608

Instrument ID (1): 1 Instrument ID (2): 1

Lab Sample ID: 2595-1MS

Lab File ID: (only if confirmed by GC/MS)

PWL 10/12/92

PESTICIDE/PCB	RETENTION TIME		RT WINDOW OF STANDARD From	To	QUANT? (Y/N)	GC/MS? (Y/N)
01GAMMA-BHC	Column 1	10.52	10.53	10.65	N	N
02	Column 2	10.86	10.85	10.93	Y	N
03HEPTACHLOR	Column 1	11.19	11.18	11.30	N	N
04	Column 2	12.03	12.02	12.10	Y	N
05ALDRIN	Column 1	12.11	12.10	12.22	N	N
06	Column 2	13.23	13.22	13.30	Y	N
07DIELDRIN	Column 1	16.68	16.68	16.80	N	N
08	Column 2	17.77	17.77	17.85	Y	N
09ENDRIN	Column 1	17.36	17.35	17.47	N	N
10	Column 2	19.10	19.09	19.17	Y	N
114,4'-DDT	Column 1	19.53	19.53	19.67	N	N
12	Column 2	20.73	20.72	20.80	Y	N

Comments:

10

PESTICIDE/PCB IDENTIFICATION

EPA SAMPLE NO.

B00ZS6MSD

Lab Name: S-CUBED Contract: 32359-05

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

GC Column ID (1): DB-1701 GC Column ID (2): DB-608

Instrument ID (1): 1 Instrument ID (2): 1

Lab Sample ID: 2595-1MSD

Lab File ID: (only if confirmed by GC/MS)

PESTICIDE/PCB	RETENTION TIME		RT WINDOW OF STANDARD From	To	QUANT? (Y/N)	GC/MS? (Y/N)
01GAMMA-BHC	Column 1	10.53	10.53	10.65	N	N
02	Column 2	10.86	10.85	10.93	Y	N
03HEPTACHLOR	Column 1	11.19	11.18	11.30	N	N
04	Column 2	12.03	12.02	12.10	Y	N
05ALDRIN	Column 1	12.11	12.10	12.22	N	N
06	Column 2	13.23	13.22	13.30	Y	N
07DIELDRIN	Column 1	16.69	16.68	16.80	N	N
08	Column 2	17.77	17.77	17.85	Y	N
09ENDRIN	Column 1	17.36	17.35	17.47	N	N
10	Column 2	19.10	19.09	19.17	Y	N
114,4'-DDT	Column 1	19.54	19.53	19.67	N	N
12	Column 2	20.73	20.72	20.80	Y	N

Comments:

FORM X PEST 1/87 Rev.

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EBS2595

Lab Name: S-CUBED Contract: ~~68-D9-0027~~ 32359-05 DM 10/02/91

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Matrix: (soil/water) SOIL Lab Sample ID: EBS2595

Sample wt/vol: 30.2 (g/mL) G Lab File ID: C0925028

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. 0 dec. Date Extracted: 09/16/91

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 09/28/91

GPC Cleanup: (Y/N) N pH: 0.0 Dilution Factor: 0.500

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.00	U
319-85-7	beta-BHC	4.00	U
319-86-8	delta-BHC	4.00	U
58-89-9	gamma-BHC (Lindane)	4.00	U
76-44-8	Heptachlor	4.00	U
309-00-2	Aldrin	4.00	U
1024-57-3	Heptachlor epoxide	4.00	U
959-98-8	Endosulfan I	4.00	U
60-57-1	Dieldrin	8.00	U
72-55-9	4,4'-DDE	8.00	U
72-20-8	Endrin	8.00	U
33213-65-9	Endosulfan II	8.00	U
72-54-8	4,4'-DDD	8.00	U
1031-07-8	Endosulfan sulfate	8.00	U
50-29-3	4,4'-DDT	8.00	U
72-43-5	Methoxychlor	40.00	U
53494-70-5	Endrin ketone	8.00	U
5103-71-9	alpha-Chlordane	40.00	U
5103-74-2	gamma-Chlordane	40.00	U
8001-35-2	Toxaphene	79.00	U
12674-11-2	Aroclor-1016	40.00	U
11104-28-2	Aroclor-1221	40.00	U
11141-16-5	Aroclor-1232	40.00	U
53469-21-9	Aroclor-1242	40.00	U
12672-29-6	Aroclor-1248	40.00	U
11097-69-1	Aroclor-1254	79.00	U
11096-82-5	Aroclor-1260	79.00	U

10/2/15

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS2595

Lab Name: S-CUBED Contract: ~~68-D9-0027~~ 32359-05 AM 10/12/91

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Matrix: (soil/water) SOIL Lab Sample ID: LCS2595

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C0925029

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. 0 dec. Date Extracted: 09/16/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/28/91

GPC Cleanup: (Y/N) N pH: 0.0 Dilution Factor: 0.500

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.00	U
319-85-7	beta-BHC	4.00	U
319-86-8	delta-BHC	4.00	U
58-89-9	gamma-BHC (Lindane)	28.00	X
76-44-8	Heptachlor	23.00	X
309-00-2	Aldrin	30.00	X
1024-57-3	Heptachlor epoxide	4.00	U
959-98-8	Endosulfan I	4.00	U
60-57-1	Dieldrin	63.00	X
72-55-9	4,4'-DDE	8.00	U
72-20-8	Endrin	66.00	X
33213-65-9	Endosulfan II	8.00	U
72-54-8	4,4'-DDD	8.00	U
1031-07-8	Endosulfan sulfate	8.00	U
50-29-3	4,4'-DDT	41.00	X
72-43-5	Methoxychlor	40.00	U
53494-70-5	Endrin ketone	8.00	U
5103-71-9	alpha-Chlordane	40.00	U
5103-74-2	gamma-Chlordane	40.00	U
8001-35-2	Toxaphene	80.00	U
12674-11-2	Aroclor-1016	40.00	U
11104-28-2	Aroclor-1221	40.00	U
11141-16-5	Aroclor-1232	40.00	U
53469-21-9	Aroclor-1242	40.00	U
12672-29-6	Aroclor-1248	40.00	U
11097-69-1	Aroclor-1254	80.00	U
11096-82-5	Aroclor-1260	80.00	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B00ZS6 MS

