PRC Environmental Management, Inc.
1411 Fourth Avenue
Suite 720
Seattle, WA 98101
206-624-2692
Fax 206-624-3679

YPLSF

PRC

July 22, 1992

Paul Sonnenfeld
U.S. Environmental Protection Agency, Region 10
1200 Sixth Avenue, Mail Stop HW-104
Seattle, Washington 98101

Subject: Laboratory Analytical Data
Yakima Agriculture Research Laboratory, Yakima, Washington
Contract 068-W9-0009
Work Assignment R10047

Dear Mr. Sonnenfeld:

Enclosed are the analytical data that you requested for groundwater samples collected by PRC Environmental Management, Inc. (PRC) on May 6, 1991 at the Yakima Agriculture Research Laboratory. I have copied the original FORM 1 data summaries from the large data packages for the following parameters:

- Volatile organics
- Pesticides/PCBs
- Organophosphorus
- Chlorinated herbicides
- Inorganics

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I have also enclosed Tables 1 and 2 from the PRC Revised data validation report dated October 10, 1991. These tables contain the validated and summarized analytical data from the laboratory FORM 1 sheets. Only the individual constituents showing detectable concentrations or data qualifiers are listed in the PRC tables.

If you have any further questions, please call me at 624-2692.

Sincerely,

Gary A. Bruno
Project Manager

RECEIVED
JUL 22 1992
RCRA COMPLIANCE SECTION

cc: Marcia Bailey, EPA Work Assignment Manager

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TABLE 1
INORGANIC ANALYTICAL RESULTS, YAKIMA AGRICULTURE RESEARCH LABORATORY
(µg/L)

Sample Location:	MW-D		MW-A		MW-A		MW-E		MW-F		MW-G	
	T	D	T	D	T	D	T	D	T	D	T	D
Contract Laboratory Program Number:	MJF123	MJF124	MJF144	MJF145	MJF146	MJR147	MJF413	MJF414	MJF148	MJF149	MJF125	MJF143
Aluminum	14.0U	14.0U	14.0U	14.0U	28.8	15.1	14.0U	14.0U	17.2	31.4	14.0U	19.5
Arsenic	7.2	7.2	5.2	5.6	4.7	4.9	3.0	2.8	5.4	6.1	6.3	6.9
Barium	21.6	21.1	20.5	25.2	20.0	20.6	24.2	24.6	18.0	17.7	18.3	18.2
Calcium	71,400.0	74,500.0	79,800.0	78,500.0	79,100.0	78,600.0	57,900.0	55,100.0	74,300.0	76,400.0	75,700.0	71,400.0
Copper	4.3	4.0U	4.0U	4.0U	4.0U	4.0U	4.0U	4.0U	4.0U	4.0U	4.0U	4.0U
Iron	34.1	8.0U	12.1	8.0U	20.1	13.2	10.4	8.0U	11.5	8.0U	8.0U	8.0U
Lead	5.5	2.7	2.7	3.4	17.2	3.0	1.0U	3.0	2.9	4.1	3.0	3.9
Magnesium	44,300.0	45,600.0	44,000.0	43,600.0	43,100.0	42,500.0	27,200.0	26,800.0	43,400.0	44,600.0	46,700.0	44,900.0
Potassium	3,290.0	3,320.0	4,190.0	4,190.0	4,070.0	4,020.0	4,790.0	4,800.0	3,410.0	3,550.0	3,550.0	3,570.0
Sodium	67,200.0	68,600.0	65,800.0	65,400.0	63,100.0	62,000.0	30,100.0	30,500.0	59,900.0	61,700.0	67,300.0	65,600.0
Vanadium	66.6	68.0	52.2	52.2	50.8	54.4	26.5	27.1	59.1	60.5	67.7	65.0
Zinc	11.3	8.7	7.0U	7.0U	7.0U	21.7	7.0U	7.0U	9.1	7.0U	7.0U	7.0U

Notes:

Metals not listed were not found in any samples.
T = Total metals.
D = Dissolved metals (sample filtered in the field).
Qualifier: U = Not detected; listed value is the sample detection limit.

TABLE 2

ORGANIC ANALYTICAL RESULTS,
YAKIMA AGRICULTURE RESEARCH LABORATORY
(µg/L)

Sample Location:	Trip Blank	MW-D	MW-A	MW-A	MW-E	MW-F	MW-G
Contract Laboratory Program Number:	JG889	JG879	JG885	JG886	JG888	JG887	JG884
Volatile Organics							
Methylene chloride	2J	5U	5U	5U	5U	5U	5U
Acetone	10U	10U	10U	10U	4J	5J	10U
Chloroform	5U	5U	2J	1J	1J	2J	3J
Tetrachloroethene	5U	3J	5U	5U	5U	1J	5U
Pesticides and PCBs							
Endosulfan sulfate	NS	0.10U	0.20	0.17	0.10	0.10	0.10

Notes:

Chemicals not listed were not found in any samples (including all target analytes in the organophosphorus pesticide and chlorinated herbicide assays).

Qualifiers:
U = Not detected; listed value is the contract-required quantitation limit (CRQL).
J = Estimated value; most commonly the chemical was found at a concentration less than the CRQL.
NS = No sample.

NATIONAL EXPRESS LABORATORIES, INC.

NATEX

Gulf South Environmental Laboratory, Inc.
4801 Press Drive—East Building
New Orleans, LA 70126
(504) 283-4223
FAX (504) 288-3625

Sample Data Package

EPA Contract No. 68-D9-0038

Project No. 6200-3026

Case 16402

Episode(s): GGP

SDG: JG879

Presented to:

U.S. Environmental Protection Agency
Sample Management Office
Contract Laboratory Program
300 North Lee Street, Suite 200
Alexandria, VA 22314

Presented By:

Analytical Chemistry Department
Gulf South Environmental Laboratory, Inc.
P.O. Box 26518
New Orleans, Louisiana 70186

May 24, 1991

recycled paper

NATIONAL EXPRESS LABORATORIES, INC.

NATEX

Gulf South Environmental Laboratory, Inc.
6801 Press Drive—East Building
New Orleans, LA 70126
(504) 283-4223
FAX (504) 288-3625

Narrative

Case 16402

recycled paper

Gulf South Environmental Laboratory
Contract 68-D9-0038

Case 16402
SDG No. JG879

Narrative

Case 16402 consisted of seven (7) water samples which were received by Gulf South Environmental Laboratory on May 8, 1991 and logged in as Episodes GGP. The samples were identified as follows:

JG879	JG885	JG887	JG889
JG884	JG886	JG888	

The samples were analyzed for volatile organics, and pesticides/PCB's only. No problems were encountered with the analyses.

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

Shelley R Antoine
Shelley R. Antoine
GC/MS Laboratory Manager

5/24/91
Date

NATIONAL EXPRESS LABORATORIES, INC.

NATEX

Gulf South Environmental Laboratory, Inc.
6801 Press Drive—East Building
New Orleans, LA 70126
(504) 283-4223
FAX (504) 288-3625

Volatile Fraction

Sample Data

Case 16402

recycled pap

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JG879

ab Name: G S E L I Contract: 68-D9-0038

ab Code: GULF Case No.: 16402 SAS No.: _____ SDG No.: JG879

atrix: (soil/water) WATER Lab Sample ID: GGP01

ample wt/vol: 5.0 (g/mL) ML Lab File ID: VOGGP01

evel: (low/med) LOW Date Received: 05/08/91

Moisture: not dec. ____ Date Analyzed: 05/13/91

olumn: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	3	J
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JG884

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 16402 SAS No.: _____ SDG No.: JG879

Matrix: (soil/water) WATER Lab Sample ID: GGP02

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VOGGP02R

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. ____ Date Analyzed: 05/13/91

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	3	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JG885

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 16402 SAS No.: _____ SDG No.: JG879

Matrix: (soil/water) WATER Lab Sample ID: GGP03

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VOGGP03R

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. ____ Date Analyzed: 05/13/91

Column: (pack/cap) CAP Dilution Factor: 1.0

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

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	2	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JG886

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 16402 SAS No.: _____ SDG No.: JG879

Matrix: (soil/water) WATER Lab Sample ID: GGP06

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VOGGP06R

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. ____ Date Analyzed: 05/14/91

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	1	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JG887

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 16402 SAS No.: _____ SDG No.: JG879

Matrix: (soil/water) WATER Lab Sample ID: GGP07

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VOGGP07

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. ____ Date Analyzed: 05/14/91

Column: (pack/cap) CAP Dilution Factor: 1.0

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

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	5	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	2	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	1	J
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JG888

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 16402 SAS No.: _____ SDG No.: JG879

Matrix: (soil/water) WATER Lab Sample ID: GGP08

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VOGGP08

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. ___ Date Analyzed: 05/14/91

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	1	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JG889

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 16402 SAS No.: _____ SDG No.: JG879

Matrix: (soil/water) WATER Lab Sample ID: GGP09

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: VOGGP09

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. ____ Date Analyzed: 05/14/91

Column: (pack/cap) CAP Dilution Factor: 1.0

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

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

NATIONAL EXPRESS LABORATORIES, INC.

NATEX

Gulf South Environmental Laboratory, Inc.
6801 Press Drive—East Building
New Orleans, LA 70126
(504) 283-4223
FAX (504) 288-3625

Pesticide/PCB

Sample Data

Case 16402

recycled paper

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JG879

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 16402 SAS No.: _____ SDG No.: JG879

Matrix: (soil/water) WATER Lab Sample ID: GGP01

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

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/08/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/15/91

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 1.0

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

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JG884

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 16402 SAS No.: _____ SDG No.: JG879

Matrix: (soil/water) WATER Lab Sample ID: GGP02

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

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/08/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/15/91

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.0

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

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JG885

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 16402 SAS No.: _____ SDG No.: JG879

Matrix: (soil/water) WATER Lab Sample ID: GGP03

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

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/08/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/15/91

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.20	
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JG886

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 16402 SAS No.: _____ SDG No.: JG879

Matrix: (soil/water) WATER Lab Sample ID: GGP06

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

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/08/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/15/91

GPC Cleanup: (Y/N) N pH: 7.8 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.17	
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JG887

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 16402 SAS No.: _____ SDG No.: JG879

Matrix: (soil/water) WATER Lab Sample ID: GGP07

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

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/08/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/15/91

GPC Cleanup: (Y/N) N pH: 7.9 Dilution Factor: 1.0

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

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JG888

Lab Name: G S E L I Contract: 68-D9-0038

Lab Code: GULF Case No.: 16402 SAS No.: _____ SDG No.: JG879

Matrix: (soil/water) WATER Lab Sample ID: GGP08

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

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/08/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/15/91

GPC Cleanup: (Y/N) N pH: 7.9 Dilution Factor: 1.0

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

JG889

FORM I PEST

Missing

ORGANOPHOSPHORUS ANALYSIS-WATER
DATA SUMMARY PACKAGE

CLIENT: VERSAR A & E/GREELEY
SITE: PRC/EPA REGION X
PROJECT: 420.1 B#6
CONTROL: 4755
DATE: 05/24/91

Versar Laboratories, Inc.
Analytical Data Summary
Oragnophosphorus Pesticides - by FPD
SW-846 - METHOD 8140
VERSA&E - 4755 waters
23 May, 1991

The samples were analyzed for organophosphorous insecticides using EPA Method 8140. In Method 8140 the compounds are extracted from the sample matrix with an organic solvent. The volume of the solvent is then reduced to enrich the compounds of interest. The concentrated extract is then injected into a gas chromatograph. The various constituents in the extract are separated on a column in the gas chromatograph and the organophoshorous compounds are detected using a flame photometric detector. The analyte list for this analysis includes:

O,O,O-TEP	sulfotepp	methyl parathion
thionazin	disulfoton	parathion
phorate	famphur	dimethoate
chlorpyrifos (Dursban) = SURROGATE		

The results for the sample analyses are presented on the following pages. Sample results are in ug/L or ug/Kg based on dry weight. Detection limits are based on the ability of the instrumentation to detect concnetrations of 0.20ug/ml at injection. A detection limit standard is included in the calibration curve.