Lab Name: S-CUBED Contract: ~~68-D9-0027~~ 32359-05 PM 8/02/91

Lab Code: S3 Case No.: 100-DR-1 SAS No.: SDG No.: 2595

Matrix: (soil/water) SOIL Lab Sample ID: 2595-1 MS

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C0925031

Level: (low/med) LOW Date Received: 09/13/91

% Moisture: not dec. 1 dec.____ Date Extracted: 09/16/91

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 09/28/91

GPC Cleanup: (Y/N) N pH: 8.5 Dilution Factor: 0.500

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.00	U
319-85-7	beta-BHC	4.00	U
319-86-8	delta-BHC	4.00	U
58-89-9	gamma-BHC (Lindane)	28.00	X
76-44-8	Heptachlor	22.00	X
309-00-2	Aldrin	28.00	X
1024-57-3	Heptachlor epoxide	4.00	U
959-98-8	Endosulfan I	4.00	U
60-57-1	Dieldrin	59.00	X
72-55-9	4,4'-DDE	8.10	U
72-20-8	Endrin	60.00	X
33213-65-9	Endosulfan II	8.10	U
72-54-8	4,4'-DDD	8.10	U
1031-07-8	Endosulfan sulfate	8.10	U
50-29-3	4,4'-DDT	34.00	X
72-43-5	Methoxychlor	40.00	U
53494-70-5	Endrin ketone	8.10	U
5103-71-9	alpha-Chlordane	40.00	U
5103-74-2	gamma-Chlordane	40.00	U
8001-35-2	Toxaphene	81.00	U
12674-11-2	Aroclor-1016	40.00	U
11104-28-2	Aroclor-1221	40.00	U
11141-16-5	Aroclor-1232	40.00	U
53469-21-9	Aroclor-1242	40.00	U
12672-29-6	Aroclor-1248	40.00	U
11097-69-1	Aroclor-1254	81.00	U
11096-82-5	Aroclor-1260	81.00	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOOZS6 MSD

Lab Name: S-CUBED Contract: ~~68-D9-0027~~ 32359-05 DM 10/02/91

Lab Code: S3 Case No.: 100-DM SAS No.: SDG No.: 2595

Matrix: (soil/water) SOIL Lab Sample ID: 2595-1 MSD

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C0925035

Level: (low/med) LOW Date Received: 09/13/91

% Moisture: not dec. 1 dec. Date Extracted: 09/16/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/28/91

GPC Cleanup: (Y/N) N pH: 8.5 Dilution Factor: 0.500

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.00	U
319-85-7	beta-BHC	4.00	U
319-86-8	delta-BHC	4.00	U
58-89-9	gamma-BHC (Lindane)	27.00	X
76-44-8	Heptachlor	20.00	X
309-00-2	Aldrin	27.00	X
1024-57-3	Heptachlor epoxide	4.00	U
959-98-8	Endosulfan I	4.00	U
60-57-1	Dieldrin	56.00	X
72-55-9	4,4'-DDE	8.10	U
72-20-8	Endrin	53.00	X
33213-65-9	Endosulfan II	8.10	U
72-54-8	4,4'-DDD	8.10	U
1031-07-8	Endosulfan sulfate	8.10	U
50-29-3	4,4'-DDT	30.00	X
72-43-5	Methoxychlor	40.00	U
53494-70-5	Endrin ketone	8.10	U
5103-71-9	alpha-Chlordane	40.00	U
5103-74-2	gamma-Chlordane	40.00	U
8001-35-2	Toxaphene	81.00	U
12674-11-2	Aroclor-1016	40.00	U
11104-28-2	Aroclor-1221	40.00	U
11141-16-5	Aroclor-1232	40.00	U
53469-21-9	Aroclor-1242	40.00	U
12672-29-6	Aroclor-1248	40.00	U
11097-69-1	Aroclor-1254	81.00	U
11096-82-5	Aroclor-1260	81.00	U

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator Jonathan G. Lucas

Company Contact Mike Stankovich Telephone (509) 376-2493

Project Designation/Sampling Locations 100-DR-1 PCB Soil Sampling Collection Date 9-11-91

Ice Chest No. RH # 35 Field Logbook No.

Bill of Lading/Airbill No. 2474252242 Offsite Property No. W91-0-05

Method of Shipment Emery

Shipped to S-Cubed

Possible Sample Hazards/Remarks —

Sample Identification

B00ZS6 - Soil

☐ Field Transfer of Custody

CHAIN OF POSSESSION (Sign and Print Names)		
Relinquished by: Jonathan G. Lucas Jonathan G. Lucas	Received by: T. Dixon Rec'd for Lab	Date/Time: 9/13/91 2pm
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:

A-6000-407 (12/90)

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector J.G. Lucas / C.E. Heiden Date Sampled 9-11-91 Time — hours

Company Contact Mike Stankovich Telephone (509) 376-2493

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B00Z S6	(1) 120 ml glass	Soil	VOA - Method 8240
↓	(1) 250 ml glass	Soil	Semi-VOA, PCBs - Methods 8270 & 8080

Field Information** —

Special Handling and/or Storage —

Possible Sample Hazards —

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

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

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

A-6000-406 (05/90)

EMERY WORLDWIDE

A CF Company

SIGNATURE AND TALLY RECORD

60029-46 (8/88) Litho USA

(94)

DATE: 09-12-91 SHIPMENT NO.: BB 247425224 2

SHIPPER: WESTINGHOUSE SHIPPING DEPT (509) 376-6665

REFERENCE NO.: W91-0-0572

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	JOHN DEWALD S-CUBED 3398 CARMEL MT. ROAD SAN DIEGO CA 92121-1095

Pieces	Weight	Description/Marks	Emery Authorization No.
1	75 LBS	B00256 W91-0-0572 ICE CHEST #35 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
	MARK W BRYANT WESTINGHOUSE SHIPPING 1167/1100	RICHLAND WA		/09-12-91
2.				
3.				
4.				
5.				
6.	J. PRICE	SAN		
7.				
8.				

SPECIAL HANDLING INSTRUCTIONS

CONSIGNEE COPY

FORM OF PAYMENT

CASH ☐ GBL CBL ☐ FCCOD ☐

PPD [X] COL ☐ OTH ☐ COMAT ☐

EMERY WORLDWIDE — A CF Company

SERVICES

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

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

PULL FOR SHPT. NO. TAB

E Shipper's Account Number: 850281585

Date	Origin	Shipment Number
09-12-91	PSC	247425224 2

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

To:
JOHN DEWALD
S-CUBED
3398 CARMEL MT. ROAD
SAN DIEGO CA 92121-1095
Hold for Pick Up ☐ Canada ☐

Tariff Dest. | Gateway

Check to Shipper $

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 Numbers: W81220 E84C8 W91-0-0572

Zip: 99352

E Consignee's Account Number

Zip: 92121-1095

Description	Pcs	L	W	H	Total Pieces	Total Weight (In Lbs)
1 POLY ICE CHEST #35 B00256 SOIL SAMPLES W91-0-0572	1	1	1	1	1	75

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

Declared Value $

247425224 2

TODSR ☐ Haz Mat ☐ Edit ☐ A B C D E F G H I J K

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

OVERNIGHT DELIVERY
SIGNATURE SECURITY SERVICE

Envelope 9X12 ☐ Pak 12X15 ☐

Shipper's Signature X Michael Wright

International Shipments: Free Domicile ☐ Commodity Code

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

Bass Charge

International Customs Value | International Insurance

Total Transportation Charges

Other Charges/Advance at Origin ☐ OC/AO $

SANA

Terms and Conditions on Back

CONSIGNEE — PACKAGE COPY — 4

9 Jan 00

PESTICIDE/PCB DATA VALIDATION CHECKLIST - FORM A-3

PROJECT: WHC Data Validation	REVIEWER: [illegible]	DATE: 10/21/92
LABORATORY: S-Cubed	CASE: 100-DR-1	SDG: B00ZS6
SAMPLES/MATRIX: One soil - B00ZS6		

1. DATA PACKAGE COMPLETENESS

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for re-submittal.

Data Package Item	Present?:	Yes	No	N/A
Case Narrative		✓		
Data Summary		✓		
Chain-of-Custody		✓		
QC Summary				
Surrogate report		✓		
MS/MSD report		✓		
Blank summary report		✓		
Sample Data				
Sample reports		✓		
Chromatograms		✓		
GC integration reports		✓		
Worksheets				✓
UV traces from GPC				✓
GC/MS confirmation spectra				✓
Standards Data				
Pesticides Evaluation Standards Summary		✓		
Pesticides/PCB Standards Summary		✓		
Pesticides/PCB identification		✓		
Pesticides standard chromatograms		✓		
Raw QC Data				
Blank analysis report forms and chromatograms		✓		
MS/MSD report forms and chromatograms		✓		

Data Package Item	Present?: Yes	No	N/A
Additional Data			
Moisture/% solids data sheets	✓		
Reduction formulae	✓		
Instrument time logs			✓
Chemist notebook pages			✓
Sample preparation sheets		✓	

2. HOLDING TIMES

Were all samples extracted within holding time? (Yes) No N/A

Were all samples analyzed within holding time? (Yes) No N/A

ACTION: If any holding times were exceeded, but not by greater than a factor of two, qualify associated samples as estimated (J for detects or UJ for nondetects), otherwise reject all nondetects (R) and qualify all associated detects as estimated (J).

3. INSTRUMENT PERFORMANCE AND CALIBRATIONS

3.1 INSTRUMENT PERFORMANCE (2/88 SOW)

Are DDT retention times greater than 12 minutes? (Yes) No N/A

ACTION: If DDT retention time is $\leq$12 minutes and resolution is <25% qualify associated data as unusable (R).

Is resolution between DDT peaks acceptable? (Yes) No N/A

ACTION: If resolution between DDT peaks is unacceptable qualify associated data as unusable (R).

Do all pesticide standards elute within the established retention time windows? (Yes) No N/A

ACTION: If the standards do not meet the retention time criteria and peaks are not present near or within the retention time windows no sample qualification is necessary. If peaks are near or within the retention time windows and the standards and matrix spikes do not fall within the expanded retention time windows calculated according to the validation requirements, qualify all associated sample results from the last in-control point as unusable (R).

Are DDT breakdowns $\leq$20%? (Yes) No N/A

ACTION: If the DDT percent breakdown exceeds 20%, qualify all detected results for DDT as estimated (J) and all nondetects as unusable (R) if DDD and DDE are detected. In addition qualify all results for DDD or DDE as presumptive and estimated (NJ).

Are endrin breakdowns $\leq$20%? (Yes) No N/A

ACTION: If the endrin breakdown exceeds 20%, qualify all detected results for endrin as estimated (J) and all nondetects as unusable (R) if endrin aldehyde or endrin ketone are detected. In addition, qualify all results for endrin ketone as presumptive and estimated (NJ).

Are DBC retention time differences within specification?	Yes	No	N/A

ACTION: If DBC %D values are outside the limits and the shift is ocurring repeatedly in samples and standards, qualify affected sample results as unusable (R).

3.2 CALIBRATIONS (2/88 SOW)

Are RSD values for aldrin, endrin, DDT and DBC ≤ 10%?	Yes	No	N/A
Have all standards been analyzed within 72 h of any sample?	Yes	No	N/A
Has a 3-point calibration been conducted for DDT or toxaphene?	Yes	No	N/A
Have all standards been analyzed at the start of each 72-h sequence?	Yes	No	N/A
Have evaluation standards A, B, and C been analyzed within 72 h of any sample?	Yes	No	N/A
Has the confirmation standard mix been analyzed after every five samples?	Yes	No	N/A
Has evaluation standard B analyzed every 10 samples?	Yes	No	N/A
Are %D values for initial and subsequent standards ≤15% for quantitation standards and ≤20% for confirmation standards?	Yes	No	N/A

ACTION: If the RSD criteria were exceeded or three point calibrations not conducted qualify associated detects as estimated (J). If all standards were not analyzed at the beginning of each 72-h sequence qualify associated data as unusable (R). If the confirmation standards were not analyzed properly qualify associated detects as estimated (J). If the continuing calibration criteria were not met qualify associated quantitation data as estimated (J).

3.3 INSTRUMENT PERFORMANCE AND INITIAL CALIBRATION (3/90 SOW)

Is peak resolution acceptable? Yes No N/A

ACTION: If the resolution criteria are not met, reject positive sample results generated after initial calibration (R).

Are DDT and endrin breakdowns ≤20.0% Yes No N/A

ACTION: If the breakdown criteria are not met qualify sample results as described in Section 5.3.1 of the validation requirements.

Are single component target compounds in the PEMs, INDA, INDB and the calibration standards within the retention time windows? Yes No N/A

ACTION: If the retention time criteria are not met and no peaks are present in the samples within two times the retention time windows (±0.04, ±0.05 for methoxychlor), no qualification is necessary. If peaks are present in samples within the retention time window a review is made of the raw data to determine expanded retention time windows (see Section 5.3.1 of the validation requirements). If all standards and matrix spikes fall within the expanded windows then no qualification of sample results is necessary. If all standards and matrix spikes do not fall within the expanded windows then all affected sample results are qualified as unusable (R).

Are the RPDs acceptable for the PEMs? Yes No N/A

ACTION: If the RPD criteria are not met qualify associated positive sample results as estimated (J).