A reagent blank is analyzed before every set of samples to verify that the analytical system including the extraction is free of interferences. A surrogate (Dursban) is spiked into every sample to monitor performance of the analytical system. Spiked samples and spiked reagent blanks are run at a frequency specified by the Method and by our internal standard operating procedures. The Method also requires calibrations and calibration checks at a certain frequency. The results from these quality control checks are presented in the tables following the tables of results.

All standard data would indicate that the sample analyses are valid and representative as reported, without further qualification.

Release of the data contianed in this hardcopy data package has been authorized by the Laboratory Manager, or his designee, as verified by the following signature.

5/23/91

Dr. Reza Karimi
Section Chief
Applied Chromatography

Christopher E. Bunker
Data Quality Analyst
Applied Chromatography

VLI Analytical Sequence Monitoring
Surrogate Recovery / Blank Summary

Sequence File: /SEQUENCE/A052191E1OP.SEQ
Method : /METHOD/E1M8140.MTH
OP PESTICIDES - VERSA&E 4755 waters
INST E(sig a) 10%SP2100 PACKED
FPD - 2.OuL INJECTION

The following samples were analyzed with this blank:

		ADVISORY LIMITS (40-150)			
		Time	Date	SSS	%REC
Sample PBLK46, RB0346 VERS A&E CT	Analyzed:	1447	21May1991		114
		Time	Date	SSS	%REC
Sample PBLK47 RB0347	Analyzed:	1509	21May1991		104
		Time	Date	SSS	%REC
Sample MSTD49893	Analyzed:	1530	21May1991		80
		Time	Date	SSS	%REC
Sample 49893, FIELD#91194310	Analyzed:	1551	21May1991		104
		Time	Date	SSS	%REC
Sample 49894, FIELD#91194314	Analyzed:	1612	21May1991		107
		Time	Date	SSS	%REC
Sample 49895, FIELD#91194306	Analyzed:	1633	21May1991		107
		Time	Date	SSS	%REC
Sample 49896, FIELD#91194300	Analyzed:	1716	21May1991		109
		Time	Date	SSS	%REC
Sample 49897, FIELD#91194302	Analyzed:	1737	21May1991		79
		Time	Date	SSS	%REC
Sample 49898, FIELD#91194308	Analyzed:	1758	21May1991		82
		Time	Date	SSS	%REC
Sample 49899, FIELD#91194304	Analyzed:	1819	21May1991		99
		Time	Date	SSS	%REC
Sample 49899MS, FIELD#911943004MS	Analyzed:	1841	21May1991		76
		Time	Date	SSS	%REC
Sample 49899MSD, FIELD#911943004MS	Analyzed:	1902	21May1991		137

OP-PEST MS/MSD SUMMARY

Date Analyzed: 05/21/91 Test Code: OPPEST

Matrix (SOIL/WATER/WIPE): water Level (LOW/MED):LOW

Concentration Units: ug/L Instrument ID: GCE1

Control Number: 4755 Sample Number: 49899MS

Extraction Analyst(s): OEL Chromatographer:ACL

MATRIX SPIKE ANALYTE COMPOUND	SPIKED UG/L	SAMPLE UG/L	MS OBSERVED CONCENTRATION	% RECOVERY
phorate	10	3.3	3.3	33
sulfotepp	10	3.8	3.8	38
disulfoton	10	2.2	2.2	22
parathion	10	4.2	4.2	42
m.parathion	10	4.9	4.9	49
dursban	10	7.6	7.6	76

MATRIX SPIKE ANALYTE COMPOUND	SPIKED UG/L	MSD OBSERVED CONCENTRAT	% RECOVERY	PRECISION % RPD
phorate	10	4.8	48	37%
sulfotepp	10	7.1	71	61%
disulfoton	10	1.6	16	32%
parathion	10	7.9	79	61%
m.parathion	10	9.5	95	64%
dursban	10	13.7	137	57%

SAMPLE ANALYTICAL RESULTS

Sample: 49893, FIELD#91194310

Analyzed: 1551 21May1991

Peak Identification	Amount (ppb)
dursban	10.44

REPORTING LIMITS
==========

O,O,O-TEP	2.0
thionazin	2.0
phorate	2.0
sulfotepp	2.0
disulfoton	2.0
dimethoate	5.0
methyl parathion	2.0
parathion	2.0
famphur	2.0

100307

SAMPLE ANALYTICAL RESULTS

Sample: 49894, FIELD#91194314

Analyzed: 1612 21May1991

Peak Identification	Amount (ppb)
dursban	10.66

REPORTING LIMITS

O,O,O-TEP	2.0
thionazin	2.0
phorate	2.0
sulfotepp	2.0
disulfoton	2.0
dimethoate	5.0
methyl parathion	2.0
parathion	2.0
famphur	2.0

100009

SAMPLE ANALYTICAL RESULTS

Sample: 49895, FIELD#91194306

Analyzed: 1633 21May1991

Peak Identification	Amount (ppb)
dursban	10.71

REPORTING LIMITS
==========

O,O,O-TEP	2.0
thionazin	2.0
phorate	2.0
sulfotepp	2.0
disulfoton	2.0
dimethoate	5.0
methyl parathion	2.0
parathion	2.0
famphur	2.0

100011

SAMPLE ANALYTICAL RESULTS

Sample: 49896, FIELD#91194300

Analyzed: 1716 21May1991

Peak Identification	Amount (ppb)
dursban	10.93

REPORTING LIMITS
==========

O,O,O-TEP	2.0
thionazin	2.0
phorate	2.0
sulfotepp	2.0
disulfoton	2.0
dimethoate	5.0
methyl parathion	2.0
parathion	2.0
famphur	2.0