Are the RSDs for the calibration factors < 10.0% (< 15.0% for the BHC series, DDT, endrin, and methoxychlor)? Yes No N/A

ACTION: If the RSD criteria are not met qualify associated positive sample results as estimated (J).

3.4 CALIBRATION VERIFICATION (3/90 SOW)

Have the analytical sequence requirements been met for the analysis of instrument blanks, PEMs, INDA and INDB mixes? Yes No N/A

ACTION: If the analytical sequence requirements are not followed and any of the resolution or retention time criteria listed below are exceeded, reject associated positive results (R).

Is peak resolution acceptable for PEMs, INDA and INDB mixes? Yes No N/A

ACTION: If the resolution criteria are not met reject positive sample results generated after a noncompliant standard analysis (R).

Are single component target compounds in the PEMs, INDA and INDB mixes within the retention time windows? Yes No N/A

ACTION: If the retention time criteria are not met and no peaks are present in the samples analyzed after the noncompliant standard within two times the retention time windows (±0.04, ±0.05 for methoxychlor), no qualification is necessary. If peaks are present in samples within the expanded windows rejected associated positive and nondetect results (R).

Are RPDs between the calculated and true amounts in the PEMs, INDA and INDB mixes ≤25.0%?	Yes	No	N/A

ACTION: If the RPD criteria are not met qualify associated positive sample results as estimated (J).

Are DDT and endrin breakdowns in the PEMs ≤20.0% (≤30.0% total combined)?	Yes	No	N/A

ACTION: If the breakdown criteria are not met qualify associated positive sample results in accordance with the criteria specified in Section 5.3.1.

4. BLANKS

4.1 LABORATORY BLANKS

Has the laboratory analyzed the method blanks at the required frequency?	Yes	No	N/A
Has the laboratory analyzed a sulfur clean-up blank if required?	Yes	No	N/A
Has the laboratory analyzed instrument blanks at the required frequency?	Yes	No	N/A
Are target compounds present in the blanks?	Yes	No	N/A

ACTION: Qualify all associated positive results as nondetects (U) that are <5 times the highest concentration in any acceptable blank.

4.2 FIELD BLANKS

Are target compounds present in the field blanks?	Yes	No	N/A

ACTION: If target compounds are present in the field blanks qualify all positive sample results <5 times the highest valid field blank concentrations as nondetects (U) and note the results in the validation narrative.

5. ACCURACY

5.1 SURROGATE RECOVERY

Are any surrogate recoveries out of specification?	Yes	(No)	N/A
Do any samples show non-detects for surrogates?	Yes	(No)	N/A
Are any method blank surrogates out of specification?	Yes	(No)	N/A

ACTION: Qualify all associated sample results as estimated (J for detects and UJ for non-detects) for surrogates out of specification. If the surrogate was not detected (0% recovery) in the sample qualify associated non-detects as unusable (R). If method blank surrogates are out of specification and sample surrogates are acceptable, no qualification is required however, the laboratory should be contacted for an explanation.

5.2 MATRIX SPIKE RECOVERY

Has the laboratory analyzed a MS/MSD per matrix for the the sample group?	(Yes)	No	N/A
Are MS/MSD recoveries within specification?	(Yes)	No	N/A
Are there any calculation or transcription errors?	Yes	(No)	N/A

ACTION: If MS/MSD analyses have not been conducted contact the laboratory for clarification. Review the MS/MSD recoveries in conjunction with other QC data such as surrogate recoveries and note the results in the validation narrative. If MS/MSD recoveries are out of specification and sample concentration is greater than five times the spike concentration, no qualification is required, otherwise qualify results as follows: Qualify positive results as estimated (J) in all samples if associated surrogates are also out of specification. The qualification shall only be done on samples of similar matrix as the MS/MSD samples. If it is determined from the review that only the spiked samples are affected by the low recoveries, qualify only the results for the spiked sample as described above. If it is determined from the review that out of specification MS/MSD recoveries are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

5.3 PERFORMANCE AUDIT SAMPLES

Are performance audit sample results within the acceptance limits?	Yes	No	(N/A)

ACTION: Note the results of the performance audit samples in the validation narrative.

6. PRECISION

6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLES

Are the RPD values within specification? Yes No N/A

ACTION: Review the MS/MSD results in conjunction with other QC data such as field duplicates and note the results in the validation narrative. If MS/MSD RPD values are out of specification and sample results are greater than five times the CRQL qualify positive results as estimated (J). If it is determined from the review that out of specification MS/MSD results are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

6.2 FIELD DUPLICATE SAMPLES

Are field duplicate RPD values acceptable? Yes No N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

6.3 FIELD SPLIT SAMPLES

Are field split RPD values acceptable? Yes No N/A

ACTION: Note the results of the field split samples in the validation narrative.

7. COMPOUND IDENTIFICATION AND QUANTITATION

7.1 COMPOUND IDENTIFICATION

Do positive results meet the retention time window criteria? Yes No N/A

Were positive results analyzed on disimilar columns? Yes No N/A

If dieldrin and DDE were reported was a 3% OV-1 column used for confirmation (2/88 SOW data only)? Yes No N/A

Do retention times and relative peak height ratios match the expected patterns for multipeak compounds (PCB, toxaphene or chlordane)? Yes No N/A

Has GC/MS confirmation been conducted on sample extract concentrations > 10 ppm? Yes No N/A

ACTION: If positive results do not meet the retention time criteria qualify all detected results as nondetects as follows: If the misidentified peak is outside the retention time windows and no interferences are noted report the CRQL and if the misidentified peak interferes with a target peak then the report value is qualified as estimated and nondetected (UJ). If positive results were not confirmed on disimilar columns, reject affected results (R). If a 3% OV-1 was used to confirm dieldrin and DDE, reject the affected data (R). If PCB, chlordane or toxaphene identification is questionable qualify the results as presumptive and estimated (NJ). If GC/MS confirmation was not conducted contact the laboratory for explanation and note in the validation narrative.

7.2 REPORTED RESULTS AND QUANTITATION LIMITS

Are results and quantitation limits calculated properly?	Yes	No	N/A
Has the laboratory reported the sample quantitation limits within 5xCRQL values?	Yes	No	N/A

ACTION: If results and quantitation limits are in error contact the laboratory for clarification and note in the validation narrative.

8. OVERALL ASSESSMENT AND SUMMARY

Has the laboratory conducted the analysis in accordance with the analytical SOW?	Yes	No	N/A
Were project specific data quality objectives met for this analysis?	Yes	No	N/A

ACTION: Summarize all the data qualifications and complete the data validation narrative as specified in Section 10.0 of the data validation requirements.

COMMENTS (attach additional sheets as necessary):

1) Instrument blanks have not been included in the data package. Action: Call lab to clarify if instrument blanks were or were not run. If they were run, have lab submit data. If not, qualify data accordingly.

2) % D for 4,4'-DDT was >15% for quantitation purposes. Therefore, Sample E00ZS6 was flagged with a "J" for 4,4'-DDT.

SEMI-VOLATILE ORGANIC DATA VALIDATION CHECKLIST - FORM A-2

PROJECT: WHC Data Validation	REVIEWER: RMA	DATE: 10/20/92
LABORATORY: S-Cubed	CASE: 100-DR-1	SDG: B00ZS6
SAMPLES/MATRIX: One soil - B00ZS6		

1. DATA PACKAGE COMPLETENESS

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for submittal.

Data Package Item	Present?: Yes	No	N/A
Case Narrative	✓		
Data Summary	✓		
Chain-of-Custody	✓		
QC Summary			
Surrogate report	✓		
MS/MSD report	✓		
Blank summary report	✓		
GC/MS tuning report	✓		
Internal standard summary report	✓		
Sample Data			
Sample reports	✓		
TIC reports for each sample	✓		
RIC reports for all samples	✓		
Raw and corrected spectra for all detected results	✓		
Raw and corrected library search data for all reported TIC	✓		
Quantitation and calculation data for all TIC	✓		
Standards Data			
Initial calibration report	✓		
RIC and quantitation reports for initial calibration	✓		
Continuing calibration reports	✓		
RIC and quantitation reports for cont. calibrations	✓		
Internal standard summary report	✓		
Raw QC Data			
Tuning report, spectra and mass lists	✓		
Blank analysis reports	✓		
TIC reports for all blanks	✓		
RIC and quantitation reports for blanks	✓		
Raw and corrected spectra for all detected results in blanks			✓
Raw and corrected library search data for all reported TIC	✓		
Quantitation and calculation data for all TIC	✓		
MS/MSD report forms	✓		

Data Package Item	Present?: Yes	No	N/A
RIC and quantitation reports for MS/MSD	✓		
Additional Data			
Moisture/% solids data sheets	✓		
Reduction formulae	✓		
Instrument time logs			✓
Chemist notebook pages			✓
Sample preparation sheets		✓	

2. HOLDING TIMES

Were all samples extracted within holding time?	(Yes)	No	N/A
Were all samples analyzed within holding time?	(Yes)	No	N/A

ACTION: If any holding times were exceeded, but not by greater than a factor of two, qualify associated samples as estimated (J for detects or UJ for non-detects), otherwise reject all non-detects (R) and qualify all associated detects as estimated (J).

3. INSTRUMENT CALIBRATION, TUNING AND PERFORMANCE CHECKS

3.1 GC/MS TUNING AND PERFORMANCE CHECKS

Is a DFTPP tune report present for each applicable 12h period?	(Yes)	No	N/A
Do all tunes on all instruments meet the tuning criteria?	(Yes)	No	N/A
Do all tunes on all instruments meet the expanded criteria?	(Yes)	No	N/A
Has the laboratory made any calculation or transciption errors?	Yes	(No)	N/A
Have the proper significant figures been reported?	(Yes)	No	N/A

ACTION: If the mass calibration is out of specification but within the expanded criteria, qualify associated data as estimated (J for detects and UJ for non-detects). If all tuning criteria are not met, qualify all associated data as unusable (R).

3.2 INITIAL CALIBRATION

Is an initial calibration report provided for all instruments?	(Yes)	No	N/A
Are all RSD values ≤30% (2/88 SOW)?	Yes	No	(N/A)
Are all RRF values ≥0.05 (2/88 SOW)?	Yes	No	(N/A)
Are all applicable RSD values ≤20.5% (3/90 SOW)?	Yes	(No)	N/A
Are all applicable RSD values ≤40% (3/90 SOW)?	(Yes)	No	N/A

Are all applicable RRF values within SOW limits (3/90 SOW)?	Yes	No	N/A
Are all erratic performance compound RRF values ≥0.01 (3/90 SOW)?	Yes	No	N/A

ACTION: With the exception of compounds that exhibit erratic performance and making allowances for up to four TCL compounds or surrogates, if any RRF value is out of specification qualify all detected results for the particular compound as estimated (J) and all non-detects as unusable (R). Making allowances for up to four TCL compounds or surrogates, if any RSD value is out of specification qualify all associated data as estimated (J for detects or UJ for non-detects).

3.3. CONTINUING CALIBRATION

Is a continuing calibration report present for all 12h periods in which associated samples were analyzed?	Yes	No	N/A
Are all RRF values ≥0.05 (2/88 SOW)?	Yes	No	N/A
Are all %D values ≤25% (2/88 or 3/90 SOW)?	Yes	No	N/A
Are all %D values ≤40% (3/90 SOW)?	Yes	No	N/A
Are all RRF values within SOW limits (3/90 SOW)?	Yes	No	N/A
Are all erratic performance compound RRF values ≥0.01 (3/90 SOW)?	Yes	No	N/A

ACTION: With the exception of compounds that exhibit erratic performance and making allowances for up to four TCL compounds or surrogates, if any RRF value is out of specification qualify all associated detected results as estimated and all non-detects as unusable (R). Making allowances for up to four TCL compounds or surrogates, if any %D is out of specification, qualify all associated results as estimated (J for detects or UJ for non-detects).

4. BLANKS

4.1 LABORATORY BLANKS

Has the laboratory conducted a method blank analysis per matrix for every extraction batch?	Yes	No	N/A
Are compounds reported in the laboratory blanks?	Yes	No	N/A

ACTION: Qualify all sample results < 10X the highest blank concentration for the common laboratory contaminants, as non-detects (U) or at the SQL if the result is < CRQL. Qualify all remaining sample results < 5X the blank concentration in similar fashion.

4.2. FIELD BLANKS

Are compounds reported in the field blanks? Yes No (N/A)

ACTION: Qualify all detected sample results ≤ 5 times the amount in any valid field blank as nondetects (U) and note the results of the field blanks in the validation narrative.

5. ACCURACY

5.1 SURROGATE RECOVERY/SYSTEM MONITORING COMPOUND RECOVERY

Are any surrogate recoveries out of specification? Yes (No) N/A

Are any surrogate recoveries <10%? Yes (No) N/A

Are any method blank surrogate recoveries out of specification? Yes (No) N/A

ACTION: Qualify all associated data as estimated (J for detects and UJ for nondetects) if at least two semivolatile surrogates are out of specification. If any surrogate is below 10% recovery qualify associated detected results as estimated (J) and associated nondetect results as unusable (R). If method blank surrogates are out of specification and associated sample surrogates are acceptable no qualification is required, however, the laboratory should be contacted for an explanation.