100013

SAMPLE ANALYTICAL RESULTS

Sample: 49897, FIELD#91194302

Analyzed: 1737 21May1991

Peak Identification	Amount (ppb)
dursban	7.86

REPORTING LIMITS
==========

O,O,O-TEP	2.0
thionazin	2.0
phorate	2.0
sulfotepp	2.0
disulfoton	2.0
dimethoate	5.0
methyl parathion	2.0
parathion	2.0
famphur	2.0

100015

SAMPLE ANALYTICAL RESULTS

Sample: 49898, FIELD#91194308

Analyzed: 1758 21May1991

Peak Identification	Amount (ppb)
dursban	8.17

REPORTING LIMITS
==========

O,O,O-TEP	2.0
thionazin	2.0
phorate	2.0
sulfotepp	2.0
disulfoton	2.0
dimethoate	5.0
methyl parathion	2.0
parathion	2.0
famphur	2.0

SAMPLE ANALYTICAL RESULTS

Sample: 49899, FIELD#91194304

Analyzed: 1819 21May1991

Peak Identification	Amount (ppb)
dursban	9.85

REPORTING LIMITS
==========

O,O,O-TEP	2.0
thionazin	2.0
phorate	2.0
sulfotepp	2.0
disulfoton	2.0
dimethoate	5.0
methyl parathion	2.0
parathion	2.0
famphur	2.0

SAMPLE ANALYTICAL RESULTS

Sample: PBLK46, RB0346 VERS A&E

Analyzed: 1447 21May1991

Peak Identification	Amount (ppb)
dursban	11.41

REPORTING LIMITS

O,O,O-TEP	2.0
thionazin	2.0
phorate	2.0
sulfotepp	2.0
disulfoton	2.0
dimethoate	5.0
methyl parathion	2.0
parathion	2.0
famphur	2.0

SAMPLE ANALYTICAL RESULTS

Sample: PBLK47 RB0347

Analyzed: 1509 21May1991

Peak Identification	Amount (ppb)
dursban	10.40

REPORTING LIMITS

O,O,O-TEP	2.0
thionazin	2.0
phorate	2.0
sulfotepp	2.0
disulfoton	2.0
dimethoate	5.0
methyl parathion	2.0
parathion	2.0
famphur	2.0

SAMPLE ANALYTICAL RESULTS

Sample: 49899MS, FIELD#911943004MS

Analyzed: 1841 21May1991

Peak Identification	Amount (ppb)
phorate	3.33
sulfotepp	3.84
disulfoton	2.17
dimethoate	6.92
dursban	7.61
methyl parathi	4.94
parathion	4.15
famphur	4.01

REPORTING LIMITS

O,O,O-TEP	2.0
thionazin	2.0
phorate	2.0
sulfotepp	2.0
disulfoton	2.0
dimethoate	5.0
methyl parathion	2.0
parathion	2.0
famphur	2.0

109935

SAMPLE ANALYTICAL RESULTS

Sample: 49899MSD, FIELD#911943004MSD

Analyzed: 1902 21May1991

Peak Identification	Amount (ppb)
phorate	4.83
sulfotepp	7.11
dimethoate	13.79
dursban	13.70
methyl parathi	9.52
parathion	7.87
famphur	8.29

REPORTING LIMITS

O,O,O-TEP	2.0
thionazin	2.0
phorate	2.0
sulfotepp	2.0
disulfoton	2.0
dimethoate	5.0
methyl parathion	2.0
parathion	2.0
famphur	2.0

100038

SAMPLE ANALYTICAL RESULTS

Sample: MSTD49893

Analyzed: 1530 21May1991

Peak Identification	Amount (ppb)
phorate	3.26
sulfotepp	4.04
disulfoton	1.63
dimethoate	5.78
dursban	8.01
methyl parathi	5.29
parathion	4.19
famphur	4.49

REPORTING LIMITS

O,O,O-TEP	2.0
thionazin	2.0
phorate	2.0
sulfotepp	2.0
disulfoton	2.0
dimethoate	5.0
methyl parathion	2.0
parathion	2.0
famphur	2.0

100056

HERBICIDE ANALYSIS-WATER
DATA SUMMARY PACKAGE

CLIENT: VERSAR A & E/GREELEY
SITE: PRC/EPA REGION X
PROJECT: 420.1 B#6
CONTROL: 4755
DATE: 06/03/91

Herbicide Analysis Narrative
Versar Project Number 420.1 B#6; Control# 4755
Client: Versar A & E/Greeley; PRC/EPA Region X; Water
June 3, 1991

Please find enclosed the analytical data and calculated results for the analysis of the samples received at Versar on 8 May, 1991. The package includes calculated and summarized results, as well as any QC samples processed with the batch.

All standard and QC data would indicate that the analysis is valid and representative for the samples without further qualification.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

R. Karimi

Dr. Reza Karimi
Section Chief
Applied Chromatography
Laboratory Operations

Herbicide Analysis Detail
Versar Project Number 420.1 B#6; Control# 4755
Client: Versar A & E/Greeley; PRC/EPA Region X; Water
June 3, 1991

Please find enclosed the analytical data and calculated results for the analysis of the samples received at Versar on 8 May, 1991. The samples were requested extraction and analysis of selected chlorinated phenoxy herbicides under EPA method 8150 protocol. The samples were extracted and analyzed within the holding times prescribed in the Method. The date of extraction was 10 May, 1991 for the enclosed samples.

Laboratory IDs were used in tracking samples throughout extraction and analysis.

All criteria were adhered to during analysis. All calibration standard comparison results were acceptable where required. All data has been reviewed for completeness and validity. The samples contained none of the herbicides listed on Forms I above the reported limits. The reported limits are based on the ability of the instrumentation to detect minimum concentrations of 0.02ug/ml at injection. A detection limit standard was analyzed in the sequence and is included in the standard section of the report.

The sample extracts were analyzed on a DB-608 mega-bore column under five point calibration for each of the analytes of interest. Five concentrations of calibration standards were analyzed in calibration, but only three of five concentrations were used in the curve evaluation. Samples requiring further analysis were analyzed on an RTx-1701 mega-bore column also under five point calibration. Five points were analyzed in calibration, but only three of five concentration were used in the curve evaluation.