5.2 MATRIX SPIKE RECOVERY

Has an MS/MSD analysis been conducted per matrix in the sample group? (Yes) No N/A

Are MS/MSD recoveries within specification? (Yes) No N/A

Are there any calculation errors? Yes (No) N/A

ACTION: If an MS/MSD analysis has not been conducted contact the laboratory for an explanation. Review the MS/MSD recoveries in conjunction with other QC data such as surrogate recoveries and note the results in the validation narrative. If MS/MSD recoveries are out of specification and sample concentration is >5 times the spike concentration, no qualification is required, otherwise qualify results as follows: Qualify positive results for the specific class of compound (aromatics and non-aromatics) as estimated (J) in all samples if associated surrogates are also out of specification. The qualification shall only be done on samples of similar matrix as the MS/MSD samples. If it is determined from the review that only the spiked samples are affected by low recoveries, qualify only the results for the spiked sample as described above. If it is determined from the review that out of specification MS/MSD recoveries are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

5.3 PERFORMANCE AUDIT SAMPLES

Are the results for the performance audit samples within the acceptance limits? Yes No N/A

ACTION: Note the results of the performance audit samples in the validation narrative.

6. PRECISION

6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATES

Are all RPD values within specification? Yes No N/A

Are there any calculation errors? Yes No N/A

ACTION: Review the MS/MSD results in conjunction with other QC data such as field duplicates and note the results in the validation narrative. If MS/MSD RPDs are out of specification and sample results are >5xCRQL qualify positive results for the specific class of compound (aromatics and non-aromatics) as estimated (J). If it is determined from the review that out of specification MS/MSD results are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

6.2 FIELD DUPLICATE SAMPLES

Are field duplicate RPD values acceptable? Yes No N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

6.3 FIELD SPLIT SAMPLES

Are field split RPD values acceptable? Yes No N/A

ACTION: Note the results of the field split samples in the validation narrative.

7. SYSTEM PERFORMANCE

7.1 INTERNAL STANDARDS PERFORMANCE

Are any internal standard area counts outside the acceptance limits? Yes No N/A

Are retention times for any internal standard outside the ±30 second windows established by the most recent calibration check? Yes No N/A

ACTION: If the area counts are outside the acceptance limits qualify all associated results as estimated (J for detects and UJ for nondetects. If it is determined from the review that out of specification area counts and relative retention times are indicative of systematic problems within the laboratory the reviewer may consider rejection of all affected sample data (R).

8. COMPOUND IDENTIFICATION AND QUANTITATION

8.1 COMPOUND IDENTIFICATION

Are detected compounds within ±0.06 relative retention time units of the associated calibration standard?	Yes	(No)	N/A
Are all ions at a relative intensity of ≥10% in the standard spectra present in the sample spectra?	(Yes)	No	N/A
Do the relative intensities between the standard and sample spectra agree within 20%?	(Yes)	No	N/A
Have all ions > 10% in the sample spectra that are not present in the standard spectra been reviewed for possible background contamination?	Yes	No	(N/A)
Are molecular ions in the reference spectrum present in the sample spectrum?	(Yes)	No	N/A

ACTION: If compound identification is in error and retention time and mass spectral criteria are exceeded qualify all affected positive results as unusable (R). If cross-contamination between analyses is suspected, qualify affected data as unusable (R).

8.2 REPORTED RESULTS AND QUANTITATION LIMITS

Has the laboratory used the correct RRF values and internal standards for quantitation?	(Yes)	No	N/A
Are results and quantitation limits calculated properly?	(Yes)	No	N/A
Has the laboratory reported the sample quantitation limits within 5xCRQL values?	(Yes)	No	N/A

ACTION: If the quantitation limits are in error contact the laboratory for clarification and note in the validation narrative.

8.3 TENTATIVELY IDENTIFIED COMPOUNDS

Has the laboratory conducted a spectral library search on all candidate TIC peaks in accordance with the analytical SOW?	(Yes)	No	N/A
Has the laboratory properly identified and coded all TIC?	(Yes)	No	N/A

ACTION: If the laboratory has failed to search the minimum number of TIC peaks in the chromatogram contact the laboratory for submittal of the required data. Qualify as nondetects (U) all TIC compounds present in samples and blanks using the review criteria specified in the validation requirements. If TIC identification is in error sample results should be qualified as nondetects (U) or unusable (R). If TIC identifications are judged valid, qualify the results as presumptive and estimated (JN).

VOLATILE ORGANIC DATA VALIDATION CHECKLIST - FORM A-1

PROJECT: WHC Data Validation	REVIEWER:	DATE: 10/19/92
LABORATORY: S-Cubed	CASE: 100-DR-1	SDG: B00ZS6
SAMPLES/MATRIX: One soil - B00ZS6		

1. DATA PACKAGE COMPLETENESS

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for submittal.

Data Package Item	Present?: Yes	No	N/A
Case Narrative	✓		
Data Summary	✓		
Chain-of-Custody	✓		
QC Summary			
Surrogate report	✓		
MS/MSD report	✓		
Blank summary report	✓		
GC/MS tuning report	✓		
Internal standard summary report	✓		
Sample Data			
Sample reports	✓		
TIC reports for each sample			✓
RIC reports for all samples	✓		
Raw and corrected spectra for all detected results	✓		
Raw and corrected library search data for all reported TIC			✓
Quantitation and calculation data for all TIC			✓
Standards Data			
Initial calibration report	✓		
RIC and quantitation reports for initial calibration	✓		
Continuing calibration reports	✓		
RIC and quantitation reports for cont. calibrations	✓		
Internal standard summary report	✓		
Raw QC Data			
Tuning report, spectra and mass lists	✓		
Blank analysis reports	✓		
TIC reports for all blanks			✓
RIC and quantitation reports for blanks	✓		
Raw and corrected spectra for all detected results in blanks	✓		
Raw and corrected library search data for all reported TIC			✓

Data Package Item	Present?: Yes	No	N/A
Quantitation and calculation data for all TIC			✓
MS/MSD report forms	✓		
RIC and quantitation reports for MS/MSD	✓		
Additional Data			
Moisture/% solids data sheets	✓		
Reduction formulae	✓		
Instrument time logs			✓
Chemist notebook pages			✓
Sample preparation sheets			✓

2. HOLDING TIMES

Complete the holding time summary form listing all samples and dates of collection and analysis.