Linearity was evaluated prior to injection of sample extracts by the laboratory data system with a linear curve fit to include the origin. Correlation was established at $\geq$ 0.996 for all compounds of interest in both the primary and confirmation analyses. Again, while five concentrations were analyzed in calibration, only three were evaluated for linearity.

Standard comparison results were acceptable where required. Since no sample analyses were performed after an outlying standard, no reanalyses were required.

The sample preparation section of the report includes sample comments in which each sequence is further discussed. The comments address any difficulties encountered during extraction and analysis.

The QC section of the report includes surrogate, matrix spike and matrix spike duplicate recoveries, as well as precision and method blank results. Overall, QC for the case demonstrates fair extraction efficiency with 3 of 10 surrogate recoveries outside advisory QC limit windows. Matrix spike and matrix spike duplicate recoveries were fair with 3 of 8 results outside QC limit windows. Precision, as measured by the relative percent difference (RPD), was poor with 4 of 4 results above QC limits. Internal QC included a method standard (MSTD), or spiked reagent blank, which yielded acceptable recoveries for all spike compounds. Recoveries for the MSTD ranged from 31 to 69 percent. No qualified identifications or significant interferences were observed in the laboratory blank.

If you have any questions regarding the results detailed herein, please feel free to call me at your convenience.

Christopher E. Bunker
Data Quality Analyst
Applied Chromatography
Laboratory Operations

2E
WATER HERBICIDE SURROGATE RECOVERY

Lab Name: VERSAR Contract:

Lab Code: VERSAR Case No.: VERSA&E SAS No.: SDG No.:

	EPA SAMPLE NO.	S1 (DBC)#	OTHER 2,4-DB
01	PBLK49		33
02	91194310		102
03	91194314		20*
04	91194306		ND*
05	91194300		63
06	91194302		118
07	91194308		95
08	91194304		ND*
09	91194304MS		45
10	91194304MSD		112
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

CSB 6/3/91

ADVISORY QC LIMITS

S1 (DBC) = Dibutylchlorendate (24-154)

Column used to flag recovery values

* Values outside of QC limits

D Surrogates diluted out

100005

FORM II VOAD 1

3E

WATER HERBICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: VERSAR Contract: _____

Lab Code: VERSAR Case No.: VERSA&E SAS No.: SDG No.: _

Matrix Spike - EPA Sample No.: 91194304

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
2,4-D	1.00	0	0.35	35 *	56-123
Silvex	1.00	0	0.69	69	40-131
2,4,5-T	1.00	0	0.48	48	40-120
Dinoseb	1.00	0	0.15	15 *	52-126

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
2,4-D	1.00	0.76	76	73 *	15	56-123
Silvex	1.00	0.92	92	29 *	20	40-131
2,4,5-T	1.00	0.80	80	51 *	22	40-120
Dinoseb	1.00	0.34	34 *	80 *	18	52-126

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

* Values outside of QC limits

RPD: 4 out of 4 outside limits
Spike Recovery: 3 out of 8 outside limits

COMMENTS: _____

100006

4C

HERBICIDE METHOD BLANK SUMMARY

Lab Name:_____VERSAR_____ Contract:_____

Lab Code:VERSAR Case No.:VERS A&E SAS No.: SDG No.:

Lab Sample ID: ___PBLK48 Lab File ID: _____

Matrix:(soil/water)WATER Level:(low/med) _____ LOW

Date Extracted: 05/10/91 Extraction: (SepF/Cont/Sonc)__SEPF

Date Analyzed (1): 05/16/91 Date Analyzed (2): _05/24/91

Time Analyzed (1): 2004 Time Analyzed (2): _1905

Instrument ID (1): N Instrument ID (2): _H(3)

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

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

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	91194310	49893	05/16/91	
02	91194314	49894	05/16/91	
03	91194306	49895	05/16/91	
04	91194300	49896	05/16/91	
05	91194302	49897	05/16/91	05/24/91
06	91194308	49898	05/16/91	
07	91194304	49899	05/16/91	05/24/91
08	91194304MS	49899MS	05/16/91	05/24/91
09	91194304MSD	49899MSD	05/16/91	05/24/91
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS: _____ ~~100007~~

HERBICIDE METHOD STANDARD RECOVERY

Date Analyzed: 05/16/91 Test Code: HERB

Matrix (SOIL/WATER/WIPE): WATER Level (LOW/MED):LOW

Concentration Units: ug/L Instrument ID: N

Control Number: 4755 Sample Number: MSTD_49893

Extraction Analyst(s): MH Chromatographer:KC

MATRIX SPIKE ANALYTE COMPOUND	ug/L SPIKED CONCENTRATION	ug/L OBSERVED CONCENTRATION	MSTD % RECOVERY
2,4-D	1	0.617	62
Silvex	1	0.6665	67
2,4,5-T	1	0.6681	67
2,4-DB	ND	ND	ND
dinoseb	ND	ND	ND

100008

HERBICIDE WORKING STANDARD RECOVERY

Date Analyzed: 05/16/91 Test Code: HERB

Matrix (SOIL/WATER/WIPE): WATER Level (LOW/MED): LOW

Concentration Units: ug/L Instrument ID: N

Control Number: 4755 Sample Number: WS

Extraction Analyst(s): MH Chromatographer: KC

MATRIX SPIKE ANALYTE COMPOUND	ug/L SPIKED CONCENTRATION	ug/L OBSERVED CONCENTRATION	MSTD % RECOVERY
2,4-D	10	8.78	88
Silvex	5.0	5.61	112
2,4-DB	10	10.86	109

10000

KC

1D

HERBICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

91194310

Lab Name: VERSAR, INC. Contract: _

Lab Code: VERSAR Case No.: VERS A&E SAS No.: SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 49893

Sample wt/vol: 1000 (g/ml) ML Lab File ID: ___

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 05/10/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/16/91