Were all samples analyzed within holding time? (Yes) No N/A

ACTION: If any holding times were exceeded, but not by greater than a factor of two, qualify associated samples as estimated (J for detects or UJ for non-detects), otherwise reject all non-detects (R) and qualify all associated detects as estimated (J).

3. INSTRUMENT CALIBRATION, TUNING AND PERFORMANCE CHECKS

3.1 GC/MS TUNING AND PERFORMANCE CHECKS

Is a BFB tune report present for each applicable 12h period? (Yes) No N/A

Do all tunes on all instruments meet the tuning criteria? (Yes) No N/A

Do all tunes on all instruments meet the expanded criteria? (Yes) No N/A

Has the laboratory made any calculation or transciption errors? Yes (No) N/A

Have the proper significant figures been reported? (Yes) No N/A

ACTION: If the mass calibration is out of specification but within the expanded criteria, qualify associated data as estimated (J for detects or UJ for non-detects). If all tuning criteria are missed, qualify all associated data as unusable (R).

3.2 INITIAL CALIBRATION

Is an initial calibration report provided for all instruments? (Yes) No N/A

Are all RSD values ≤30% (2/88 SOW)? Yes No (N/A)

Are all RRF values ≥0.05 (2/88 SOW)? Yes No (N/A)

Are all applicable RSD values ≤20.5% (3/90 SOW)?	Yes	No	N/A
Are all applicable RSD values ≤40% (3/90 SOW)?	Yes	No	N/A
Are all applicable RRF values within SOW limits (3/90 SOW)?	Yes	No	N/A
Are all erratic performance compound RRF values ≥0.01 (3/90 SOW)?	Yes	No	N/A

ACTION: With the exception of compounds that exhibit erratic performance and making allowances for up to two TCL compounds, if any RRF value is out of specification qualify all detected results for the particular compound as estimated (J) and all non-detects as unusable (R). Making allowances for up to two TCL compounds, if any RSD value is out of specification qualify all associated data as estimated (J for detects or UJ for non-detects).

3.3. CONTINUING CALIBRATION

Is a continuing calibration report present for all 12h periods in which associated samples were analyzed ?	Yes	No	N/A
Are all RRF values ≥0.05 (2/88 SOW)?	Yes	No	N/A
Are all %D values ≤25% (2/88 or 3/90 SOW)?	Yes	No	N/A
Are all %D values ≤40% (3/90 SOW)?	Yes	No	N/A
Are all RRF values within SOW limits (3/90 SOW)?	Yes	No	N/A
Are all erratic performance compound RRF values ≥0.01 (3/90 SOW)?	Yes	No	N/A

ACTION: With the exception of compounds that exhibit erratic performance and making allowances for up to two TCL compounds, if any RRF value is out of specification qualify all associated detected results as estimated and all non-detects as unusable (R). Making allowances for up to two TCL compounds, if any %D is out of specification, qualify all associated results as estimated (J for detects or UJ for non-detects).

4. BLANKS

4.1 LABORATORY BLANKS

Has the laboratory conducted a method blank analysis per matrix for every 12h period in which samples were analyzed?	Yes	No	N/A
Are TCL compounds present in the laboratory blanks?	Yes	No	N/A

ACTION: Qualify all sample results < 10X the highest blank concentration for the common laboratory contaminants, as non-detects (U) or at the SQL if the result is < CRQL. Qualify all remaining sample results <5X the blank concentration in similar fashion.

4.2. FIELD BLANKS

Are TCL compounds present in the field blanks? Yes No (N/A)

ACTION: Qualify all detected sample results ≤5 times the amount in any valid field blank as nondetects (U) and note the field blank results in the validation narrative.

5. ACCURACY

5.1 SURROGATE/SYSTEM MONITORING COMPOUND RECOVERY

Are any surrogate recoveries out of specification?	(Yes)	No	N/A
Are any surrogate recoveries < 10%?	Yes	(No)	N/A
Are any method blank surrogate recoveries out of specification?	Yes	(No)	N/A

ACTION: Qualify all associated sample results as estimated (J for detects or UJ for nondetects) for surrogates out of specification but > 10%. Qualify all associated positive sample results as estimated (J) and all nondetect results as unusable (R) for all surrogates below 10%. If method blank surrogates are out of specification and the associated sample surrogates are acceptable no qualification is necessary, however, the laboratory should be contacted for an explanation.

5.2 MATRIX SPIKE RECOVERY

Has an MS/MSD analysis been conducted per matrix in the sample group?	(Yes)	No	N/A
Are MS/MSD recoveries within specification?	(Yes)	No	N/A
Are there any calculation errors?	Yes	(No)	N/A

ACTION: If an MS/MSD analysis has not been conducted contact the laboratory for an explanation. Review the MS/MSD recoveries in conjunction with other QC data such as surrogate recoveries and note the results in the validation narrative. If MS/MSD recoveries are out of specification and sample concentration is >5 times the spike concentration, no qualification is required, otherwise qualify results as follows: Qualify positive results for the specific class of compound (aromatics and non-aromatics) as estimated (J) in all samples if associated surrogates are also out of specification. The qualification shall only be done on samples of similar matrix as the MS/MSD samples. If it is determined from the review that only the spiked samples are affected by low recoveries, qualify only the results for the spiked sample as described above. If it is determined from the review that out of specification MS/MSD recoveries are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

5.3 PERFORMANCE AUDIT SAMPLES

Are the performance audit sample results within the acceptance limits? Yes No N/A

ACTION: Note the results of the performance audit sample in the validation narrative.

6. PRECISION

6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATES

Are RPD values within specification? Yes No N/A

Are there any calculation errors? Yes No N/A

ACTION: Review the MS/MSD results in conjunction with other QC data such as field duplicates and note the results in the validation narrative. If MS/MSD RPDs are out of specification and sample results are >5xCRQL qualify positive results for the specific class of compound (aromatics and non-aromatics) as estimated (J). If it is determined from the review that out of specification MS/MSD results are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

6.2 FIELD DUPLICATE SAMPLES

Are field duplicate RPD values acceptable? Yes No N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

6.3 FIELD SPLIT SAMPLES

Are field split RPD values acceptable? Yes No N/A

ACTION: Note the results of the field split samples in the validation narrative.