GPC Cleanup: (Y/N) N pH: ___ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	0.20	U
93-72-1	Silvex	0.20	U
93-76-5	2,4,5-T	0.20	U
88-85-7	Dinoseb	0.20	U

1D

HERBICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

91194314

Lab Name: VERSAR, INC. Contract: _

Lab Code: VERSAR Case No.: VERS A&E SAS No.: SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 49894

Sample wt/vol: 1000 (g/ml) ML Lab File ID: __

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 05/10/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/16/91

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	0.20	U
93-72-1	Silvex	0.20	U
93-76-5	2,4,5-T	0.20	U
88-85-7	Dinoseb	0.20	U

10001

1D

HERBICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

91194306

Lab Name: VERSAR, INC. Contract: _

Lab Code: VERSAR Case No.: VERS A&E SAS No.: SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 49895

Sample wt/vol: 1000 (g/ml) ML Lab File ID: ___

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 05/10/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/16/91

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	0.20	U
93-72-1	Silvex	0.20	U
93-76-5	2,4,5-T	0.20	U
88-85-7	Dinoseb	0.20	U

1D
HERBICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

91194300

Lab Name: VERSAR, INC. Contract: _

Lab Code: VERSAR Case No.: VERS A&E SAS No.: SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 49896

Sample wt/vol: 1000 (g/ml) ML Lab File ID: ___

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 05/10/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/16/91

GPC Cleanup: (Y/N) N pH: ___ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	0.20	U
93-72-1	Silvex	0.20	U
93-76-5	2,4,5-T	0.20	U
88-85-7	Dinoseb	0.20	U

1D

HERBICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

91194302

Lab Name: VERSAR, INC. Contract: _

Lab Code: VERSAR Case No.: VERS A&E SAS No.: SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 49897

Sample wt/vol: 1000 (g/ml) ML Lab File ID: ___

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 05/10/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/16/91

GPC Cleanup: (Y/N) N pH: ___ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	0.20	U
93-72-1	Silvex	0.20	U
93-76-5	2,4,5-T	0.20	U
88-85-7	Dinoseb	0.20	U

1D

HERBICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

91194308

Lab Name: VERSAR, INC. Contract: _

Lab Code: VERSAR Case No.: VERS A&E SAS No.: SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 49898

Sample wt/vol: 1000 (g/ml) ML Lab File ID: ___

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 05/10/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/16/91

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	0.20	U
93-72-1	Silvex	0.20	U
93-76-5	2,4,5-T	0.20	U
88-85-7	Dinoseb	0.20	U

100026

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HERBICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

91194304

Lab Name: VERSAR, INC. Contract: _

Lab Code: VERSAR Case No.: VERS A&E SAS No.: SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 49899

Sample wt/vol: 1000 (g/ml) ML Lab File ID: ___

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 05/10/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/16/91

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	0.20	U
93-72-1	Silvex	0.20	U
93-76-5	2,4,5-T	0.20	U
88-85-7	Dinoseb	0.20	U

1D
HERBICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK48

Lab Name: VERSAR, INC. Contract:

Lab Code: VERSAR Case No.: VERS A&E SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: RB0348

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

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. dec. Date Extracted: 05/10/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/16/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	0.20	U
93-72-1	Silvex	0.20	U
93-76-5	2,4,5-T	0.20	U
88-85-7	Dinoseb	0.20	U

FORM I HERB

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HERBICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

91194304MS

Lab Name: VERSAR, INC. Contract: _

Lab Code: VERSAR Case No.: VERS A&E SAS No.: SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 49899MS

Sample wt/vol: 1000 (g/ml) ML Lab File ID: ___

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 05/10/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/16/91

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	0.20	U
93-72-1	Silvex	0.20	U
93-76-5	2,4,5-T	0.20	U
88-85-7	Dinoseb	0.20	U

1D

HERBICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

91194304MSD

Lab Name: VERSAR, INC. Contract:

Lab Code: VERSAR Case No.: VERS A&E SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 49899MSD

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

Level: (low/med) LOW Date Received: 05/08/91

% Moisture: not dec. dec. Date Extracted: 05/10/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/16/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	0.20	U
93-72-1	Silvex	0.20	U
93-76-5	2,4,5-T	0.20	U
88-85-7	Dinoseb	0.20	U

FORM I HERB

100055

TMA
Thermo Analytical Inc.

Skinner & Sherman Laboratories Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200

FILE COPY

Federal Express Airbill #9286406953

28 May 1991

USEPA Contract Laboratory Program (CLP)
Sample Management Office (SMO)
300 North Lee Street, Suite 200
Alexandria, VA 22314

Attention: Data Receiver

Dear Sir:

Enclosed is the Sample Data package for the Inorganic Analyses of Case 16402 and SDG MJF123. The samples were analyzed under Skinner and Sherman Work Order #9105068.

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

Sincerely,

SKINNER AND SHERMAN LABORATORIES, INC.

Kirk Johnson
Contract Laboratory Program
EPA Data Manager

RP/cd

Encl.

cc: Data Audit Staff, USEPA-EMSL-LV, Federal Airbill #9286406964
Betty Ann Wiley, USEPA Region X, Federal Airbill #9286406975

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0081

Lab Code: SKINER Case No.: 16402 SAS No.: SDG No.: MJF123

SOW No.: 7/88

EPA Sample No.	Lab Sample ID.
MJF123	05068-01S
MJF124	05068-02S
MJF125	05068-03S
MJF143	05068-04S
MJF144	05068-05S
MJF144D	05068-05S2
MJF145	05068-06S
~~MJF145D~~	~~05068-06DS~~
MJF146	05068-07S
MJF147	05068-08S
MJF148	05068-09S
MJF149	05068-10S
MJF413	05068-11S
MJF414	05068-12S

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

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

Signature: Name: David N. Peterson

Date: 05/28/91 Title: Asst. Laboratory Manager

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF123

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0081

Lab Code: SKINER Case No.: 16402 SAS No.: SDG No.: MJF123

Matrix (soil/water): WATER Lab Sample ID: 05068-01S

Level (low/med): LOW Date Received: 05/08/91

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14.00	U		P
7440-36-0	Antimony	17.00	U		P
7440-38-2	Arsenic	7.20	B		F
7440-39-3	Barium	21.60	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	3.00	U		P
7440-70-2	Calcium	71400.00			P
7440-47-3	Chromium	3.00	U		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	4.30	B		P
7439-89-6	Iron	34.10	B		P
7439-92-1	Lead	5.50			F
7439-95-4	Magnesium	44300.00			P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	3290.00	B		P
7782-49-2	Selenium	3.00	U	NW	F
7440-22-4	Silver	5.00	U		P
7440-23-5	Sodium	67200.00			P
7440-28-0	Thallium	2.00	U	NW	F
7440-62-2	Vanadium	66.60			P
7440-66-6	Zinc	11.30	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF124

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0081

Lab Code: SKINER Case No.: 16402 SAS No.: SDG No.: MJF123

Matrix (soil/water): WATER Lab Sample ID: 05068-02S

Level (low/med): LOW Date Received: 05/08/91

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14.00	U		P
7440-36-0	Antimony	17.00	U		P
7440-38-2	Arsenic	7.20	B		F
7440-39-3	Barium	21.10	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	3.00	U		P
7440-70-2	Calcium	74500.00			P
7440-47-3	Chromium	3.00	U		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	4.00	U		P
7439-89-6	Iron	8.00	U		P
7439-92-1	Lead	2.70	B		F
7439-95-4	Magnesium	45600.00			P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	3320.00	B		P
7782-49-2	Selenium	15.00	U	NW	F
7440-22-4	Silver	5.00	U		P
7440-23-5	Sodium	68600.00			P
7440-28-0	Thallium	2.00	U	NW	F
7440-62-2	Vanadium	68.00			P
7440-66-6	Zinc	8.70	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF125

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0081

Lab Code: SKINER Case No.: 16402 SAS No.: SDG No.: MJF123

Matrix (soil/water): WATER Lab Sample ID: 05068-03S

Level (low/med): LOW Date Received: 05/08/91

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14.00	U		P
7440-36-0	Antimony	17.00	U		P
7440-38-2	Arsenic	6.30	B		F
7440-39-3	Barium	18.30	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	3.00	U		P
7440-70-2	Calcium	75700.00			P
7440-47-3	Chromium	3.00	U		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	4.00	U		P
7439-89-6	Iron	8.00	U		P
7439-92-1	Lead	3.00	B		F
7439-95-4	Magnesium	46700.00			P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	3550.00	B		P
7782-49-2	Selenium	15.00	U	NW	F
7440-22-4	Silver	5.00	U		P
7440-23-5	Sodium	67300.00			P
7440-28-0	Thallium	2.00	U	NW	F
7440-62-2	Vanadium	67.70			P
7440-66-6	Zinc	7.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF143

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0081

Lab Code: SKINER Case No.: 16402 SAS No.: SDG No.: MJF123

Matrix (soil/water): WATER Lab Sample ID: 05068-04S

Level (low/med): LOW Date Received: 05/08/91

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19.50	B		P
7440-36-0	Antimony	17.00	U		P
7440-38-2	Arsenic	6.90	B		F
7440-39-3	Barium	18.20	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	3.00	U		P
7440-70-2	Calcium	71400.00			P
7440-47-3	Chromium	3.00	U		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	4.00	U		P
7439-89-6	Iron	8.00	U		P
7439-92-1	Lead	3.90			F
7439-95-4	Magnesium	44900.00			P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	3570.00	B		P
7782-49-2	Selenium	3.00	U	NW	F
7440-22-4	Silver	5.00	U		P
7440-23-5	Sodium	65600.00			P
7440-28-0	Thallium	2.00	U	NW	F
7440-62-2	Vanadium	65.00			P
7440-66-6	Zinc	7.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF144

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0081

Lab Code: SKINER Case No.: 16402 SAS No.: SDG No.: MJF123

Matrix (soil/water): WATER Lab Sample ID: 05068-05S

Level (low/med): LOW Date Received: 05/08/91

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14.00	U		P
7440-36-0	Antimony	17.00	U		P
7440-38-2	Arsenic	5.20	B		F
7440-39-3	Barium	20.50	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	3.00	U		P
7440-70-2	Calcium	79800.00			P
7440-47-3	Chromium	3.00	U		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	4.00	U		P
7439-89-6	Iron	12.10	B		P
7439-92-1	Lead	2.70	B		F
7439-95-4	Magnesium	44000.00			P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	4190.00	B		P
7782-49-2	Selenium	15.00	U	NW	F
7440-22-4	Silver	5.00	U		P
7440-23-5	Sodium	65800.00			P
7440-28-0	Thallium	2.00	U	NW	F
7440-62-2	Vanadium	52.20			P
7440-66-6	Zinc	7.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF145

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0081

Lab Code: SKINER Case No.: 16402 SAS No.: SDG No.: MJF123

Matrix (soil/water): WATER Lab Sample ID: 05068-06S

Level (low/med): LOW Date Received: 05/08/91

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14.00	U		P
7440-36-0	Antimony	17.00	U		P
7440-38-2	Arsenic	5.60	B		F
7440-39-3	Barium	25.20	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	3.00	U		P
7440-70-2	Calcium	78500.00			P
7440-47-3	Chromium	3.00	U		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	4.00	U		P
7439-89-6	Iron	8.00	U		P
7439-92-1	Lead	3.40			F
7439-95-4	Magnesium	43600.00			P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	4190.00	B		P
7782-49-2	Selenium	3.00	U	NE	F
7440-22-4	Silver	5.00	U		P
7440-23-5	Sodium	65400.00			P
7440-28-0	Thallium	2.00	U	NW	F
7440-62-2	Vanadium	52.20			P
7440-66-6	Zinc	7.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF146