7. SYSTEM PERFORMANCE

7.1 INTERNAL STANDARDS PERFORMANCE

Are any internal standard area counts outside the acceptance limits? Yes No N/A

Are retention times for any internal standard outside the ±30 second windows established by the most recent calibration check? Yes No N/A

ACTION: If the area counts are outside the acceptance limits qualify all associated results as estimated (J for detects or UJ for nondetects). If it is determined from the review that out of specification area counts and relative retention times are indicative of systematic problems within the laboratory the reviewer may consider rejection of all affected sample data (R).

8. COMPOUND IDENTIFICATION AND QUANTITATION

8.1 COMPOUND IDENTIFICATION

Are detected compounds within ±0.06 relative retention time units of the associated calibration standard?	Yes	No	N/A
Are all ions at a relative intensity of ≥10% in the standard spectra present in the sample spectra?	Yes	No	N/A
Do the relative intensities between the standard and sample spectra agree within 20%?	Yes	No	N/A
Have all ions > 10% in the sample spectra that are not present in the standard spectra been reviewed for possible background contamination?	Yes	No	N/A
Are molecular ions present in the reference specrum present in the sample spectrum?	Yes	No	N/A

ACTION: If compound identification is in error and retention time and mass spectral criteria are exceeded qualify all affected positive results as unusable (R). If cross-contamination between analyses is suspected, qualify affected data as unusable (R). Note the results in the validation narrative.

8.2 REPORTED RESULTS AND QUANTITATION LIMITS

Has the laboratory used the correct RRF values and internal standard(s) for quantitation?	Yes	No	N/A
Are results and quantitation limits calculated properly?	Yes	No	N/A
Has the laboratory reported the sample quantitation limits within 5xCRQL values?	Yes	No	N/A

ACTION: If the results and quantitation limits are in error contact the laboratory for clarification and note in the validation narrative.

8.3 TENTATIVELY IDENTIFIED COMPOUNDS (TIC)

Has the laboratory conducted a spectral library search on all candidate TIC peaks in accordance with the analytical SOW?	Yes	No	N/A
Has the laboratory properly identified and coded all TIC?	Yes	No	N/A

ACTION: If the laboratory has failed to search the minimum number of TIC peaks in the chromatogram contact the laboratory for submittal of the required data. Qualify as nondetects (U) all TIC compounds present in samples and blanks using the review criteria specified in the validation requirements. If TIC identification is in error sample results should be qualified as nondetects (U) or unusable (R). If TIC identifications are judged valid, qualify the results as presumptive and estimated (JN).

9. OVERALL ASSESSMENT AND SUMMARY

Has the laboratory conducted the analysis in accordance with the analytical SOW?	Yes	No	N/A
Were project specific data quality objectives met for this analysis?	Yes	No	N/A

ACTION: Summarize all the data qualifications recommended in the foregoing sections, and complete the data validation narrative according to the requirements of Section 10.0 of the data validation requirements.

COMMENTS (attach additional sheets as necessary):

1) Continuing Calibration %D for Acetone exceeded the QC limits. Sample B00ZS6 was flagged with a "J".

2) Lab blank contained methylene chloride. Sample B00ZS6 was flagged with a "U".

3) For sample B00ZS6, 1,2-Dichloroethane-d_4 (DCE) surrogate was out of QC limits. Flagged rest of non-detects with a "J".

4) For the MSD sample, 1,4-Difluorobenzene (DFB) was outside the acceptance limits. No action was taken.

X00565
Electrical Facil

DATA VALIDATION REPORT

DATA PACKAGE NUMBER: X00565

MAXWELL S-CUBED DIVISION DATA PACKAGE: 32359-05

SOIL SAMPLE: BOOZS6

OPERABLE UNIT: 100-DR-1

PREPARED BY:

A. T. KEARNEY, INC.
RICHLAND, WASHINGTON

FOR:

WESTINGHOUSE HANFORD COMPANY
PURCHASE ORDER MDR-SVV-061461
TASK ORDER K-92-06-26

SAMPLE NUMBER: BOOZS6
MATRIX: Soil
OPERABLE UNIT: 100-DR-1
LABORATORY: MAXWELL S-CUBED DIVISION
TRANSMITTAL NUMBER: X00565
LABORATORY PACKAGE NUMBER: 32359-05

VOLATILES:

1. The following result is considered usable for limited purposes because of a continuing calibration problem. The result is estimated and flagged "J" on the Form I.

   - Acetone in sample BOOZS6

   The %D for acetone in the 9/17/91 continuing calibration was 35.7% which exceeds the QC limit of 25%.

2. Due to laboratory contamination, methylene chloride in sample BOOZS6 was flagged "U" on the Form I.

3. The following results are considered useable for limited purposes due to a surrogate recovery problem. The results are considered estimates and are flagged "J" on the Form I.

   - All analytes associated with surrogate 1,2-dichloroethane-d4 in sample BOOZS6

   The surrogate recovery for 1,2-dichloroethane-d4 was 124% which is greater than the 70-121% QC limits.

SEMI-VOLATILES:

1. Due to laboratory contamination, the 4-Hydroxy-4-methyl-2-pentanone TIC with RT 7.45 in sample BOOZS6 was flagged "U" on the Form I.

PESTICIDES/PCBS:

1. The following result is considered usable for limited purposes because of an INDA standard problem. The result is estimated and flagged "J" on the Form I.

   - 4,4'-DDT in sample BOOZS6

   The %D for 4,4'-DDT in the 9/28/91 INDA standard was 16.3% which exceeds the QC limit of 15% for quantitation purposes.

DATA QUALIFICATION SUMMARY

UNIT: 100-DR-1

DOCUMENT CONTROL NUMBER: WHC-SD-EN-TI-145

ANALYSES: VOC, BNA, Pest/PCB

RFW NO.: S595-SCU-009

SDG NO.: B00ZS6

QUALIFICATION SUMMARY:

VOLATILES

SAMPLE NUMBERS: B00ZS6

BLANKS

Due to the presence of laboratory blank contamination, the following samples were flagged "U" for methylene chloride:

- Sample number B00ZS6 in SDG No. B00ZS6.

SURROGATE RECOVERY

The surrogate recovery results did not meet the QC limits for surrogate compound 1,2-dichloroethane in the following sample:

- Sample number B00ZS6 in SDG No. B00ZS6.

All associated sample results were qualified as estimates and flagged "J".

SEMIVOLATILES

SAMPLE NUMBERS: B00ZS6

No Data Qualified.

PESTICIDES/PCBS

SAMPLE NUMBERS: B00ZS6

CALIBRATION VERIFICATION

The %D for 4,4'-DDT exceeded the QC limit for sample number B00ZS6 in SDG No. B00ZS6. The associated sample result was qualified as an estimate and flagged "J".