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0081

Lab Code: SKINER Case No.: 16402 SAS No.: SDG No.: MJF123

Matrix (soil/water): WATER Lab Sample ID: 05068-07S

Level (low/med): LOW Date Received: 05/08/91

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	28.80	B		P
7440-36-0	Antimony	17.00	U		P
7440-38-2	Arsenic	4.70	B		F
7440-39-3	Barium	20.00	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	3.00	U		P
7440-70-2	Calcium	79100.00			P
7440-47-3	Chromium	3.00	U		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	4.00	U		P
7439-89-6	Iron	20.10	B		P
7439-92-1	Lead	17.20			F
7439-95-4	Magnesium	43100.00			P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	4070.00	B		P
7782-49-2	Selenium	15.00	U	NW	F
7440-22-4	Silver	5.00	U		P
7440-23-5	Sodium	63100.00			P
7440-28-0	Thallium	2.00	U	NW	F
7440-62-2	Vanadium	50.80			P
7440-66-6	Zinc	7.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF147

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0081

Lab Code: SKINER Case No.: 16402 SAS No.: SDG No.: MJF123

Matrix (soil/water): WATER Lab Sample ID: 05068-08S

Level (low/med): LOW Date Received: 05/08/91

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15.10	B		P
7440-36-0	Antimony	17.00	U		P
7440-38-2	Arsenic	4.90	B		F
7440-39-3	Barium	20.60	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	3.00	U		P
7440-70-2	Calcium	78600.00			P
7440-47-3	Chromium	3.00	U		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	4.00	U		P
7439-89-6	Iron	13.20	B		P
7439-92-1	Lead	3.00	B		F
7439-95-4	Magnesium	42500.00			P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	4020.00	B		P
7782-49-2	Selenium	15.00	U	NW	F
7440-22-4	Silver	5.00	U		P
7440-23-5	Sodium	62000.00			P
7440-28-0	Thallium	2.00	U	NW	F
7440-62-2	Vanadium	54.40			P
7440-66-6	Zinc	21.70			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF148

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0081

Lab Code: SKINER Case No.: 16402 SAS No.: SDG No.: MJF123

Matrix (soil/water): WATER Lab Sample ID: 05068-09S

Level (low/med): LOW Date Received: 05/08/91

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.20	B		P
7440-36-0	Antimony	17.00	U		P
7440-38-2	Arsenic	5.40	B	W	F
7440-39-3	Barium	18.00	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	3.00	U		P
7440-70-2	Calcium	74300.00			P
7440-47-3	Chromium	3.00	U		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	4.00	U		P
7439-89-6	Iron	11.50	B		P
7439-92-1	Lead	2.90	B		F
7439-95-4	Magnesium	43400.00			P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	3410.00	B		P
7782-49-2	Selenium	15.00	U	NW	F
7440-22-4	Silver	5.00	U		P
7440-23-5	Sodium	59900.00			P
7440-28-0	Thallium	2.00	U	NW	F
7440-62-2	Vanadium	59.10			P
7440-66-6	Zinc	9.10	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF149

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0081

Lab Code: SKINER Case No.: 16402 SAS No.: SDG No.: MJF123

Matrix (soil/water): WATER Lab Sample ID: 05068-10S

Level (low/med): LOW Date Received: 05/08/91

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	31.40	B		P
7440-36-0	Antimony	17.00	U		P
7440-38-2	Arsenic	6.10	B		F
7440-39-3	Barium	17.70	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	3.00	U		P
7440-70-2	Calcium	76400.00			P
7440-47-3	Chromium	3.00	U		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	4.00	U		P
7439-89-6	Iron	8.00	U		P
7439-92-1	Lead	4.10			F
7439-95-4	Magnesium	44600.00			P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	3550.00	B		P
7782-49-2	Selenium	15.00	U	NW	F
7440-22-4	Silver	5.00	U		P
7440-23-5	Sodium	61700.00			P
7440-28-0	Thallium	2.00	U	NW	F
7440-62-2	Vanadium	60.50			P
7440-66-6	Zinc	7.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF413

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0081

Lab Code: SKINER Case No.: 16402 SAS No.: SDG No.: MJF123

Matrix (soil/water): WATER Lab Sample ID: 05068-11S

Level (low/med): LOW Date Received: 05/08/91

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14.00	U		P
7440-36-0	Antimony	17.00	U		P
7440-38-2	Arsenic	3.00	B		F
7440-39-3	Barium	24.20	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	3.00	U		P
7440-70-2	Calcium	57900.00			P
7440-47-3	Chromium	3.00	U		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	4.00	U		P
7439-89-6	Iron	10.40	B		P
7439-92-1	Lead	1.00	U		F
7439-95-4	Magnesium	27200.00			P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	4790.00	B		P
7782-49-2	Selenium	15.00	U	NW	F
7440-22-4	Silver	5.00	U		P
7440-23-5	Sodium	30100.00			P
7440-28-0	Thallium	2.00	U	NW	F
7440-62-2	Vanadium	26.50	B		P
7440-66-6	Zinc	7.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF414

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0081

Lab Code: SKINER Case No.: 16402 SAS No.: SDG No.: MJF123

Matrix (soil/water): WATER Lab Sample ID: 05068-12S

Level (low/med): LOW Date Received: 05/08/91

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14.00	U		P
7440-36-0	Antimony	17.00	U		P
7440-38-2	Arsenic	2.80	B	W	F
7440-39-3	Barium	24.60	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	3.00	U		P
7440-70-2	Calcium	55100.00			P
7440-47-3	Chromium	3.00	U		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	4.00	U		P
7439-89-6	Iron	8.00	U		P
7439-92-1	Lead	3.00	B		F
7439-95-4	Magnesium	26800.00			P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	4800.00	B		P
7782-49-2	Selenium	15.00	U	NW	F
7440-22-4	Silver	5.00	U		P
7440-23-5	Sodium	30500.00			P
7440-28-0	Thallium	2.00	U	NE	F
7440-62-2	Vanadium	27.10	B		P
7440-66-6	Zinc	7.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: