PRC Environmental Management, Inc.
120 Howard Street
Suite 700
San Francisco, CA 94105
415-543-4880
Fax 415-543-5480

PRC

December 6, 1993

Mr. Chris Prokop
Work Assignment Manager
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street (H-4-4)
San Francisco, CA 94105

Contract No. 68-W9-009
Work Assignment No. R09042

Dear Mr. Prokop:

PRC Environmental Management, Inc. is pleased to submit the analytical data packages for the split samples from Fuller O'Brien Corporation, collected on November 1 and 3, 1993. If you have any questions or comments, please call me at 415/543-4880.

Sincerely,
PRC Environmental Management, Inc.

Santiago M. Lee
Project Manager

Enclosure

cc: File

Versar

PRINTED ON RECYCLED PAPER

November 30, 1993

Mr. Santiago Lee
PRC Environmental Management Inc.
120 Howard Street, Suite 700
San Francisco, California 94105

Reference: EPA Contract 68-W9-0009, WA No. R09042

Dear Mr. Lee:

Enclosed please find the analytical data packages for the above referenced assignment. The various analyses are described within.

If you have any questions concerning this data, please feel free to call Janet Jaufmann at (800) 238-7727 or me at (303) 452-5700.

Sincerely,

Michael Galvin

Michael Galvin
TES 12 Program Manager

Enclosure

MLG/mlg

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	PARAMETERS	INDUSTRIAL HYGIENE SAMPLE Y / N

SAMPLERS: *(Signature)*	(Printed)

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS									REMARKS
				X			X	X	X						
				X					X						
				X		7	X	X	X						
				X		7	X	X	X						
				X		7	X	X	X						
				X		1	X								

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
(Printed)		(Printed)	(Printed)		(Printed)

Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks
(Printed)		(Printed)		

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

Versar Laboratories INC.

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	PARAMETERS	INDUSTRIAL HYGIENE SAMPLE Y / N

SAMPLERS: *(Signature)* (Printed)

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS									REMARKS

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
(Printed)		(Printed)	(Printed)		(Printed)

Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks
(Printed)		(Printed)		

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

Versar Laboratories INC.

M-E-M-O-R-A-N-D-U-M

TO: Mike Galvin

FROM: Janet Jaufmann

DATE: 11-29-93

SUBJ: Transmittal of Laboratory Data Package

- -

Attached please find the analytical data package for Versar, Inc. Job No. 312R09042, VLI Control No(s). 8632, 8650. Included in this package are the data for the following:

Organics

VOA

BNA

Inorganics

metals

Comments

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ANALYTICAL DATA PACKAGE
Metals Section

CLIENT: VERSAR DIV 61
SITE: O'BRIEN
CODE-BATCH: VEOBRIEN - 4,5
CONTROL #: 8632,8650
CASE-SDG: R09042 -
DATE: 24-NOV-93

Versar Laboratories INC.

November 24, 1993

Narrative
VLI Project 420.1.0 - Batch 4,5
VLI Control 8632,8650

Client Information:
Versar Division 61 / O'BRIEN

Analytical Methodology:
U.S. EPA Contract Laboratory Program (CLP) Statement of Work (SOW) ILM02.1, 200 Series for ICP, GFAA, CVAA Analysis, Exhibit D, Part A, D-16, Part B, D-28, Part D, D-45. Analysis Part E, D-62 for the following element list: Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Mg, Mn, Na, Ni, Pb, Se, Sb, Tl, V, Zn.

Sample Management:
Nine soil samples were received in two batch shipments by VLI on November 3 and 5, 1993. Sample W-5 was received on November 3, 1993, all other samples were received on November 5, 1993.

Sample List:
A cross reference list of the laboratory sample numbers and the field sample numbers appears on the cover page.

Quality Control:
There were no preparation or analysis problems associated with this batch. All method required quality assurance checks were within acceptable control limits, except the spike recoveries for lead(Pb) and selenium(Se). The poor recoveries were due to the matrix interference in the sample. All duplicate recoveries were within acceptable limits. All analyses were performed within method required holding times.

For Additional Information:
For all questions, please refer to the VLI Control number at the top of this narrative.
For questions concerning sample scheduling, billing, or other program management issues, please contact Janet Jaufmann, VLI Client Services Manager.
For questions concerning technical integrity of the data, please contact Linda Bock, Quality Assurance Officer.

Narrative (continued)

Release Authority:
Release of this data package is approved by the Laboratory Directory or his designee as indicated by the following signature:

Oksana Pozda

Oksana Pozda
Senior Analyst, Metals Section

Linda E Bock

Reviewed By

DEFINITION OF QUALIFIERS

Some of the following qualifiers may have been used in this data package.

Under the "Q" qualifier, column the following flags may have been used.

E - The reported value is estimated because of the presence of interference.

M - Duplicate injection precision not met.

N - Spiked sample recovery not within control limits.

W - Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance.

S - The reported value was determined by the Method of Standard Addition (MSA).

* - Duplicate analysis not within control limits.

+ - Correlation coefficient for the MSA is less than 0.995.

Under the "M" method qualifier, column the following flags may have been used.

"P" for ICP
"A" for Flame AA
"F" for Furnace AA
"CV" for Manual Cold Vapor AA
"AS" for Semi-Automated Spectrophotometric
" " where no data has been entered
"NR" if the analyte is not required to be analyzed.

Under the "C" concentration qualifier, column the following flags may have been used.

"U" is used when the sample concentration beneath the instrument detection limit.

"B" is used when the sample concentration is above the instrument detection limit and below the CRDL.

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: VERSAR_DIV_61_____ Contract: O'BRIEN___

Lab Code: VERSAR Case No.: 8632_& 8650 SAS No.: _____ SDG No.:11____

SOW No.: 3/90_

EPA Sample No.	Lab Sample ID
_MW-11_____	__12319_____
_MW-11F_____	__12325_____
_MW-12_____	__12313_____
_MW-13_____	__12314_____
_MW-14_____	__12315_____
_MW-14F_____	__12316_____
_MW-15_____	__12317_____
_MW-15F_____	__12318_____
_W-5_____	__12146_____
_W-5D_____	__12146D_____
_W-5S_____	__12146S_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

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: _____

Date: _____ Title: _____

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW-11

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

Matrix (soil/water): WATER Lab Sample ID: 12319

Level (low/med): _____ Date Received: 11/05/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	73.7	B		P
7440-36-0	Antimony	49.0	U		P
7440-38-2	Arsenic	6.8	B		F
7440-39-3	Barium	534			P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	49900			P
7440-47-3	Chromium	4.0	U		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	3.0	U		P
7439-89-6	Iron	2800			P
7439-92-1	Lead	6.3		N	F
7439-95-4	Magnesium	128000			P
7439-96-5	Manganese	805			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	56800			P
7782-49-2	Selenium	1.0	U	WN	F
7440-22-4	Silver	4.0	U		P
7440-23-5	Sodium	1170000			P
7440-28-0	Thallium	2.0	U	W	F
7440-62-2	Vanadium	10.5	B		P
7440-66-6	Zinc	2.0	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

THE_ENTIRE_EPA_SAMPLE_NAME_IS_MW-11(S)

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW-11F

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

Matrix (soil/water): WATER Lab Sample ID: 12325

Level (low/med): _____ Date Received: 11/05/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	29.0	U		P
7440-36-0	Antimony	49.0	U		P
7440-38-2	Arsenic	6.9	B		F
7440-39-3	Barium	750			P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	81300			P
7440-47-3	Chromium	4.0	U		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	3.0	U		P
7439-89-6	Iron	771			P
7439-92-1	Lead	1.0	U	N	F
7439-95-4	Magnesium	223000			P
7439-96-5	Manganese	1270			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	79400			P
7782-49-2	Selenium	5.0	U	WN	F
7440-22-4	Silver	4.0	U		P
7440-23-5	Sodium	1910000			P
7440-28-0	Thallium	2.0	U	W	F
7440-62-2	Vanadium	9.1	B		P
7440-66-6	Zinc	2.0	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLOUDY Artifacts: _____

Comments:

THE_ENTIRE_EPA_SAMPLE_NAME_IS_MW-11(S)F

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW-12

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

Matrix (soil/water): WATER Lab Sample ID: 12313

Level (low/med): _____ Date Received: 11/05/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	47.4	B		P
7440-36-0	Antimony	49.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	98.0	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	26400			P
7440-47-3	Chromium	4.0	U		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	3.0	U		P
7439-89-6	Iron	22.7	B		P
7439-92-1	Lead	1.0	U	WN	F
7439-95-4	Magnesium	35700			P
7439-96-5	Manganese	593			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	22.2	B		P
7440-09-7	Potassium	11800			P
7782-49-2	Selenium	1.0	U	WN	F
7440-22-4	Silver	4.0	U		P
7440-23-5	Sodium	993000			P
7440-28-0	Thallium	2.0	U	W	F
7440-62-2	Vanadium	3.0	U		P
7440-66-6	Zinc	2.0	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

THE_ENTIRE_EPA_SAMPLE_NAME_IS_MW-12(S)

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW-13

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

Matrix (soil/water): WATER Lab Sample ID: 12314

Level (low/med): _____ Date Received: 11/05/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	47.8	B		P
7440-36-0	Antimony	49.0	U		P
7440-38-2	Arsenic	2.7	B		F
7440-39-3	Barium	88.1	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	31200			P
7440-47-3	Chromium	4.0	U		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	3.0	U		P
7439-89-6	Iron	58.5	B		P
7439-92-1	Lead	1.0	U	N	F
7439-95-4	Magnesium	51200			P
7439-96-5	Manganese	684			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	24300			P
7782-49-2	Selenium	1.0	U	WN	F
7440-22-4	Silver	4.0	U		P
7440-23-5	Sodium	829000			P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	3.0	U		P
7440-66-6	Zinc	3.3	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

THE_ENTIRE_EPA_SAMPLE_NAME_IS_MW-13(S)

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW-14

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

Matrix (soil/water): WATER Lab Sample ID: 12315

Level (low/med): _____ Date Received: 11/05/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	29.0	U		P
7440-36-0	Antimony	49.0	U		P
7440-38-2	Arsenic	11.3			F
7440-39-3	Barium	700			P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	158000			P
7440-47-3	Chromium	4.0	U		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	3.0	U		P
7439-89-6	Iron	1930			P
7439-92-1	Lead	1.0	U	WN	F
7439-95-4	Magnesium	215000			P
7439-96-5	Manganese	3370			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	24200			P
7782-49-2	Selenium	1.0	U	WN	F
7440-22-4	Silver	4.0	U		P
7440-23-5	Sodium	848000			P
7440-28-0	Thallium	2.0	U	W	F
7440-62-2	Vanadium	3.0	U		P
7440-66-6	Zinc	2.0	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

THE_ENTIRE_EPA_SAMPLE_NAME_IS_MW-14(S)

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW-14F

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

Matrix (soil/water): WATER Lab Sample ID: 12316

Level (low/med): _____ Date Received: 11/05/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	29.0	U		P
7440-36-0	Antimony	49.0	U		P
7440-38-2	Arsenic	11.0			F
7440-39-3	Barium	683			P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	155000			P
7440-47-3	Chromium	4.0	U		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	3.0	U		P
7439-89-6	Iron	1860			P
7439-92-1	Lead	1.0	U	WN	F
7439-95-4	Magnesium	211000			P
7439-96-5	Manganese	3310			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	23000			P
7782-49-2	Selenium	1.0	U	WN	F
7440-22-4	Silver	4.0	U		P
7440-23-5	Sodium	840000			P
7440-28-0	Thallium	2.0	U	W	F
7440-62-2	Vanadium	3.0	U		P
7440-66-6	Zinc	2.0	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

THE_ENTIRE_EPA_SAMPLE_NAME_IS_MW-14(S)F

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW-15

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

Matrix (soil/water): WATER Lab Sample ID: 12317

Level (low/med): _____ Date Received: 11/05/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	692			P
7440-36-0	Antimony	49.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	142	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	76000			P
7440-47-3	Chromium	4.0	U		P
7440-48-4	Cobalt	3.3	B		P
7440-50-8	Copper	3.0	U		P
7439-89-6	Iron	1130			P
7439-92-1	Lead	6.5		N	F
7439-95-4	Magnesium	104000			P
7439-96-5	Manganese	2420			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	971	U		P
7782-49-2	Selenium	1.2	B	WN	F
7440-22-4	Silver	4.0	U		P
7440-23-5	Sodium	443000			P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	4.2	B		P
7440-66-6	Zinc	8.6	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

THE_ENTIRE_EPA_SAMPLE_NAME_IS_MW-15(S)

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW-15F

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

Matrix (soil/water): WATER Lab Sample ID: 12318

Level (low/med): _____ Date Received: 11/05/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	29.0	U		P
7440-36-0	Antimony	49.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	108	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	62700			P
7440-47-3	Chromium	4.0	U		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	3.0	U		P
7439-89-6	Iron	82.4	B		P
7439-92-1	Lead	1.0	U	N	F
7439-95-4	Magnesium	85900			P
7439-96-5	Manganese	1930			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	25.3	B		P
7440-09-7	Potassium	971	U		P
7782-49-2	Selenium	1.0	U	WN	F
7440-22-4	Silver	4.0	U		P
7440-23-5	Sodium	376000			P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	3.0	U		P
7440-66-6	Zinc	2.0	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

THE_ENTIRE_EPA_SAMPLE_NAME_IS_MW-15(S)F

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

W-5

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

Matrix (soil/water): WATER Lab Sample ID: 12146

Level (low/med): _____ Date Received: 11/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	29.0	U		P
7440-36-0	Antimony	49.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	576			P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	62700			P
7440-47-3	Chromium	4.0	U		P
7440-48-4	Cobalt	9.6	B		P
7440-50-8	Copper	3.0	U		P
7439-89-6	Iron	163			P
7439-92-1	Lead	1.0	U	WN	F
7439-95-4	Magnesium	194000			P
7439-96-5	Manganese	1680			P
7439-97-6	Mercury	0.23			CV
7440-02-0	Nickel	60.9			P
7440-09-7	Potassium	81500			P
7782-49-2	Selenium	1.0	U	WN	F
7440-22-4	Silver	4.0	U		P
7440-23-5	Sodium	2200000			P
7440-28-0	Thallium	2.0	U	W	F
7440-62-2	Vanadium	3.0	U		P
7440-66-6	Zinc	2.0	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLOUDY Artifacts: _____

Comments:

THE_ENTIRE_EPA_SAMPLE_NAME_IS_MW-5(S)

FORM I - IN

ILMO2.1

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

Initial Calibration Source: NIST

Continuing Calibration Source: NIST

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	5000.0	5071.12	101.4	5000.0	5086.60	101.7	5129.79	102.6	P
Antimony	500.0	505.65	101.1	500.0	475.64	95.1	486.60	97.3	P
Arsenic	50.0	50.40	100.8	50.0	50.20	100.4	48.30	96.6	F
Barium	500.0	488.36	97.7	500.0	491.54	98.3	491.23	98.2	P
Beryllium	500.0	487.33	97.5	500.0	489.02	97.8	494.53	98.9	P
Cadmium	500.0	495.87	99.2	500.0	498.16	99.6	501.40	100.3	P
Calcium	25000.0	24006.83	96.0	25000.0	24088.48	96.4	24423.11	97.7	P
Chromium	500.0	474.10	94.8	500.0	476.78	95.4	483.59	96.7	P
Cobalt	500.0	485.94	97.2	500.0	487.79	97.6	497.78	99.6	P
Copper	500.0	485.30	97.1	500.0	487.44	97.5	490.36	98.1	P
Iron	5000.0	4920.78	98.4	5000.0	4933.64	98.7	4997.76	100.0	P
Lead	25.0	26.99	108.0	25.0	26.64	106.6	26.11	104.4	F
Magnesium	50000.0	48765.23	97.5	50000.0	49054.77	98.1	49377.45	98.8	P
Manganese	500.0	482.13	96.4	500.0	483.37	96.7	489.35	97.9	P
Mercury	5.0	4.68	93.6	5.0	4.78	95.6	4.73	94.6	CV
Nickel	500.0	491.10	98.2	500.0	510.26	102.1	491.44	98.3	P
Potassium	25000.0	24753.08	99.0	25000.0	24253.64	97.0	24248.03	97.0	P
Selenium	25.0	25.40	101.6	25.0	24.90	99.6	24.70	98.8	F
Silver	500.0	491.59	98.3	500.0	496.63	99.3	500.84	100.2	P
Sodium	33200.0	33568.06	101.1	33200.0	33646.04	101.3	33349.06	100.4	P
Thallium	25.0	25.21	100.8	25.0	25.67	102.7	26.36	105.4	F
Vanadium	500.0	472.72	94.5	500.0	474.61	94.9	480.92	96.2	P
Zinc	500.0	489.03	97.8	500.0	493.02	98.6	501.66	100.3	P

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

Initial Calibration Source: NIST

Continuing Calibration Source: NIST

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				5000.0	5062.11	101.2	5079.22	101.6	P
Antimony				500.0	473.65	94.7	458.62	91.7	P
Arsenic				50.0	48.20	96.4	48.40	96.8	F
Barium				500.0	488.36	97.7	491.54	98.3	P
Beryllium				500.0	488.18	97.6	490.21	98.0	P
Cadmium				500.0	495.18	99.0	500.19	100.0	P
Calcium				25000.0	24011.95	96.0	24254.69	97.0	P
Chromium				500.0	477.40	95.5	479.26	95.9	P
Cobalt				500.0	488.90	97.8	492.23	98.4	P
Copper				500.0	484.53	96.9	487.83	97.6	P
Iron				5000.0	4931.40	98.6	4954.52	99.1	P
Lead				25.0	26.46	105.8	26.99	108.0	F
Magnesium				50000.0	48907.56	97.8	49118.88	98.2	P
Manganese				500.0	482.38	96.5	485.37	97.1	P
Mercury				5.0	4.73	94.6	4.64	92.8	CV
Nickel				500.0	473.64	94.7	501.02	100.2	P
Potassium				25000.0	25151.51	100.6	24511.78	98.0	P
Selenium				25.0	24.80	99.2			F
Silver				500.0	495.23	99.0	494.39	98.9	P
Sodium				33200.0	33079.98	99.6	33173.36	99.9	P
Thallium				25.0	26.13	104.5	26.82	107.3	F
Vanadium				500.0	473.98	94.8	476.50	95.3	P
Zinc				500.0	494.35	98.9	495.68	99.1	P

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

Initial Calibration Source: NIST

Continuing Calibration Source: NIST

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				5000.0	5101.99	102.0			P
Antimony				500.0	486.58	97.3			P
Arsenic									NR
Barium				500.0	492.74	98.5			P
Beryllium				500.0	498.10	99.6			P
Cadmium				500.0	502.28	100.5			P
Calcium				25000.0	24540.58	98.2			P
Chromium				500.0	486.28	97.3			P
Cobalt				500.0	497.04	99.4			P
Copper				500.0	488.22	97.6			P
Iron				5000.0	5007.45	100.1			P
Lead									NR
Magnesium				50000.0	49489.36	99.0			P
Manganese				500.0	493.32	98.7			P
Mercury									NR
Nickel				500.0	489.04	97.8			P
Potassium				25000.0	25392.81	101.6			P
Selenium	25.0	25.40	101.6	25.0	26.60	106.4	24.30	97.2	F
Silver				500.0	498.31	99.7			P
Sodium				33200.0	33450.13	100.8			P
Thallium									NR
Vanadium				500.0	482.18	96.4			P
Zinc				500.0	501.66	100.3			P

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

Initial Calibration Source: NIST

Continuing Calibration Source: NIST

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium				25.0	26.00	104.0			F
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

AA CRDL Standard Source: INORG._VENT.

ICP CRDL Standard Source: INORG._VENT.

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony				120.0	108.82	90.7	80.82	67.4
Arsenic	10.0	10.30	103.0					
Barium								
Beryllium				10.0	10.52	105.2	9.85	98.5
Cadmium				10.0	10.59	105.9	11.76	117.6
Calcium								
Chromium				20.0	22.07	110.4	22.90	114.5
Cobalt								
Copper				50.0	48.84	97.7	46.89	93.8
Iron								
Lead	3.0	2.60	86.7					
Magnesium								
Manganese				30.0	30.51	101.7	28.77	95.9
Mercury	0.2	0.18	90.0					
Nickel				80.0	78.37	98.0	63.31	79.1
Potassium								
Selenium	5.0	5.30	106.0					
Silver				20.0	17.08	85.4	16.52	82.6
Sodium								
Thallium	10.0	10.09	100.9					
Vanadium				100.0	101.82	101.8	98.05	98.0
Zinc				40.0	39.86	99.6	39.86	99.6

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

AA CRDL Standard Source: INORG._VENT.

ICP CRDL Standard Source: _____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium	5.0	5.70	114.0					
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

FORM II (PART 2) - IN

U.S. EPA - CLP

3
BLANKS

Lab Name: VERSAR_DIV_61_____ Contract: O'BRIEN___

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11____

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L_

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	29.0	U	29.0	U	29.0	U	29.0	U	29.000	U	P
Antimony	49.0	U	49.0	U	49.0	U	49.0	U	49.000	U	P
Arsenic	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	F
Barium	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Calcium	4.0	U	4.0	U	4.0	U	4.0	U	22.900	B	P
Chromium	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Cobalt	3.0	U	3.0	U	3.0	U	3.0	U	3.320	B	P
Copper	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Iron	3.0	U	3.0	U	3.0	U	3.0	U	4.280	B	P
Lead	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	F
Magnesium	32.0	U	42.4	B	32.0	U	43.4	B	40.190	B	P
Manganese	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U	0.200	U	CV
Nickel	20.0	U	20.0	U	20.0	U	20.0	U	20.000	U	P
Potassium	971.0	U	971.0	U	971.0	U	971.0	U	971.000	U	P
Selenium	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	F
Silver	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Sodium	59.7	B	78.0	B	89.5	B	79.4	B	32.000	U	P
Thallium	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	F
Vanadium	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Zinc	3.3	B	6.6	B	8.0	B	5.3	B	2.000	U	P

U.S. EPA - CLP

3
BLANKS

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			29.0	U	29.0	U					P
Antimony			49.0	U	49.0	U					P
Arsenic			1.0	U							F
Barium			1.0	U	1.0	U					P
Beryllium			1.0	U	1.0	U					P
Cadmium			5.0	U	5.0	U					P
Calcium			4.0	U	4.0	U					P
Chromium			4.0	U	4.0	U					P
Cobalt			3.0	U	3.0	U					P
Copper			3.0	U	3.0	U					P
Iron			3.0	U	3.0	U					P
Lead			1.0	U							F
Magnesium			32.0	U	32.0	U					P
Manganese			1.0	U	1.0	U					P
Mercury			0.2	U							CV
Nickel			20.0	U	20.0	U					P
Potassium			971.0	U	971.0	U					P
Selenium	1.0	U	1.0	U	1.0	U	1.0	U			F
Silver			4.0	U	4.0	U					P
Sodium			135.2	B	109.3	B					P
Thallium			2.0	U							F
Vanadium			3.0	U	3.0	U					P
Zinc			5.3	B	6.0	B					P

FORM III - IN

ILM02.1

U.S. EPA - CLP

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No: _____ SDG No.: 11

ICP ID Number: 1-TJA 61E ICS Source: INORG._VENT.

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000	484886	488910.8	97.8	482885	481485.2	96.3
Antimony	0	0	-22	-0.8		-49	-6.8	
Arsenic								
Barium	0	500	0	478.5	95.7	0	478.8	95.8
Beryllium	0	500	0	456.6	91.3	0	459.6	91.9
Cadmium	0	1000	5	931.0	93.1	4	927.3	92.7
Calcium	500000	500000	442497	445069.5	89.0	439674	438844.4	87.8
Chromium	0	500	-5	444.6	88.9	-6	444.8	89.0
Cobalt	0	500	4	443.8	88.8	4	446.0	89.2
Copper	0	500	1	474.2	94.8	3	470.5	94.1
Iron	200000	200000	174879	176340.7	88.2	174500	174368.7	87.2
Lead								
Magnesium	500000	500000	477229	481686.6	96.3	475963	475329.7	95.1
Manganese	0	500	23	471.0	94.2	22	470.6	94.1
Mercury								
Nickel	0	1000	-17	877.5	87.8	0	862.8	86.3
Potassium	0	0	-774	-1178.4		-1549	-1823.8	
Selenium								
Silver	0	1000	-67	902.0	90.2	-63	897.8	89.8
Sodium	0	0	-36	-21.7		-31	-33.2	
Thallium								
Vanadium	0	500	-12	452.6	90.5	-9	454.3	90.9
Zinc	0	1000	-6	911.0	91.1	-3	911.0	91.1

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

W-5S

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

Matrix (soil/water): WATER_ Level (low/med): _____

% Solids for Sample: 0.0

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75-125	1970.4600		29.0000	U	2000.00	98.5		P
Antimony	75-125	405.1900		49.0000	U	500.00	81.0		P
Arsenic	75-125	37.4000		1.0000	U	40.00	93.5		F
Barium	75-125	2481.4100		575.6700		2000.00	95.3		P
Beryllium	75-125	46.2500		1.0000	U	50.00	92.5		P
Cadmium	75-125	51.9300		5.0000	U	50.00	103.9		P
Calcium									NR
Chromium	75-125	179.2800		4.0000	U	200.00	89.6		P
Cobalt	75-125	469.6700		9.6100	B	500.00	92.0		P
Copper	75-125	232.7300		3.0000	U	250.00	93.1		P
Iron	75-125	1096.5100		162.9000		1000.00	93.4		P
Lead	75-125	10.8450		1.0000	U	20.00	54.2	N	F
Magnesium									NR
Manganese	75-125	2166.5700		1680.0300		500.00	97.3		P
Mercury	75-125	1.0530		0.2290		1.00	82.4		CV
Nickel	75-125	516.0800		60.9100		500.00	91.0		P
Potassium									NR
Selenium	75-125	6.6000		1.0000	U	10.00	66.0	N	F
Silver	75-125	37.8100		4.0000	U	50.00	75.6		P
Sodium									NR
Thallium	75-125	40.3440		2.0000	U	50.00	80.7		F
Vanadium	75-125	474.9700		3.0000	U	500.00	95.0		P
Zinc	75-125	471.0900		2.0000	U	500.00	94.2		P

Comments:
THE_ENTIRE_EPA_SAMPLE_NAME_IS_MW-5(S)

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

W-5D

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: SDG No.: 11

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

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

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

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		29.0000	U	29.0000	U			P
Antimony		49.0000	U	49.0000	U			P
Arsenic		1.0000	U	1.0000	U			F
Barium	200.0	575.6700		565.5500		1.8		P
Beryllium		1.0000	U	1.0000	U			P
Cadmium		5.0000	U	5.0000	U			P
Calcium		62738.3600		61132.4700		2.6		P
Chromium		4.0000	U	4.0000	U			P
Cobalt		9.6100	B	9.6100	B	0.0		P
Copper		3.0000	U	3.0000	U			P
Iron	100.0	162.9000		146.3100		10.7		P
Lead		1.0000	U	1.0000	U			F
Magnesium		193862.0300		189428.1900		2.3		P
Manganese		1680.0300		1638.8400		2.5		P
Mercury	0.2	0.2290		0.2290		0.0		CV
Nickel	40.0	60.9100		29.4300	B	69.7		P
Potassium		81548.8200		80499.4300		1.3		P
Selenium		1.0000	U	1.0000	U			F
Silver		4.0000	U	4.0000	U			P
Sodium								NR
Thallium		2.0000	U	2.0000	U			F
Vanadium		3.0000	U	3.0000	U			P
Zinc		2.0000	U	2.0000	U			P

FORM VI - IN

ILMO2.1

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

Solid LCS Source: _____

Aqueous LCS Source: INOR VEN

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum	5000.0	4834.12	96.7						
Antimony	500.0	441.95	88.4						
Arsenic	500.0	476.00	95.2						
Barium	5000.0	4774.47	95.5						
Beryllium	125.0	114.55	91.6						
Cadmium	250.0	226.58	90.6						
Calcium	12500.0	11476.12	91.8						
Chromium	500.0	460.90	92.2						
Cobalt	1250.0	1167.15	93.4						
Copper	625.0	586.68	93.9						
Iron	2500.0	2385.37	95.4						
Lead	500.0	511.68	102.3						
Magnesium	12500.0	11977.68	95.8						
Manganese	1250.0	1166.49	93.3						
Mercury									
Nickel	1250.0	1149.55	92.0						
Potassium	12500.0	11503.92	92.0						
Selenium	500.0	468.00	93.6						
Silver	625.0	822.68	131.6						
Sodium	12500.0	12130.86	97.0						
Thallium	500.0	495.10	99.0						
Vanadium	1250.0	1182.59	94.6						
Zinc	1250.0	1144.18	91.5						

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10

Instrument Detection Limits (Quarterly)

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: SDG No.: 11

ICP ID Number: Date: 10/01/93

Flame AA ID Number :

Furnace AA ID Number : 4-VARIAN_SPE

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead	283.30	BZ	3	1.0	F
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR

Comments:

U.S. EPA - CLP

10

Instrument Detection Limits (Quarterly)

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: SDG No.: 11

ICP ID Number: Date: 10/01/93

Flame AA ID Number :

Furnace AA ID Number : 7-PE_5100

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic	193.30	BZ	10	1.0	F
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium	196.00	BZ	5	1.0	F
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR

Comments:

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

Solid LCS Source: _____

Aqueous LCS Source: INOR VEN

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum	2000.0	1988.59	99.4						
Antimony	500.0	462.14	92.4						
Arsenic	40.0	39.80	99.5						
Barium	2000.0	1949.39	97.5						
Beryllium	50.0	48.07	96.1						
Cadmium	50.0	55.35	110.7						
Calcium	50.0	31.19	62.4						
Chromium	200.0	195.79	97.9						
Cobalt	500.0	489.27	97.9						
Copper	250.0	243.43	97.4						
Iron	1000.0	994.93	99.5						
Lead	20.0	21.37	106.9						
Magnesium									
Manganese									
Mercury	1.0	0.96	95.6						
Nickel	500.0	495.89	99.2						
Potassium									
Selenium	10.0	10.20	102.0						
Silver	50.0	38.93	77.9						
Sodium									
Thallium	50.0	49.06	98.1						
Vanadium	500.0	488.76	97.8						
Zinc	500.0	484.38	96.9						

FORM VII - IN

ILM02.1

U.S. EPA - CLP

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ICP SERIAL DILUTION

EPA SAMPLE NO.

W-5L

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

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

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	29.00	U	145.00	U			P
Antimony	49.00	U	245.00	U			P
Arsenic							
Barium	575.67		590.60	B	2.6		P
Beryllium	1.00	U	5.00	U			P
Cadmium	5.00	U	25.00	U			P
Calcium	62738.36		68060.50		8.5		P
Chromium	4.00	U	20.00	U			P
Cobalt	9.61	B	15.00	U	100.0		P
Copper	3.00	U	15.00	U			P
Iron	162.90		164.95	B	1.3		P
Lead							
Magnesium	193862.03		201399.90		3.9		P
Manganese	1680.03		1796.10		6.9		P
Mercury							
Nickel	60.91		100.00	U	100.0		P
Potassium	81548.82		75757.55		7.1		P
Selenium							
Silver	4.00	U	20.00	U			P
Sodium	439517.97		457511.55		4.1		P
Thallium							
Vanadium	3.00	U	15.00	U			P
Zinc	2.00	U	13.25	B			P

FORM IX - IN

ILMO2.1

U.S. EPA - CLP

10

Instrument Detection Limits (Quarterly)

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

ICP ID Number: 1-TJA_61E Date: 10/01/93

Flame AA ID Number : _____

Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.20		200	29.0	P
Antimony	206.80		60	49.0	P
Arsenic			10		NR
Barium	493.40		200	1.0	P
Beryllium	313.00		5	1.0	P
Cadmium	228.80		5	5.0	P
Calcium	317.90		5000	4.0	P
Chromium	267.70		10	4.0	P
Cobalt	228.60		50	3.0	P
Copper	324.70		25	3.0	P
Iron	259.90		100	3.0	P
Lead			3		NR
Magnesium	323.20		5000	32.0	P
Manganese	257.60		15	1.0	P
Mercury			0.2		NR
Nickel	231.60		40	20.0	P
Potassium	766.40		5000	971.0	P
Selenium			5		NR
Silver	328.00		10	4.0	P
Sodium	588.90		5000	32.0	P
Thallium			10		NR
Vanadium	292.40		50	3.0	P
Zinc	213.80		20	2.0	P

Comments:

FORM X - IN ILMO2.

U.S. EPA - CLP

10
Instrument Detection Limits (Quarterly)

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: SDG No.: 11

ICP ID Number: Date: 10/01/93

Flame AA ID Number :

Furnace AA ID Number : 8-PE_3030

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium	276.60	BZ	10	2.0	F
Vanadium			50		NR
Zinc			20		NR

Comments:

U.S. EPA - CLP

10

Instrument Detection Limits (Quarterly)

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: SDG No.: 11

ICP ID Number: Date: 10/01/93

Flame AA ID Number : 12-PE_2380

Furnace AA ID Number :

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury	253.70		0.2	0.2	CV
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR

Comments:

U.S. EPA - CLP

11A
ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

ICP ID Number: 1-TJA 61E Date: 10/01/93

Analyte	Wave-length (nm)	Interelement Correction Factors for : Al	Ca	Fe	Mg	AS_
Aluminum	308.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	193.60	0.0058000	0.0000000	0.0004500	0.0000000	0.0000000
Barium	493.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.00	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	228.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0071000
Calcium	317.90	0.0000000	0.0000000	0.0000300	0.0000000	0.0000000
Chromium	267.70	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.70	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.90	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.30	0.0010920	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	323.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.60	0.0000000	0.0000000	-0.0003000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.00	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.00	0.0000000	0.0000000	-0.0002400	0.0000000	0.0000000
Sodium	588.90	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.80	0.0000000	0.0000000	0.0014000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	-0.0005000	0.0000000	0.0000000
Zinc	213.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP

11B
ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: SDG No.: 11

ICP ID Number: 1-TJA 61E Date: 10/01/93

Analyte	Wave-length (nm)	Interelement Correction Factors for : V				
Aluminum	308.20	0.0000000				
Antimony	206.80	0.0006000				
Arsenic	193.60	0.0210000				
Barium	493.40	0.0000000				
Beryllium	313.00	0.0035000				
Cadmium	228.80	0.0000000				
Calcium	317.90	0.0000000				
Chromium	267.70	0.0004000				
Cobalt	228.60	0.0000000				
Copper	324.70	0.0000000				
Iron	259.90	0.0000000				
Lead	220.30	0.0000000				
Magnesium	323.20	-0.0010000				
Manganese	257.60	0.0000000				
Mercury						
Nickel	231.60	0.0000000				
Potassium	766.40	0.0000000				
Selenium	196.00	-0.0031000				
Silver	328.00	0.0000000				
Sodium	588.90	0.0000000				
Thallium	190.80	0.0035000				
Vanadium	292.40	0.0000000				
Zinc	213.80	-0.0002000				

Comments:

U.S. EPA - CLP

12
ICP LINEAR RANGES (QUARTERLY)

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.: 11

ICP ID Number: 1-TJA 61E Date: 10/01/93

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum	7.00	900000.0	P
Antimony	7.00	50000.0	P
Arsenic	7.00	50000.0	P
Barium	7.00	40000.0	P
Beryllium	7.00	30000.0	P
Cadmium	7.00	35000.0	P
Calcium	7.00	500000.0	P
Chromium	7.00	35000.0	P
Cobalt	7.00	50000.0	P
Copper	7.00	40000.0	P
Iron	7.00	250000.0	P
Lead	7.00	95000.0	P
Magnesium	7.00	1000000.0	P
Manganese	7.00	25000.0	P
Mercury			NR
Nickel	7.00	45000.0	P
Potassium	7.00	1000000.0	P
Selenium	7.00	50000.0	P
Silver	7.00	50000.0	P
Sodium	7.00	500000.0	P
Thallium	7.00	50000.0	P
Vanadium	7.00	50000.0	P
Zinc	7.00	50000.0	P

Comments:

U.S. EPA - CLP

13
PREPARATION LOG

Lab Name: VERSAR_DIV_61_____ Contract: O'BRIEN___

Lab Code: VERSAR Case No.:_8632_8 SAS No.: _____ SDG No.:11____

Method: P_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW_____	_11/18/93__	_____	___100__
LCSM_____	_11/18/93__	_____	___100__
MW-11____	_11/18/93__	_____	___100__
MW-11F___	_11/18/93__	_____	___100__
MW-12____	_11/18/93__	_____	___100__
MW-13____	_11/18/93__	_____	___100__
MW-14____	_11/18/93__	_____	___100__
MW-14F___	_11/18/93__	_____	___100__
MW-15____	_11/18/93__	_____	___100__
MW-15F___	_11/18/93__	_____	___100__
PBW_____	_11/18/93__	_____	___100__
W-5_____	_11/18/93__	_____	___100__
W-5DD____	_11/18/93__	_____	___100__
W-5SS____	_11/18/93__	_____	___100__
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
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_____	_____	_____	_____
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_____	_____	_____	_____
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_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

FORM XIII - IN ILMO2.1

U.S. EPA - CLP

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PREPARATION LOG

Lab Name: VERSAR_DIV_61_____ Contract: O'BRIEN___

Lab Code: VERSAR Case No.:_8632_8 SAS No.: _____ SDG No.:11____

Method: F_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW	11/18/93		100
LCSM	11/18/93		100
MW-11	11/18/93		100
MW-11F	11/18/93		100
MW-12	11/18/93		100
MW-13	11/18/93		100
MW-14	11/18/93		100
MW-14F	11/18/93		100
MW-15	11/18/93		100
MW-15F	11/18/93		100
PBW	11/18/93		100
W-5	11/18/93		100
W-5DD	11/18/93		100
W-5SS	11/18/93		100

FORM XIII - IN ILMO2.1

U.S. EPA - CLP

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PREPARATION LOG

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: SDG No.: 11

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW	11/19/93		100
LCSM	11/19/93		100
MW-11	11/19/93		100
MW-11F	11/19/93		100
MW-12	11/19/93		100
MW-13	11/19/93		100
MW-14	11/19/93		100
MW-14F	11/19/93		100
MW-15	11/19/93		100
MW-15F	11/19/93		100
PBW	11/19/93		100
W-5	11/19/93		100
W-5DD	11/19/93		100
W-5SS	11/19/93		100

FORM XIII - IN ILMO2.1

U.S. EPA - CLP

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ANALYSIS RUN LOG

Lab Name: VERSAR_DIV_61_____ Contract: O'BRIEN___

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.:11____

Instrument ID Number: 1-TJA 61E____ Method: P_

Start Date: 11/19/93 End Date: 11/19/93

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	
				X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_
S0	1.00	1420		X	_	_	X	X	_	_	_	X	X	_	_	_	_	_	_	_	_	X	_	_	X	_	_
S	1.00	1423		_	_	_	_	_	_	X	_	X	_	_	_	_	X	_	_	_	_	_	_	_	_	X	_
S	1.00	1426		_	X	_	_	_	X	_	X	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
S	1.00	1429		_	_	_	_	_	_	_	_	_	_	X	_	X	_	_	_	_	_	_	_	_	_	_	_
S	1.00	1435		_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	X	_	_	X	_	_	_	_
S	1.00	1437		_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
ICV	1.00	1441		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_
ICB	1.00	1446		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_
CCV	1.00	1449		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_
CCB	1.00	1453		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_
CRI	1.00	1456		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_
ICSA	1.00	1500		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_
ICSAB	1.00	1504		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_
PBW	1.00	1507		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_
INORG VE	1.00	1511		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_
LCSM	1.00	1514																									
W-5S	1.00	1518		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_
W-5	1.00	1522		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_
W-5L	5.00	1525		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_
W-5D	1.00	1529		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_
CCV	1.00	1532		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_
CCB	1.00	1540		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_
W-5	5.00	1544																									
MW-12	1.00	1547		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	_	_	X	X	_
MW-13	1.00	1551		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	_	_	X	X	_
MW-14	1.00	1554		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	_	_	X	X	_
MW-14F	1.00	1558		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	_	_	X	X	_
MW-15	1.00	1602		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	_	_	X	X	_
MW-15F	1.00	1605		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	_	_	X	X	_
MW-11	1.00	1609		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	_	_	X	X	_
MW-11F	1.00	1612		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_
W-5	5.00	1629		_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
				_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_

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ANALYSIS RUN LOG

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.:11

Instrument ID Number: 1-TJA 61E Method: P_

Start Date: 11/19/93 End Date: 11/19/93

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	
CCV	1.00	1633		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCB	1.00	1644		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
W-5L	25.00	1647																					X				
W-5	5.00	1651																									
MW-12	5.00	1654																					X				
MW-13	5.00	1658																					X				
MW-14	5.00	1702																					X				
MW-14F	5.00	1705																					X				
MW-11	5.00	1709																					X				
MW-11F	5.00	1712																					X				
CRI	1.00	1716		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCV	1.00	1720		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCB	1.00	1723		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
ICSA	1.00	1727		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
ICSAB	1.00	1730		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCV	1.00	1737		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCB	1.00	1741		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	

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ANALYSIS RUN LOG

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.:11

Instrument ID Number: 4-VARIAN SPE_ Method: F_

Start Date: 11/19/93 End Date: 11/19/93

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	
S0	1.00	1045													X												
S3	1.00	1050													X												
S10	1.00	1055													X												
S20	1.00	1100													X												
S50	1.00	1105													X												
ICV	1.00	1110													X												
ICB	1.00	1115													X												
CCV	1.00	1120													X												
CCB	1.00	1125													X												
CRA	1.00	1130													X												
PBW	1.00	1135													X												
PBWA	1.00	1140	105.1												X												
INORG VE	20.00	1145													X												
INORG VE	20.00	1150	89.5												X												
LCSM	1.00	1155													X												
W-5S	1.00	1200													X												
W-5	1.00	1205													X												
W-5A	1.00	1210	55.1												X												
CCV	1.00	1215													X												
CCB	1.00	1220													X												
W-5D	1.00	1225													X												
W-5DA	1.00	1230	56.0												X												
MW-12	1.00	1235													X												
MW-12A	1.00	1240	83.2												X												
MW-13	1.00	1245													X												
MW-13A	1.00	1250	87.6												X												
MW-14	1.00	1255													X												
MW-14A	1.00	1300	84.1												X												
MW-14F	1.00	1305													X												
MW-14FA	1.00	1310	83.2												X												
CCV	1.00	1315													X												
CCB	1.00	1320													X												

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ANALYSIS RUN LOG

Lab Name: VERSAR_DIV_61_____ Contract: O'BRIEN___

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.:11____

Instrument ID Number: 4-VARIAN SPE_ Method: F_

Start Date: 11/19/93 End Date: 11/19/93

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	
MW-15	1.00	1325													X												
MW-15A	1.00	1330	91.2												X												
MW-15F	1.00	1335													X												
MW-15FA	1.00	1340	93.7												X												
MW-11	1.00	1345													X												
MW-11A	1.00	1350	86.0												X												
MW-11F	1.00	1355													X												
MW-11FA	1.00	1400	102.5												X												
CCV	1.00	1405													X												
CCB	1.00	1410													X												

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ANALYSIS RUN LOG

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.:11

Instrument ID Number: 7-PE 5100 Method: F_

Start Date: 11/20/93 End Date: 11/20/93

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	
S0	1.00	1517				X																					
S10	1.00	1521				X																					
S20	1.00	1524				X																					
S50	1.00	1528				X																					
S100	1.00	1531				X																					
ICV	1.00	1535				X																					
ICB	1.00	1539				X																					
CCV	1.00	1542				X																					
CCB	1.00	1546				X																					
CRA	1.00	1549				X																					
ZZZZZZ	1.00	1553																									
PBW	1.00	1556				X																					
PBWA	1.00	1600	98.5			X																					
INORG VE	10.00	1604				X																					
INORG VE	10.00	1607	96.0			X																					
LCSM	1.00	1611				X																					
W-5S	1.00	1614				X																					
W-5	1.00	1618				X																					
W-5A	1.00	1621	99.0			X																					
CCV	1.00	1625				X																					
CCB	1.00	1629				X																					
W-5D	1.00	1632				X																					
W-5DA	1.00	1636	87.0			X																					
MW-12	1.00	1640				X																					
MW-12A	1.00	1643	95.0			X																					
MW-13	1.00	1647				X																					
MW-13A	1.00	1650	92.5			X																					
MW-14	1.00	1654				X																					
MW-14A	1.00	1658	95.5			X																					
MW-14F	1.00	1701				X																					
MW-14FA	1.00	1705	92.0			X																					
CCV	1.00	1709				X																					

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ANALYSIS RUN LOG

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.:11

Instrument ID Number: 7-PE 5100 Method: F_

Start Date: 11/20/93 End Date: 11/20/93

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	
CCB	1.00	1712				X																					
MW-15	1.00	1716				X																					
MW-15A	1.00	1719	96.0			X																					
MW-15F	1.00	1723				X																					
MW-15FA	1.00	1727	92.5			X																					
MW-11	1.00	1730				X																					
MW-11A	1.00	1734	95.0			X																					
MW-11F	1.00	1738				X																					
MW-11FA	1.00	1741	94.0			X																					
CCV	1.00	1745				X																					
CCB	1.00	1748				X																					

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ANALYSIS RUN LOG

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.:11

Instrument ID Number: 7-PE 5100 Method: F_

Start Date: 11/18/93 End Date: 11/18/93

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	
S0	1.00	1600		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
S5	1.00	1606		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
S10	1.00	1611		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
S20	1.00	1616		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
S50	1.00	1621		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
ICV	1.00	1626		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
ICB	1.00	1631		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CCV	1.00	1636		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CCB	1.00	1641		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CRA	1.00	1646		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
ZZZZZZ	1.00	1651		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PBW	1.00	1656		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
PBWA	1.00	1701	103.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
INORG VE	20.00	1706		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
INORG VE	20.00	1711	96.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
LCSM	1.00	1716		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
W-5S	1.00	1721		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
W-5	1.00	1727		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
W-5A	1.00	1732	58.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CCV	1.00	1737		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CCB	1.00	1742		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
W-5D	1.00	1747		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
W-5DA	1.00	1752	51.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
MW-12	1.00	1757		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
MW-12A	1.00	1802	69.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
MW-13	1.00	1807		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
MW-13A	1.00	1813	67.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
MW-14	1.00	1818		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
MW-14A	1.00	1823	63.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
MW-14F	1.00	1828		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
MW-14FA	1.00	1833	52.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CCV	1.00	1838		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-

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ANALYSIS RUN LOG

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.:11

Instrument ID Number: 7-PE 5100 Method: F_

Start Date: 11/18/93 End Date: 11/18/93

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	
ZZZZZZ	1.00	1841																									
CCB	1.00	1852																			X						
ZZZZZZ	1.00	1857																									
ZZZZZZ	1.00	1902																									
ZZZZZZ	1.00	1907																									
ZZZZZZ	1.00	1912																									
ZZZZZZ	1.00	1917																									
ZZZZZZ	1.00	1922																									
ZZZZZZ	1.00	1927																									
ZZZZZZ	1.00	1933																									
ZZZZZZ	1.00	1938																									
ZZZZZZ	1.00	1940																									

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ANALYSIS RUN LOG

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.:11

Instrument ID Number: 7-PE 5100 Method: F_

Start Date: 11/19/93 End Date: 11/19/93

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S0	1.00	1037		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
S5	1.00	1042		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
S10	1.00	1047		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
S20	1.00	1052		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
S50	1.00	1057		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
ICV	1.00	1102		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
ICB	1.00	1107		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CCV	1.00	1112		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CCB	1.00	1117		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CRA	1.00	1122		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
MW-15	1.00	1128		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
MW-15A	1.00	1133	64.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
MW-15F	1.00	1138		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
MW-15FA	1.00	1143	83.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
MW-11	1.00	1148		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
MW-11A	1.00	1153	46.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
MW-11F	1.00	1158		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
MW-11FA	1.00	1203	40.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CCV	1.00	1211		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CCB	1.00	1216		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
MW-11F	5.00	1221		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
MW-11FA	5.00	1226	84.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CCV	1.00	1231		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CCB	1.00	1236		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

FORM XIV - IN ILMO2.1

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.:11

Instrument ID Number: 8-PE 3030 Method: F_

Start Date: 11/19/93 End Date: 11/19/93

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	
S0	1.00	1000																						X			
S10	1.00	1005																						X			
S20	1.00	1010																						X			
S50	1.00	1015																						X			
ICV	1.00	1020																						X			
ICB	1.00	1025																						X			
CCV	1.00	1030																						X			
CCB	1.00	1035																						X			
CRA	1.00	1040																						X			
PBW	1.00	1045																						X			
PBWA	1.00	1050	99.7																					X			
INORG VE	20.00	1055																						X			
INORG VE	20.00	1100	85.9																					X			
LCSM	2.00	1105																						X			
W-5S	2.00	1110																						X			
W-5	1.00	1115																						X			
W-5A	1.00	1120	66.5																					X			
CCV	1.00	1125																						X			
CCB	1.00	1130																						X			
W-5D	1.00	1135																						X			
W-5DA	1.00	1140	68.8																					X			
MW-12	1.00	1145																						X			
MW-12A	1.00	1150	81.4																					X			
MW-13	1.00	1155																						X			
MW-13A	1.00	1200	87.1																					X			
MW-14	1.00	1205																						X			
MW-14A	1.00	1210	83.7																					X			
MW-14F	1.00	1215																						X			
MW-14FA	1.00	1220	83.7																					X			
CCV	1.00	1225																						X			
CCB	1.00	1230																						X			
MW-15	1.00	1235																						X			

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ANALYSIS RUN LOG

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.:11

Instrument ID Number: 8-PE 3030 Method: F_

Start Date: 11/19/93 End Date: 11/19/93

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	
MW-15A	1.00	1240	91.7																					X			
MW-15F	1.00	1245																						X			
MW-15FA	1.00	1250	91.7																					X			
MW-11	1.00	1255																						X			
MW-11A	1.00	1300	80.2																					X			
MW-11F	1.00	1305																						X			
MW-11FA	1.00	1310	68.8																					X			
ZZZZZZ	1.00	1315																									
CCV	1.00	1320																						X			
CCB	1.00	1325																						X			

FORM XIV - IN ILM02.1

U.S. EPA - CLP

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ANALYSIS RUN LOG

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.:11

Instrument ID Number: 12-PE 2380 Method: CV

Start Date: 11/19/93 End Date: 11/19/93

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN		
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
S0	1.00	1310		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
S0.5	1.00	1312		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
S1	1.00	1314		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
S5	1.00	1316		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
S10	1.00	1318		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
ICV	1.00	1320		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
ICB	1.00	1322		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
CCV	1.00	1324		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
CCB	1.00	1326		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
CRA	1.00	1328		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
ZZZZZZ	1.00	1330		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
ZZZZZZ	1.00	1332		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
ZZZZZZ	1.00	1334		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
ZZZZZZ	1.00	1336		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
ZZZZZZ	1.00	1338		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
ZZZZZZ	1.00	1340		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
ZZZZZZ	1.00	1342		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
ZZZZZZ	1.00	1344		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
ZZZZZZ	1.00	1346		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
CCV	1.00	1348		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
CCB	1.00	1350		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
PBW	1.00	1352		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
LCSM	1.00	1354		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
W-5	1.00	1356		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
W-5D	1.00	1358		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
W-5S	1.00	1400		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
MW-12	1.00	1402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
MW-13	1.00	1404		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
MW-14	1.00	1406		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
MW-14F	1.00	1408		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
MW-15	1.00	1410		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
CCV	1.00	1412		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

FORM XIV - IN ILMO2.1

U.S. EPA - CLP

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ANALYSIS RUN LOG

Lab Name: VERSAR_DIV_61 Contract: O'BRIEN

Lab Code: VERSAR Case No.: 8632_8 SAS No.: _____ SDG No.:11

Instrument ID Number: 12-PE 2380 Method: CV

Start Date: 11/19/93 End Date: 11/19/93

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	
CCB	1.00	1414																X									
MW-15F	1.00	1416																X									
MW-11	1.00	1418																X									
MW-11F	1.00	1420																X									
CCV	1.00	1422																X									
CCB	1.00	1424																X									
ZZZZZZ	1.00	1426																									
ZZZZZZ	1.00	1428																									
ZZZZZZ	1.00	1430																									
ZZZZZZ	1.00	1432																									
ZZZZZZ	1.00	1434																									
ZZZZZZ	1.00	1436																									
ZZZZZZ	1.00	1438																									
ZZZZZZ	1.00	1440																									
ZZZZZZ	1.00	1442																									
ZZZZZZ	1.00	1444																									
ZZZZZZ	1.00	1446																									
ZZZZZZ	1.00	1448																									
ZZZZZZ	1.00	1450																									
ZZZZZZ	1.00	1452																									
ZZZZZZ	1.00	1454																									
ZZZZZZ	1.00	1456																									
ZZZZZZ	1.00	1458																									
ZZZZZZ	1.00	1500																									
ZZZZZZ	1.00	1502																									
ZZZZZZ	1.00	1504																									
ZZZZZZ	1.00	1506																									

FORM XIV - IN ILMO2.1

10
HOLDING TIMES

Client: VERSAR_DIV_61 Site: O'BRIEN

Lab Name: VERSAR Control No.: 8632_ Code: _____ Batch: 11____

EPA Sample No.	Matrix	Date Received	Mercury Prep Date	Mercury Holding Time	Cyanide Prep Date	Cyanide Holding Time
MW-11	WATER	11/05/93	11/19/93	14		
MW-11F	WATER	11/05/93	11/19/93	14		
MW-12	WATER	11/05/93	11/19/93	14		
MW-13	WATER	11/05/93	11/19/93	14		
MW-14	WATER	11/05/93	11/19/93	14		
MW-14F	WATER	11/05/93	11/19/93	14		
MW-15	WATER	11/05/93	11/19/93	14		
MW-15F	WATER	11/05/93	11/19/93	14		
W-5	WATER	11/03/93	11/19/93	16		
W-5D	WATER	11/03/93	11/19/93	16		
W-5S	WATER	11/03/93	11/19/93	16		

FORM X - IN

File : 8632H1.WSL

File Record	Laboratory Sample Name	Customer/EPA Sample Name	Instrument Type	Matrix	Dil.	Date	Time	Flags
1	S0		3		1.0	11/19/93	14:20:00	
2	S		3		1.0	11/19/93	14:23:00	
3	S		3		1.0	11/19/93	14:26:00	
4	S		3		1.0	11/19/93	14:29:00	
5	S		3		1.0	11/19/93	14:35:00	
6	S		3		1.0	11/19/93	14:37:00	
7	CCVC0		0		1.0	11/19/93	14:41:00	
8	ICB	CCB	0		1.0	11/19/93	14:46:00	
9	CCVC1		0		1.0	11/19/93	14:49:00	
10	CCB1	CCB	0		1.0	11/19/93	14:53:00	
11	CRII	CRI	0		1.0	11/19/93	14:56:00	
12	ICSAII	ICSA	0		1.0	11/19/93	15:00:00	
13	ICSABII	ICSAB	0		1.0	11/19/93	15:04:00	
14	PBW	PBW	0		1.0	11/19/93	15:07:00	
15	LCSIV		0		1.0	11/19/93	15:11:00	
16	LCSWCW		0		1.0	11/19/93	15:14:00	
17	12146S		0		1.0	11/19/93	15:18:00	
18	12146		0		1.0	11/19/93	15:22:00	
19	12146L		0		5.0	11/19/93	15:25:00	
20	12146D		0		1.0	11/19/93	15:29:00	
21	CCVC2		0		1.0	11/19/93	15:32:00	
22	CCB2	CCB	0		1.0	11/19/93	15:40:00	
23	12446S/5		0		5.0	11/19/93	15:44:00	
24	12313		0		1.0	11/19/93	15:47:00	
25	12314		0		1.0	11/19/93	15:51:00	
26	12315		0		1.0	11/19/93	15:54:00	
27	12316		0		1.0	11/19/93	15:58:00	
28	12317		0		1.0	11/19/93	16:02:00	
29	12318		0		1.0	11/19/93	16:05:00	
30	12319		0		1.0	11/19/93	16:09:00	
31	12325		0		1.0	11/19/93	16:12:00	
32	12146/5		0		5.0	11/19/93	16:29:00	
33	CCVC3		0		1.0	11/19/93	16:33:00	
34	CCB3	CCB	0		1.0	11/19/93	16:44:00	
35	12146L		0		25.0	11/19/93	16:47:00	
36	12416D/5		0		5.0	11/19/93	16:51:00	
37	12313/5		0		5.0	11/19/93	16:54:00	
38	12314/5		0		5.0	11/19/93	16:58:00	
39	12315/5		0		5.0	11/19/93	17:02:00	
40	12316/5		0		5.0	11/19/93	17:05:00	
41	12319/5		0		5.0	11/19/93	17:09:00	
42	12325/5		0		5.0	11/19/93	17:12:00	
43	CRIF	CRI	0		1.0	11/19/93	17:16:00	
44	CCVC4		0		1.0	11/19/93	17:20:00	
45	CCB4	CCB	0		1.0	11/19/93	17:23:00	
46	ICSAIF	ICSA	0		1.0	11/19/93	17:27:00	
47	ICSABIF	ICSAB	0		1.0	11/19/93	17:30:00	
48	CCVC5		0		1.0	11/19/93	17:37:00	
49	CCB5	CCB	0		1.0	11/19/93	17:41:00	

CLP ICP ANALYSIS LOG SHEET

Date: 11-19-93

Code-Batch: VEOBRIEN 4,5 Control No.: 86328650

Analyst: JH File Name: 8632-H1 Inst. No.: 1

Elements: Al, Ag, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, Pb, Se, Sb, Si, Sn, Sr, Ti, Tl, V, Zn

Standardization:

		Source/Code:
CAL1-SO	Blank	
CAL2-S	1 ppm Cd, Cr, Mn, Ni, Pb, Sb, Sn, Sr 10 ppm Tl	
CAL3-S	1 ppm Ag, Ba, Be, Cu, Ti, V 10 ppm Al	
CAL4-S	1 ppm B, Co, Mo, Zn 10 ppm As, Se 50 ppm Ca	
CAL5-S	50 ppm K 100 ppm Na	
CAL6-2	10 ppm Si	
CAL7-S	100 ppm Mg	

Analysis Run:

QC Set (1)	Source/Code/Comments:
ICV	
ICB	
CCVC1	
CCB1	

Sample Set #1

1) CRII	
2) ICSAII	
3) ICSABII	
4) P3W	
5) LCSW	
6) LCSWCW	
7) 121465	High Na
8) 12146	
9) 121462	
10) 12146D	

QC Set (2)	Source/Code/Comments:
CCVC2	
CCB2	

Sample Set #2 JH

1) ~~12146A~~ 121465/5	
2) 12313	High Na
3) 12314	
4) 12315	
5) 12316	
6) 12317	
7) 12318	
8) 12319	High Na
9) 12325	
10) ~~CRIF~~ 12146/5	

CLP ICP ANALYSIS LOG SHEET

Analysis Run:

QC Set (3)

CCVC3

CCB3

Sample Set #3

1) 121462 — 25 FD
2) 121462/5
3) 123131/5
4) 123141/5
5) 123151/5
6) 123161/5
7) 123191/5
8) 123251/5
9) CRIF
10)

QC Set (4)

CCVC4

CCB4

Sample Set #4

1) ICSA1IE
2) ICSAB1E
3)
4)
5)
6)
7)
8)
9)
10)

QC Set (5)

CCVC5

CCB5

Sample Set #5

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)

QC Set (6)

CCVC6

CCB6

ICP Spikes Worksheet

Project/batch: VEO BRIEN 45

Control no.: 8632

Date: 11-19-93

QC Sample no.: 12146

Analyte?		Spk Lvl LCSM	Sample	Spike	%Rec	P?		P level	P volume	Spil
Ag		0.050	—	0.378	76	✓			µl @ ppm	
Al		2.000	—	1.970	98	✓			µl @ ppm	
As									µl @ ppm	
B									µl @ ppm	
Ba		2.000	0.576	2.481	95	✓			µl @ ppm	
Be		0.050	—	0.046	92	✓			µl @ ppm	
Ca									µl @ ppm	
Cd		0.050	—	0.052	104	✓			µl @ ppm	
Co		0.500	0.010	0.470	92	✓			µl @ ppm	
Cr		0.200	—	0.179	90	✓			µl @ ppm	
Cu		0.250	—	0.233	93	✓			µl @ ppm	
Fe		1.000	0.163	1.097	93	✓			µl @ ppm	
K									µl @ ppm	
Li									µl @ ppm	
Mg									µl @ ppm	
Mn		0.500	1.680	2.167	97	✓			µl @ ppm	
Mo									µl @ ppm	
Na									µl @ ppm	
Ni		0.500	0.061	0.516	91	✓			µl @ ppm	
Pb									µl @ ppm	
Sb		0.500	—	0.405	81	✓			µl @ ppm	
Se									µl @ ppm	
Si									µl @ ppm	
Sn									µl @ ppm	
Sr									µl @ ppm	
Ti									µl @ ppm	
Tl									µl @ ppm	
V		0.500	—	0.475	95	✓			µl @ ppm	
Y									µl @ ppm	
Zn		0.500	—	0.471	94	✓			µl @ ppm	

vol in µl = (1000 µl/ml)(10 ml vol.)(P level, ppm)

000056

CLP ICP ANALYSIS LOG SHEET

Analysis Run:

QC Set (3)

CCVC3

CCB3

Sample Set #3

1) ICSAIF
2) ICSABIF
3)
4)
5)
6)
7)
8)
9)
10)

QC Set (4)

CCVC4

CCB4

Sample Set #4

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)

QC Set (5)

CCVC5

CCB5

Sample Set #5

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)

QC Set (6)

CCVC6

CCB6

Method: EARL Standard: CAL1-S0

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Avge	-.0039	.0262	-.0014	-.0001	.0003	.0017	.0006
#1	-.0044	.0256	-.0014	.0000	-.0001	.0017	.0013
#2	-.0033	.0269	-.0014	-.0003	.0007	.0017	-.0001

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Avge	-.0001	.0004	.0006	.0021	.0004	-.0051	.0486
#1	-.0001	.0006	.0013	.0013	.0009	-.0203	.0513
#2	-.0001	.0001	.0000	.0030	.0000	.0100	.0460

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Avge	.0001	.0001	.1689	.0004	-.0019	.0019	-.0006
#1	.0000	.0000	.1696	-.0009	-.0006	.0031	-.0017
#2	.0001	.0003	.1683	.0017	-.0031	.0007	.0004

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Avge	.0059	.0009	.0003	.0001	.0007	.1647	.0978
#1	.0040	.0006	.0000	.0000	.0007	.1646	.0976
#2	.0079	.0011	.0006	.0003	.0007	.1649	.0980

Standardization Rpt. Fri 11-19-93 02:25:44 PM page 1

Method: EARL Standard: CAL3-S

Elem	Ag3280	Al3082	Ba4934	Be3130	Cu3247	V_2924	Ti3349
Avge	.2511	1.775	.4731	.8411	.3692	.1138	.7978
#1	.2519	1.780	.4757	.8444	.3699	.1143	.8007
#2	.2504	1.769	.4706	.8377	.3686	.1133	.7949

Standardization Rpt. Fri 11-19-93 02:28:36 PM page 1

Method: EARL Standard: CAL4-S

Elem	As1936	B_2496	Ca3179	Co2286	Mo2020	Se1960	Zn2138
Avge	.4417	.0396	14.65	.1935	.0537	.2586	.1082
#1	.4423	.0396	14.65	.1933	.0537	.2573	.1079
#2	.4411	.0396	14.66	.1937	.0537	.2599	.1086

Standardization Rpt. Fri 11-19-93 02:37:10 PM page 1

Method: EARL Standard: CAL7-S

Elem	Fe2599	Mg3232
Avge	3.833	13.20
#1	3.841	13.22
#2	3.825	13.17

Standardization Rpt. Fri 11-19-93 02:39:19 PM page 1

Method: EARL Standard: CAL5-S

Elem	K_7664	Na5889
Avge	.6313	15.01
#1	.6337	15.07
#2	.6289	14.95

Standardization Report Fri 11-19-93 02:40:36 PM page 1

Method: EARL Slope = Conc(SIR)/IR

Element	Wavelen	High std	Low std	Slope	Y-intercept	Date Standardized
Ag3280	328.068	CAL3-S	CAL1-SO	3.92157	.015126	11/19/93 02:37:29
Al3082	308.215	CAL3-S	CAL1-SO	5.71919	-.149924	11/19/93 02:37:29
As1936	193.696	CAL4-S	CAL1-SO	22.5661	.032237	11/19/93 02:37:29
B_2496	249.678	CAL4-S	CAL1-SO	25.1799	.003597	11/19/93 02:37:29
Ba4934	493.409	CAL3-S	CAL1-SO	2.11480	-.000604	11/19/93 02:37:29
Be3130	313.042	CAL3-S	CAL1-SO	1.19139	-.002042	11/19/93 02:37:29
Ca3179	317.933	CAL4-S	CAL1-SO	3.41210	-.001950	11/19/93 02:37:29
Cd2288	228.802	CAL2-S	CAL1-SO	13.7795	.001969	11/19/93 02:37:29
Co2286	228.616	CAL4-S	CAL1-SO	5.17751	-.001849	11/19/93 02:37:29
Cr2677	267.716	CAL2-S	CAL1-SO	2.88838	-.001857	11/19/93 02:37:29
Cu3247	324.754	CAL3-S	CAL1-SO	2.72427	-.005838	11/19/93 02:37:29
Fe2599	259.940	CAL7-S	CAL1-SO	2.60941	-.001118	11/19/93 02:37:29
K_7664	766.491	CAL5-S	CAL1-SO	78.5634	.404040	11/19/93 02:37:29
Mg3232	323.231	CAL7-S	CAL1-SO	7.60522	-.369940	11/19/93 02:37:29
Mn2576	257.610	CAL2-S	CAL1-SO	3.47308	-.000248	11/19/93 02:37:29
Mo2020	202.030	CAL4-S	CAL1-SO	18.6667	-.002667	11/19/93 02:37:29
Na5889	588.995	CAL5-S	CAL1-SO	6.73884	-1.13838	11/19/93 02:37:29
N 316	231.600	CAL2-S	CAL1-SO	4.79124	-.002053	11/19/93 02:37:29
Pb2203	220.353	CAL2-S	CAL1-SO	5.69801	.010582	11/19/93 02:37:29
Sb2068	206.838	CAL2-S	CAL1-SO	14.0000	-.027000	11/19/93 02:37:29
Se1960	196.026	CAL4-S	CAL1-SO	38.5781	.024800	11/19/93 02:37:29
Si2881	288.158	CAL6-S	CAL1-SO	5.75847	-.034140	11/19/93 02:37:29
Sn1899	189.989	CAL2-S	CAL1-SO	9.03809	-.007747	11/19/93 02:37:29
Tl1908	190.864	CAL2-S	CAL1-SO	36.4109	-.010403	11/19/93 02:37:29
V_2924	292.402	CAL3-S	CAL1-SO	8.79950	-.001257	11/19/93 02:37:29
Zn2138	213.856	CAL4-S	CAL1-SO	9.30233	-.006645	11/19/93 02:37:29
Sr4215	421.552	CAL2-S	CAL1-SO	.150802	-.024839	11/19/93 02:37:29
Ti3349	334.941	CAL3-S	CAL1-SO	1.42857	-.139694	11/19/93 02:37:29

Analysis Report QC Standard Fri 11-19-93 02:44:55 PM page 1

Method: EARL Sample Name: CCV1 Operator: JH
Run Time: 11/19/93 14:41:56
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4916	5.071	4.873	.4748	.4884	.4873	24.01
#1	.4936	5.084	4.889	.4748	.4906	.4891	24.03
#2	.4896	5.058	4.857	.4748	.4861	.4856	23.98
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	5.000	5.000	.5000	.5000	.5000	25.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4959	.4859	.4741	.4853	4.921	24.75	48.77
	.4977	.4885	.4756	.4876	4.932	24.09	48.90
#2	.4940	.4834	.4727	.4830	4.910	25.42	48.63
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	.5000	.5000	.5000	5.000	25.00	50.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4821	.4853	33.57	.4911	.4987	.5057	4.883
#1	.4836	.4907	33.71	.5120	.5174	.4976	4.924
#2	.4806	.4800	33.42	.4702	.4800	.5137	4.842
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	.5000	33.20	.5000	.5000	.5000	5.000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.157	.4573	4.859	.4727	.4890	.4861	.4900
#1	5.173	.4612	4.925	.4746	.4890	.4880	.4913
#2	5.141	.4534	4.792	.4708	.4890	.4842	.4888
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5.000	.5000	5.000	.5000	.5000	.5000	.5000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Analysis Report Blank Sample Fri 11-19-93 02:49:35 PM page 1

Method: EARL Sample Name: CCB1 Operator: JH
Run Time: 11/19/93 14:46:06
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0036	-.0082	.0226	.0018	-.0005	.0002	-.0034
#1	-.0039	-.0110	.0420	-.0000	-.0003	.0002	-.0029
#2	-.0034	-.0053	.0033	.0036	-.0006	.0002	-.0039
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.2000	.0500	.0200	.2000	.0050	5.000
Low	-.0100	-.2000	-.0500	-.0200	-.2000	-.0050	-5.000

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0018	.0015	.0006	-.0027	-.0026	-1.700	-.0060
	.0036	.0011	-.0010	-.0031	-.0015	-1.493	-.0288
#2	-.0000	.0018	.0023	-.0023	-.0037	-1.908	.0168
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0100	.0250	.1000	5.000	5.000
Low	-.0050	-.0500	-.0100	-.0250	-.1000	-5.000	-5.000

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0002	-.0040	.0597	.0072	.0000	-.0200	.0165
#1	.0002	-.0053	.0477	.0123	.0236	-.0230	.0303
#2	.0002	-.0027	.0717	.0021	-.0236	-.0170	.0028
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0150	.0400	5.000	.0400	.0500	.0600	.1000
Low	-.0150	-.0400	-5.000	-.0400	-.0500	-.0600	-.1000

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0202	-.0050	-.0749	-.0000	.0033	.0009	.0046
#1	-.0226	-.0050	-.1082	-.0013	.0013	.0009	.0050
#2	-.0177	-.0050	-.0416	.0013	.0053	.0008	.0042
rors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
gh	.0800	.2000	.1500	.0500	.0200	.0200	.0200
Low	-.0800	-.2000	-.1500	-.0500	-.0200	-.0200	-.0200

Analysis Report QC Standard Fri 11-19-93 02:53:11 PM page 1

Method: EARL Sample Name: CCV1 Operator: JH
Run Time: 11/19/93 14:49:42
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4966	5.087	4.830	.4802	.4915	.4890	24.09
#1	.4952	5.064	4.735	.4712	.4885	.4857	23.93
#2	.4980	5.109	4.925	.4892	.4946	.4923	24.25
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	5.000	5.000	.5000	.5000	.5000	25.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4982	.4878	.4768	.4874	4.934	24.25	49.05
	.4989	.4848	.4739	.4849	4.901	23.70	48.73
#2	.4975	.4908	.4797	.4900	4.966	24.80	49.38
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	.5000	.5000	.5000	5.000	25.00	50.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4834	.4880	33.65	.5103	.4808	.4756	4.880
#1	.4796	.4827	33.43	.4956	.4881	.4837	4.825
#2	.4871	.4933	33.86	.5250	.4734	.4676	4.935
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	.5000	33.20	.5000	.5000	.5000	5.000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.180	.4948	4.882	.4746	.4930	.4894	.4917
#1	5.156	.4947	4.854	.4721	.4930	.4861	.4882
#2	5.204	.4949	4.909	.4771	.4930	.4927	.4951
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5.000	.5000	5.000	.5000	.5000	.5000	.5000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Analysis Report Blank Sample Fri 11-19-93 02:56:47 PM page 1

Method: EARL Sample Name: CCB1 Operator: JH
Run Time: 11/19/93 14:53:18
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0008	-.0041	.0178	.0090	-.0003	.0001	-.0005
#1	-.0034	-.0093	.0291	.0144	-.0012	.0000	-.0019
#2	.0017	.0012	.0064	.0036	.0006	.0002	.0010
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.2000	.0500	.0200	.2000	.0050	5.000
Low	-.0100	-.2000	-.0500	-.0200	-.2000	-.0050	-5.000

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0001	.0011	.0023	-.0010	.0004	-1.874	.0424
	.0018	.0011	.0014	-.0031	-.0011	-2.817	.0255
#2	-.0020	.0011	.0031	.0012	.0019	-.9315	.0592
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0100	.0250	.1000	5.000	5.000
Low	-.0050	-.0500	-.0100	-.0250	-.1000	-5.000	-5.000

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0000	.0013	.0780	.0140	-.0045	-.0120	.0083
#1	-.0002	.0053	.0544	.0144	-.0016	-.0050	.0303
#2	.0002	-.0027	.1016	.0137	-.0073	-.0190	-.0138
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0150	.0400	5.000	.0400	.0500	.0600	.1000
Low	-.0150	-.0400	-5.000	-.0400	-.0500	-.0600	-.1000

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0156	-.0069	-.0140	-.0013	.0066	.0011	.0055
#1	-.0243	-.0115	-.0200	-.0038	.0080	.0010	.0048
#2	-.0070	-.0024	-.0079	.0013	.0053	.0012	.0062
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0800	.2000	.1500	.0500	.0200	.0200	.0200
Low	-.0800	-.2000	-.1500	-.0500	-.0200	-.0200	-.0200

Analysis Report Blank Sample Fri 11-19-93 02:56:47 PM page 1

Method: EARL Sample Name: CCB1 Operator: JH
Run Time: 11/19/93 14:53:18
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0008	-.0041	.0178	.0090	-.0003	.0001	-.0005
#1	-.0034	-.0093	.0291	.0144	-.0012	.0000	-.0019
#2	.0017	.0012	.0064	.0036	.0006	.0002	.0010
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.2000	.0500	.0200	.2000	.0050	5.000
Low	-.0100	-.2000	-.0500	-.0200	-.2000	-.0050	-5.000

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0001	.0011	.0023	-.0010	.0004	-1.874	.0424
	.0018	.0011	.0014	-.0031	-.0011	-2.817	.0255
#2	-.0020	.0011	.0031	.0012	.0019	-.9315	.0592
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0100	.0250	.1000	5.000	5.000
Low	-.0050	-.0500	-.0100	-.0250	-.1000	-5.000	-5.000

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0000	.0013	.0780	.0140	-.0045	-.0120	.0083
#1	-.0002	.0053	.0544	.0144	-.0016	-.0050	.0303
#2	.0002	-.0027	.1016	.0137	-.0073	-.0190	-.0138
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0150	.0400	5.000	.0400	.0500	.0600	.1000
Low	-.0150	-.0400	-5.000	-.0400	-.0500	-.0600	-.1000

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0156	-.0069	-.0140	-.0013	.0066	.0011	.0055
#1	-.0243	-.0115	-.0200	-.0038	.0080	.0010	.0048
#2	-.0070	-.0024	-.0079	.0013	.0053	.0012	.0062
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0800	.2000	.1500	.0500	.0200	.0200	.0200
Low	-.0800	-.2000	-.1500	-.0500	-.0200	-.0200	-.0200

Analysis Report Fri 11-19-93 03:00:22 PM page 1

Method: EARL Sample Name: CRII1 Operator: JH
Run Time: 11/19/93 14:56:54
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0171	.0096	H.0322	.0054	-.0005	.0105	.0222
#1	.0162	-.0007	H.0258	.0072	-.0006	.0105	.0195
#2	.0179	.0198	H.0386	.0036	-.0003	.0105	.0249
Errors	LC Pass	NOCHECK	LC High	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	.0240		.0240			.0120	
Low	.0160		.0160			.0080	

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0106	.1024	.0221	.0488	.0110	-1.229	-.0168
	.0097	.0995	.0221	.0498	.0104	-2.626	-.0527
#2	.0115	.1054	.0221	.0479	.0116	.1684	.0190
Errors	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK	NOCHECK
High	.0120	.1200	.0240	.0600			
Low	.0080	.0800	.0160	.0400			

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0305	-.0013	-.0043	.0784	.1178	.1088	.0083
#1	.0305	-.0027	-.0111	.0917	.1076	.1268	.0138
#2	.0305	-.0000	.0024	.0650	H.1279	L.0908	.0028
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK
High	.0360			.0960	.1200	.1440	
Low	.0240			.0640	.0800	.0960	

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0012	.0013	-.0681	.1018	.0399	-.0000	-.0003
#1	-.0053	-.0078	-.0535	.1031	.0412	-.0002	-.0011
#2	.0029	.0103	-.0826	.1006	.0385	.0001	.0005
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK
High				.1200			
Low				.0800			

Analysis Report Fri 11-19-93 03:03:58 PM page 1

Method: EARL Sample Name: ICSAII1 Operator: JH
Run Time: 11/19/93 15:00:29
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0667	484.9	-.0014	.0072	-.0003	.0003	442.5
#1	-.0672	486.5	-.0334	.0180	-.0003	.0004	443.1
#2	-.0661	483.3	.0307	-.0036	-.0003	.0002	441.9
Errors	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass
High		600.0					600.0
Low		400.0					400.0

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0049	.0041	-.0047	.0014	174.9	-.7744	477.2
	.0061	.0048	-.0076	.0016	175.2	-1.481	478.8
#2	.0037	.0033	-.0019	.0012	174.6	-.0673	475.7
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK	LC Pass
High					240.0		600.0
Low					160.0		400.0

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0230	-.0080	-.0356	-.0168	.0042	-.0220	-.0055
#1	.0233	-.0080	-.0505	-.0068	-.0203	-.0330	.0248
#2	.0226	-.0080	-.0207	-.0267	.0287	-.0110	-.0358
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1903	-.0121	.0849	-.0118	-.0060	.0183	.0065
#1	.1959	-.0179	.0910	-.0098	-.0066	.0183	.0063
#2	.1846	-.0063	.0788	-.0138	-.0053	.0182	.0067
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Analysis Report Fri 11-19-93 03:07:34 PM page 1

Method: EARL Sample Name: ICSABII1 Operator: JH
Run Time: 11/19/93 15:04:05
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9020	488.9	.0136	.0162	.4785	.4566	445.1
#1	.9020	489.3	.0309	.0144	.4798	.4574	445.4
#2	.9020	488.6	-.0038	.0180	.4773	.4558	444.7
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	1.200	600.0			.6000	.6000	600.0
Low	.8000	400.0			.4000	.4000	400.0

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9310	.4438	.4446	.4742	176.3	-1.178	481.7
	.9309	.4442	.4475	.4748	176.5	-1.414	482.2
#2	.9311	.4434	.4417	.4736	176.2	-.9428	481.2
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	LC Pass
High	1.200	.6000	.6000	.6000	240.0		600.0
Low	.8000	.4000	.4000	.4000	160.0		400.0

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4710	-.0040	-.0217	.8775	.9092	-.0008	-.0579
#1	.4712	-.0000	-.0351	.9206	.9169	.0102	-.1405
#2	.4707	-.0080	-.0082	.8344	.9015	-.0118	.0248
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	NOCHECK	NOCHECK
High	.6000			1.200	1.200		
Low	.4000			.8000	.8000		

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2094	-.0089	.0181	.4526	.9110	.0184	.0063
#1	.2065	-.0050	-.0089	.4545	.9103	.0183	.0060
#2	.2123	-.0127	.0450	.4507	.9116	.0184	.0066
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	NOCHECK	NOCHECK
High				.6000	1.200		
Low				.4000	.8000		

Analysis Report Fri 11-19-93 03:11:09 PM page 1

Method: EARL Sample Name: PBW1 Operator: JH
Run Time: 11/19/93 15:07:41
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0014	.0118	.0338	.0090	.0005	-.0000	.0229
#1	.0039	.0143	.0450	.0144	.0006	-.0000	.0244
#2	-.0011	.0094	.0225	.0036	.0003	-.0000	.0214
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.2000	.0500	.0200	.2000	.0050	5.000
Low	-.0100	-.2000	-.0500	-.0200	-.2000	-.0050	-5.000

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0027	.0033	.0012	.0002	.0043	-.3816	.0402
	.0016	.0026	.0031	.0004	.0056	-.2245	.0440
#2	.0038	.0041	-.0006	-.0000	.0030	-.5387	.0364
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0100	.0250	.1000	5.000	5.000
Low	-.0050	-.0500	-.0100	-.0250	-.1000	-5.000	-5.000

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0002	.0013	.0183	-.0127	-.0175	-.0220	.0055
#1	.0002	.0027	.0082	-.0034	-.0065	-.0410	-.0138
#2	.0002	-.0000	.0284	-.0219	-.0285	-.0030	.0248
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0150	.0400	5.000	.0400	.0500	.0600	.1000
Low	-.0150	-.0400	-5.000	-.0400	-.0500	-.0600	-.1000

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0473	-.0051	-.0332	.0006	-.0013	.0001	.0005
#1	.0605	-.0052	-.0725	.0000	-.0013	.0001	.0003
#2	.0341	-.0051	.0061	.0013	-.0013	.0001	.0007
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0800	.2000	.1500	.0500	.0200	.0200	.0200
Low	-.0800	-.2000	-.1500	-.0500	-.0200	-.0200	-.0200

Analysis Report Fri 11-19-93 03:14:44 PM page 1

Method: EARL Sample Name: LCSIV1 Operator: JH
Run Time: 11/19/93 15:11:16
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.8227	4.834	.5098	.0162	4.774	.1146	11.48
#1	H.8252	4.846	.5130	.0108	4.792	.1148	11.49
#2	H.8202	4.822	.5067	.0216	4.757	.1143	11.46
Errors	LC High	LC Pass	LC Pass	NOCHECK	LC Pass	LC Pass	LC Pass
High	.7813	6.250	.6250		6.250	.1563	15.63
Low	.4688	3.750	.3750		3.750	.0938	9.375

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2266	1.167	.4609	.5867	2.385	11.50	11.98
	.2207	1.172	.4628	.5881	2.390	11.82	11.99
#2	.2325	1.162	.4590	.5853	2.381	11.19	11.96
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.3125	1.563	.6250	.7813	3.125	15.63	15.63
Low	.1875	.9375	.3750	.4688	1.875	9.375	9.375

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.166	-.0013	12.13	1.150	.4487	.4420	.4299
#1	1.169	-.0027	12.15	1.140	.4634	.4629	.4547
#2	1.164	-.0000	12.11	1.159	.4341	.4210	.4051
Errors	LC Pass	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.563		15.63	1.563	.6250	.6250	.6250
Low	.9375		9.375	.9375	.3750	.3750	.3750

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0815	-.0001	L.3607	1.183	1.144	.0042	-.0043
#1	.0766	.0063	.4201	1.185	1.144	.0042	-.0047
#2	.0865	-.0066	L.3013	1.180	1.144	.0042	-.0040
Errors	NOCHECK	NOCHECK	LC Low	LC Pass	LC Pass	NOCHECK	NOCHECK
High			.6250	1.563	1.563		
Low			.3750	.9375	.9375		

Analysis Report Fri 11-19-93 03:18:18 PM page 1

Method: EARL Sample Name: LCSMCW1 Operator: JH
Run Time: 11/19/93 15:14:50
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0389	1.989	1.853	.0072	1.949	.0481	.0312
#1	.0387	1.979	1.868	.0108	1.938	.0479	.0297
#2	.0392	1.998	1.839	.0036	1.961	.0482	.0327
Errors	LC Pass	LC Pass	LC Pass	NOCHECK	LC Pass	LC Pass	NOCHECK
High	.0625	2.500	2.500		2.500	.0625	
Low	.0375	1.500	1.500		1.500	.0375	

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0554	.4893	.1958	.2434	.9949	-.1908	.0011
	.0533	.4856	.1946	.2421	.9919	.6958	-.0125
#2	.0574	.4930	.1970	.2448	.9979	-1.077	.0147
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK
High	.0625	.6250	.2500	.3125	1.250		
Low	.0375	.3750	.1500	.1875	.7500		

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4823	-.0053	.0014	.4959	.4690	.4621	1.962
#1	.4804	-.0053	-.0024	.4894	.4783	.4742	1.915
#2	.4843	-.0053	.0053	.5024	.4596	.4501	2.009
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High	.6250			.6250	.6250	.6250	2.500
Low	.3750			.3750	.3750	.3750	1.500

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0431	.0084	1.953	.4888	.4844	.0012	-.0010
#1	.0439	.0155	1.934	.4869	.4811	.0013	-.0009
#2	.0422	.0013	1.971	.4907	.4877	.0012	-.0011
Errors	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK
High			2.500	.6250	.6250		
Low			1.500	.3750	.3750		

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Analysis Report Fri 11-19-93 03:21:54 PM page 1

Method: EARL Sample Name: 12146S1 Operator: JH
Run Time: 11/19/93 15:18:25
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0378	1.970	1.916	1.522	2.481	.0463	63.89
#1	.0381	1.977	1.903	1.504	2.484	.0463	63.92
#2	.0375	1.964	1.929	1.540	2.479	.0463	63.85
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0519	.4697	.1793	.2327	1.097	82.71	196.6
	.0510	.4700	.1805	.2331	1.097	82.73	196.7
#2	.0528	.4693	.1780	.2323	1.096	82.69	196.5
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.167	.0040	S7678.	.5161	.4462	.4052	1.976
#1	2.167	-.0000	S7678.	.5106	.4425	.4182	1.954
#2	2.166	.0080	S7678.	.5216	.4499	.3922	1.998
Errors	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	9.870	-.0201	1.771	.4750	.4711	1.597	-.0042
#1	9.886	-.0105	1.784	.4756	.4704	1.598	-.0047
#2	9.855	-.0298	1.758	.4743	.4718	1.595	-.0037
[illegible]rors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
[illegible]gh	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Analysis Report Fri 11-19-93 03:25:30 PM page 1

Method: EARL Sample Name: 12146 Operator: JH
Run Time: 11/19/93 15:22:01
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0053	-.0061	-.0064	1.504	.5757	-.0000	62.74
#1	-.0062	-.0094	.0001	1.511	.5776	.0000	62.90
#2	-.0045	-.0029	-.0129	1.496	.5737	-.0000	62.58
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0009	.0096	-.0017	-.0010	.1629	81.55	193.9
	.0020	.0085	-.0019	-.0035	.1614	81.94	194.6
#2	-.0038	.0107	-.0014	.0016	.1644	81.16	193.1
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.680	-.0000	S7679.	.0609	-.0207	-.0370	-.0772
#1	1.685	-.0053	S7679.	.0705	-.0252	-.0130	-.0468
#2	1.675	.0053	S7679.	.0513	-.0163	-.0610	-.1075
Errors	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	9.672	-.0015	-.0131	.0001	-.0027	1.574	-.0057
#1	9.692	-.0028	.0331	-.0012	-.0027	1.580	-.0063
#2	9.652	-.0002	-.0592	.0013	-.0027	1.567	-.0052
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Analysis Report Fri 11-19-93 03:29:06 PM page 1

Method: EARL Sample Name: 12146L1 Operator: JH
Run Time: 11/19/93 15:25:37
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0003	-.0012	.0306	.3183	.1181	.0000	13.61
#1	.0017	.0012	.0064	.3237	.1181	.0000	13.64
#2	-.0011	-.0037	.0548	.3129	.1181	-.0000	13.59
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0017	.0030	.0006	-.0018	.0330	15.15	40.28
	.0059	.0033	.0010	-.0027	.0332	15.31	40.32
#2	-.0024	.0026	.0002	-.0008	.0328	14.99	40.24
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3592	-.0053	451.3	.0075	-.0147	-.0630	-.0358
#1	.3595	-.0027	451.4	.0021	.0008	-.0490	-.0413
#2	.3590	-.0080	451.2	.0130	-.0301	-.0770	-.0303
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.036	.0033	-.0136	-.0006	.0027	.3232	.0038
#1	2.035	.0040	-.0263	-.0012	.0013	.3236	.0040
#2	2.038	.0027	-.0008	.0000	.0040	.3228	.0036
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Analysis Report Fri 11-19-93 03:32:42 PM page 1

Method: EARL Sample Name: 12146D1 Operator: JH
Run Time: 11/19/93 15:29:13
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0000	.0041	.0354	1.477	.5656	.0000	61.13
#1	-.0006	-.0029	.0451	1.471	.5656	-.0000	61.02
#2	.0006	.0111	.0257	1.482	.5656	.0000	61.24
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0027	.0096	-.0008	-.0002	.1463	80.50	189.4
	.0036	.0092	-.0006	.0004	.1469	80.09	189.3
#2	.0018	.0100	-.0010	-.0008	.1458	80.91	189.5
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.639	.0013	S7679.	.0294	-.0012	-.0330	-.0413
#1	1.637	.0027	S7679.	.0322	-.0016	-.0130	-.0854
#2	1.641	-.0000	S7679.	.0267	-.0008	-.0530	.0028
Errors	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	9.437	-.0021	-.0345	-.0006	-.0013	1.534	-.0063
#1	9.411	.0037	-.0451	.0001	-.0013	1.534	-.0065
#2	9.462	-.0079	-.0238	-.0012	-.0013	1.535	-.0061
rors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
gh	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Analysis Report QC Standard Fri 11-19-93 03:36:20 PM page 1

Method: EARL Sample Name: CCV1 Operator: JH
Run Time: 11/19/93 15:32:49
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5008	5.130	4.925	.4892	.4912	.4945	24.42
#1	.4980	5.118	4.941	.4820	.4876	.4913	24.31
#2	.5036	5.141	4.908	.4964	.4949	.4978	24.54
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	5.000	5.000	.5000	.5000	.5000	25.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5014	.4978	.4836	.4904	4.998	24.25	49.38
	.4954	.4974	.4817	.4873	4.974	23.93	49.06
#2	.5074	.4982	.4855	.4935	5.021	24.57	49.69
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	.5000	.5000	.5000	5.000	25.00	50.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4894	.4987	33.35	.4914	.5243	.4866	4.927
#1	.4871	.4960	33.14	.4798	Q.5532	.5016	4.880
#2	.4916	.5013	33.56	.5031	.4953	.4716	4.974
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	.5000	33.20	.5000	.5000	.5000	5.000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.258	.4859	4.827	.4809	.5017	.4917	.4985
#1	5.235	.4794	4.952	.4784	.4997	.4883	.4961
#2	5.280	.4925	4.703	.4834	.5037	.4951	.5008
rrors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
alue	5.000	.5000	5.000	.5000	.5000	.5000	.5000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Analysis Report Blank Sample Fri 11-19-93 03:43:53 PM page 1

Method: EARL Sample Name: CCB1 Operator: JH
Run Time: 11/19/93 15:40:23
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0039	-.0257	.0114	.0108	-.0008	.0001	.0019
#1	-.0039	-.0119	.0162	.0108	-.0006	.0002	.0029
#2	-.0039	-.0396	.0067	.0108	-.0009	.0000	.0010
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.2000	.0500	.0200	.2000	.0050	5.000
Low	-.0100	-.2000	-.0500	-.0200	-.2000	-.0050	-5.000

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0001	.0011	.0023	-.0016	-.0019	-.9933	.0185
	-.0001	.0018	.0031	-.0004	-.0019	-.7407	.0321
#2	-.0000	.0004	.0014	-.0027	-.0019	-1.246	.0049
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0100	.0250	.1000	5.000	5.000
Low	-.0050	-.0500	-.0100	-.0250	-.1000	-5.000	-5.000

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0002	.0013	.0895	-.0003	.0033	-.0290	.0110
#1	-.0002	.0053	.1112	.0068	-.0041	-.0110	.0138
#2	-.0002	-.0027	.0679	-.0075	.0106	-.0470	.0083
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0150	.0400	5.000	.0400	.0500	.0600	.1000
Low	-.0150	-.0400	-5.000	-.0400	-.0500	-.0600	-.1000

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0239	-.0037	-.0202	.0006	.0080	.0009	.0047
#1	-.0210	-.0128	-.0089	.0013	.0080	.0011	.0054
#2	-.0267	.0053	-.0315	-.0000	.0080	.0008	.0040
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0800	.2000	.1500	.0500	.0200	.0200	.0200
Low	-.0800	-.2000	-.1500	-.0500	-.0200	-.0200	-.0200

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Method: EARL Sample Name: 124465/5 Operator: JH
Run Time: 11/19/93 15:44:00
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0067	.3936	.4361	.3165	.5127	.0098	13.62
#1	.0078	.3973	.4296	.3201	.5130	.0098	13.65
#2	.0056	.3900	.4426	.3129	.5124	.0097	13.59
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0145	.1010	.0373	.0477	.2322	14.90	40.58
	.0126	.1017	.0386	.0483	.2319	15.66	40.64
#2	.0165	.1002	.0361	.0471	.2326	14.15	40.53
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4568	-.0067	456.9	.1054	.0949	.0838	.3830
#1	.4573	-.0053	457.1	.1205	.0769	.1068	.4161
#2	.4563	-.0080	456.6	.0903	.1128	.0608	.3500
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.034	-.0070	.3150	.0981	.1010	.3261	.0032
#1	2.048	-.0038	.2375	.0994	.0997	.3262	.0036
#2	2.019	-.0102	.3925	.0969	.1023	.3259	.0028
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

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Method: EARL Sample Name: 12313 Operator: JH
Run Time: 11/19/93 15:47:36
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0008	.0474	-.0116	.8741	.0980	.0002	26.40
#1	.0022	.0355	-.0260	.8741	.0982	.0003	26.34
#2	-.0006	.0592	.0029	.8741	.0979	-.0000	26.46
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0021	.0026	.0035	.0016	.0227	11.78	35.69
	.0022	.0011	.0060	.0031	.0242	11.46	35.63
#2	.0019	.0041	.0010	-.0000	.0212	12.11	35.75
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5932	-.0013	H950.2	.0222	.0207	-.0180	-.0083
#1	.5922	-.0107	H949.0	.0390	.0179	-.0190	-.0248
#2	.5942	.0080	H951.4	.0055	.0235	-.0170	.0083
Errors	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	7.675	-.0200	-.0403	.0019	.0007	.3056	-.0010
#1	7.659	-.0220	-.0223	.0025	.0013	.3050	-.0011
#2	7.691	-.0181	-.0584	.0013	-.0000	.3062	-.0009
[illegible]rors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
[illegible]gh	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

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Method: EARL Sample Name: 12314 Operator: JH
Run Time: 11/19/93 15:51:12
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0003	.0478	.0110	.8489	.0881	-.0000	31.19
#1	-.0006	.0527	.0158	.8597	.0882	.0000	31.26
#2	.0011	.0428	.0062	.8381	.0879	-.0000	31.13
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0039	.0026	.0027	.0008	.0585	24.31	51.20
	.0058	.0026	.0014	-.0000	.0593	24.74	51.34
#2	.0019	.0026	.0039	.0016	.0578	23.88	51.06
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.6837	.0147	H791.8	.0092	.0117	-.0100	-.0524
#1	.6855	.0107	H795.4	.0041	.0032	.0010	-.1020
#2	.6820	.0187	H788.2	.0144	.0203	-.0210	-.0028
Errors	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	7.978	-.0013	.0633	.0007	.0033	.3730	-.0012
#1	8.007	.0090	.0548	-.0012	.0027	.3745	-.0017
#2	7.950	-.0116	.0717	.0025	.0040	.3714	-.0007
[illegible]rors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
[illegible]gh	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

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Method: EARL Sample Name: 12315 Operator: JH
Run Time: 11/19/93 15:54:49
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0006	.0155	.0064	.6996	.7005	.0001	157.8
#1	-.0006	.0266	-.0131	.6799	.6988	.0002	157.5
#2	-.0006	.0045	.0258	.7194	.7021	.0000	158.1
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0029	.0030	-.0012	.0006	1.931	24.15	215.0
	.0040	.0033	-.0019	.0019	1.929	23.69	214.6
#2	.0018	.0026	-.0006	-.0008	1.933	24.61	215.4
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.367	-.0013	H808.0	.0024	.0138	-.0210	-.0276
#1	3.361	-.0000	H806.8	-.0082	.0195	-.0250	-.0358
#2	3.372	-.0027	H809.3	.0130	.0081	-.0170	-.0193
Errors	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	12.79	-.0059	-.0056	-.0005	-.0033	1.844	-.0036
#1	12.76	.0025	.0386	-.0005	-.0027	1.840	-.0036
#2	12.81	-.0143	-.0498	-.0005	-.0040	1.848	-.0036
[illegible]rors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
[illegible]gh	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

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Method: EARL Sample Name: 12316 Operator: JH
Run Time: 11/19/93 15:58:26
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0031	.0016	-.0065	.6835	.6829	.0002	155.2
#1	-.0034	-.0069	-.0032	.6763	.6882	.0000	155.7
#2	-.0028	.0102	-.0097	.6906	.6776	.0003	154.6
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0020	.0030	-.0006	-.0014	1.864	22.96	211.4
	.0000	.0026	-.0019	-.0035	1.877	22.33	212.9
#2	.0040	.0033	.0006	.0008	1.852	23.58	210.0
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.307	-.0000	H793.3	-.0007	.0020	-.0180	-.0303
#1	3.325	-.0027	H799.7	.0027	.0057	-.0110	-.0524
#2	3.289	.0027	H787.0	-.0041	-.0016	-.0250	-.0083
Errors	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	12.58	-.0156	.0678	-.0005	-.0027	1.810	-.0033
#1	12.66	-.0130	-.0292	-.0030	-.0027	1.824	-.0039
#2	12.51	-.0182	.1648	.0020	-.0027	1.796	-.0028
[illegible]rors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
[illegible]gh	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

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Method: EARL Sample Name: 12317 Operator: JH
Run Time: 11/19/93 16:02:01
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0025	.6924	.0427	.2626	.1415	.0001	76.00
#1	-.0017	.6850	.0508	.2662	.1426	-.0000	76.14
#2	-.0034	.6997	.0346	.2590	.1405	.0002	75.87
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0003	.0033	.0031	-.0002	1.126	.6285	104.4
	-.0023	.0004	.0019	-.0000	1.127	-.0673	104.7
#2	.0017	.0063	.0043	-.0004	1.126	1.324	104.1
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.422	.0067	442.7	.0161	.0219	-.0242	-.0138
#1	2.428	.0053	444.2	.0137	.0170	-.0052	.0579
#2	2.416	.0080	441.3	.0185	.0268	-.0432	-.0854
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	15.59	-.0211	-.0006	.0042	.0086	.6101	.0289
#1	15.63	-.0172	-.0110	.0042	.0093	.6121	.0289
#2	15.54	-.0250	.0099	.0042	.0080	.6080	.0289
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

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Method: EARL Sample Name: 12318 Operator: JH
Run Time: 11/19/93 16:05:37
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0011	.0098	.0032	.3112	.1082	-.0000	62.66
#1	-.0006	.0200	.0063	.3165	.1082	-.0000	62.52
#2	-.0017	-.0004	.0000	.3058	.1082	-.0000	62.80
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0020	.0026	.0004	-.0010	.0824	-.4658	85.88
	-.0000	.0055	-.0006	-.0004	.0828	.4826	85.69
#2	-.0039	-.0004	.0014	-.0016	.0820	-1.414	86.07
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.927	-.0040	375.7	.0253	-.0082	-.0420	-.0220
#1	1.924	-.0027	374.4	.0144	.0081	-.0350	.0138
#2	1.931	-.0053	376.9	.0363	-.0244	-.0490	-.0579
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	13.61	-.0104	.0179	.0019	.0007	.4956	-.0020
#1	13.60	-.0052	.0395	.0025	.0013	.4941	-.0014
#2	13.62	-.0156	-.0037	.0013	-.0000	.4972	-.0026
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Analysis Report Fri 11-19-93 04:12:42 PM page 1

Method: EARL Sample Name: 12319 Operator: JH
Run Time: 11/19/93 16:09:13
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0031	.0737	.0237	1.621	.5337	-.0000	49.91
#1	-.0017	.0802	.0221	1.612	.5311	-.0002	49.71
#2	-.0045	.0672	.0254	1.629	.5363	.0001	50.10
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0038	.0015	.0017	-.0021	2.801	56.79	127.7
	.0057	.0026	.0035	-.0035	2.791	56.55	127.0
#2	.0018	.0004	-.0002	-.0008	2.811	57.03	128.3
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.8054	-.0013	H1119.	-.0082	.0085	.0019	-.0220
#1	.8020	-.0000	H1113.	-.0192	.0211	-.0251	-.0248
#2	.8089	-.0027	H1126.	.0027	-.0041	.0290	-.0193
Errors	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Ti1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	15.79	-.0224	-.1143	.0105	.0013	.8947	.0063
#1	15.73	-.0153	-.1397	.0124	.0013	.8900	.0068
#2	15.86	-.0295	-.0889	.0087	.0013	.8995	.0059
[illegible]rors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
[illegible]gh	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Analysis Report Fri 11-19-93 04:16:18 PM page 1

Method: EARL Sample Name: 12325 Operator: JH
Run Time: 11/19/93 16:12:48
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0031	-.0063	.0097	1.953	.7502	-.0000	81.34
#1	-.0050	-.0055	.0484	1.950	.7468	-.0000	81.12
#2	-.0011	-.0071	-.0290	1.957	.7535	-.0000	81.56
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0019	.0011	-.0006	-.0025	.7711	79.38	223.0
	.0036	.0033	-.0010	-.0023	.7683	80.29	222.2
#2	.0002	-.0011	-.0002	-.0027	.7739	78.47	223.9
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.270	-.0080	S4736.	-.0079	.0135	-.0100	-.0744
#1	1.266	-.0027	S7681.	-.0096	.0187	-.0090	-.0524
#2	1.274	-.0133	H1791.	-.0062	.0082	-.0110	-.0964
Errors	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	15.93	-.0060	.0288	.0091	-.0020	1.502	-.0053
#1	15.86	-.0221	.0837	.0104	-.0000	1.496	-.0051
#2	16.00	.0102	-.0261	.0078	-.0040	1.507	-.0056
rors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Analysis Report Fri 11-19-93 04:32:58 PM page 1

Method: EARL Sample Name: 12416/5 Operator: JH
Run Time: 11/19/93 16:29:29
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0022	-.0151	.0146	.3147	.1160	.0001	13.16
#1	.0000	-.0028	.0258	.3094	.1160	.0000	13.16
#2	-.0045	-.0274	.0034	.3201	.1160	.0002	13.17
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0019	.0026	.0017	.0002	.0315	14.99	39.18
#1	.0018	.0018	.0002	-.0008	.0302	15.04	39.18
#2	.0019	.0033	.0031	.0012	.0328	14.94	39.19
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3476	-.0000	439.5	.0014	-.0020	-.0260	.0193
#1	.3476	.0027	439.3	.0068	.0000	-.0230	.0634
#2	.3476	-.0027	439.7	-.0041	-.0040	-.0290	-.0248
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
nits	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.962	-.0044	-.0949	-.0006	.0020	.3148	.0033
#1	1.967	.0001	-.1051	-.0012	.0027	.3148	.0035
#2	1.956	-.0089	-.0848	.0000	.0013	.3148	.0031

Analysis Report QC Standard Fri 11-19-93 04:36:35 PM page 1

Method: EARL Sample Name: CCV1 Operator: JH
Run Time: 11/19/93 16:33:05
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4952	5.062	4.833	.4892	.4884	.4882	24.01
#1	.4952	5.054	4.864	.4856	.4876	.4874	23.97
#2	.4952	5.070	4.802	.4928	.4891	.4889	24.06
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	5.000	5.000	.5000	.5000	.5000	25.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	.4952	.4889	.4774	.4845	4.931	25.15	48.91
#1	.4881	.4885	.4772	.4849	4.923	24.85	48.81
#2	.5023	.4893	.4776	.4841	4.940	25.45	49.01
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	.5000	.5000	.5000	5.000	25.00	50.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4824	.4893	33.08	.4736	.4938	.4737	4.919
#1	.4811	.4880	33.02	.4702	.4816	.4877	4.891
#2	.4836	.4907	33.14	.4771	.5060	.4596	4.946
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	.5000	33.20	.5000	.5000	.5000	5.000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.174	.4877	4.751	.4740	.4944	.4872	.4913
#1	5.168	.5051	4.674	.4734	.4930	.4863	.4902
`2	5.180	.4703	4.828	.4746	.4957	.4881	.4923
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5.000	.5000	5.000	.5000	.5000	.5000	.5000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Analysis Report Blank Sample Fri 11-19-93 04:47:36 PM page 1

Method: EARL Sample Name: CCB1 Operator: JH
Run Time: 11/19/93 16:44:07
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0036	-.0110	-.0015	-.0018	-.0006	.0001	.0007
#1	-.0050	-.0086	-.0193	-.0072	-.0006	.0000	.0000
#2	-.0022	-.0135	.0162	.0036	-.0006	.0002	.0015
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.2000	.0500	.0200	.2000	.0050	5.000
Low	-.0100	-.2000	-.0500	-.0200	-.2000	-.0050	-5.000

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0049	.0011	.0006	-.0012	-.0011	-.8249	.0435
#1	.0041	-.0004	.0006	-.0012	-.0011	-1.515	.0494
#2	H.0058	.0026	.0006	-.0012	-.0011	-.1347	.0375
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0100	.0250	.1000	5.000	5.000
Low	-.0050	-.0500	-.0100	-.0250	-.1000	-5.000	-5.000

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0000	-.0053	.0794	.0021	.0224	-.0210	.0083
#1	-.0002	-.0053	.0919	-.0007	.0171	-.0470	-.0193
#2	.0002	-.0053	.0669	.0048	.0277	.0050	.0358
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0150	.0400	5.000	.0400	.0500	.0600	.1000
Low	-.0150	-.0400	-5.000	-.0400	-.0500	-.0600	-.1000

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0078	-.0128	.0134	-.0000	.0053	.0009	.0045
#1	-.0136	-.0257	.0161	-.0000	.0027	.0009	.0046
#2	-.0021	.0001	.0107	-.0000	.0080	.0009	.0044
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0800	.2000	.1500	.0500	.0200	.0200	.0200
Low	-.0800	-.2000	-.1500	-.0500	-.0200	-.0200	-.0200

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Method: EARL Sample Name: 12416L 1 Operator: JH
Run Time: 11/19/93 16:47:43
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0014	-.0029	.0435	.0665	.0240	-.0000	2.707
#1	-.0039	.0003	.0548	.0540	.0242	-.0000	2.705
#2	.0011	-.0062	.0323	.0791	.0239	-.0000	2.708
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	.0007	.0055	.0029	.0006	.0075	2.570	8.087
#1	.0016	.0063	.0035	.0004	.0063	1.919	8.084
#2	-.0002	.0048	.0023	.0008	.0086	3.221	8.090
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0719	-.0013	91.50	.0065	-.0183	-.0150	-.0276
#1	.0717	.0053	91.52	.0027	-.0236	-.0150	-.0028
#2	.0722	-.0080	91.49	.0103	-.0130	-.0150	-.0524
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3924	-.0089	.0708	.0025	.0020	.0652	.0047
#1	.3945	-.0128	.1145	.0038	.0027	.0651	.0043
#2	.3903	-.0050	.0271	.0013	.0013	.0653	.0051
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Analysis Report Fri 11-19-93 04:54:49 PM page 1

Method: EARL Sample Name: 12416D/5 Operator: JH
Run Time: 11/19/93 16:51:20
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0011	.0037	.0145	.3165	.1181	.0001	13.34
#1	-.0006	.0045	.0193	.3165	.1178	.0002	13.29
#2	-.0017	.0028	.0097	.3165	.1184	-.0000	13.39
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	-.0021	.0018	-.0002	-.0010	.0313	15.71	39.62
#1	-.0041	.0026	-.0006	-.0000	.0298	15.99	39.47
#2	-.0001	.0011	.0002	-.0019	.0328	15.43	39.77
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3515	-.0040	443.8	.0192	-.0012	.0010	-.0551
#1	.3500	-.0080	441.9	.0192	-.0106	-.0030	-.0193
#2	.3530	-.0000	445.6	.0192	.0081	.0050	-.0909
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.983	-.0160	-.0555	.0013	.0013	.3188	.0036
#1	1.988	-.0167	-.0944	.0013	-.0000	.3174	.0037
#2	1.977	-.0154	-.0167	.0013	.0027	.3203	.0034
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Analysis Report Fri 11-19-93 04:58:26 PM page 1

Method: EARL Sample Name: 12313/5 Operator: JH
Run Time: 11/19/93 16:54:56
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0017	.0065	-.0033	.1835	.0193	-.0001	5.513
#1	-.0017	.0029	.0097	.1835	.0193	-.0002	5.507
#2	-.0017	.0102	-.0162	.1835	.0193	-.0000	5.520
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	.0040	-.0004	.0027	-.0014	.0041	1.285	7.318
#1	.0039	-.0018	.0019	-.0023	.0037	1.706	7.323
#2	.0041	.0011	.0035	-.0004	.0045	.8642	7.314
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1226	-.0040	198.6	.0123	-.0033	-.0430	-.0083
#1	.1228	-.0027	198.6	.0212	.0024	-.0650	.0083
#2	.1223	-.0053	198.7	.0034	-.0090	-.0210	-.0248
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.560	.0085	-.0242	.0000	.0033	.0629	.0036
#1	1.558	-.0038	-.0433	.0000	.0040	.0629	.0029
`2	1.563	.0208	-.0051	.0000	.0027	.0628	.0043
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Analysis Report Fri 11-19-93 05:02:02 PM page 1

Method: EARL Sample Name: 12314/5 Operator: JH
Run Time: 11/19/93 16:58:33
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0000	-.0004	.0048	.1799	.0177	-.0000	6.530
#1	.0006	-.0070	.0065	.1799	.0178	.0002	6.526
#2	-.0006	.0061	.0032	.1799	.0175	-.0002	6.534
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	-.0010	.0011	.0019	-.0000	.0130	3.984	10.53
#1	-.0000	.0048	.0027	-.0000	.0130	3.726	10.52
#2	-.0020	-.0026	.0010	-.0000	.0130	4.242	10.54
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1426	.0080	165.7	.0140	.0163	-.0200	.0220
#1	.1426	.0107	165.3	-.0007	.0025	-.0030	.0193
#2	.1426	.0053	166.1	.0287	.0301	-.0370	.0248
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.633	-.0244	-.0069	.0013	.0027	.0767	.0029
#1	1.639	-.0283	-.0383	.0025	.0027	.0764	.0028
#2	1.626	-.0206	.0244	.0000	.0027	.0769	.0030
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Analysis Report Fri 11-19-93 05:05:38 PM page 1

Method: EARL Sample Name: 12315/5 Operator: JH
Run Time: 11/19/93 17:02:09
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0017	-.0224	-.0095	.1493	.1429	.0000	33.90
#1	.0000	-.0396	.0002	.1511	.1438	-.0002	34.09
#2	-.0034	-.0053	-.0193	.1475	.1420	.0002	33.71
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	.0020	-.0011	-.0002	-.0023	.4114	3.878	44.48
#1	-.0020	-.0026	-.0010	-.0027	.4153	4.231	44.73
#2	.0060	.0004	.0006	-.0019	.4074	3.524	44.24
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.7148	-.0040	169.7	-.0068	-.0106	-.0310	.0028
#1	.7188	-.0027	170.7	.0110	-.0236	-.0510	.0138
#2	.7109	-.0053	168.6	-.0246	.0024	-.0110	-.0083
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.644	-.0018	-.0501	-.0011	.0027	.3769	.0031
#1	2.656	-.0154	.0170	-.0011	.0027	.3792	.0026
#2	2.632	.0117	-.1172	-.0011	.0027	.3746	.0035
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Analysis Report Fri 11-19-93 05:09:14 PM page 1

Method: EARL Sample Name: 12316/5 Operator: JH
Run Time: 11/19/93 17:05:45
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0006	.0028	.0080	.1439	.1417	-.0000	33.51
#1	-.0006	.0020	.0226	.1439	.1420	-.0000	33.58
#2	-.0006	.0037	-.0065	.1439	.1414	-.0000	33.43
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	.0019	.0033	.0025	-.0004	.3998	3.816	44.15
#1	.0077	.0033	.0023	-.0012	.4015	3.367	44.28
#2	-.0039	.0033	.0027	.0004	.3981	4.265	44.02
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.7059	.0013	168.1	.0140	-.0142	.0090	-.0276
#1	.7079	.0027	168.6	.0055	-.0317	-.0270	-.0358
#2	.7039	-.0000	167.5	.0226	.0033	.0450	-.0193
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.630	-.0096	-.0014	.0014	.0027	.3730	.0025
#1	2.641	.0052	.0530	.0014	.0027	.3742	.0023
#2	2.618	-.0245	-.0557	.0014	.0027	.3719	.0027
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Analysis Report Fri 11-19-93 05:12:50 PM page 1

Method: EARL Sample Name: 12319/5 Operator: JH
Run Time: 11/19/93 17:09:21
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0022	.0012	.0081	.3327	.1076	.0001	10.52
#1	-.0022	-.0013	.0097	.3345	.1082	.0002	10.55
#2	-.0022	.0036	.0064	.3309	.1069	-.0000	10.50
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	.0019	.0007	.0021	-.0000	.5834	10.24	26.04
#1	.0019	-.0004	.0010	-.0000	.5849	10.07	26.11
#2	.0019	.0018	.0031	-.0000	.5819	10.40	25.97
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1671	-.0053	234.9	.0058	.0122	-.0370	-.0220
#1	.1676	-.0053	235.7	.0157	.0155	-.0310	-.0524
#2	.1667	-.0053	234.1	-.0041	.0090	-.0430	.0083
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.228	-.0127	-.0138	.0021	.0033	.1814	.0057
#1	3.233	-.0140	-.0220	.0027	.0040	.1820	.0054
#2	3.222	-.0114	-.0056	.0015	.0027	.1808	.0060
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Analysis Report Fri 11-19-93 05:16:26 PM page 1

Method: EARL Sample Name: 12325/5 Operator: JH
Run Time: 11/19/93 17:12:57
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0022	.0065	.0241	.3813	.1479	-.0000	17.24
#1	-.0017	.0044	-.0097	.3885	.1477	-.0000	17.20
#2	-.0028	.0086	.0580	.3741	.1480	-.0000	17.27
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	900.0	50.00	50.00	40.00	30.00	500.0
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	.0028	.0015	.0012	-.0008	.1601	13.92	44.63
#1	.0020	.0011	.0019	-.0004	.1603	14.16	44.51
#2	.0035	.0018	.0006	-.0012	.1599	13.68	44.76
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	35.00	50.00	35.00	40.00	250.0	1000.	1000.
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2635	-.0027	382.4	.0072	-.0029	-.0070	.0138
#1	.2628	-.0027	381.4	.0014	-.0114	-.0230	.0193
#2	.2643	-.0027	383.4	.0130	.0057	.0090	.0083
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	25.00	50.00	500.0	45.00	95.00	50.00	50.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.215	.0060	-.0249	.0038	.0027	.2973	.0057
#1	3.210	.0221	.0014	.0063	.0040	.2963	.0059
#2	3.220	-.0102	-.0511	.0013	.0013	.2984	.0055
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00	25.00	50.00	50.00	50.00	5.000	40.00
Low	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

Analysis Report Fri 11-19-93 05:20:02 PM page 1

Method: EARL Sample Name: CRIF 1 Operator: JH
Run Time: 11/19/93 17:16:33
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0165	-.0137	L.0065	.0018	.0003	.0099	.0202
#1	.0179	-.0087	.0162	-.0000	.0003	.0097	.0219
#2	L.0151	-.0186	L-.0031	.0036	.0003	.0100	.0185
Errors	LC Pass	NOCHECK	LC Low	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	.0240		.0240			.0120	
Low	.0160		.0160			.0080	

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	.0118	.0987	.0229	.0469	.0006	-.9315	.0130
#1	.0117	.0987	.0221	.0463	.0011	-.6285	.0288
#2	.0118	.0987	.0237	.0475	.0000	-1.235	-.0027
Errors	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK	NOCHECK
High	.0120	.1200	.0240	.0600			
Low	.0080	.0800	.0160	.0400			

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0288	-.0027	.1049	L.0633	.1035	L.0808	-.0138
#1	.0285	.0027	.1276	.0657	.0913	L.0768	.0138
#2	.0290	-.0080	.0823	L.0609	.1158	L.0848	-.0413
Errors	LC Pass	NOCHECK	NOCHECK	LC Low	LC Pass	LC Low	NOCHECK
High	.0360			.0960	.1200	.1440	
Low	.0240			.0640	.0800	.0960	

Elem	Si2881	Sn1899	Ti1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0008	-.0006	-.0324	.0981	.0399	.0002	.0011
#1	.0111	.0091	-.0093	.0968	.0399	.0002	.0009
#2	-.0095	-.0103	-.0556	.0993	.0399	.0002	.0013
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK
High				.1200			
Low				.0800			

Analysis Report QC Standard Fri 11-19-93 05:23:39 PM page 1

Method: EARL Sample Name: CCV2 Operator: JH
Run Time: 11/19/93 17:20:09
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4944	5.079	4.822	.4766	.4915	.4902	24.25
#1	.4919	5.089	4.809	.4784	.4921	.4898	24.18
#2	.4969	5.069	4.835	.4748	.4909	.4906	24.33
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	5.000	5.000	.5000	.5000	.5000	25.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	.5002	.4922	.4793	.4878	4.955	24.51	49.12
#1	.5023	.4915	.4776	.4869	4.947	24.73	49.13
#2	.4981	.4930	.4809	.4888	4.962	24.30	49.11
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	.5000	.5000	.5000	5.000	25.00	50.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4854	.4827	33.17	.5010	.5097	.4586	4.853
#1	.4846	.4907	33.23	.5161	.5092	.4956	4.891
#2	.4861	.4747	33.11	.4860	.5101	Q.4216	4.814
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	.5000	33.20	.5000	.5000	.5000	5.000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.195	.4916	4.797	.4765	.4957	.4902	.4950
#1	5.185	.4923	4.851	.4759	.4944	.4903	.4943
#2	5.205	.4910	4.744	.4771	.4970	.4900	.4957
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5.000	.5000	5.000	.5000	.5000	.5000	.5000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Analysis Report Blank Sample Fri 11-19-93 05:27:15 PM page 1

Method: EARL Sample Name: CCB2 Operator: JH
Run Time: 11/19/93 17:23:46
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0020	-.0110	.0226	-.0036	-.0002	.0001	-.0002
#1	-.0006	.0053	H.0548	.0072	.0003	.0000	.0000
#2	-.0034	-.0274	-.0095	-.0144	-.0006	.0002	-.0005
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.2000	.0500	.0200	.2000	.0050	5.000
Low	-.0100	-.2000	-.0500	-.0200	-.2000	-.0050	-5.000

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	.0018	-.0000	.0010	-.0016	-.0007	-1.105	.0217
#1	.0016	.0004	.0031	-.0008	-.0011	.1235	.0342
#2	.0020	-.0004	-.0010	-.0023	-.0004	-2.334	.0092
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0100	.0250	.1000	5.000	5.000
Low	-.0050	-.0500	-.0100	-.0250	-.1000	-5.000	-5.000

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0002	-.0107	.1353	.0058	-.0069	-.0240	.0083
#1	-.0002	-.0080	.1526	.0068	.0016	-.0350	.0248
#2	-.0002	-.0133	.1179	.0048	-.0154	-.0130	-.0083
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0150	.0400	5.000	.0400	.0500	.0600	.1000
Low	-.0150	-.0400	-5.000	-.0400	-.0500	-.0600	-.1000

Elem	Si2881	Sn1899	Ti1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0062	-.0024	-.0350	-.0006	.0053	.0015	.0074
#1	-.0128	.0093	-.0157	-.0013	.0066	.0016	.0083
#2	.0004	-.0140	-.0542	-.0000	.0040	.0014	.0066
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0800	.2000	.1500	.0500	.0200	.0200	.0200
Low	-.0800	-.2000	-.1500	-.0500	-.0200	-.0200	-.0200

Analysis Report Fri 11-19-93 05:30:50 PM page 1

Method: EARL Sample Name: ICSAIF1 Operator: JH
Run Time: 11/19/93 17:27:22
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0627	482.9	-.0218	.0108	.0003	.0003	439.7
#1	-.0639	481.3	.0426	.0108	-.0006	.0002	438.1
#2	-.0616	484.5	-.0862	.0108	.0012	.0004	441.3
Errors	NOCHECK	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass
High		600.0					600.0
Low		400.0					400.0

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	.0041	.0037	-.0058	.0025	174.5	-1.549	476.0
#1	.0036	.0033	-.0064	.0016	173.9	-1.942	474.4
#2	.0046	.0041	-.0052	.0035	175.1	-1.156	477.5
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK	LC Pass
High					240.0		600.0
Low					160.0		400.0

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0223	.0013	-.0313	.0003	.0251	-.0490	-.0992
#1	.0224	-.0080	-.0332	-.0151	.0322	-.0530	-.0634
#2	.0223	.0107	-.0294	.0157	.0181	-.0450	-.1350
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1509	-.0205	.1917	-.0088	-.0033	.0180	.0052
#1	.1436	-.0076	.2930	-.0103	-.0027	.0179	.0049
2	.1582	-.0334	.0904	-.0073	-.0040	.0181	.0056
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High							
Low							

Analysis Report Fri 11-19-93 05:34:26 PM page 1

Method: EARL Sample Name: ICSABIF1 Operator: JH
Run Time: 11/19/93 17:30:57
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.8978	481.5	.1106	-.0054	.4789	.4596	438.8
#1	.8980	481.8	.0780	-.0036	.4795	.4601	439.3
#2	.8975	481.2	.1431	-.0072	.4782	.4591	438.4
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	1.200	600.0			.6000	.6000	600.0
Low	.8000	400.0			.4000	.4000	400.0

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	.9273	.4460	.4448	.4705	174.4	-1.824	475.3
#1	.9246	.4464	.4454	.4697	174.5	-1.448	475.7
#2	.9301	.4456	.4442	.4713	174.3	-2.200	475.0
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	LC Pass
High	1.200	.6000	.6000	.6000	240.0		600.0
Low	.8000	.4000	.4000	.4000	160.0		400.0

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4706	-.0000	-.0332	.8628	.8909	-.0068	-.0496
#1	.4706	-.0000	-.0245	.8652	.9137	-.0258	-.0799
#2	.4705	-.0000	-.0419	.8604	.8681	.0122	-.0193
Errors	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	NOCHECK	NOCHECK
High	.6000			1.200	1.200		
Low	.4000			.8000	.8000		

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1448	-.0237	.1777	.4543	.9110	.0180	.0061
#1	.1452	-.0269	.0214	.4550	.9130	.0181	.0062
#2	.1445	-.0205	.3341	.4537	.9090	.0180	.0059
Errors	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	NOCHECK	NOCHECK
High				.6000	1.200		
Low				.4000	.8000		

Analysis Report QC Standard Fri 11-19-93 05:41:20 PM page 1

Method: EARL Sample Name: CCV2 Operator: JH
Run Time: 11/19/93 17:37:51
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4983	5.102	4.939	.4910	.4927	.4981	24.54
#1	.4975	5.067	4.899	.4748	.4894	.4952	24.45
#2	.4992	5.137	4.979	.5072	.4961	.5010	24.63
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	5.000	5.000	.5000	.5000	.5000	25.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	.5023	.4970	.4863	.4882	5.007	25.39	49.49
#1	.5016	.4945	.4855	.4857	4.983	25.90	49.22
#2	.5030	.4996	.4871	.4908	5.032	24.88	49.76
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	.5000	.5000	.5000	5.000	25.00	50.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4933	.4947	33.45	.4890	.4649	.4866	4.974
#1	.4916	.4907	33.25	.4716	.4759	.5216	4.968
#2	.4951	.4987	33.65	.5065	.4538	.4516	4.979
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	.5000	.5000	33.20	.5000	.5000	.5000	5.000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.253	.4860	4.948	.4822	.5017	.4937	.5014
#1	5.239	.4950	4.905	.4797	.4997	.4908	.5000
#2	5.268	.4770	4.991	.4847	.5037	.4967	.5029
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5.000	.5000	5.000	.5000	.5000	.5000	.5000
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Analysis Report Blank Sample Fri 11-19-93 05:44:57 PM page 1

Method: EARL Sample Name: CCB2 Operator: JH
Run Time: 11/19/93 17:41:27
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	B_2496	Ba4934	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0011	-.0216	.0308	.0054	-.0002	.0000	-.0024
#1	-.0028	-.0347	.0131	.0144	-.0003	.0000	-.0049
#2	.0006	-.0086	.0484	-.0036	.0000	.0000	.0000
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.2000	.0500	.0200	.2000	.0050	5.000
Low	-.0100	-.2000	-.0500	-.0200	-.2000	-.0050	-5.000

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg3232
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	.0008	-.0007	-.0002	-.0014	-.0022	-1.577	.0217
#1	-.0001	-.0018	-.0014	-.0031	-.0019	-1.560	-.0038
#2	.0016	.0004	.0010	.0004	-.0026	-1.594	.0473
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0050	.0500	.0100	.0250	.1000	5.000	5.000
Low	-.0050	-.0500	-.0100	-.0250	-.1000	-5.000	-5.000

Elem	Mn2576	Mo2020	Na5889	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0000	-.0067	.1093	.0010	.0057	-.0210	.0110
#1	-.0002	-.0080	.1006	.0000	.0106	-.0430	-.0083
#2	.0002	-.0053	.1179	.0021	.0008	.0010	.0303
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0150	.0400	5.000	.0400	.0500	.0600	.1000
Low	-.0150	-.0400	-5.000	-.0400	-.0500	-.0600	-.1000

Elem	Si2881	Sn1899	Tl1908	V_2924	Zn2138	Sr4215	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0033	-.0095	.0384	-.0006	.0060	.0015	.0079
#1	-.0152	-.0049	-.0058	-.0013	.0066	.0014	.0079
#2	.0086	-.0140	.0826	-.0000	.0053	.0015	.0079
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0800	.2000	.1500	.0500	.0200	.0200	.0200
Low	-.0800	-.2000	-.1500	-.0500	-.0200	-.0200	-.0200

File Record	Laboratory Sample Name	Customer/EPA Sample Name	Type	Matrix	Instrument Dil.	Date	Time	Flags
1	S0		3		1.0	11/20/93	15:17:40	
2	S10		3		1.0	11/20/93	15:21:14	
3	S20		3		1.0	11/20/93	15:24:49	
4	S50		3		1.0	11/20/93	15:28:23	
5	S100		3		1.0	11/20/93	15:31:58	100.9%
6	ICV	ICV	0		1.0	11/20/93	15:35:31	100.5%
7	ICB	ICB	0		1.0	11/20/93	15:39:07	
8	CCV1	CCV	0		1.0	11/20/93	15:42:40	100.4%
9	CCB1	CCB	0		1.0	11/20/93	15:46:14	
10	CRA	CRA	0		1.0	11/20/93	15:49:49	105.0%
11	ZZZZZZ		0		1.0	11/20/93	15:53:22	
12	PBW	PBW	0		1.0	11/20/93	15:56:56	
13	+20		1		1.0	11/20/93	16:00:30	
14	LCSW	LCSW	0		10.0	11/20/93	16:04:04	95.2%
15	+20		1		10.0	11/20/93	16:07:37	96.0%
16	LCSM		0		1.0	11/20/93	16:11:10	99.5%
17	12146S		0		1.0	11/20/93	16:14:45	93.5%
18	12146		0		1.0	11/20/93	16:18:20	
19	+20		1		1.0	11/20/93	16:21:54	
20	CCV2	CCV	0		1.0	11/20/93	16:25:32	96.6%
21	CCB2	CCB	0		1.0	11/20/93	16:29:08	
22	12146D		0		1.0	11/20/93	16:32:48	RPD=NC
23	+20		1		1.0	11/20/93	16:36:24	
24	12313		0		1.0	11/20/93	16:40:03	
25	+20		1		1.0	11/20/93	16:43:42	
26	12314		0		1.0	11/20/93	16:47:20	
27	+20		1		1.0	11/20/93	16:50:57	
28	12315		0		1.0	11/20/93	16:54:35	
29	+20		1		1.0	11/20/93	16:58:13	
30	12316		0		1.0	11/20/93	17:01:50	
31	+20		1		1.0	11/20/93	17:05:27	
32	CCV3	CCV	0		1.0	11/20/93	17:09:03	96.4%
33	CCB3	CCB	0		1.0	11/20/93	17:12:36	
34	12317		0		1.0	11/20/93	17:16:18	
35	+20		1		1.0	11/20/93	17:19:54	
36	12318		0		1.0	11/20/93	17:23:32	
37	+20		1		1.0	11/20/93	17:27:11	
38	12319		0		1.0	11/20/93	17:30:47	
39	+20		1		1.0	11/20/93	17:34:25	
40	12325		0		1.0	11/20/93	17:38:06	
41	+20		1		1.0	11/20/93	17:41:45	
42	CCV4	CCV	0		1.0	11/20/93	17:45:20	96.8%
43	CCB4	CCB	0		1.0	11/20/93	17:48:55	

Code-Batch : VEOBRIEN-4,5
Date : 20-NOV-93
Element : AS
Inst # 7 Analyst : OP
Page # 1

#	Sample Names Laboratory	EPA/Customer	Element	Original	Added	Found	% R	E
1	PBW	PBW	AS193.70	-0.40000	20.000	19.70000	98.50	
2	LCSW	LCSW	AS193.70	47.60000	20.000	66.80000	96.00	
3	12146		AS193.70	0.10000	20.000	19.80000	99.00	
4	12146D		AS193.70	0.70000	20.000	17.40000	87.00	
5	12313		AS193.70	0.10000	20.000	19.00000	95.00	
6	12314		AS193.70	2.70000	20.000	21.20000	92.50	
7	12315		AS193.70	11.30000	20.000	30.40000	95.50	
8	12316		AS193.70	11.00000	20.000	29.40000	92.00	
9	12317		AS193.70	0.50000	20.000	19.20000	96.00	
10	12318		AS193.70	-0.60000	20.000	18.50000	92.50	
11	12319		AS193.70	6.80000	20.000	25.80000	95.00	
12	12325		AS193.70	6.90000	20.000	25.70000	94.00	

ICV=CCV=50 NIST
LCSM=40
LCSW=500 IV

Code-Batch : VEOBRIEN-4,5
Date : 20-NOV-93
Element : AS
Inst # 7 Analyst : OP
Page # 2

Element File: VAS.GEL Element: As Wavelength: 193.7
Date: 11/20/93 Time: 15:15 Slit: 0.70 L
Data File: 8632ASH1.DAT ID/Wt File: 8632ASH1.IDW Lamp Current: 0
Technique: HGA Calib. Type: Linear Energy: 49

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As ID: S0 Seq. No.: 00001 A/S Pos.: 1 Date: 11/20/93

Replicate 1 Time: 15:15
Peak Area (A-s): -0.002 Peak Height (A): 0.006
Background Pk Area (A-s): 0.034 Background Pk Height (A): 0.015
Blank Corrected Pk Area (A-s): -0.002

Replicate 2 Time: 15:17
Peak Area (A-s): -0.002 Peak Height (A): 0.010
Background Pk Area (A-s): 0.036 Background Pk Height (A): 0.017
Blank Corrected Pk Area (A-s): -0.002

Mean Pk Area (A-s): -0.002 SD: 0.0000 RSD(%): 3.10

Auto-zero performed.

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As ID: S10 Seq. No.: 00002 A/S Pos.: 2 Date: 11/20/93

Replicate 1 Time: 15:19
Peak Area (A-s): 0.029 Peak Height (A): 0.066
Background Pk Area (A-s): 0.033 Background Pk Height (A): 0.016
Blank Corrected Pk Area (A-s): 0.030

Replicate 2 Time: 15:21
Peak Area (A-s): 0.027 Peak Height (A): 0.061
Background Pk Area (A-s): 0.034 Background Pk Height (A): 0.016
Blank Corrected Pk Area (A-s): 0.029

Mean Pk Area (A-s): 0.030 SD: 0.0010 RSD(%): 3.41

Standard number 1 applied. [10.0]
Correlation coefficient: 1.00000 Slope: 0.0030 Int: -0.000

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As ID: S20 Seq. No.: 00003 A/S Pos.: 3 Date: 11/20/93

Replicate 1 Time: 15:23
Peak Area (A-s): 0.054 Peak Height (A): 0.117
Background Pk Area (A-s): 0.038 Background Pk Height (A): 0.017
Blank Corrected Pk Area (A-s): 0.055
Concentration (ug/L): 18.8

Replicate 2 Time: 15:24
Peak Area (A-s): 0.058 Peak Height (A): 0.119
Background Pk Area (A-s): 0.035 Background Pk Height (A): 0.018
Blank Corrected Pk Area (A-s): 0.060
Concentration (ug/L): 20.2

Mean Conc (ug/L): 19.5 SD: 1.00 RSD(%): 5.13

Standard number 2 applied. [20.0]
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As ID: S50 Seq. No.: 00004 A/S Pos.: 4 Date: 11/20/93

Replicate 1 Time: 15:26
Peak Area (A-s): 0.144 Peak Height (A): 0.294
Background Pk Area (A-s): 0.042 Background Pk Height (A): 0.027
Blank Corrected Pk Area (A-s): 0.145
Concentration (ug/L): 50.4

Replicate 2 Time: 15:28
Peak Area (A-s): 0.143 Peak Height (A): 0.296
Background Pk Area (A-s): 0.042 Background Pk Height (A): 0.026
Blank Corrected Pk Area (A-s): 0.145
Concentration (ug/L): 50.3

Mean Conc (ug/L): 50.4 SD: 0.09 RSD(%): 0.19

Standard number 3 applied. [50.0]
Correlation coefficient: 0.99998 Slope: 0.0029 Int: 0.000

As ID: S100 Seq. No.: 00005 A/S Pos.: 5 Date: 11/20/93

Replicate 1 Time: 15:30
Peak Area (A-s): 0.282 Peak Height (A): 0.558
Background Pk Area (A-s): 0.052 Background Pk Height (A): 0.041
Blank Corrected Pk Area (A-s): 0.284
Concentration (ug/L): 98.0

Replicate 2 Time: 15:31
Peak Area (A-s): 0.278 Peak Height (A): 0.556
Background Pk Area (A-s): 0.048 Background Pk Height (A): 0.041
Blank Corrected Pk Area (A-s): 0.279
Concentration (ug/L): 96.4

Mean Conc (ug/L): 97.2 SD: 1.09 RSD(%): 1.13

Standard number 4 applied. [100.0]
Correlation coefficient: 0.99989 Slope: 0.0028 Int: 0.001

As ID: ICV Seq. No.: 00006 A/S Pos.: 6 Date: 11/20/93

Replicate 1 Time: 15:33
Peak Area (A-s): 0.142 Peak Height (A): 0.307
Background Pk Area (A-s): 0.043 Background Pk Height (A): 0.029
Blank Corrected Pk Area (A-s): 0.143
Concentration (ug/L): 50.4

Replicate 2 Time: 15:35
Peak Area (A-s): 0.142 Peak Height (A): 0.309
Background Pk Area (A-s): 0.042 Background Pk Height (A): 0.027
Blank Corrected Pk Area (A-s): 0.143
Concentration (ug/L): 50.4

Mean Conc (ug/L): 50.4 SD: 0.02 RSD(%): 0.04

Code-Batch : VEOBRIEN-4,5
Date : 20-NOV-93
Element : AS
Inst # 7 Analyst : OP
Page # 4

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As ID: ICB Seq. No.: 00007 A/S Pos.: 7 Date: 11/20/93

Replicate 1 Time: 15:37
Peak Area (A-s): 0.000 Peak Height (A): 0.007
Background Pk Area (A-s): 0.035 Background Pk Height (A): 0.016
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.2

Replicate 2 Time: 15:39
Peak Area (A-s): -0.000 Peak Height (A): 0.010
Background Pk Area (A-s): 0.034 Background Pk Height (A): 0.017
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.1

Mean Conc (ug/L): 0.1 SD: 0.07 RSD(%): 62.62

QC sample is within range -10 - 10

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As ID: CCV Seq. No.: 00008 A/S Pos.: 8 Date: 11/20/93

Replicate 1 Time: 15:40
Peak Area (A-s): 0.141 Peak Height (A): 0.321
Background Pk Area (A-s): 0.043 Background Pk Height (A): 0.028
Blank Corrected Pk Area (A-s): 0.142
Concentration (ug/L): 50.0

Replicate 2 Time: 15:42
Peak Area (A-s): 0.142 Peak Height (A): 0.322
Background Pk Area (A-s): 0.043 Background Pk Height (A): 0.027
Blank Corrected Pk Area (A-s): 0.143
Concentration (ug/L): 50.4

Mean Conc (ug/L): 50.2 SD: 0.25 RSD(%): 0.49

QC sample is within range 45.0 - 55.0

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As ID: CCB Seq. No.: 00009 A/S Pos.: 9 Date: 11/20/93

Replicate 1 Time: 15:44
Peak Area (A-s): 0.001 Peak Height (A): 0.008
Background Pk Area (A-s): 0.034 Background Pk Height (A): 0.015
Blank Corrected Pk Area (A-s): 0.003
Concentration (ug/L): 0.5

Replicate 2 Time: 15:46
Peak Area (A-s): -0.002 Peak Height (A): 0.008
Background Pk Area (A-s): 0.035 Background Pk Height (A): 0.018
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.6

Mean Conc (ug/L): -0.1 SD: 0.75 RSD(%): 1355.63

QC sample is within range -10 - 10

Code-Batch : VEOBRIEN-4,5
Date : 20-NOV-93
Element : AS
Inst # 7 Analyst : OP
Page # 5
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As ID: CRA Seq. No.: 00010 A/S Pos.: 10 Date: 11/20/93

Replicate 1 Time: 15:48
Peak Area (A-s): 0.030 Peak Height (A): 0.070
Background Pk Area (A-s): 0.034 Background Pk Height (A): 0.016
Blank Corrected Pk Area (A-s): 0.031
Concentration (ug/L): 10.7

Replicate 2 Time: 15:49
Peak Area (A-s): 0.028 Peak Height (A): 0.069
Background Pk Area (A-s): 0.035 Background Pk Height (A): 0.019
Blank Corrected Pk Area (A-s): 0.029
Concentration (ug/L): 10.0

Mean Conc (ug/L): 10.3 SD: 0.50 RSD(%): 4.83

QC sample is within range

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As ID: BLANK Seq. No.: 00011 A/S Pos.: 11 Date: 11/20/93

Replicate 1 Time: 15:51
Peak Area (A-s): -0.002 Peak Height (A): 0.007
Background Pk Area (A-s): 0.034 Background Pk Height (A): 0.017
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.7

Replicate 2 Time: 15:53
Peak Area (A-s): -0.002 Peak Height (A): 0.012
Background Pk Area (A-s): 0.033 Background Pk Height (A): 0.019
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.5

Mean Conc (ug/L): -0.6 SD: 0.12 RSD(%): 21.43

QC sample is within range

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As ID: PBW Seq. No.: 00012 A/S Pos.: 12 Date: 11/20/93

Replicate 1 Time: 15:55
Peak Area (A-s): 0.001 Peak Height (A): 0.007
Background Pk Area (A-s): 0.033 Background Pk Height (A): 0.015
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.3

Replicate 2 Time: 15:56
Peak Area (A-s): -0.003 Peak Height (A): 0.007
Background Pk Area (A-s): 0.033 Background Pk Height (A): 0.015
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -1.1

Mean Conc (ug/L): -0.4 SD: 1.01 RSD(%): 251.74

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As ID: +20 Seq. No.: 00013 A/S Pos.: 13 Date: 11/20/93

Replicate 1 Time: 15:58
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Background Pk Area (A-s): 0.036 Background Pk Height (A): 0.019
Blank Corrected Pk Area (A-s): 0.058
Concentration (ug/L): 20.0

Replicate 2 Time: 16:00
Peak Area (A-s): 0.054 Peak Height (A): 0.114
Background Pk Area (A-s): 0.037 Background Pk Height (A): 0.021
Blank Corrected Pk Area (A-s): 0.056
Concentration (ug/L): 19.4

Mean Conc (ug/L): 19.7 SD: 0.39 RSD(%): 1.97

~~~~~~

As ID: LCSW/10 Seq. No.: 00014 A/S Pos.: 14 Date: 11/20/93

Replicate 1 Time: 16:02
Peak Area (A-s): 0.135 Peak Height (A): 0.329
Background Pk Area (A-s): 0.041 Background Pk Height (A): 0.029
Blank Corrected Pk Area (A-s): 0.137
Concentration (ug/L): 48.1

Replicate 2 Time: 16:04
Peak Area (A-s): 0.132 Peak Height (A): 0.319
Background Pk Area (A-s): 0.041 Background Pk Height (A): 0.031
Blank Corrected Pk Area (A-s): 0.134
Concentration (ug/L): 47.1

Mean Conc (ug/L): 47.6 SD: 0.71 RSD(%): 1.49

~~~~~~

As ID: +20 Seq. No.: 00015 A/S Pos.: 15 Date: 11/20/93

Replicate 1 Time: 16:05
Peak Area (A-s): 0.188 Peak Height (A): 0.439
Background Pk Area (A-s): 0.042 Background Pk Height (A): 0.036
Blank Corrected Pk Area (A-s): 0.189
Concentration (ug/L): 66.8

Replicate 2 Time: 16:07
Peak Area (A-s): 0.188 Peak Height (A): 0.442
Background Pk Area (A-s): 0.042 Background Pk Height (A): 0.035
Blank Corrected Pk Area (A-s): 0.189
Concentration (ug/L): 66.7

Mean Conc (ug/L): 66.8 SD: 0.02 RSD(%): 0.04

~~~~~~

As ID: LCSM Seq. No.: 00016 A/S Pos.: 16 Date: 11/20/93

Replicate 1 Time: 16:09
Peak Area (A-s): 0.113 Peak Height (A): 0.228
Background Pk Area (A-s): 0.039 Background Pk Height (A): 0.025
Blank Corrected Pk Area (A-s): 0.115
Concentration (ug/L): 40.3

Replicate 2 Time: 16:11
Peak Area (A-s): 0.110 Peak Height (A): 0.227
Background Pk Area (A-s): 0.039 Background Pk Height (A): 0.025
~~~~~~

Concentration (ug/L): 39.3

Mean Conc (ug/L): 39.8 SD: 0.66 RSD(%): 1.67

~~~~~~

As ID: 12146S Seq. No.: 00017 A/S Pos.: 17 Date: 11/20/93

Replicate 1 Time: 16:12
Peak Area (A-s): 0.105 Peak Height (A): 0.213
Background Pk Area (A-s): 0.185 Background Pk Height (A): 0.074
Blank Corrected Pk Area (A-s): 0.107
Concentration (ug/L): 37.4

Replicate 2 Time: 16:14
Peak Area (A-s): 0.105 Peak Height (A): 0.206
Background Pk Area (A-s): 0.192 Background Pk Height (A): 0.076
Blank Corrected Pk Area (A-s): 0.107
Concentration (ug/L): 37.4

Mean Conc (ug/L): 37.4 SD: 0.02 RSD(%): 0.05

~~~~~~

As ID: 12146 Seq. No.: 00018 A/S Pos.: 18 Date: 11/20/93

Replicate 1 Time: 16:16
Peak Area (A-s): -0.001 Peak Height (A): 0.009
Background Pk Area (A-s): 0.189 Background Pk Height (A): 0.078
Blank Corrected Pk Area (A-s): 0.000
Concentration (ug/L): -0.4

Replicate 2 Time: 16:18
Peak Area (A-s): 0.001 Peak Height (A): 0.011
Background Pk Area (A-s): 0.190 Background Pk Height (A): 0.079
Blank Corrected Pk Area (A-s): 0.003
Concentration (ug/L): 0.5

Mean Conc (ug/L): 0.1 SD: 0.62 RSD(%): 1209.28

~~~~~~

As ID: +20 Seq. No.: 00019 A/S Pos.: 19 Date: 11/20/93

Replicate 1 Time: 16:20
Peak Area (A-s): 0.054 Peak Height (A): 0.115
Background Pk Area (A-s): 0.199 Background Pk Height (A): 0.082
Blank Corrected Pk Area (A-s): 0.056
Concentration (ug/L): 19.4

Replicate 2 Time: 16:21
Peak Area (A-s): 0.057 Peak Height (A): 0.113
Background Pk Area (A-s): 0.202 Background Pk Height (A): 0.085
Blank Corrected Pk Area (A-s): 0.058
Concentration (ug/L): 20.3

Mean Conc (ug/L): 19.8 SD: 0.58 RSD(%): 2.90

~~~~~~

As ID: CCV Seq. No.: 00020 A/S Pos.: 8 Date: 11/20/93

Peak Area (A-s): 0.132 Peak Height (A): 0.357
Background Pk Area (A-s): 0.044 Background Pk Height (A): 0.029
Blank Corrected Pk Area (A-s): 0.134
Concentration (ug/L): 47.1

Replicate 2 Time: 16:25
Peak Area (A-s): 0.139 Peak Height (A): 0.347
Background Pk Area (A-s): 0.041 Background Pk Height (A): 0.026
Blank Corrected Pk Area (A-s): 0.141
Concentration (ug/L): 49.5

Mean Conc (ug/L): 48.3 SD: 1.67 RSD(%): 3.45

QC sample is within range 45.0 - 55.0

~~~~~~

As ID: CCB Seq. No.: 00021 A/S Pos.: 9 Date: 11/20/93

Replicate 1 Time: 16:27
Peak Area (A-s): -0.003 Peak Height (A): 0.007
Background Pk Area (A-s): 0.037 Background Pk Height (A): 0.017
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.9

Replicate 2 Time: 16:29
Peak Area (A-s): -0.001 Peak Height (A): 0.007
Background Pk Area (A-s): 0.035 Background Pk Height (A): 0.017
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): -0.3

Mean Conc (ug/L): -0.6 SD: 0.42 RSD(%): 74.22

QC sample is within range -10 - 10

~~~~~~

As ID: 12146D Seq. No.: 00022 A/S Pos.: 20 Date: 11/20/93

Replicate 1 Time: 16:31
Peak Area (A-s): -0.001 Peak Height (A): 0.011
Background Pk Area (A-s): 0.191 Background Pk Height (A): 0.082
Blank Corrected Pk Area (A-s): 0.000
Concentration (ug/L): -0.3

Replicate 2 Time: 16:32
Peak Area (A-s): 0.004 Peak Height (A): 0.016
Background Pk Area (A-s): 0.226 Background Pk Height (A): 0.095
Blank Corrected Pk Area (A-s): 0.006
Concentration (ug/L): 1.6

Mean Conc (ug/L): 0.7 SD: 1.34 RSD(%): 202.91

~~~~~~

As ID: +20 Seq. No.: 00023 A/S Pos.: 21 Date: 11/20/93

Replicate 1 Time: 16:34
Peak Area (A-s): 0.048 Peak Height (A): 0.107
Background Pk Area (A-s): 0.201 Background Pk Height (A): 0.083
Blank Corrected Pk Area (A-s): 0.049
~~~~~~

Replicate 2 Time: 16:36
Peak Area (A-s): 0.050 Peak Height (A): 0.106
Background Pk Area (A-s): 0.209 Background Pk Height (A): 0.086
Blank Corrected Pk Area (A-s): 0.051
Concentration (ug/L): 17.8

Mean Conc (ug/L): 17.4 SD: 0.57 RSD(%): 3.26

~~~~~~

As ID: 12313 Seq. No.: 00024 A/S Pos.: 22 Date: 11/20/93

Replicate 1 Time: 16:38
Peak Area (A-s): 0.001 Peak Height (A): 0.011
Background Pk Area (A-s): 0.119 Background Pk Height (A): 0.049
Blank Corrected Pk Area (A-s): 0.003
Concentration (ug/L): 0.5

Replicate 2 Time: 16:40
Peak Area (A-s): -0.001 Peak Height (A): 0.011
Background Pk Area (A-s): 0.121 Background Pk Height (A): 0.049
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): -0.3

Mean Conc (ug/L): 0.1 SD: 0.54 RSD(%): 573.15

~~~~~~

As ID: +20 Seq. No.: 00025 A/S Pos.: 23 Date: 11/20/93

Replicate 1 Time: 16:41
Peak Area (A-s): 0.053 Peak Height (A): 0.112
Background Pk Area (A-s): 0.116 Background Pk Height (A): 0.048
Blank Corrected Pk Area (A-s): 0.054
Concentration (ug/L): 18.8

Replicate 2 Time: 16:43
Peak Area (A-s): 0.054 Peak Height (A): 0.110
Background Pk Area (A-s): 0.121 Background Pk Height (A): 0.049
Blank Corrected Pk Area (A-s): 0.055
Concentration (ug/L): 19.2

Mean Conc (ug/L): 19.0 SD: 0.26 RSD(%): 1.36

~~~~~~

As ID: 12314 Seq. No.: 00026 A/S Pos.: 24 Date: 11/20/93

Replicate 1 Time: 16:45
Peak Area (A-s): 0.008 Peak Height (A): 0.022
Background Pk Area (A-s): 0.109 Background Pk Height (A): 0.044
Blank Corrected Pk Area (A-s): 0.009
Concentration (ug/L): 2.8

Replicate 2 Time: 16:47
Peak Area (A-s): 0.007 Peak Height (A): 0.024
Background Pk Area (A-s): 0.106 Background Pk Height (A): 0.045
Blank Corrected Pk Area (A-s): 0.008
Concentration (ug/L): 2.5
~~~~~~

Mean Conc (ug/L): ... SD: 0.?? RSD(%): 7.84

~~~~~~

As ID: +20 Seq. No.: 00027 A/S Pos.: 25 Date: 11/20/93

Replicate 1 Time: 16:49
Peak Area (A-s): 0.058 Peak Height (A): 0.145
Background Pk Area (A-s): 0.110 Background Pk Height (A): 0.045
Blank Corrected Pk Area (A-s): 0.060
Concentration (ug/L): 20.8

Replicate 2 Time: 16:50
Peak Area (A-s): 0.060 Peak Height (A): 0.138
Background Pk Area (A-s): 0.114 Background Pk Height (A): 0.045
Blank Corrected Pk Area (A-s): 0.062
Concentration (ug/L): 21.5

Mean Conc (ug/L): 21.2 SD: 0.55 RSD(%): 2.60

~~~~~~

As ID: 12315 Seq. No.: 00028 A/S Pos.: 26 Date: 11/20/93

Replicate 1 Time: 16:52
Peak Area (A-s): 0.031 Peak Height (A): 0.068
Background Pk Area (A-s): 0.141 Background Pk Height (A): 0.058
Blank Corrected Pk Area (A-s): 0.033
Concentration (ug/L): 11.1

Replicate 2 Time: 16:54
Peak Area (A-s): 0.032 Peak Height (A): 0.065
Background Pk Area (A-s): 0.142 Background Pk Height (A): 0.059
Blank Corrected Pk Area (A-s): 0.034
Concentration (ug/L): 11.5

Mean Conc (ug/L): 11.3 SD: 0.26 RSD(%): 2.31

~~~~~~

As ID: +20 Seq. No.: 00029 A/S Pos.: 27 Date: 11/20/93

Replicate 1 Time: 16:56
Peak Area (A-s): 0.085 Peak Height (A): 0.166
Background Pk Area (A-s): 0.148 Background Pk Height (A): 0.061
Blank Corrected Pk Area (A-s): 0.087
Concentration (ug/L): 30.3

Replicate 2 Time: 16:58
Peak Area (A-s): 0.086 Peak Height (A): 0.165
Background Pk Area (A-s): 0.147 Background Pk Height (A): 0.061
Blank Corrected Pk Area (A-s): 0.087
Concentration (ug/L): 30.5

Mean Conc (ug/L): 30.4 SD: 0.16 RSD(%): 0.51

~~~~~~

As ID: 12316 Seq. No.: 00030 A/S Pos.: 28 Date: 11/20/93

Replicate 1 Time: 17:00
Peak Area (A-s): 0.032 Peak Height (A): 0.068
Background Pk Area (A-s): 0.145 Background Pk Height (A): 0.059

Concentration (ug/L): 11.4

Replicate 2 Time: 17:01
Peak Area (A-s): 0.030 Peak Height (A): 0.068
Background Pk Area (A-s): 0.144 Background Pk Height (A): 0.060
Blank Corrected Pk Area (A-s): 0.031
Concentration (ug/L): 10.6

Mean Conc (ug/L): 11.0 SD: 0.53 RSD(%): 4.82

~~~~~~

As ID: +20 Seq. No.: 00031 A/S Pos.: 29 Date: 11/20/93

Replicate 1 Time: 17:03
Peak Area (A-s): 0.084 Peak Height (A): 0.170
Background Pk Area (A-s): 0.148 Background Pk Height (A): 0.059
Blank Corrected Pk Area (A-s): 0.085
Concentration (ug/L): 29.8

Replicate 2 Time: 17:05
Peak Area (A-s): 0.081 Peak Height (A): 0.172
Background Pk Area (A-s): 0.149 Background Pk Height (A): 0.059
Blank Corrected Pk Area (A-s): 0.083
Concentration (ug/L): 29.0

Mean Conc (ug/L): 29.4 SD: 0.52 RSD(%): 1.76

~~~~~~

As ID: CCV Seq. No.: 00032 A/S Pos.: 8 Date: 11/20/93

Replicate 1 Time: 17:07
Peak Area (A-s): 0.135 Peak Height (A): 0.339
Background Pk Area (A-s): 0.043 Background Pk Height (A): 0.027
Blank Corrected Pk Area (A-s): 0.137
Concentration (ug/L): 48.2

Replicate 2 Time: 17:09
Peak Area (A-s): 0.136 Peak Height (A): 0.319
Background Pk Area (A-s): 0.044 Background Pk Height (A): 0.026
Blank Corrected Pk Area (A-s): 0.137
Concentration (ug/L): 48.3

Mean Conc (ug/L): 48.2 SD: 0.08 RSD(%): 0.17

QC sample is within range 45.0 - 55.0

~~~~~~

As ID: CCB Seq. No.: 00033 A/S Pos.: 9 Date: 11/20/93

Replicate 1 Time: 17:10
Peak Area (A-s): -0.004 Peak Height (A): 0.006
Background Pk Area (A-s): 0.037 Background Pk Height (A): 0.021
Blank Corrected Pk Area (A-s): -0.003
Concentration (ug/L): -1.4

Replicate 2 Time: 17:12
Peak Area (A-s): -0.003 Peak Height (A): 0.009
Background Pk Area (A-s): 0.034 Background Pk Height (A): 0.018
~~~~~~

Concentration (ug/L): -1.1

Mean Conc (ug/L): -1.3 SD: 0.27 RSD(%): 21.94

QC sample is within range -10 - 10

~~~~~~

As ID: 12317 Seq. No.: 00034 A/S Pos.: 30 Date: 11/20/93

Replicate 1 Time: 17:14
Peak Area (A-s): 0.000 Peak Height (A): 0.011
Background Pk Area (A-s): 0.108 Background Pk Height (A): 0.042
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.2

Replicate 2 Time: 17:16
Peak Area (A-s): 0.002 Peak Height (A): 0.013
Background Pk Area (A-s): 0.106 Background Pk Height (A): 0.039
Blank Corrected Pk Area (A-s): 0.003
Concentration (ug/L): 0.7

Mean Conc (ug/L): 0.5 SD: 0.39 RSD(%): 82.78

~~~~~~

As ID: +20 Seq. No.: 00035 A/S Pos.: 31 Date: 11/20/93

Replicate 1 Time: 17:18
Peak Area (A-s): 0.056 Peak Height (A): 0.112
Background Pk Area (A-s): 0.109 Background Pk Height (A): 0.046
Blank Corrected Pk Area (A-s): 0.057
Concentration (ug/L): 19.9

Replicate 2 Time: 17:19
Peak Area (A-s): 0.052 Peak Height (A): 0.112
Background Pk Area (A-s): 0.113 Background Pk Height (A): 0.046
Blank Corrected Pk Area (A-s): 0.053
Concentration (ug/L): 18.5

Mean Conc (ug/L): 19.2 SD: 1.01 RSD(%): 5.28

~~~~~~

As ID: 12318 Seq. No.: 00036 A/S Pos.: 32 Date: 11/20/93

Replicate 1 Time: 17:21
Peak Area (A-s): -0.002 Peak Height (A): 0.010
Background Pk Area (A-s): 0.092 Background Pk Height (A): 0.037
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.6

Replicate 2 Time: 17:23
Peak Area (A-s): -0.002 Peak Height (A): 0.009
Background Pk Area (A-s): 0.093 Background Pk Height (A): 0.036
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.7

Mean Conc (ug/L): -0.6 SD: 0.09 RSD(%): 14.80
~~~~~~

As ID: +20 Seq. No.: 00037 A/S Pos.: 33 Date: 11/20/93

Replicate 1 Time: 17:25
Peak Area (A-s): 0.053 Peak Height (A): 0.106
Background Pk Area (A-s): 0.096 Background Pk Height (A): 0.036
Blank Corrected Pk Area (A-s): 0.054
Concentration (ug/L): 18.8

Replicate 2 Time: 17:27
Peak Area (A-s): 0.051 Peak Height (A): 0.108
Background Pk Area (A-s): 0.097 Background Pk Height (A): 0.038
Blank Corrected Pk Area (A-s): 0.053
Concentration (ug/L): 18.2

Mean Conc (ug/L): 18.5 SD: 0.41 RSD(%): 2.21

~~~~~~

As ID: 12319 Seq. No.: 00038 A/S Pos.: 34 Date: 11/20/93

Replicate 1 Time: 17:28
Peak Area (A-s): 0.018 Peak Height (A): 0.049
Background Pk Area (A-s): 0.154 Background Pk Height (A): 0.066
Blank Corrected Pk Area (A-s): 0.019
Concentration (ug/L): 6.4

Replicate 2 Time: 17:30
Peak Area (A-s): 0.020 Peak Height (A): 0.052
Background Pk Area (A-s): 0.154 Background Pk Height (A): 0.071
Blank Corrected Pk Area (A-s): 0.021
Concentration (ug/L): 7.1

Mean Conc (ug/L): 6.8 SD: 0.46 RSD(%): 6.81

~~~~~~

As ID: +20 Seq. No.: 00039 A/S Pos.: 35 Date: 11/20/93

Replicate 1 Time: 17:32
Peak Area (A-s): 0.071 Peak Height (A): 0.163
Background Pk Area (A-s): 0.153 Background Pk Height (A): 0.065
Blank Corrected Pk Area (A-s): 0.072
Concentration (ug/L): 25.2

Replicate 2 Time: 17:34
Peak Area (A-s): 0.074 Peak Height (A): 0.157
Background Pk Area (A-s): 0.154 Background Pk Height (A): 0.068
Blank Corrected Pk Area (A-s): 0.076
Concentration (ug/L): 26.4

Mean Conc (ug/L): 25.8 SD: 0.83 RSD(%): 3.22

~~~~~~

As ID: 12325 Seq. No.: 00040 A/S Pos.: 36 Date: 11/20/93

Replicate 1 Time: 17:36
Peak Area (A-s): 0.019 Peak Height (A): 0.037
Background Pk Area (A-s): 0.185 Background Pk Height (A): 0.084
Blank Corrected Pk Area (A-s): 0.021
Concentration (ug/L): 7.0

Code-Batch : VEOBRIEN-4,5
Date : 20-NOV-93
Element : AS
Inst # 7 Analyst : OP
Page # 14
~~~~~~

Peak Area (A-s): 0.019 | Peak Height (A): 0.037
Background Pk Area (A-s): 0.187 | Background Pk Height (A): 0.083
Blank Corrected Pk Area (A-s): 0.020
Concentration (ug/L): 6.8

Mean Conc (ug/L): 6.9 SD: 0.19 RSD(%): 2.73

~~~~~~

As ID: +20 Seq. No.: 00041 A/S Pos.: 37 Date: 11/20/93

Replicate 1 Time: 17:39
Peak Area (A-s): 0.070 Peak Height (A): 0.132
Background Pk Area (A-s): 0.190 Background Pk Height (A): 0.082
Blank Corrected Pk Area (A-s): 0.072
Concentration (ug/L): 25.0

Replicate 2 Time: 17:41
Peak Area (A-s): 0.074 Peak Height (A): 0.131
Background Pk Area (A-s): 0.191 Background Pk Height (A): 0.082
Blank Corrected Pk Area (A-s): 0.076
Concentration (ug/L): 26.5

Mean Conc (ug/L): 25.7 SD: 1.06 RSD(%): 4.12

~~~~~~

As ID: CCV Seq. No.: 00042 A/S Pos.: 8 Date: 11/20/93

Replicate 1 Time: 17:43
Peak Area (A-s): 0.137 Peak Height (A): 0.300
Background Pk Area (A-s): 0.043 Background Pk Height (A): 0.024
Blank Corrected Pk Area (A-s): 0.139
Concentration (ug/L): 48.7

Replicate 2 Time: 17:45
Peak Area (A-s): 0.135 Peak Height (A): 0.307
Background Pk Area (A-s): 0.044 Background Pk Height (A): 0.025
Blank Corrected Pk Area (A-s): 0.137
Concentration (ug/L): 48.2

Mean Conc (ug/L): 48.4 SD: 0.39 RSD(%): 0.80

QC sample is within range 45.0 - 55.0

~~~~~~

As ID: CCB Seq. No.: 00043 A/S Pos.: 9 Date: 11/20/93

Replicate 1 Time: 17:47
Peak Area (A-s): -0.003 Peak Height (A): 0.007
Background Pk Area (A-s): 0.035 Background Pk Height (A): 0.019
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -1.0

Replicate 2 Time: 17:48
Peak Area (A-s): -0.006 Peak Height (A): 0.008
Background Pk Area (A-s): 0.036 Background Pk Height (A): 0.019
Blank Corrected Pk Area (A-s): -0.004
Concentration (ug/L): -1.9
~~~~~~

QC sample is within range -10 - 10

Code-Batch : VEOBRIEN-4,5
Date : 20-NOV-93
Element : AS
Inst # 7 Analyst : OP
Page # 16

VERSAR LABORATORIES INC.
Worklist # 17310

19-NOV-93 02:32 PM

Analyst: OP

Comments: [illegible]

Date Analyzed: 19-NOV-93

Control #	Code	Batch	Matrix	Analysis Code	Test
8632	VEOBRIEN	4	HOH	3CLP	PB
8650	VEOBRIEN	5	HOH	3CLP	PB

STANDARD INFORMATION

	Name	Source	Conc.
ICV :		NIST	25
CCV :		NIST	25
LCSW :		EPA	500
LCSS :		EPA	
CAL. STD. :		I.V.	
Prep. Day/Hr. :	19-NOV-93 07:30		

INSTRUMENT # 4

Light Source:	EDL	Gas Flow:	0
Current/Power:	5	Matrix Modifiers:	Y
Slit:	0.7	Signal:	PK AR
Wavelength:	283.3	Tube:	LVP
Background Corr.:	BZ	Replicates:	2
IDL:	1	CRDL:	3
Spike:	20	Integration Time:	5 SEC

Correlation: .9985 Y-Intercept: 5.19 Slope: 5.7 Units: UG/L

Seq	Control #	Sample/QC	Rp	Field Number	Standard Concentr	Time	Absorb	Concentration	Diluth	True Value	% Recovr	Flag	Comments
1	8632	S0	1		0	10:45	-1		1				
2	8632	S3	1		3	10:50	20	2.60	1		86.7	CRA	
3	8632	S10	2		10	10:55	66		1				
4	8632	S20	3		20	11:00	128		1				
5	8632	S50	4		50	11:05	286		1				
6	8632	ICV	1			11:10	159	26.99	1	25	108.0		
7	8632	ICB	1			11:15	7	0.32	1				
8	8632	CCV1	1			11:20	157	26.64	1	25	106.5		
9	8632	CCB1	1			11:25	0	-0.91	1				
10	8632	CRA	1			11:30	20	2.60	1	3	86.6		
11	8632	PBW	1			11:35	0	-0.91	1				
12	8632	+20	1			11:40	125	21.02	1	20	105.1		
13	8632	LCSW	1			11:45	151	25.58	20	500	102.3		
14	8632	+20	1			11:50	253	43.48	20	20	89.5		
15	8632	LCSM	1			11:55	127	21.37	1	20	106.9		
16	8632	12146S	1	W-5(S)		12:00	67	10.85	1	20	54.2	N	
17	8632	12146	1	W-5(S)		12:05	-2	-1.26	1			W	
18	8632	+20	1			12:10	68	11.02	1	20	55.1		
19	8632	CCV2	2			12:15	154	26.11	1	25	104.4		
20	8632	CCB2	2			12:20	0	-0.91	1				

Worklist # 17310

Analyst: OP

Comments:

Date Analyzed: 19-NOV-93

Seq	Control #	Sample/QC	Rp	Field Number	Standard Concentr	Time	Absorb	Concentration	Dilutn	True Value	% Recovr	Flag	Comments
21	8632	121460	1	W-5(S)		12:25	-4	-1.61	1			W	
22	8632	+20	1			12:30	69	11.20	1	20	56.0		
23	8650	12313	1	MW-12(S)		12:35	-1	-1.09	1			W	
24	8650	+20	1			12:40	100	16.64	1	20	83.2		
25	8650	12314	1	MW-13(S)		12:45	6	0.14	1				
26	8650	+20	1			12:50	105	17.51	1	20	87.6		
27	8650	12315	1	MW-14(S)		12:55	0	-0.91	1			W	
28	8650	+20	1			13:00	101	16.81	1	20	84.1		
29	8650	12316	1	MW-14(S)F		13:05	-1	-1.09	1			W	
30	8650	+20	1			13:10	100	16.64	1	20	83.2		
31	8650	CCV3	3			13:15	156	26.46	1	25	105.8		
32	8650	CCB3	3			13:20	-1	-1.09	1				
33	8650	12317	1	MW-15(S)		13:25	42	6.46	1				
34	8650	+20	1			13:30	146	24.71	1	20	91.2		
35	8650	12318	1	MW-15(S)F		13:35	2	-0.56	1				
36	8650	+20	1			13:40	112	18.74	1	20	93.7		
37	8650	12319	1	MW-11(S)		13:45	41	6.28	1				
38	8650	+20	1			13:50	139	23.48	1	20	86.0		
39	8650	12325	1	MW-11(S)F		13:55	1	-0.74	1				
40	8650	+20	1			14:00	122	20.50	1	20	102.5		
41	8650	CCV4	4			14:05	159	26.99	1	25	108.0		
42	8650	CCB4	4			14:10	0	-0.91	1				

Varian SpectrAA 300/400 Zeeman Report

VERSAR LABORATORIES, INC.
INORGANIC LAB
6850 VERSAR CENTER SPRINGFIELD, VIRGINIA 22151

OPERATOR OP
DATE 19-NOV-93
BATCH VEOBRIEN-4.5

WR # 17310

PROGRAM 9 Pb Platform/1% H3PO4/OP

SAMPLE	EXPANDED ABS	%RSD	MEAN ABS	READINGS		
BLANK	0.000		0.003	0.003	0.004	
0	-0.001	32.2	-0.001	-0.001	-0.001	
3	0.020	4.1	0.020	0.020	0.021	
10	0.066	0.5	0.066	0.066	0.066	
20	0.128	1.6	0.128	0.129	0.126	
50	0.286	1.4	0.286	0.289	0.283	
ICV	0.159	1.3	0.159	0.160	0.157	11:10
ICB	0.007	5.2	0.007	0.007	0.007	11:15
CCV1	0.157	0.2	0.157	0.158	0.157	11:20
CCB1	-0.000	51.4	-0.000	-0.000	-0.000	11:25
CRA	0.020	7.4	0.020	0.019	0.021	
PBW	0.000	99.9	0.000	-0.000	0.000	
+20	0.125	0.2	0.125	0.125	0.125	
LCSW/20	0.151	0.4	0.151	0.152	0.151	
+20	0.253	0.8	0.253	0.251	0.254	
LCSM	0.127	1.0	0.127	0.126	0.128	
12146S	0.067	1.7	0.067	0.066	0.068	
12146	-0.002	99.9	-0.002	-0.000	-0.003	
+20	0.068	1.9	0.068	0.069	0.067	
CCV2	0.154	1.4	0.154	0.152	0.155	12:15
CCB2	-0.000	0.0	-0.000	-0.000	-0.000	12:20
12146D	-0.004	9.7	-0.004	-0.003	-0.004	
+20	0.069	0.0	0.069	0.069	0.069	
12113	-0.001	94.5	-0.001	-0.000	-0.002	
+20	0.100	1.7	0.100	0.101	0.099	
12114	0.006	9.9	0.006	0.005	0.006	
+20	0.105	1.3	0.105	0.104	0.106	
12115	-0.000	99.9	-0.000	0.000	-0.000	
+20	0.101	1.7	0.101	0.100	0.103	
12116	-0.001	85.7	-0.001	-0.000	-0.001	
+20	0.100	1.6	0.100	0.098	0.101	
CCV3	0.156	1.5	0.156	0.154	0.157	13:15
CCB3	-0.001	39.7	-0.001	-0.001	-0.002	13:20
12117	0.042	1.2	0.042	0.042	0.042	
+20	0.146	0.6	0.146	0.146	0.145	
12118	0.002	64.7	0.002	0.001	0.002	
+20	0.112	0.0	0.112	0.112	0.112	
12119	0.041	1.6	0.041	0.041	0.041	
+20	0.139	1.5	0.139	0.140	0.137	
12125	0.001	13.2	0.001	0.001	0.001	
+20	0.122	2.1	0.122	0.124	0.120	
CCV4	0.159	0.7	0.159	0.160	0.158	14:05
CCB4	0.000	99.9	0.000	-0.000	0.001	14:10

000126

File Record	Laboratory Sample Name	Customer/EPA Sample Name	Type	Matrix	Instrument Dil.	Date	Time	Flags
1	S0		3		1.0	11/18/93	16:00:57	
2	S5		3		1.0	11/18/93	16:06:01	
3	S10		3		1.0	11/18/93	16:11:05	
4	S20		3		1.0	11/18/93	16:16:08	
5	S50		3		1.0	11/18/93	16:21:13	44444%
6	ICV	ICV	0		1.0	11/18/93	16:26:17	100.0%
7	ICB	ICB	0		1.0	11/18/93	16:31:20	
8	CCV1	CCV	0		1.0	11/18/93	16:36:24	99.6%
9	CCB1	CCB	0		1.0	11/18/93	16:41:28	
10	CRA	CRA	0		1.0	11/18/93	16:46:32	106.0%
11	ZZZZZZ		0		1.0	11/18/93	16:51:36	
12	PBW	PBW	0		1.0	11/18/93	16:56:40	
13	+10		1		1.0	11/18/93	17:01:44	
14	LCSW	LCSW	0		20.0	11/18/93	17:06:47	93.6%
15	+20		1		20.0	11/18/93	17:11:49	96.0%
16	LCSM		0		1.0	11/18/93	17:16:53	103.0%
17	12146S		0		1.0	11/18/93	17:21:57	66.0%
18	12146		0		1.0	11/18/93	17:27:01	w
19	+10		1		1.0	11/18/93	17:32:05	
20	CCV2	CCV	0		1.0	11/18/93	17:37:13	98.8%
21	CCB2	CCB	0		1.0	11/18/93	17:42:16	
22	12146D		0		1.0	11/18/93	17:47:20	RPD=NC w
23	+10		1		1.0	11/18/93	17:52:35	
24	12313		0		1.0	11/18/93	17:57:42	w
25	+10		1		1.0	11/18/93	18:02:51	
26	12314		0		1.0	11/18/93	18:07:57	w
27	+10		1		1.0	11/18/93	18:13:03	
28	12315		0		1.0	11/18/93	18:18:10	w
29	+10		1		1.0	11/18/93	18:23:18	
30	12316		0		1.0	11/18/93	18:28:25	w
31	+10		1		1.0	11/18/93	18:33:32	
32	CCV3	CCV	0		1.0	11/18/93	18:38:37	97.3%
33	CCBZZZ	CCB	~~0~~		~~1.0~~	~~11/18/93~~	~~18:41:08~~	not needed
34	CCB3	CCB	0		1.0	11/18/93	18:52:10	
35	12317		~~0~~		~~1.0~~	~~11/18/93~~	~~18:57:16~~	recan
36	+10		0		1.0	11/18/93	19:02:26	
37	12318		0		1.0	11/18/93	19:07:32	
38	+10		0		1.0	11/18/93	19:12:38	
39	12319		0		1.0	11/18/93	19:17:45	
40	+10		0		1.0	11/18/93	19:22:52	
41	12325		0		1.0	11/18/93	19:27:57	
42	+10		0		1.0	11/18/93	19:33:06	
43	CCV	CCV	0		1.0	11/18/93	19:38:11	
44	~~CCB~~	~~CCB~~	~~0~~		~~1.0~~	~~11/18/93~~	~~19:40:42~~	

Code-Batch : VEOBRIEN-4,5
Date : 18-NOV-93
Element : SE
Inst # 7 Analyst : OP
Page # 1

CKF

#	Sample Names Laboratory	EPA/Customer	Element	Original	Added	Found	% R	E
1	PBW	PBW	SE196.00	0.10000	10.000	10.30000	103.00	
2	LCSW	LCSW	SE196.00	23.40000	10.000	33.00000	96.00	
3	12146		SE196.00	0.60000	10.000	5.80000	58.00	W
4	12146D		SE196.00	-0.60000	10.000	5.10000	51.00	W
5	12313		SE196.00	-0.70000	10.000	6.90000	69.00	W
6	12314		SE196.00	-0.60000	10.000	6.70000	67.00	W
7	12315		SE196.00	-0.90000	10.000	6.30000	63.00	W
8	12316		SE196.00	-0.80000	10.000	5.20000	52.00	W

ICV=CCV=25 NIST
LCSM=10
LCSW=500 IV

Code-Batch : VEOBRIEN-4,5
Date : 18-NOV-93
Element : SE
Inst # 7 Analyst : OP
Page # 2

Element File: VSE.GEL Element: Se Wavelength: 196.0
Date: 11/18/93 Time: 15:58 Slit: 2.00 L
Data File: 8632SEH1.DAT ID/Wt File: 8632SEH1.IDW Lamp Current: 0
Technique: HGA Calib. Type: Linear Energy: 49

Se ID: S0 Seq. No.: 00001 A/S Pos.: 1 Date: 11/18/93

Replicate 1 Time: 15:58
Peak Area (A-s): 0.011 Peak Height (A): 0.023
Background Pk Area (A-s): 0.136 Background Pk Height (A): 0.079
Blank Corrected Pk Area (A-s): 0.011

Replicate 2 (Peak Stored) Time: 16:00
Peak Area (A-s): 0.015 Peak Height (A): 0.025
Background Pk Area (A-s): 0.125 Background Pk Height (A): 0.074
Blank Corrected Pk Area (A-s): 0.015

Mean Pk Area (A-s): 0.013 SD: 0.0034 RSD(%): 26.03

Auto-zero performed.

Se ID: S5 Seq. No.: 00002 A/S Pos.: 2 Date: 11/18/93

Replicate 1 Time: 16:03
Peak Area (A-s): 0.040 Peak Height (A): 0.077
Background Pk Area (A-s): 0.145 Background Pk Height (A): 0.082
Blank Corrected Pk Area (A-s): 0.027

Replicate 2 (Peak Stored) Time: 16:06
Peak Area (A-s): 0.041 Peak Height (A): 0.073
Background Pk Area (A-s): 0.143 Background Pk Height (A): 0.081
Blank Corrected Pk Area (A-s): 0.028

Mean Pk Area (A-s): 0.028 SD: 0.0013 RSD(%): 4.62

Standard number 1 applied. [5.0]
Correlation coefficient: 1.00000 Slope: 0.0055

Se ID: S10 Seq. No.: 00003 A/S Pos.: 3 Date: 11/18/93

Replicate 1 Time: 16:08
Peak Area (A-s): 0.070 Peak Height (A): 0.127
Background Pk Area (A-s): 0.156 Background Pk Height (A): 0.084
Blank Corrected Pk Area (A-s): 0.057
Concentration (ug/L): 10.3

Replicate 2 (Peak Stored) Time: 16:11
Peak Area (A-s): 0.071 Peak Height (A): 0.126
Background Pk Area (A-s): 0.151 Background Pk Height (A): 0.083
Blank Corrected Pk Area (A-s): 0.058
Concentration (ug/L): 10.4

Mean Conc (ug/L): 10.4 SD: 0.08 RSD(%): 0.79

Standard number 2 applied. [10.0]

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Se ID: S20 Seq. No.: 00004 A/S Pos.: 4 Date: 11/18/93

Replicate 1 Time: 16:13
Peak Area (A-s): 0.129 Peak Height (A): 0.222
Background Pk Area (A-s): 0.162 Background Pk Height (A): 0.101
Blank Corrected Pk Area (A-s): 0.116
Concentration (ug/L): 20.5

Replicate 2 (Peak Stored) Time: 16:16
Peak Area (A-s): 0.129 Peak Height (A): 0.229
Background Pk Area (A-s): 0.162 Background Pk Height (A): 0.098
Blank Corrected Pk Area (A-s): 0.116
Concentration (ug/L): 20.5

Mean Conc (ug/L): 20.5 SD: 0.03 RSD(%): 0.13

Standard number 3 applied. [20.0]
Correlation coefficient: 0.99965 Slope: 0.0058

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Se ID: S50 Seq. No.: 00005 A/S Pos.: 5 Date: 11/18/93

Replicate 1 Time: 16:18
Peak Area (A-s): 0.297 Peak Height (A): 0.500
Background Pk Area (A-s): 0.190 Background Pk Height (A): 0.148
Blank Corrected Pk Area (A-s): 0.284
Concentration (ug/L): 49.0

Replicate 2 (Peak Stored) Time: 16:21
Peak Area (A-s): 0.299 Peak Height (A): 0.505
Background Pk Area (A-s): 0.192 Background Pk Height (A): 0.152
Blank Corrected Pk Area (A-s): 0.286
Concentration (ug/L): 49.4

Mean Conc (ug/L): 49.2 SD: 0.25 RSD(%): 0.51

Standard number 4 applied. [50.0]
Correlation coefficient: 0.99992 Slope: 0.0057

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Se ID: ICV Seq. No.: 00006 A/S Pos.: 6 Date: 11/18/93

Replicate 1 Time: 16:23
Peak Area (A-s): 0.157 Peak Height (A): 0.276
Background Pk Area (A-s): 0.164 Background Pk Height (A): 0.104
Blank Corrected Pk Area (A-s): 0.144
Concentration (ug/L): 25.2

Replicate 2 (Peak Stored) Time: 16:26
Peak Area (A-s): 0.159 Peak Height (A): 0.271
Background Pk Area (A-s): 0.161 Background Pk Height (A): 0.107
Blank Corrected Pk Area (A-s): 0.146
Concentration (ug/L): 25.5

Mean Conc (ug/L): 25.4 SD: 0.22 RSD(%): 0.87
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Se ID: ICB Seq. No.: 00007 A/S Pos.: 7 Date: 11/18/93

Replicate 1 Time: 16:28
Peak Area (A-s): 0.016 Peak Height (A): 0.029
Background Pk Area (A-s): 0.142 Background Pk Height (A): 0.070
Blank Corrected Pk Area (A-s): 0.003
Concentration (ug/L): 0.5

Replicate 2 (Peak Stored) Time: 16:31
Peak Area (A-s): 0.015 Peak Height (A): 0.025
Background Pk Area (A-s): 0.138 Background Pk Height (A): 0.065
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.3

Mean Conc (ug/L): 0.4 SD: 0.11 RSD(%): 28.12

QC sample is within range -5 - 5

~~~~~~

Se ID: CCV Seq. No.: 00008 A/S Pos.: 8 Date: 11/18/93

Replicate 1 Time: 16:33
Peak Area (A-s): 0.153 Peak Height (A): 0.275
Background Pk Area (A-s): 0.167 Background Pk Height (A): 0.105
Blank Corrected Pk Area (A-s): 0.140
Concentration (ug/L): 24.6

Replicate 2 (Peak Stored) Time: 16:36
Peak Area (A-s): 0.157 Peak Height (A): 0.277
Background Pk Area (A-s): 0.162 Background Pk Height (A): 0.102
Blank Corrected Pk Area (A-s): 0.144
Concentration (ug/L): 25.3

Mean Conc (ug/L): 24.9 SD: 0.49 RSD(%): 1.96

QC sample is within range 22.5 - 27.5

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Se ID: CCB Seq. No.: 00009 A/S Pos.: 9 Date: 11/18/93

Replicate 1 Time: 16:38
Peak Area (A-s): 0.015 Peak Height (A): 0.026
Background Pk Area (A-s): 0.134 Background Pk Height (A): 0.066
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.4

Replicate 2 (Peak Stored) Time: 16:41
Peak Area (A-s): 0.013 Peak Height (A): 0.026
Background Pk Area (A-s): 0.138 Background Pk Height (A): 0.067
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.1

Mean Conc (ug/L): 0.2 SD: 0.34 RSD(%): 182.99

QC sample is within range -5 - 5

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Inst # 7 Analyst : OP
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Se ID: CRA Seq. No.: 00010 A/S Pos.: 10 Date: 11/18/93

Replicate 1 Time: 16:44
Peak Area (A-s): 0.044 Peak Height (A): 0.080
Background Pk Area (A-s): 0.161 Background Pk Height (A): 0.079
Blank Corrected Pk Area (A-s): 0.031
Concentration (ug/L): 5.4

Replicate 2 (Peak Stored) Time: 16:46
Peak Area (A-s): 0.043 Peak Height (A): 0.078
Background Pk Area (A-s): 0.157 Background Pk Height (A): 0.079
Blank Corrected Pk Area (A-s): 0.029
Concentration (ug/L): 5.2

Mean Conc (ug/L): 5.3 SD: 0.19 RSD(%): 3.67

QC sample is within range

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Se ID: BLANK Seq. No.: 00011 A/S Pos.: 11 Date: 11/18/93

Replicate 1 Time: 16:49
Peak Area (A-s): -0.000 Peak Height (A): 0.005
Background Pk Area (A-s): 0.008 Background Pk Height (A): 0.013
Blank Corrected Pk Area (A-s): -0.013
Concentration (ug/L): -2.3

Replicate 2 (Peak Stored) Time: 16:51
Peak Area (A-s): -0.002 Peak Height (A): 0.006
Background Pk Area (A-s): 0.007 Background Pk Height (A): 0.013
Blank Corrected Pk Area (A-s): -0.015
Concentration (ug/L): -2.7

Mean Conc (ug/L): -2.5 SD: 0.27 RSD(%): 10.84

QC sample is within range

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Se ID: PBW Seq. No.: 00012 A/S Pos.: 12 Date: 11/18/93

Replicate 1 Time: 16:54
Peak Area (A-s): 0.012 Peak Height (A): 0.025
Background Pk Area (A-s): 0.132 Background Pk Height (A): 0.070
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.2

Replicate 2 (Peak Stored) Time: 16:56
Peak Area (A-s): 0.015 Peak Height (A): 0.029
Background Pk Area (A-s): 0.133 Background Pk Height (A): 0.064
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.4

Mean Conc (ug/L): 0.1 SD: 0.42 RSD(%): 772.50

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Se ID: +10 Seq. No.: 00013 A/S Pos.: 13 Date: 11/18/93

Replicate 1 Time: 16:59
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Background Pk Area (A-s): 0.141 Background Pk Height (A): 0.074
Blank Corrected Pk Area (A-s): 0.058
Concentration (ug/L): 10.1

Replicate 2 (Peak Stored) Time: 17:01
Peak Area (A-s): 0.073 Peak Height (A): 0.133
Background Pk Area (A-s): 0.138 Background Pk Height (A): 0.074
Blank Corrected Pk Area (A-s): 0.060
Concentration (ug/L): 10.6

Mean Conc (ug/L): 10.3 SD: 0.33 RSD(%): 3.17

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Se ID: LCSW/20 Seq. No.: 00014 A/S Pos.: 14 Date: 11/18/93

Replicate 1 Time: 17:04
Peak Area (A-s): 0.148 Peak Height (A): 0.268
Background Pk Area (A-s): 0.158 Background Pk Height (A): 0.096
Blank Corrected Pk Area (A-s): 0.135
Concentration (ug/L): 23.6

Replicate 2 (Peak Stored) Time: 17:06
Peak Area (A-s): 0.145 Peak Height (A): 0.269
Background Pk Area (A-s): 0.159 Background Pk Height (A): 0.097
Blank Corrected Pk Area (A-s): 0.132
Concentration (ug/L): 23.2

Mean Conc (ug/L): 23.4 SD: 0.32 RSD(%): 1.38

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Se ID: +20 Seq. No.: 00015 A/S Pos.: 15 Date: 11/18/93

Replicate 1 Time: 17:09
Peak Area (A-s): 0.201 Peak Height (A): 0.365
Background Pk Area (A-s): 0.170 Background Pk Height (A): 0.115
Blank Corrected Pk Area (A-s): 0.188
Concentration (ug/L): 32.9

Replicate 2 (Peak Stored) Time: 17:11
Peak Area (A-s): 0.202 Peak Height (A): 0.363
Background Pk Area (A-s): 0.168 Background Pk Height (A): 0.118
Blank Corrected Pk Area (A-s): 0.189
Concentration (ug/L): 33.2

Mean Conc (ug/L): 33.0 SD: 0.15 RSD(%): 0.47

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Se ID: LCSM Seq. No.: 00016 A/S Pos.: 16 Date: 11/18/93

Replicate 1 Time: 17:14
Peak Area (A-s): 0.071 Peak Height (A): 0.135
Background Pk Area (A-s): 0.142 Background Pk Height (A): 0.072
Blank Corrected Pk Area (A-s): 0.058
Concentration (ug/L): 10.2

Replicate 2 (Peak Stored) Time: 17:16
Peak Area (A-s): 0.071 Peak Height (A): 0.136
Background Pk Area (A-s): 0.143 Background Pk Height (A): 0.073

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Inst # 7 Analyst : OP

000133
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Concentration (ug/L): 10.2

Mean Conc (ug/L): 10.2 SD: 0.01 RSD(%): 0.10

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Se ID: 121465 Seq. No.: 00017 A/S Pos.: 17 Date: 11/18/93

Replicate 1 Time: 17:19
Peak Area (A-s): 0.048 Peak Height (A): 0.115
Background Pk Area (A-s): 1.252 Background Pk Height (A): 1.946
Blank Corrected Pk Area (A-s): 0.034
Concentration (ug/L): 6.0

Replicate 2 (Peak Stored) Time: 17:21
Peak Area (A-s): 0.054 Peak Height (A): 0.078
Background Pk Area (A-s): 1.247 Background Pk Height (A): 1.956
Blank Corrected Pk Area (A-s): 0.040
Concentration (ug/L): 7.1

Mean Conc (ug/L): 6.6 SD: 0.74 RSD(%): 11.33

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Se ID: 12146 Seq. No.: 00018 A/S Pos.: 18 Date: 11/18/93

Replicate 1 Time: 17:24
Peak Area (A-s): 0.018 Peak Height (A): 0.023
Background Pk Area (A-s): 0.954 Background Pk Height (A): 0.971
Blank Corrected Pk Area (A-s): 0.005
Concentration (ug/L): 0.9

Replicate 2 (Peak Stored) Time: 17:27
Peak Area (A-s): 0.014 Peak Height (A): 0.018
Background Pk Area (A-s): 0.980 Background Pk Height (A): 0.985
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.2

Mean Conc (ug/L): 0.6 SD: 0.51 RSD(%): 89.61

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Se ID: +10 Seq. No.: 00019 A/S Pos.: 19 Date: 11/18/93

Replicate 1 Time: 17:29
Peak Area (A-s): 0.047 Peak Height (A): 0.071
Background Pk Area (A-s): 1.026 Background Pk Height (A): 1.054
Blank Corrected Pk Area (A-s): 0.034
Concentration (ug/L): 5.9

Replicate 2 (Peak Stored) Time: 17:32
Peak Area (A-s): 0.046 Peak Height (A): 0.065
Background Pk Area (A-s): 1.040 Background Pk Height (A): 1.089
Blank Corrected Pk Area (A-s): 0.033
Concentration (ug/L): 5.8

Mean Conc (ug/L): 5.8 SD: 0.12 RSD(%): 2.04

~~~~~~

Se ID: CCV Seq. No.: 00020 A/S Pos.: 8 Date: 11/18/93

Code-Batch : VEOBRIEN-4,5
Date : 18-NOV-93
Element : SE
Inst # 7 Analyst : OP

Replicate 1 Time: 17:34
Peak Area (A-s): 0.153 Peak Height (A): 0.240
Background Pk Area (A-s): 0.196 Background Pk Height (A): 0.089
Blank Corrected Pk Area (A-s): 0.140
Concentration (ug/L): 24.6

Replicate 2 (Peak Stored) Time: 17:37
Peak Area (A-s): 0.154 Peak Height (A): 0.237
Background Pk Area (A-s): 0.184 Background Pk Height (A): 0.093
Blank Corrected Pk Area (A-s): 0.141
Concentration (ug/L): 24.8

Mean Conc (ug/L): 24.7 SD: 0.12 RSD(%): 0.48

QC sample is within range 22.5 - 27.5

~~~~~~

Se ID: CCB Seq. No.: 00021 A/S Pos.: 9 Date: 11/18/93

Replicate 1 Time: 17:39
Peak Area (A-s): 0.013 Peak Height (A): 0.024
Background Pk Area (A-s): 0.150 Background Pk Height (A): 0.067
Blank Corrected Pk Area (A-s): 0.000
Concentration (ug/L): 0.0

Replicate 2 (Peak Stored) Time: 17:42
Peak Area (A-s): 0.013 Peak Height (A): 0.023
Background Pk Area (A-s): 0.145 Background Pk Height (A): 0.064
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.1

Mean Conc (ug/L): -0.0 SD: 0.07 RSD(%): 634.38

QC sample is within range -5 - 5

~~~~~~

Se ID: 12146D Seq. No.: 00022 A/S Pos.: 20 Date: 11/18/93

Replicate 1 Time: 17:44
Peak Area (A-s): 0.011 Peak Height (A): 0.051
Background Pk Area (A-s): 1.163 Background Pk Height (A): 1.523
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.3

Replicate 2 (Peak Stored) Time: 17:47
Peak Area (A-s): 0.008 Peak Height (A): 0.032
Background Pk Area (A-s): 1.165 Background Pk Height (A): 1.472
Blank Corrected Pk Area (A-s): -0.005
Concentration (ug/L): -0.9

Mean Conc (ug/L): -0.6 SD: 0.43 RSD(%): 67.86

~~~~~~

Se ID: +10 Seq. No.: 00023 A/S Pos.: 21 Date: 11/18/93

Replicate 1 Time: 17:50
Peak Area (A-s): 0.041 Peak Height (A): 0.060
Background Pk Area (A-s): 1.227 Background Pk Height (A): 1.553
Blank Corrected Pk Area (A-s): 0.028

Code-Batch : VEOBRIEN-4,5
Date : 18-NOV-93
Element : SE
Inst # 7 Analyst : OP
Page # 9
~~~~~~

Replicate 2 (Peak Stored) Time: 17:52
Peak Area (A-s): 0.044 Peak Height (A): 0.081
Background Pk Area (A-s): 1.283 Background Pk Height (A): 1.686
Blank Corrected Pk Area (A-s): 0.031
Concentration (ug/L): 5.4

Mean Conc (ug/L): 5.1 SD: 0.39 RSD(%): 7.55

~~~~~~

Se ID: 12313 Seq. No.: 00024 A/S Pos.: 22 Date: 11/18/93

Replicate 1 Time: 17:55
Peak Area (A-s): 0.011 Peak Height (A): 0.022
Background Pk Area (A-s): 0.702 Background Pk Height (A): 0.510
Blank Corrected Pk Area (A-s): -0.003
Concentration (ug/L): -0.4

Replicate 2 (Peak Stored) Time: 17:57
Peak Area (A-s): 0.008 Peak Height (A): 0.019
Background Pk Area (A-s): 0.738 Background Pk Height (A): 0.559
Blank Corrected Pk Area (A-s): -0.005
Concentration (ug/L): -0.9

Mean Conc (ug/L): -0.7 SD: 0.32 RSD(%): 47.10

~~~~~~

Se ID: +10 Seq. No.: 00025 A/S Pos.: 23 Date: 11/18/93

Replicate 1 Time: 18:00
Peak Area (A-s): 0.052 Peak Height (A): 0.076
Background Pk Area (A-s): 0.724 Background Pk Height (A): 0.515
Blank Corrected Pk Area (A-s): 0.039
Concentration (ug/L): 6.9

Replicate 2 (Peak Stored) Time: 18:02
Peak Area (A-s): 0.053 Peak Height (A): 0.074
Background Pk Area (A-s): 0.739 Background Pk Height (A): 0.570
Blank Corrected Pk Area (A-s): 0.040
Concentration (ug/L): 7.0

Mean Conc (ug/L): 6.9 SD: 0.10 RSD(%): 1.45

~~~~~~

Se ID: 12314 Seq. No.: 00026 A/S Pos.: 24 Date: 11/18/93

Replicate 1 Time: 18:05
Peak Area (A-s): 0.007 Peak Height (A): 0.016
Background Pk Area (A-s): 0.821 Background Pk Height (A): 0.767
Blank Corrected Pk Area (A-s): -0.006
Concentration (ug/L): -1.0

Replicate 2 (Peak Stored) Time: 18:07
Peak Area (A-s): 0.012 Peak Height (A): 0.020
Background Pk Area (A-s): 0.793 Background Pk Height (A): 0.778
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.1
~~~~~~

Se ID: +10 Seq. No.: 00027 A/S Pos.: 25 Date: 11/18/93

Replicate 1 Time: 18:10
Peak Area (A-s): 0.052 Peak Height (A): 0.074
Background Pk Area (A-s): 0.840 Background Pk Height (A): 0.811
Blank Corrected Pk Area (A-s): 0.039
Concentration (ug/L): 6.8

Replicate 2 (Peak Stored) Time: 18:13
Peak Area (A-s): 0.051 Peak Height (A): 0.079
Background Pk Area (A-s): 0.825 Background Pk Height (A): 0.803
Blank Corrected Pk Area (A-s): 0.038
Concentration (ug/L): 6.7

Mean Conc (ug/L): 6.7 SD: 0.12 RSD(%): 1.81

Se ID: 12315 Seq. No.: 00028 A/S Pos.: 26 Date: 11/18/93

Replicate 1 Time: 18:15
Peak Area (A-s): 0.007 Peak Height (A): 0.015
Background Pk Area (A-s): 0.893 Background Pk Height (A): 0.842
Blank Corrected Pk Area (A-s): -0.006
Concentration (ug/L): -1.1

Replicate 2 (Peak Stored) Time: 18:18
Peak Area (A-s): 0.009 Peak Height (A): 0.012
Background Pk Area (A-s): 0.889 Background Pk Height (A): 0.877
Blank Corrected Pk Area (A-s): -0.005
Concentration (ug/L): -0.8

Mean Conc (ug/L): -0.9 SD: 0.21 RSD(%): 21.97

Se ID: +10 Seq. No.: 00029 A/S Pos.: 27 Date: 11/18/93

Replicate 1 Time: 18:20
Peak Area (A-s): 0.050 Peak Height (A): 0.054
Background Pk Area (A-s): 0.855 Background Pk Height (A): 0.825
Blank Corrected Pk Area (A-s): 0.037
Concentration (ug/L): 6.4

Replicate 2 (Peak Stored) Time: 18:23
Peak Area (A-s): 0.049 Peak Height (A): 0.055
Background Pk Area (A-s): 0.906 Background Pk Height (A): 0.991
Blank Corrected Pk Area (A-s): 0.036
Concentration (ug/L): 6.2

Mean Conc (ug/L): 6.3 SD: 0.15 RSD(%): 2.36

Se ID: 12316 Seq. No.: 00030 A/S Pos.: 28 Date: 11/18/93

Replicate 1 Time: 18:25
Peak Area (A-s): 0.008 Peak Height (A): 0.026
Background Pk Area (A-s): 1.180 Background Pk Height (A): 1.835

Concentration (ug/L): -0.9

Replicate 2 (Peak Stored) Time: 18:28
Peak Area (A-s): 0.009 Peak Height (A): 0.091
Background Pk Area (A-s): 1.228 Background Pk Height (A): 1.851
Blank Corrected Pk Area (A-s): -0.004
Concentration (ug/L): -0.7

Mean Conc (ug/L): -0.8 SD: 0.12 RSD(%): 15.19

~~~~~~

Se ID: +10 Seq. No.: 00031 A/S Pos.: 29 Date: 11/18/93

Replicate 1 Time: 18:30
Peak Area (A-s): 0.045 Peak Height (A): 0.068
Background Pk Area (A-s): 1.245 Background Pk Height (A): 1.836
Blank Corrected Pk Area (A-s): 0.032
Concentration (ug/L): 5.6

Replicate 2 (Peak Stored) Time: 18:33
Peak Area (A-s): 0.040 Peak Height (A): 0.051
Background Pk Area (A-s): 1.250 Background Pk Height (A): 1.891
Blank Corrected Pk Area (A-s): 0.027
Concentration (ug/L): 4.7

Mean Conc (ug/L): 5.2 SD: 0.63 RSD(%): 12.16

~~~~~~

Se ID: CCV Seq. No.: 00032 A/S Pos.: 8 Date: 11/18/93

Replicate 1 Time: 18:36
Peak Area (A-s): 0.151 Peak Height (A): 0.244
Background Pk Area (A-s): 0.181 Background Pk Height (A): 0.094
Blank Corrected Pk Area (A-s): 0.138
Concentration (ug/L): 24.2

Replicate 2 (Peak Stored) Time: 18:38
Peak Area (A-s): 0.158 Peak Height (A): 0.249
Background Pk Area (A-s): 0.169 Background Pk Height (A): 0.095
Blank Corrected Pk Area (A-s): 0.144
Concentration (ug/L): 25.3

Mean Conc (ug/L): 24.8 SD: 0.79 RSD(%): 3.17

QC sample is within range 22.5 - 27.5

~~~~~~

Se ID: CCB Seq. No.: 00033 A/S Pos.: 9 Date: 11/18/93

Replicate 1 Time: 18:41
Peak Area (A-s): 0.013 Peak Height (A): 0.025
Background Pk Area (A-s): 0.140 Background Pk Height (A): 0.071
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.1

~~~~~~

Se ID: CCB Seq. No.: 00034 A/S Pos.: 9 Date: 11/18/93

Peak Area (A-s): 0.015 Peak Height (A): 0.028
Background Pk Area (A-s): 0.129 Background Pk Height (A): 0.094
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.3

Replicate 2 (Peak Stored) Time: 18:52
Peak Area (A-s): 0.013 Peak Height (A): 0.024
Background Pk Area (A-s): 0.131 Background Pk Height (A): 0.063
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.0

Mean Conc (ug/L): 0.2 SD: 0.28 RSD(%): 183.30

QC sample is within range -5 - 5

~~~~~~

Se ID: 12317 Seq. No.: 00035 A/S Pos.: 30 Date: 11/18/93

Replicate 1 Time: 18:54
Peak Area (A-s): 0.012 Peak Height (A): 0.018
Background Pk Area (A-s): 0.557 Background Pk Height (A): 0.358
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.2

Replicate 2 (Peak Stored) Time: 18:57
Peak Area (A-s): 0.010 Peak Height (A): 0.017
Background Pk Area (A-s): 0.584 Background Pk Height (A): 0.398
Blank Corrected Pk Area (A-s): -0.003
Concentration (ug/L): -0.5

Mean Conc (ug/L): -0.3 SD: 0.20 RSD(%): 61.70

~~~~~~

Se ID: +10 Seq. No.: 00036 A/S Pos.: 31 Date: 11/18/93

Replicate 1 Time: 18:59
Peak Area (A-s): 0.054 Peak Height (A): 0.070
Background Pk Area (A-s): 0.553 Background Pk Height (A): 0.347
Blank Corrected Pk Area (A-s): 0.041
Concentration (ug/L): 7.2

Replicate 2 (Peak Stored) Time: 19:02
Peak Area (A-s): 0.052 Peak Height (A): 0.069
Background Pk Area (A-s): 0.569 Background Pk Height (A): 0.360
Blank Corrected Pk Area (A-s): 0.039
Concentration (ug/L): 6.9

Mean Conc (ug/L): 7.0 SD: 0.24 RSD(%): 3.37

~~~~~~

Se ID: 12318 Seq. No.: 00037 A/S Pos.: 32 Date: 11/18/93

Replicate 1 Time: 19:04
Peak Area (A-s): 0.013 Peak Height (A): 0.019
Background Pk Area (A-s): 0.509 Background Pk Height (A): 0.249
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.0
~~~~~~

Peak Area (A-s): 0.011 Peak Height (A): 0.020
Background Pk Area (A-s): 0.460 Background Pk Height (A): 0.235
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.3

Mean Conc (ug/L): -0.2 SD: 0.17 RSD(%): 104.39

~~~~~~

Se ID: +10 Seq. No.: 00038 A/S Pos.: 33 Date: 11/18/93

Replicate 1 Time: 19:10
Peak Area (A-s): 0.057 Peak Height (A): 0.076
Background Pk Area (A-s): 0.473 Background Pk Height (A): 0.237
Blank Corrected Pk Area (A-s): 0.044
Concentration (ug/L): 7.7

Replicate 2 (Peak Stored) Time: 19:12
Peak Area (A-s): 0.056 Peak Height (A): 0.074
Background Pk Area (A-s): 0.469 Background Pk Height (A): 0.230
Blank Corrected Pk Area (A-s): 0.042
Concentration (ug/L): 7.4

Mean Conc (ug/L): 7.6 SD: 0.17 RSD(%): 2.26

~~~~~~

Se ID: 12319 Seq. No.: 00039 A/S Pos.: 34 Date: 11/18/93

Replicate 1 Time: 19:15
Peak Area (A-s): 0.007 Peak Height (A): 0.021
Background Pk Area (A-s): 0.826 Background Pk Height (A): 1.106
Blank Corrected Pk Area (A-s): -0.006
Concentration (ug/L): -1.0

Replicate 2 (Peak Stored) Time: 19:17
Peak Area (A-s): 0.008 Peak Height (A): 0.020
Background Pk Area (A-s): 0.785 Background Pk Height (A): 1.075
Blank Corrected Pk Area (A-s): -0.005
Concentration (ug/L): -1.0

Mean Conc (ug/L): -1.0 SD: 0.03 RSD(%): 3.16

~~~~~~

Se ID: +10 Seq. No.: 00040 A/S Pos.: 35 Date: 11/18/93

Replicate 1 Time: 19:20
Peak Area (A-s): 0.041 Peak Height (A): 0.080
Background Pk Area (A-s): 0.804 Background Pk Height (A): 1.083
Blank Corrected Pk Area (A-s): 0.028
Concentration (ug/L): 4.9

Replicate 2 (Peak Stored) Time: 19:22
Peak Area (A-s): 0.042 Peak Height (A): 0.079
Background Pk Area (A-s): 0.795 Background Pk Height (A): 1.044
Blank Corrected Pk Area (A-s): 0.029
Concentration (ug/L): 5.1

Mean Conc (ug/L): 5.0 SD: 0.15 RSD(%): 3.01
~~~~~~

Se ID: 12325 Seq. No.: 00041 A/S Pos.: 36 Date: 11/18/93

The height of this peak exceeds the rollover value.
Replicate 1 Time: 19:25
Peak Area (A-s): 0.083 Peak Height (A): 3.183
Background Pk Area (A-s): 1.434 Background Pk Height (A): 3.174
Blank Corrected Pk Area (A-s): 0.070
Concentration (ug/L): 12.3

The height of this peak exceeds the rollover value.
Replicate 2 (Peak Stored) Time: 19:27
Peak Area (A-s): 0.105 Peak Height (A): 3.147
Background Pk Area (A-s): 1.357 Background Pk Height (A): 2.892
Blank Corrected Pk Area (A-s): 0.092
Concentration (ug/L): 16.2

Mean Conc (ug/L): 14.2 SD: 2.76 RSD(%): 19.44

~~~~~~

Se ID: +10 Seq. No.: 00042 A/S Pos.: 37 Date: 11/18/93

The signal is too large for the range of the electronics.
Replicate 1 Time: 19:30
Peak Area (A-s): 0.172 Peak Height (A): 2.730
Background Pk Area (A-s): 1.482 Background Pk Height (A): 3.274
Blank Corrected Pk Area (A-s): 0.159
Concentration (ug/L): --------

The height of this peak exceeds the rollover value.
Replicate 2 (Peak Stored) Time: 19:33
Peak Area (A-s): 0.119 Peak Height (A): 2.634
Background Pk Area (A-s): 1.451 Background Pk Height (A): 2.977
Blank Corrected Pk Area (A-s): 0.106
Concentration (ug/L): 18.6

Mean Conc (ug/L): ---- SD: ---- RSD(%): ----

~~~~~~

Se ID: CCV Seq. No.: 00043 A/S Pos.: 8 Date: 11/18/93

Replicate 1 Time: 19:35
Peak Area (A-s): 0.150 Peak Height (A): 0.239
Background Pk Area (A-s): 0.171 Background Pk Height (A): 0.090
Blank Corrected Pk Area (A-s): 0.137
Concentration (ug/L): 24.0

Replicate 2 (Peak Stored) Time: 19:38
Peak Area (A-s): 0.156 Peak Height (A): 0.238
Background Pk Area (A-s): 0.159 Background Pk Height (A): 0.090
Blank Corrected Pk Area (A-s): 0.143
Concentration (ug/L): 25.1

Mean Conc (ug/L): 24.5 SD: 0.78 RSD(%): 3.18

QC sample is within range 22.5 - 27.5

Se ID: CCB Seq. No.: 00044 A/S Pos.: 9 Date: 11/18/93

Replicate 1
Peak Area (A-s): 0.015
Background Pk Area (A-s): 0.136
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.4

Time: 19:40
Peak Height (A): 0.024
Background Pk Height (A): 0.067

File Record	Laboratory Sample Name	Customer/EPA Sample Name	Type	Matrix	Instrument Dil.	Date	Time	Flags
1	S0		3		1.0	11/19/93	10:37:26	
2	S5		3		1.0	11/19/93	10:42:30	
3	S10		3		1.0	11/19/93	10:47:33	
4	S20		3		1.0	11/19/93	10:52:37	
5	S50		3		1.0	11/19/93	10:57:39	r = .99999
6	ICV	ICV	0		1.0	11/19/93	11:02:44	101.6%
7	ICB	ICB	0		1.0	11/19/93	11:07:47	
8	CCV1	CCV	0		1.0	11/19/93	11:12:51	106.4%
9	CCB1	CCB	0		1.0	11/19/93	11:17:54	
10	CRA	CRA	0		1.0	11/19/93	11:22:58	114.0%
11	12317		0		1.0	11/19/93	11:28:02	
12	+10		1		1.0	11/19/93	11:33:04	
13	12318		0		1.0	11/19/93	11:38:08	
14	+10		1		1.0	11/19/93	11:43:12	
15	12319		0		1.0	11/19/93	11:48:15	
16	+10		1		1.0	11/19/93	11:53:19	
17	12325		~~0~~		~~1.0~~	~~11/19/93~~	~~11:58:21~~	rerun 5F.d
18	+10		~~1~~		~~1.0~~	~~11/19/93~~	~~12:03:25~~	↓
19	CCV2	CCV	0		1.0	11/19/93	12:11:20	97.2%
20	CCB2	CCB	0		1.0	11/19/93	12:16:23	
21	12325		0		5.0	11/19/93	12:21:32	
22	+10		1		5.0	11/19/93	12:26:36	
23	CCV3	CCV	0		1.0	11/19/93	12:31:45	104.0%
24	CCB3	CCB	0		1.0	11/19/93	12:36:49	

Code-Batch : VEOBRIEN-4,5
Date : 19-NOV-93
Element : SE
Inst # 7 Analyst : OP
Page # 1

OK

#	Sample Names Laboratory	EPA/Customer	Element	Original	Added	Found	% R	E
1	12317		SE196.00	1.20000	10.000	7.60000	64.00	W
2	12318		SE196.00	-0.10000	10.000	8.30000	83.00	W
3	12319		SE196.00	-0.30000	10.000	4.60000	46.00	W
4	12325 rerun	5f.d.	~~SE196.00~~	~~-1.60000~~	~~10.000~~	~~4.00000~~	~~40.00~~	~~*~~
5	12325		SE196.00	-0.20000	10.000	8.40000	84.00	W

ICV=CCV=25 NIST
LCSM=10
LCSW=500 IV

Code-Batch : VEOBRIEN-4,5
Date : 19-NOV-93
Element : SE
Inst # 7 Analyst : OP
Page # 2

Element File: VSE.GEL Element: Se Wavelength: 196.0
Date: 11/19/93 Time: 10:34 Slit: 2.00 L
Data File: 8632SEH2.DAT ID/Wt File: 8632SEH2.IDW Lamp Current: 0
Technique: HGA Calib. Type: Linear Energy: 51

~~~~~~

Se ID: S0 Seq. No.: 00001 A/S Pos.: 1 Date: 11/19/93

Replicate 1 Time: 10:34
Peak Area (A-s): 0.011 Peak Height (A): 0.026
Background Pk Area (A-s): 0.170 Background Pk Height (A): 0.106
Blank Corrected Pk Area (A-s): 0.011

Replicate 2 (Peak Stored) Time: 10:37
Peak Area (A-s): 0.010 Peak Height (A): 0.025
Background Pk Area (A-s): 0.175 Background Pk Height (A): 0.104
Blank Corrected Pk Area (A-s): 0.010

Mean Pk Area (A-s): 0.010 SD: 0.0010 RSD(%): 9.55

Auto-zero performed.

~~~~~~

Se ID: S5 Seq. No.: 00002 A/S Pos.: 2 Date: 11/19/93

Replicate 1 Time: 10:39
Peak Area (A-s): 0.036 Peak Height (A): 0.076
Background Pk Area (A-s): 0.181 Background Pk Height (A): 0.104
Blank Corrected Pk Area (A-s): 0.025

Replicate 2 (Peak Stored) Time: 10:42
Peak Area (A-s): 0.035 Peak Height (A): 0.077
Background Pk Area (A-s): 0.179 Background Pk Height (A): 0.100
Blank Corrected Pk Area (A-s): 0.025

Mean Pk Area (A-s): 0.025 SD: 0.0005 RSD(%): 1.81

Standard number 1 applied. [5.0]
Correlation coefficient: 1.00000 Slope: 0.0050

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Se ID: S10 Seq. No.: 00003 A/S Pos.: 3 Date: 11/19/93

Replicate 1 Time: 10:45
Peak Area (A-s): 0.058 Peak Height (A): 0.127
Background Pk Area (A-s): 0.186 Background Pk Height (A): 0.101
Blank Corrected Pk Area (A-s): 0.048
Concentration (ug/L): 9.6

Replicate 2 (Peak Stored) Time: 10:47
Peak Area (A-s): 0.060 Peak Height (A): 0.130
Background Pk Area (A-s): 0.187 Background Pk Height (A): 0.097
Blank Corrected Pk Area (A-s): 0.050
Concentration (ug/L): 10.0

Mean Conc (ug/L): 9.8 SD: 0.33 RSD(%): 3.32

Standard number 2 applied. [10.0]
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Se ID: S20 Seq. No.: 00004 A/S Pos.: 4 Date: 11/19/93

Replicate 1 Time: 10:50
Peak Area (A-s): 0.110 Peak Height (A): 0.232
Background Pk Area (A-s): 0.192 Background Pk Height (A): 0.100
Blank Corrected Pk Area (A-s): 0.100
Concentration (ug/L): 20.4

Replicate 2 (Peak Stored) Time: 10:52
Peak Area (A-s): 0.108 Peak Height (A): 0.226
Background Pk Area (A-s): 0.192 Background Pk Height (A): 0.102
Blank Corrected Pk Area (A-s): 0.097
Concentration (ug/L): 19.8

Mean Conc (ug/L): 20.1 SD: 0.37 RSD(%): 1.83

Standard number 3 applied. [20.0]
Correlation coefficient: 0.99996 Slope: 0.0049

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Se ID: S50 Seq. No.: 00005 A/S Pos.: 5 Date: 11/19/93

Replicate 1 Time: 10:55
Peak Area (A-s): 0.257 Peak Height (A): 0.507
Background Pk Area (A-s): 0.218 Background Pk Height (A): 0.145
Blank Corrected Pk Area (A-s): 0.246
Concentration (ug/L): 50.0

Replicate 2 (Peak Stored) Time: 10:57
Peak Area (A-s): 0.259 Peak Height (A): 0.509
Background Pk Area (A-s): 0.219 Background Pk Height (A): 0.147
Blank Corrected Pk Area (A-s): 0.248
Concentration (ug/L): 50.4

Mean Conc (ug/L): 50.2 SD: 0.28 RSD(%): 0.55

Standard number 4 applied. [50.0]
Correlation coefficient: 0.99999 Slope: 0.0049

~~~~~~

Se ID: ICV Seq. No.: 00006 A/S Pos.: 6 Date: 11/19/93

Replicate 1 Time: 11:00
Peak Area (A-s): 0.138 Peak Height (A): 0.276
Background Pk Area (A-s): 0.194 Background Pk Height (A): 0.105
Blank Corrected Pk Area (A-s): 0.128
Concentration (ug/L): 25.8

Replicate 2 (Peak Stored) Time: 11:02
Peak Area (A-s): 0.134 Peak Height (A): 0.264
Background Pk Area (A-s): 0.194 Background Pk Height (A): 0.104
Blank Corrected Pk Area (A-s): 0.124
Concentration (ug/L): 25.1

Mean Conc (ug/L): 25.4 SD: 0.54 RSD(%): 2.11

Code-Batch : VEOBRIEN-4,5
Date : 19-NOV-93
Element : SE
Inst # 7 Analyst : OP
Page # 4
~~~~~~

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Se ID: ICB Seq. No.: 00007 A/S Pos.: 7 Date: 11/19/93

Replicate 1 Time: 11:05
Peak Area (A-s): 0.014 Peak Height (A): 0.031
Background Pk Area (A-s): 0.168 Background Pk Height (A): 0.083
Blank Corrected Pk Area (A-s): 0.004
Concentration (ug/L): 0.8

Replicate 2 (Peak Stored) Time: 11:07
Peak Area (A-s): 0.015 Peak Height (A): 0.030
Background Pk Area (A-s): 0.161 Background Pk Height (A): 0.080
Blank Corrected Pk Area (A-s): 0.004
Concentration (ug/L): 0.9

Mean Conc (ug/L): 0.8 SD: 0.09 RSD(%): 10.95

QC sample is within range -5 - 5

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Se ID: CCV Seq. No.: 00008 A/S Pos.: 8 Date: 11/19/93

Replicate 1 Time: 11:10
Peak Area (A-s): 0.143 Peak Height (A): 0.270
Background Pk Area (A-s): 0.172 Background Pk Height (A): 0.101
Blank Corrected Pk Area (A-s): 0.133
Concentration (ug/L): 26.9

Replicate 2 (Peak Stored) Time: 11:12
Peak Area (A-s): 0.141 Peak Height (A): 0.275
Background Pk Area (A-s): 0.172 Background Pk Height (A): 0.103
Blank Corrected Pk Area (A-s): 0.130
Concentration (ug/L): 26.3

Mean Conc (ug/L): 26.6 SD: 0.37 RSD(%): 1.37

QC sample is within range 22.5 - 27.5

~~~~~~

Se ID: CCB Seq. No.: 00009 A/S Pos.: 9 Date: 11/19/93

Replicate 1 Time: 11:15
Peak Area (A-s): 0.012 Peak Height (A): 0.028
Background Pk Area (A-s): 0.152 Background Pk Height (A): 0.076
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.4

Replicate 2 (Peak Stored) Time: 11:17
Peak Area (A-s): 0.013 Peak Height (A): 0.028
Background Pk Area (A-s): 0.148 Background Pk Height (A): 0.072
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.5

Mean Conc (ug/L): 0.4 SD: 0.09 RSD(%): 19.97

QC sample is within range -5 - 5

Code-Batch : VEOBRIEN-4,5
Date : 19-NOV-93
Element : SE
Inst # 7 Analyst : OP
Page # 5
~~~~~~

Se ID: CRA Seq. No.: 00010 A/S Pos.: 10 Date: 11/19/93

Replicate 1 Time: 11:20
Peak Area (A-s): 0.039 Peak Height (A): 0.078
Background Pk Area (A-s): 0.150 Background Pk Height (A): 0.074
Blank Corrected Pk Area (A-s): 0.029
Concentration (ug/L): 5.8

Replicate 2 (Peak Stored) Time: 11:22
Peak Area (A-s): 0.038 Peak Height (A): 0.081
Background Pk Area (A-s): 0.149 Background Pk Height (A): 0.071
Blank Corrected Pk Area (A-s): 0.028
Concentration (ug/L): 5.7

Mean Conc (ug/L): 5.7 SD: 0.08 RSD(%): 1.40

QC sample is within range

~~~~~~

Se ID: 12317 Seq. No.: 00011 A/S Pos.: 12 Date: 11/19/93

Replicate 1 Time: 11:25
Peak Area (A-s): 0.017 Peak Height (A): 0.021
Background Pk Area (A-s): 0.398 Background Pk Height (A): 0.146
Blank Corrected Pk Area (A-s): 0.006
Concentration (ug/L): 1.3

Replicate 2 (Peak Stored) Time: 11:28
Peak Area (A-s): 0.016 Peak Height (A): 0.023
Background Pk Area (A-s): 0.401 Background Pk Height (A): 0.148
Blank Corrected Pk Area (A-s): 0.006
Concentration (ug/L): 1.2

Mean Conc (ug/L): 1.2 SD: 0.09 RSD(%): 7.36

~~~~~~

Se ID: +10 Seq. No.: 00012 A/S Pos.: 13 Date: 11/19/93

Replicate 1 Time: 11:30
Peak Area (A-s): 0.049 Peak Height (A): 0.082
Background Pk Area (A-s): 0.411 Background Pk Height (A): 0.149
Blank Corrected Pk Area (A-s): 0.039
Concentration (ug/L): 7.9

Replicate 2 (Peak Stored) Time: 11:33
Peak Area (A-s): 0.047 Peak Height (A): 0.088
Background Pk Area (A-s): 0.425 Background Pk Height (A): 0.151
Blank Corrected Pk Area (A-s): 0.037
Concentration (ug/L): 7.4

Mean Conc (ug/L): 7.6 SD: 0.38 RSD(%): 4.93

~~~~~~

Se ID: 12318 Seq. No.: 00013 A/S Pos.: 14 Date: 11/19/93

Replicate 1 Time: 11:35
Peak Area (A-s): 0.010 Peak Height (A): 0.019
Background Pk Area (A-s): 0.381 Background Pk Height (A): 0.143
~~~~~~

Concentration (ug/L): -0.1

Replicate 2 (Peak Stored) Time: 11:38
Peak Area (A-s): 0.010 Peak Height (A): 0.023
Background Pk Area (A-s): 0.390 Background Pk Height (A): 0.145
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.1

Mean Conc (ug/L): -0.1 SD: 0.02 RSD(%): 12.15

~~~~~~

Se ID: +10 Seq. No.: 00014 A/S Pos.: 15 Date: 11/19/93

Replicate 1 Time: 11:40
Peak Area (A-s): 0.051 Peak Height (A): 0.085
Background Pk Area (A-s): 0.397 Background Pk Height (A): 0.149
Blank Corrected Pk Area (A-s): 0.041
Concentration (ug/L): 8.2

Replicate 2 (Peak Stored) Time: 11:43
Peak Area (A-s): 0.052 Peak Height (A): 0.083
Background Pk Area (A-s): 0.395 Background Pk Height (A): 0.147
Blank Corrected Pk Area (A-s): 0.041
Concentration (ug/L): 8.4

Mean Conc (ug/L): 8.3 SD: 0.12 RSD(%): 1.43

~~~~~~

Se ID: 12319 Seq. No.: 00015 A/S Pos.: 16 Date: 11/19/93

Replicate 1 Time: 11:45
Peak Area (A-s): 0.008 Peak Height (A): 0.024
Background Pk Area (A-s): 0.454 Background Pk Height (A): 0.159
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.4

Replicate 2 (Peak Stored) Time: 11:48
Peak Area (A-s): 0.010 Peak Height (A): 0.020
Background Pk Area (A-s): 0.463 Background Pk Height (A): 0.164
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.1

Mean Conc (ug/L): -0.3 SD: 0.18 RSD(%): 71.64

~~~~~~

Se ID: +10 Seq. No.: 00016 A/S Pos.: 17 Date: 11/19/93

Replicate 1 Time: 11:50
Peak Area (A-s): 0.034 Peak Height (A): 0.085
Background Pk Area (A-s): 0.477 Background Pk Height (A): 0.166
Blank Corrected Pk Area (A-s): 0.024
Concentration (ug/L): 4.8

Replicate 2 (Peak Stored) Time: 11:53
Peak Area (A-s): 0.032 Peak Height (A): 0.089
Background Pk Area (A-s): 0.493 Background Pk Height (A): 0.171
Blank Corrected Pk Area (A-s): 0.022
Concentration (ug/L): 4.4
~~~~~~

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Se ID: 12325 Seq. No.: 00017 A/S Pos.: 18 Date: 11/19/93

Replicate 1 Time: 11:55
Peak Area (A-s): 0.003 Peak Height (A): 0.020
Background Pk Area (A-s): 0.851 Background Pk Height (A): 1.071
Blank Corrected Pk Area (A-s): -0.007
Concentration (ug/L): -1.5

Replicate 2 (Peak Stored) Time: 11:58
Peak Area (A-s): 0.002 Peak Height (A): 0.019
Background Pk Area (A-s): 0.886 Background Pk Height (A): 1.172
Blank Corrected Pk Area (A-s): -0.008
Concentration (ug/L): -1.7

Mean Conc (ug/L): -1.6 SD: 0.11 RSD(%): 6.87

~~~~~~

Se ID: +10 Seq. No.: 00018 A/S Pos.: 19 Date: 11/19/93

Replicate 1 Time: 12:00
Peak Area (A-s): 0.030 Peak Height (A): 0.078
Background Pk Area (A-s): 0.915 Background Pk Height (A): 1.261
Blank Corrected Pk Area (A-s): 0.020
Concentration (ug/L): 4.0

Replicate 2 (Peak Stored) Time: 12:03
Peak Area (A-s): 0.030 Peak Height (A): 0.081
Background Pk Area (A-s): 0.916 Background Pk Height (A): 1.224
Blank Corrected Pk Area (A-s): 0.020
Concentration (ug/L): 4.1

Mean Conc (ug/L): 4.0 SD: 0.06 RSD(%): 1.52

~~~~~~

Se ID: CCV Seq. No.: 00020 A/S Pos.: 8 Date: 11/19/93

Replicate 1 Time: 12:08
Peak Area (A-s): 0.130 Peak Height (A): 0.254
Background Pk Area (A-s): 0.187 Background Pk Height (A): 0.113
Blank Corrected Pk Area (A-s): 0.119
Concentration (ug/L): 24.1

Replicate 2 (Peak Stored) Time: 12:11
Peak Area (A-s): 0.132 Peak Height (A): 0.259
Background Pk Area (A-s): 0.190 Background Pk Height (A): 0.108
Blank Corrected Pk Area (A-s): 0.121
Concentration (ug/L): 24.5

Mean Conc (ug/L): 24.3 SD: 0.27 RSD(%): 1.12

QC sample is within range 22.5 - 27.5

~~~~~~

Se ID: CCB Seq. No.: 00021 A/S Pos.: 9 Date: 11/19/93

Replicate 1 Time: 12:1?

Background Pk Area (A-s): 0.160 Background Pk Height (A): 0.071
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.1

Replicate 2 (Peak Stored) Time: 12:16
Peak Area (A-s): 0.012 Peak Height (A): 0.023
Background Pk Area (A-s): 0.158 Background Pk Height (A): 0.069
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.4

Mean Conc (ug/L): 0.1 SD: 0.31 RSD(%): 224.96

QC sample is within range -5 - 5

~~~~~~

Se ID: 12325/5 Seq. No.: 00022 A/S Pos.: 18 Date: 11/19/93

Replicate 1 Time: 12:19
Peak Area (A-s): 0.010 Peak Height (A): 0.026
Background Pk Area (A-s): 0.331 Background Pk Height (A): 0.138
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.2

Replicate 2 (Peak Stored) Time: 12:21
Peak Area (A-s): 0.009 Peak Height (A): 0.025
Background Pk Area (A-s): 0.333 Background Pk Height (A): 0.139
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.3

Mean Conc (ug/L): -0.2 SD: 0.07 RSD(%): 35.76

~~~~~~

Se ID: +10 Seq. No.: 00023 A/S Pos.: 19 Date: 11/19/93

Replicate 1 Time: 12:24
Peak Area (A-s): 0.051 Peak Height (A): 0.102
Background Pk Area (A-s): 0.343 Background Pk Height (A): 0.138
Blank Corrected Pk Area (A-s): 0.041
Concentration (ug/L): 8.2

Replicate 2 (Peak Stored) Time: 12:26
Peak Area (A-s): 0.053 Peak Height (A): 0.108
Background Pk Area (A-s): 0.334 Background Pk Height (A): 0.137
Blank Corrected Pk Area (A-s): 0.043
Concentration (ug/L): 8.7

Mean Conc (ug/L): 8.4 SD: 0.35 RSD(%): 4.18

~~~~~~

Se ID: CCV Seq. No.: 00024 A/S Pos.: 8 Date: 11/19/93

Replicate 1 Time: 12:29
Peak Area (A-s): 0.137 Peak Height (A): 0.266
Background Pk Area (A-s): 0.178 Background Pk Height (A): 0.106
Blank Corrected Pk Area (A-s): 0.127
Concentration (ug/L): 25.7

Replicate 2 (Peak Stored) Time: 12:31
~~~~~~

Background Pk Area (A-s): 0.176 Background Pk Height (A): 0.105
Blank Corrected Pk Area (A-s): 0.130
Concentration (ug/L): 26.3

Mean Conc (ug/L): 26.0 SD: 0.41 RSD(%): 1.57

QC sample is within range 22.5 - 27.5

~~~~~~

Se ID: CCB Seq. No.: 00025 A/S Pos.: 9 Date: 11/19/93

Replicate 1 Time: 12:34
Peak Area (A-s): 0.012 Peak Height (A): 0.029
Background Pk Area (A-s): 0.152 Background Pk Height (A): 0.069
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.4

Replicate 2 (Peak Stored) Time: 12:36
Peak Area (A-s): 0.010 Peak Height (A): 0.025
Background Pk Area (A-s): 0.147 Background Pk Height (A): 0.067
Blank Corrected Pk Area (A-s): 0.000
Concentration (ug/L): 0.0

Mean Conc (ug/L): 0.2 SD: 0.26 RSD(%): 119.75

QC sample is within range -5 - 5
~~~~~~

VERSAR LABORATORIES INC.
Worklist # 17308

19-NOV-93 02:45 PM

Analyst: DP/OP

Comments: ML VJW

Date Analyzed: 19-NOV-93

Control #	Code	Batch	Matrix	Analysis Code	Test
8632	VEOBRIEN	4	HOH	3CLP	TL
8650	VEOBRIEN	5	HOH	3CLP	TL

STANDARD INFORMATION

	Name	Source	Conc.
ICV :		NIST	25
CCV :		NIST	25
LCSW :		EPA	500
LCSS :		EPA	
CAL. STD. :		I.V.	
Prep. Day/Hr. :	19-NOV-93 07:30		

INSTRUMENT # 8

Light Source:	EDL	Gas Flow:	0
Current/Power:	7	Matrix Modifiers:	Y
Slit:	0.7	Signal:	PK AR
Wavelength:	276.8	Tube:	LVP
Background Corr.:	BZ	Replicates:	2
IDL:	2	CRDL:	10
Spike:	50	Integration Time:	5 SEC

Correlation: .9981 Y-Intercept: 8.96 Slope: 4.36 Units: UG/L

Seq	Control #	Sample/QC	Rp	Field Number	Standard Concentr	Time	Absorb	Concentration	Dilutn	True Value	% Recovr	Flag	Comments
1	8632	S0	1		0	10:00	3		1				
2	8632	S10	1		10	10:05	55	10.55	1		105.5	CRA	
3	8632	S20	2		20	10:10	103		1				
4	8632	S50	3		50	10:15	224		1				
5	8632	ICV	1			10:20	119	25.21	1	25	100.9		
6	8632	ICB	1			10:25	-2	-2.51	1				
7	8632	CCV1	1			10:30	121	25.67	1	25	102.7		
8	8632	CCB1	1			10:35	-1	-2.28	1				
9	8632	CRA	1			10:40	53	10.09	1	10	100.9		
10	8632	PBW	1			10:45	2	-1.60	1				
11	8632	+20	1			10:50	96	19.94	1	20	99.7		
12	8632	LCSW	1			10:55	117	24.76	20	500	99.0		
13	8632	+20	1			11:00	192	41.94	20	20	85.9		
14	8632	LCSM	1			11:05	116	24.53	2	50	98.1		
15	8632	12146S	1	W-5(S)		11:10	97	20.17	2	50	80.7		
16	8632	12146	1	W-5(S)		11:15	0	-2.05	1			W	
17	8632	+20	1			11:20	67	13.30	1	20	66.5		
18	8632	CCV2	2			11:25	124	26.36	1	25	105.4		
19	8632	CCB2	2			11:30	1	-1.83	1				
20	8632	12146D	1	W-5(S)		11:35	1	-1.83	1			W	

Worklist # 17308

Analyst: OP 1108

Comments:

Date Analyzed: 19-NOV-93

Seq	Control #	Sample/QC	Rp	Field Number	Standard Concentr	Time	Absorb	Concentration	Dilutn	True Value	% Recovr	Flag	Comments
21	8632	+20	1			11:40	69	13.76	1	20	68.8		
22	8650	12313	1	MW-12(S)		11:45	2	-1.60	1			W	
23	8650	+20	1			11:50	80	16.28	1	20	81.4		
24	8650	12314	1	MW-13(S)		11:55	3	-1.37	1				
25	8650	+20	1			12:00	85	17.42	1	20	87.1		
26	8650	12315	1	MW-14(S)		12:05	1	-1.83	1			W	
27	8650	+20	1			12:10	82	16.74	1	20	83.7		
28	8650	12316	1	MW-14(S)F		12:15	0	-2.05	1			W	
29	8650	+20	1			12:20	82	16.74	1	20	83.7		
30	8650	CCV3	3			12:25	123	26.13	1	25	104.5		
31	8650	CCB3	3			12:30	1	-1.83	1				
32	8650	12317	1	MW-15(S)		12:35	-1	-2.28	1				
33	8650	+20	1			12:40	89	18.34	1	20	91.7		
34	8650	12318	1	MW-15(S)F		12:45	1	-1.83	1				
35	8650	+20	1			12:50	89	18.34	1	20	91.7		
36	8650	12319	1	MW-11(S)		12:55	3	-1.37	1			W	
37	8650	+20	1			13:00	79	16.05	1	20	80.2		
38	8650	12325	1	MW-11(S)F		13:05	-5	-3.20	1			W	
39	8650	+20	1			13:10	69	13.76	1	20	68.8		
40	8650	BLANK	1			~~13:15~~	~~0~~	~~-2.05~~	~~1~~				not needed
41	8650	CCV4	4			13:20	126	26.82	1	25	107.3		
42	8650	CCB4	4			13:25	-1	-2.28	1				

VEOBRIEN -4,5 UP 19 nov 93

TL
0.001 0.003

MEAN= 0.002 STD.DEV.= COEF.VAR.= 93.49 %
****
0.000 AUTOZERO
****
TL 0001
0.003 0.003

MEAN= 0.003 STD.DEV.= COEF.VAR.= 1.93 %
****
TL 0002
0.057 0.052

MEAN= 0.055 STD.DEV.= COEF.VAR.= 7.03 %
****
TL 0003
0.104 0.102

MEAN= 0.103 STD.DEV.= COEF.VAR.= 1.22 %
****
TL 0004
0.224 0.224

MEAN= 0.224 STD.DEV.= COEF.VAR.= 0.17 %
****
TL 0005
0.121 0.118 10:20

MEAN= 0.119 STD.DEV.= COEF.VAR.= 1.86 %
****
TL 0006
-0.005 0.000 10:25

MEAN= -0.002 STD.DEV.= COEF.VAR.= 99.99 %
****
TL 0007
0.120 0.122 10:30

MEAN= 0.121 STD.DEV.= COEF.VAR.= 1.07 %
****
TL 0008
-0.001 -0.001 10:35

MEAN= -0.001 STD.DEV.= COEF.VAR.= 27.47 %
****
TL 0009
0.054 0.051

MEAN= 0.053 STD.DEV.= COEF.VAR.= 3.17 %
****
L 0010
0.001 0.002

MEAN= 0.002 STD.DEV.= COEF.VAR.= 34.66 %
****

VEOBRIEN - 4,5 OP 19 nov 93

TIL 00011
0.094 0.098

MEAN= 0.096 STD.DEV.= COEF.VAR.= 2.50 %
****
TIL 00012
0.121 0.113

MEAN= 0.117 STD.DEV.= COEF.VAR.= 5.37 %
****
TIL 00013
0.192 0.191

MEAN= 0.192 STD.DEV.= COEF.VAR.= 0.28 %
****
TIL 00014
0.117 0.115

MEAN= 0.116 STD.DEV.= COEF.VAR.= 1.07 %
****
TIL 00015
0.096 0.098

MEAN= 0.097 STD.DEV.= COEF.VAR.= 1.87 %
****
TIL 00016
0.001 0.000

MEAN= 0.000 STD.DEV.= COEF.VAR.= 60.06 %
****
TIL 00017
0.067 0.068

MEAN= 0.067 STD.DEV.= COEF.VAR.= 0.87 %
****
TIL 00018
0.124 0.124 11:25

MEAN= 0.124 STD.DEV.= COEF.VAR.= 0.08 %
****
TIL 00019
0.001 0.002 11:30

MEAN= 0.001 STD.DEV.= COEF.VAR.= 12.55 %
****
TIL 00020
0.002 0.000

MEAN= 0.001 STD.DEV.= COEF.VAR.= 99.99 %
****
TIL 00021
0.070 0.068

MEAN= 0.069 STD.DEV.= COEF.VAR.= 1.84 %
****

VEOBRIEN - 4,5 OP 19 nov 93

```
TL    0022
   0.001                0.003
-----------------------------------------------------------------------------
MEAN=      0.002      STD.DEV.=                COEF.VAR.=   86.64  %
*****************************************************************************
TL    0023
   0.080                0.080
-----------------------------------------------------------------------------
MEAN=      0.080      STD.DEV.=                COEF.VAR.=   0.46   %
*****************************************************************************
TL    0024
   0.001                0.005
-----------------------------------------------------------------------------
MEAN=      0.003      STD.DEV.=                COEF.VAR.=   91.71  %
*****************************************************************************
TL    0025
   0.084                0.085
-----------------------------------------------------------------------------
MEAN=      0.085      STD.DEV.=                COEF.VAR.=   0.17   %
*****************************************************************************
TL    0026
   0.000                0.002
-----------------------------------------------------------------------------
MEAN=      0.001      STD.DEV.=                COEF.VAR.=   [illegible]  %
*****************************************************************************
TL    0027
   0.081                0.083
-----------------------------------------------------------------------------
MEAN=      0.082      STD.DEV.=                COEF.VAR.=   1.94   %
*****************************************************************************
TL    0028
   0.000                0.001
-----------------------------------------------------------------------------
MEAN=      0.000      STD.DEV.=                COEF.VAR.=   99.99  %
*****************************************************************************
TL    0029
   0.084                0.080
-----------------------------------------------------------------------------
MEAN=      0.082      STD.DEV.=                COEF.VAR.=   2.99   %
*****************************************************************************
TL    0030
   0.121                0.122                                          12:25
-----------------------------------------------------------------------------
MEAN=      0.123      STD.DEV.=                COEF.VAR.=   1.05   %
*****************************************************************************
TL    0031
   0.002                0.000                                          12:30
-----------------------------------------------------------------------------
MEAN=      0.001      STD.DEV.=                COEF.VAR.=   99.99  %
*****************************************************************************
TL    0032
  -0.003                0.001
-----------------------------------------------------------------------------
MEAN=     -0.001      STD.DEV.=                COEF.VAR.=   99.99  %
*****************************************************************************
```

Soft

VEOBRIEN - 4,5 OP 19 nov 93

TL 0033
0.088 0.090

MEAN= 0.089 STD.DEV.= COEF.VAR.= 1.50 %
****
TL 0034
0.000 0.002

MEAN= 0.001 STD.DEV.= COEF.VAR.= 99.99 %
****
TL 0035
0.088 0.089

MEAN= 0.089 STD.DEV.= COEF.VAR.= 0.75 %
****
TL 0036
0.003 0.003

MEAN= 0.003 STD.DEV.= COEF.VAR.= 2.57 %
****
TL 0037
0.080 0.078

MEAN= 0.079 STD.DEV.= COEF.VAR.= 1.24 %
****
TL 0038
-0.005 -0.004

MEAN= -0.005 STD.DEV.= COEF.VAR.= 16.73 %
****
TL 0039
0.069 0.070

MEAN= 0.069 STD.DEV.= COEF.VAR.= 1.21 %
****
TL 0040
0.000 -0.001

MEAN= 0.000 STD.DEV.= COEF.VAR.= 99.99 %
****
TL 0041
0.126 0.125 13:20

MEAN= 0.126 STD.DEV.= COEF.VAR.= 0.30 %
****
TL 0042
0.001 -0.002 13:25

MEAN= -0.001 STD.DEV.= COEF.VAR.= 99.99 %
****

000158

6/6

VERSAR LABORATORIES INC.
Worklist # 17309

19-NOV-93 02:41 PM

Analyst: BDC /13DC

Comments: OK JH

Date Analyzed: 19-NOV-93

Control #	Code	Batch	Matrix	Analysis Code	Test
8600	VER UVB	8	HOH	HGW	HG
8632	VEOBRIEN	4	HOH	3CLP	HG
8650	VEOBRIEN	5	HOH	3CLP	HG
8663	VERDIV30	96	LEACHATE	TCLM	HG
8681	DEWBERRY	34	LEACHATE	TCLM	HG

STANDARD INFORMATION

	Name	Source	Conc.
ICV :	IV	EPA	5
CCV :		NIST	5
LCSW :		EPA	
LCSS :		EPA	
CAL. STD. :		I.V.	

Prep. Day/Hr. : 19-NOV-93 08:30

INSTRUMENT # 12

Light Source:	HCL	Gas Flow:	1
Current/Power:	7mA	Matrix Modifiers:	NO
Slit:	0.7	Signal:	PK HT
Wavelength:	253.7	Tube:	LVP
Background Corr.:		Replicates:	1
IDL:	.2	CRDL:	.2
Spike:		Integration Time:	CONT.

Correlation: .9999 Y-Intercept: 2.27 Slope: 20.65 Units: UG/L

Seq	Control #	Sample/QC	Rp	Field Number	Standard Concentr	Time	Absorb	Concentration	Dilutn	True Value	% Recovr	Flag	Comments
1	8681	S0	1		0	13:10	2		1				
2	8681	S.5	1		.5	13:12	12	0.47	1		94.0	CRA	
3	8681	S1	2		1	13:14	23		1				
4	8681	S5	3		5	13:16	107		1				
5	8681	S10	4		10	13:18	208		1				
6	8681	ICV	1			13:20	99	4.69	1	5	93.7		
7	8681	ICB	1			13:22	2	-0.01	1				
8	8681	CCV1	1			13:24	101	4.78	1	5	95.6		
9	8681	CCB1	1			13:26	2	-0.01	1				
10	8681	CRA	1			13:28	6	0.18	1	.2	90.5		
11	8681	PBW	1			13:30	2	-0.01	1				
12	8681	PB1T	1			13:32	1	-0.06	1				
13	8681	LCSM	1			13:34	78	3.67	1	4	91.7		
14	8681	12819	1	1193128		13:36	1	-0.06	1				
15	8681	12819S	1	1193128		13:38	63	2.94	1	4	73.6	N	
16	8681	12820	1	1193129		13:40	3	0.04	1				
17	8681	12821	1	1193130		13:42	2	-0.01	1				
18	8663	12539	1	SOIL PILE		13:44	2	-0.01	1				
19	8663	12539S	1	SOIL PILE		13:46	46	2.12	1	4	53.0	N	

Worklist # 17309

Analyst: BDC

Comments:

Date Analyzed: 19-NOV-93

Seq	Control #	Sample/QC	Rp	Field Number	Standard Concentr	Time	Absorb	Concentration	Dilutn	True Value	% Recovr	Flag	Comments
20	8663	CCV2	2			13:48	100	4.73	1	5	94.7		
21	8663	CCB2	2			13:50	2	-0.01	1				
22	8632	PBW	1			13:52	1	-0.06	1				
23	8632	LCSM	1			13:54	22	0.96	1	1	95.6		
24	8632	12146	1	W-5(S)		13:56	7	0.23	1				
25	8632	12146D	1	W-5(S)		13:58	7	0.23	1				
26	8632	12146S	1	W-5(S)		14:00	24	1.05	1	1	~~105.5~~	80%	BDC
27	8650	12313	1	MW-12(S)		14:02	3	0.04	1				
28	8650	12314	1	MW-13(S)		14:04	2	-0.01	1				
29	8650	12315	1	MW-14(S)		14:06	3	0.04	1				
30	8650	12316	1	MW-14(S)F		14:08	2	-0.01	1				
31	8650	12317	1	MW-15(S)		14:10	3	0.04	1				
32	8650	CCV3	3			14:12	100	4.73	1	5	94.7		
33	8650	CCB3	3			14:14	2	-0.01	1				
34	8650	12318	1	MW-15(S)F		14:16	4	0.08	1				
35	8650	12319	1	MW-11(S)		14:18	2	-0.01	1				
36	8650	12325	1	MW-11(S)F		14:20	2	-0.01	1				
37	8650	CCV4	4			14:22	98	4.64	1	5	92.7		
38	8650	CCB4	4			14:24	2	-0.01	1				
39	8600	PBW	1			14:26	2	-0.01	1				
40	8600	LCSM	1			14:28	23	1.00	1	1	100.4		
41	8600	11730	1	WES-W1-S		14:30	4	0.08	1				
42	8600	11731	1	WES-W2-S		14:32	3	0.04	1				
43	8600	11731D	1	WES-W2-S		14:34	3	0.04	1				
44	8600	11731S	1	WES-W2-S		14:36	23	1.00	1	1	100.4		
45	8600	11732	1	WES-PW6-S		14:38	3	0.04	1				
46	8600	11733	1	WES-PW5-S		14:40	3	0.04	1				
47	8600	11734	1	WES-PW4-S		14:42	2	-0.01	1				
48	8600	11734D	1	WES-PW4-S		14:44	2	-0.01	1				
49	8600	CCV5	5			14:46	98	4.64	1	5	92.7		
50	8600	CCB5	5			14:48	2	-0.01	1				

Worklist # 17309

Analyst: BDC

Comments:

Date Analyzed: 19-NOV-93

Seq	Control #	Sample/QC	Rp	Field Number	Standard Concentr	Time	Absorb	Concentration	Dilutn	True Value	% Recovr	Flag	Comments
51	8600	11734S	1	WES-PW4-S		14:50	22	0.96	1	1	95.6		
52	8600	11735	1	WES-PW4-E		14:52	2	-0.01	1				
53	8600	11736	1	WES-PW3-S		14:54	3	0.04	1				
54	8600	11737	1	WES-PW2-S		14:56	3	0.04	1				
55	8600	11738	1	WES-PW1-S		14:58	2	-0.01	1				
56	8600	11738D	1	WES-PW1-S		15:00	2	-0.01	1				
57	8600	11738S	1	WES-PW1-S		15:02	23	1.00	1	1	100.4		
58	8600	CCV6	6			15:04	98	4.64	1	5	92.7		
59	8600	CCB6	6			15:06	2	-0.01	1				

000161

DIGESTION LOG

Code-Batch: DEWBERRY-34 VER DIV30-96

Date: 11-19-93

Method code: HGW TCLP

Control No.: 8681 8663

Reference:

Digestion Type: ICP/(HGA) Method: Hg

Sample/EPA ID Number		Mtrx.	Init. W/V	Final Vol.	Description * Before	After
PBW		Hbit	100.mls	100.mls		
PBTT		leachate	↓			
LCSM			2.1			
12819			2			
12819S			2.1			
12820			2			
12821			2			
12539			2			
12539S			2.1			

Comments: CCV=0.5ml x 1ppm Hg/100.mls = 5ppb

* Description of colors: red, blue, yellow, green, orange, violet, white, colorless, brown, grey, black.
* Description of texture: fine, medium, coarse.
* Description of clarity: clear, cloudy, opaque.
* Description of artifacts: yes or no and describe.

LABORATORY

DIGESTION LOG

Code-Batch: VEOBRIEN-4,5

Control No.: 8632 8650

Date: 11-19-93

Method code: HGWC

Reference:

Digestion Type: ICP/(HGA) Method: Hg

Sample/EPA ID Number		Mtrx.	Init. W/V	Final Vol.	Description * Before	After
PBW		HOH	100.mls	100.mls		
LCSM						
12146						
12146 D						
12146S						
12313						
12314						
12315						
12316						
12317						
12318						
12319						
12325						

Comments: CCV=0.5ml x 1ppm Hg/100.mls = 5ppb
LCSM = 1ml x 1ppm Hg/100ml = 1ppb

* Description of colors: red, blue, yellow, green, orange, violet, white, colorless, brown, grey, black.
* Description of texture: fine, medium, coarse.
* Description of clarity: clear, cloudy, opaque.
* Description of artifacts: yes or no and describe.

DIGESTION LOG

Page ___ of ___

Code-Batch: VER UVB-8

Date: 11-19-93

Method code: HGW

Control No.: 8600

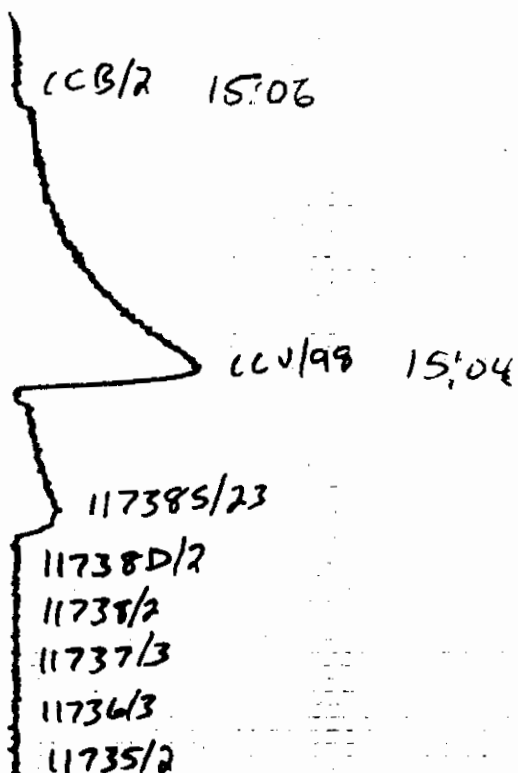
Reference:

Digestion Type: ICP/~~MGA~~ Method: Hg

Sample/EPA ID Number	Mtrx.	Init. W/V	Final Vol.	Description * Before	After
PBW	HOH	100mls	100mls		
LCSM					
11730					
11731					
11731D					
11731S					
11732					
11733					
11734					
11734D					
11734S					
11735					
11736					
11737					
11738					
11738D					
117385					

nments: CCV = 0.5ml x 1ppm Hg / 100mls = 5ppb.
LCSM = 1ml x .1ppm Hg / 100mls = 1ppb.

* Description of colors: red, blue, yellow, green, orange, violet, white, colorless, brown, grey, black.
* Description of texture: fine, medium, coarse.
* Description of clarity: clear, cloudy, opaque.
* Description of artifacts: yes or no and describe.


CCB/2 15:06
CCV/98 15:04
11738S/23
11738D/2
11738/2
11737/3
11736/3
11735/2

117345/24
LCB/2 14:48

LCV/98 14:46

VER UVB-8

117340/2
117341/2
117333/3
117332/3

117313/23
117310/3
117311/3
117306/4

LISM/23
PBW/2
LCB/2 14:24

LCV/98 14:22

12319/2
12318/4
CCB/2 14:14

CCV/100 14:12

12317/3
12316/2
12315/3
12314/2
12313/3

12146 S/24

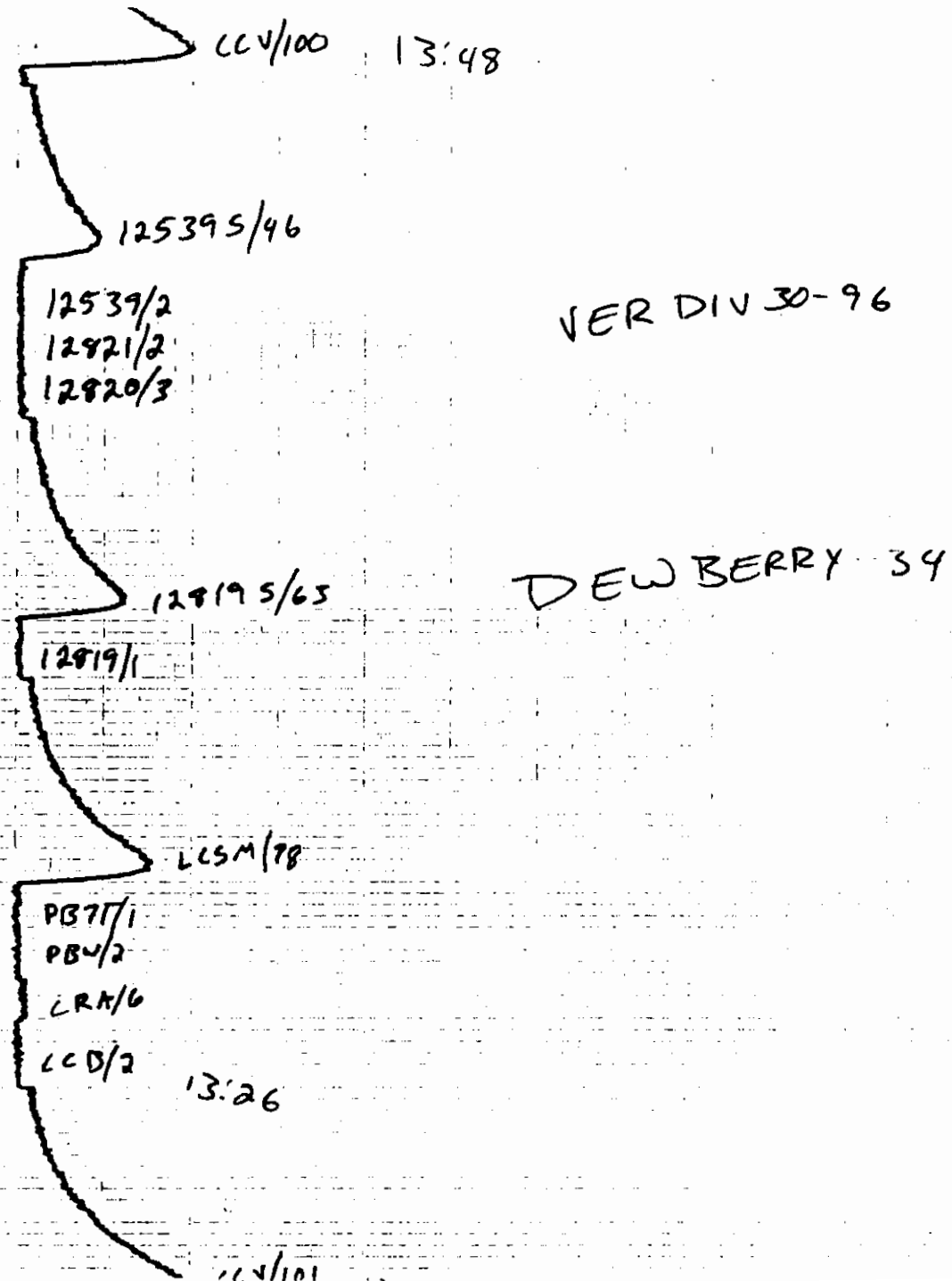
12146 D/7

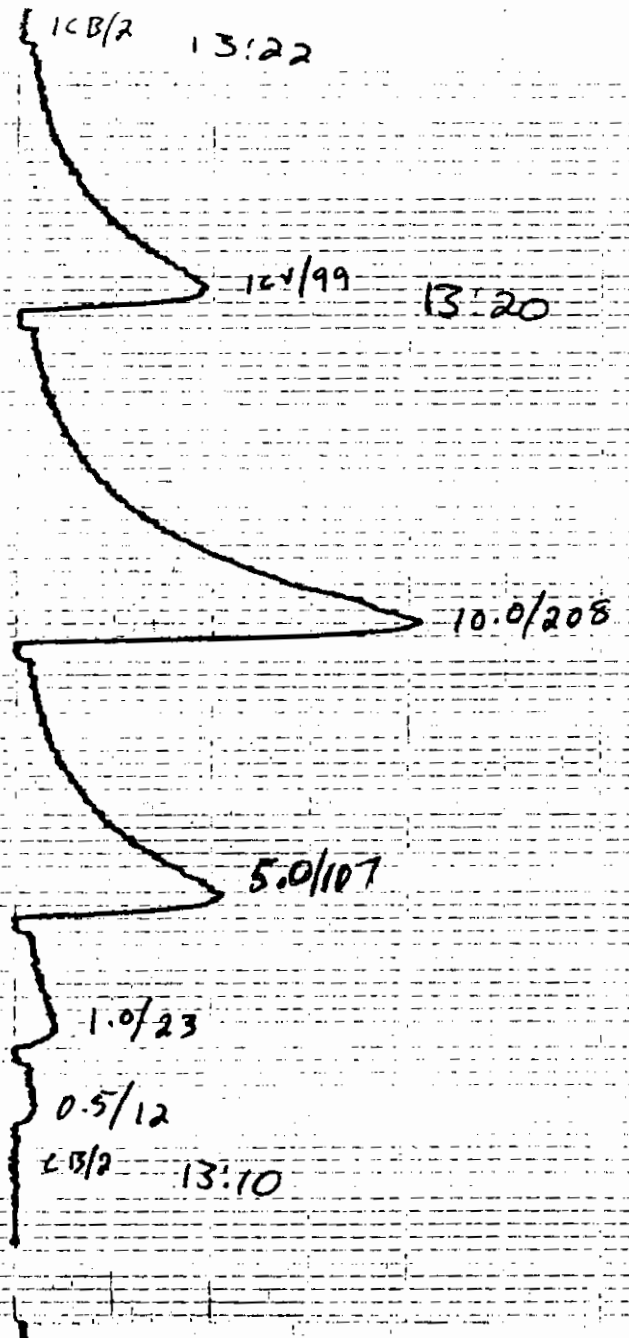
12146/7
~~12146/3~~
BDC

LCSM/22

PBW/1
CCB/2 13:50

VEOBRIEN-4,5


CCV/100
13:48
12539S/46
12539/2
12821/2
12820/3
VER DIV 30-96
12819S/65
DEWBERRY 34
12819/1
LCSM/78
PB7T/1
PBW/2
CRA/6
CCD/2
13:26



BDC 11-19-93

Hg

WCID = 17309

corr. = .9999

VERSAR, INC.
METALS LABORATORY
DIGESTION LOG

Code-Batch: 120 BRIEN 4,5,

Control No.: 8632 8632

Date: 11-18-93 Page 1 of 2

Method code: DIWC / DHWC

Reference: CLP SOW 787, D 4

Sample/EPA ID Number		Mtrx.	Init. W/V	Final Vol.	Description * Before	Description * After	pH
PBW		HNH	100mL	100mL	Colorless Clear	Colorless Clear	NA
LCSH							
LCSW	10189302						
12146							
12146D							
12146S							
12313							
12314							
12315							
12316							
12317							
12318							
12319					Cloudy		
12325							

Comments:

* Description of colors: red, blue, yellow, green, orange, violet, white, colorless, brown, grey, black.
* Description of clarity: clear, cloudy, opaque.
* Description of artifacts: yes or no and describe.

LCSWA & Series No.
Prep Date
LCSWB & Series No.
Prep Date

VESSAR, INC.
METALS LABORATORY
SPIKE LOG

Code-Batch: VeoBrien 4, 5
Control No.: 8632, 8650

Date: 11-18-93
Method code: Dux

*** CLP WATER SPIKING ***

☐ HGA WATER: spike = 0.5 ml of HGA spiking solution / 100 ml

HGA SPIKING SOLUTION: 8ppm As - 4ppm Pb - 10ppm Tl - 1ppm Cd - 2ppm Se - 200ppm Y Sol'n prep date: _____

☑ ICP WATER: spike = 5 ml of CLP ICP SPIKING SOLUTION / 100
0.5 ml of 100ppm Sb / 100 ml
0.5 ml of 10ppm Ag / 100 ml
0.2 ml 100ppm Cr / 100 ml

ICP SPIKING SOLUTION: 5ppm Cu - 40 ppm Ba, Al, As, Se, Tl - 20ppm Fe - 10ppm Mn, Ni, Zn, Co, Pb, V - 1ppm
Sol'n prep date: 09039314A Sb prep: 09279313A Ag prep: 11049313A Cr prep: 07279310

*** CLP SOIL SPIKING ***

☐ HGA SOIL: spike = 1 ml of HGA SPIKING SOLUTION / 200 ml

HGA SPIKING SOLUTION: 8ppm As - 4ppm Pb - 10ppm Tl - 1ppm Cd - 2ppm Se - 200ppm Y Soln prep date: _____

☐ ICP SOIL: spike = 10 ml of ICP SPIKING SOLUTION / 200 ml
1ml of 100ppm Sb / 200 ml
1 ml of 10ppm Ag / 200 ml
0.4ml of 100ppm Cr / 200ml

ICP SPIKING SOLUTION: 40ppm Ba, As, Se, Tl, - 10ppm Co, Pb, Mn, Ni, V, Zn - 5ppm Cu - 1ppm Se, Cd
Sol'n prep date: _____ Sb prep: _____ Ag prep: _____ Cr prep

*** NON-CLP SPIKING ***

HGA SPIKE = _____ ml of HGA NON-CLP spiking solution / _____

HGA SPIKING SOLUTION: 10 ppm As, Se, Tl, Pb Sol'n prep date: _____

ICP SPIKE = _____ ml of Solution #1 / _____ ml

SPIKING SOLUTION #1: 40 ppm Ba, Be, Cd, Co, Mo, V - 80 ppm Cu, Pb, Mn, Ni, Se, Tl - 200 ppm Si - 328 ppm
Sol'n prep date: _____

ICP SPIKE = _____ ml of Solution #2 / _____ ml

SPIKING SOLUTION #2: 40 ppm B, Cr - 80 ppm As, Sb, Sn, Zn - 400 ppm Al, Ca, Fe, K, Mg, Na
Sol'n prep date: _____

ICP SPIKE = _____ ml of Solution #3 / _____ ml

SPIKING SOLUTION #3: 40 ppm Ag Sol'n prep date: _____

000171

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VERSAR, INC.
METALS LABORATORY
DIGESTION LOG

Page 1 of 2

Code-Batch: VeoBrien 4, 5,

Date: 11-1893

Method code: DIWC / DHWC

Control No.: 8632, 8610

Reference: CLP SOW 787, D 4

Sample/EPA ID Number		Mtrx.	Init. W/V	Final Vol.	Description * Before		Description * After		pH
PBW		Holt	100 mL	100 mL	Colorless	Clear	Colorless	Clear	NA
LCSM									
LCSW	11049304A								
12146									
12146 D									
12146 S									
12313									
12314									
12315									
12316									
12317									
12318									
12319						Cloudy			
12325									

omments:

000172

* Description of colors: red, blue, yellow, green, orange, violet, white, colorless, brown, grey, black.
* Description of clarity: clear, cloudy, opaque.
* Description of artifacts: yes or no and describe.

LCSWA & Series No.
Prep Date
LCSWB & Series No.
Prep Date

VERSAR, INC.
METALS LABORATORY
SPIKE LOG

Code-Batch: VeoBRIEN 4,5 Date: 11/18/93
Control No.: 8632 8650 Method code: Dtw

*** CLP WATER SPIKING ***

[✓] HGA WATER: spike = 0.5 ml of HGA spiking solution / 100 ml

HGA SPIKING SOLUTION: 8ppm As - 4ppm Pb - 10ppm Tl - 1ppm Cd - 2ppm Se - 200ppm Y Sol'n prep date: 09/09/92

[ ] ICP WATER: spike = 5 ml of CLP ICP SPIKING SOLUTION / 100
0.5 ml of 100ppm Sb / 100 ml
0.5 ml of 10ppm Ag / 100 ml
0.2 ml 100ppm Cr / 100 ml

ICP SPIKING SOLUTION: 5ppm Cu - 40 ppm Ba, Al, As, Be, Tl - 20ppm Fe - 10ppm Mn, Ni, Zn, Co, Pb, V - 1ppm
Sol'n prep date:_____ Sb prep:_____ Ag prep:_____ Cr prep

*** CLP SOIL SPIKING ***

[ ] HGA SOIL: spike = 1 ml of HGA SPIKING SOLUTION / 200 ml

HGA SPIKING SOLUTION: 8ppm As - 4ppm Pb - 10ppm Tl - 1ppm Cd - 2ppm Se - 200ppm Y Sol'n prep date:_____

[ ] ICP SOIL: spike = 10 ml of ICP SPIKING SOLUTION / 200 ml
1ml of 100ppm Sb / 200 ml
1 ml of 10ppm Ag / 200 ml
0.4ml of 100ppm Cr / 200ml

ICP SPIKING SOLUTION: 40ppm Ba, As, Be, Tl, - 10ppm Co, Pb, Mn, Ni, V, Zn - 5ppm Cu - 1ppm Se, Cd
Sol'n prep date:_____ Sb prep:_____ Ag prep:_____ Cr prep

*** NON-CLP SPIKING ***

HGA SPIKE = _____ ml of HGA NON-CLP spiking solution / _____

HGA SPIKING SOLUTION: 10 ppm As, Se, Tl, Pb Sol'n prep date:_____

ICP SPIKE = _____ ml of Solution #1 / _____ ml

SPIKING SOLUTION #1: 40 ppm Ba, Be, Cd, Co, Mo, V - 80 ppm Cu, Pb, Mn, Ni, Se, Tl - 200 ppm Si - 320 ppm S
Sol'n prep date:_____

ICP SPIKE = _____ ml of Solution #2 / _____ ml

SPIKING SOLUTION #2: 40 ppm B, Cr - 80 ppm As, Sb, Sn, Zn - 400 ppm Al, Ca, Fe, K, Mg, Na
Sol'n prep date:_____

ICP SPIKE = _____ ml of Solution #3 / _____ ml

SPIKING SOLUTION #3: 40 ppm Ag Sol'n prep date:_____

Versar Laboratories INC.

GC/MS SEMIVOLATILE ANALYSIS
ANALYTICAL DATA PACKAGE

CLIENT: VERSAR DIVISION 61
CASE: R09042 SDG: 4
SITE: O'BRIEN
PROJECT: 420.1.0 BATCHES 4 AND 5
CONTROL: 8632/8650
DATE: 11/24/93

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Versar Laboratories INC.

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1. NARRATIVE

2. QC SUMMARY
   A. Surrogate Recovery Form (FORM 2)
   B. Matrix Spike/Matrix Spike Duplicate Recovery Form (FORM 3)
   C. Method Blank Summary Form (FORM 4)
   D. GC/MS Instrument Performance Check (FORM 5)
   E. Internal Standard Area and RT Summary (FORM 8)

3. SAMPLE DATA
   Samples in alphanumeric order unless a different order is specified in the case narrative (FORM I-SV1, FORM 1-SV2, FORM I-TIC, data)

4. STANDARDS DATA
   A. Initial Calibration Data (FORM 6) in order by instrument/date, followed by data
   B. Continuing Calibration Check (FORM 7) in order by instrument/date, followed by data

5. RAW QC DATA
   A. Tuning Data
      Bar graph spectrum, mass listing, chromatogram
   B. Method Blank Data
      In chronological order (FORM 1-SV1, FORM 1-SV2, FORM I-TIC, data)

6. MATRIX SPIKE DATA
   FORM 1-SV1, FORM 1-SV2, data

7. MATRIX SPIKE DUPLICATE DATA
   FORM 1-SV1, FORM 1-SV2, data

8. SAMPLE PREPARATION
   This section contains supporting data for analysis of these samples. The following items are present in this section as required (not all items will be required for any batch of samples):
      a. Parameter Request Sheet
      b. Chain of Custody
      c. Additional client-provided information (compound lists, detection limits, etc.)
      d. Reextraction notice
      e. TCLP preparation sheets
      f. Organic Extraction Laboratory notes on samples
      g. GC Screening data
      h. Organic Extraction Lab Chain of Custody (in-house)
      i. Extracts Ready For Analysis sheet
      j. Extraction logsheet
      k. Total Solids analysis results
      l. GC/MS batch analysis logsheet
      m. GC/MS injection logbook pages

NARRATIVE

QC SUMMARY

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November 24, 1993

NARRATIVE
VLI Project 420.1.0 - Batches 4 and 5
VLI Control 8632/8650

Client Information
Versar Division 61 - O'Brien

Analytical Method
EPA CLP Protocol (Rev OLM01.8)
Semivolatile Analysis by GC/MS

Sample Management
Five (5) water samples were received by VLI in two batch shipments on November 3 and 5, 1993.

	SAMPLE LIST	
11/03/93	W-5(S)	
11/05/93	MW-11(S)	MW-14(S)
	MW-12(S)	MW-15(S)

Instrument Tuning and Calibration
GC/MS instrument calibrations using DFTPP met all ion abundance criteria specified in the method. One calibration curve and three continuing calibration standards were required to analyzed these batch shipments of samples. All calibration standards met method specified %RSD and %D criteria.

Surrogate and Internal Standard Recovery
Semivolatile surrogate recovery values, internal standard area abundance values and associated relative retention times were within limits specified by the method for all analyses.

Quality Control
The samples were extracted and analyzed prior to expiration of sample holding times. All samples were analyzed within twelve hours of instrument calibration. The sample extracts were analyzed without dilution.

One set of matrix spike/matrix spike duplicate (MS/MSD) samples was analyzed with these batch shipments of samples. Due to limited sample volume, the MS/MSD samples were prepared from 500 mL sample aliquots, rather than the method specified 1000 mL sample aliquots. All matrix spike percent recovery values and percent RPD values were within QC limits. Semivolatile non-target compounds have been tentatively identified using the NIST/EPA/MSDC Mass Spectral Library.

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Narrative - Page 2
Versar Division 61
VLI Control 8632/8650

For Additional Information
For all questions, please refer to the VLI Control number at the top of this narrative.

For questions concerning sample scheduling, billing, or other program management issues, please contact Janet Jaufmann, VLI Client Services Manager.

For questions concerning technical integrity of the data, please contact Linda Bock, Quality Assurance Officer.

Release Authority
Release of this data package is approved by the Laboratory Director or his designee as indicated by the following signature:

Mary Anne Templeton
Mary Anne Templeton
GC/MS Data Quality Manager

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Versar Laboratories INC.

Data Qualifier Flags

J — For Target Compounds: This flag is used when mass spectral data indicates the presence of a compound but the result is less than the specified detection limit but still greater than zero.

JN — For Non Target Compounds: This flag indicates that the concentration is an estimated value, assuming a 1 to 1 response with the internal standard. For CLP 3/90 both the J and N flags are specified.

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

u — This flag states that the compound was analyzed for but was not detected. The number is the minimum attainable detection limit for the sample.

X — This flag states that the mass spectrum does not meet EPA CLP criteria for confirmation, but compound presence is strongly suspected.

E — This flag is used to indicate that the quantitation of the analyte is outside the linear calibration of the curve and that dilution was required in order to properly quantitate.

D — This flag is used to indicate the value for the target analyte was calculated from a dilution (see "E" flag above).

Y — This flag is used when a matrix spike compound is also confirmed present in the unspiked sample.

****** Above flags excerpted from and established by the US EPA Contract Lab Program (CLP) protocol.

BRL — This flag is used on the quantitation reports to eliminate compounds below a reasonable confidence limit. All compounds flagged "BRL" are less than the CRQL.

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	S7 (2CP)#	S8 (DCB)#	TOT OUT
01	MW-11(S)	75	70	74	77	63	89	88	63	0
02	MW-12(S)	70	60	74	68	55	89	79	60	0
03	MW-14(S)	78	69	80	76	59	92	87	66	0
04	MW-15(S)	72	65	71	73	51	77	85	61	0
05	W-5(S)	60	51	71	64	49	77	71	44	0
06	W-5(S)MS	71	56	65	71	59	78	83	58	0
07	W-5(S)MSD	68	63	68	71	60	79	81	61	0
08	SBLK49	72	60	71	76	61	74	88	56	0

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(35-114)	
S2 (FBP)	= 2-Fluorobiphenyl	(43-116)	
S3 (TPH)	= Terphenyl-d14	(33-141)	
S4 (PHL)	= Phenol-d5	(10-110)	
S5 (2FP)	= 2-Fluorophenol	(21-110)	
S6 (TBP)	= 2,4,6-Tribromophenol	(10-123)	
S7 (2CP)	= 2-Chlorophenol-d4	(33-110)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(16-110)	(advisory)

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

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix Spike - EPA Sample No.: W-5(S)

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
Phenol	144.0	0	90.00	62	12-110
2-Chlorophenol	144.0	0	99.61	69	27-123
1,4-Dichlorobenzene	96.20	0	66.34	69	36- 97
N-Nitroso-di-n-prop.(1)	96.20	0	72.30	75	41-116
1,2,4-Trichlorobenzene	96.20	0	69.04	72	39- 98
4-Chloro-3-methylphenol	144.0	0	110.6	77	23- 97
Acenaphthene	96.20	0	68.84	72	46-118
4-Nitrophenol	144.0	0	99.42	69	10- 80
2,4-Dinitrotoluene	96.20	0	69.61	72	24- 96
Pentachlorophenol	144.0	0	120.8	84	9-103
Pyrene	96.20	0	69.80	73	26-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	144.0	90.77	63	2	42	12-110
2-Chlorophenol	144.0	97.50	68	1	40	27-123
1,4-Dichlorobenzene	96.20	67.11	70	1	28	36- 97
N-Nitroso-di-n-prop.(1)	96.20	70.96	74	1	38	41-116
1,2,4-Trichlorobenzene	96.20	69.80	73	1	28	39- 98
4-Chloro-3-methylphenol	144.0	111.1	77	0	42	23- 97
Acenaphthene	96.20	69.61	72	0	31	46-118
4-Nitrophenol	144.0	103.5	72	4	50	10- 80
2,4-Dinitrotoluene	96.20	71.34	74	3	38	24- 96
Pentachlorophenol	144.0	124.2	86	2	50	9-103
Pyrene	96.20	75.00	78	7	31	26-127

(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: 1525R 35 280 1.00
0 9

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLK49

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Lab File ID: Z4998 Lab Sample ID: SBLK49

Instrument ID: Z Date Extracted: 11/08/93

Matrix: (soil/water) WATER Date Analyzed: 11/12/93

Level:(low/med) LOW Time Analyzed: 2006

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	MW-11(S)	12311	Z5013	11/13/93
02	MW-12(S)	12305	Z5005	11/13/93
03	MW-14(S)	12307	Z5006	11/13/93
04	MW-15(S)	12309	Z5012	11/13/93
05	W-5(S)	12145	Z4990	11/12/93
06	W-5(S)MS	12145MS	Z4991	11/12/93
07	W-5(S)MSD	12145MSD	Z4992	11/12/93

COMMENTS: 2006R 35 280 1.00
0 9

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Lab File ID: Z4937 DFTPP Injection Date: 11/09/93

Instrument ID: Z DFTPP Injection Time: 1357

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	30.8
68	Less than 2.0% of mass 69	0.9 (2.0)1
69	Mass 69 relative abundance	43.2
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	25.0 - 75.0% of mass 198	45.5
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.2
275	10.0 - 30.0% of mass 198	18.2
365	Greater than 0.75% of mass 198	2.80
441	Present, but less than mass 443	8.1
442	40.0 - 110.0% of mass 198	74.7
443	15.0 - 24.0% of mass 442	14.0 (18.7)2

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

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD160	33158	Z4938	11/09/93	1414
02	SSTD120	33159	Z4939	11/09/93	1450
03	SSTD080	32981	Z4940	11/09/93	1527
04	SSTD020	32982	Z4941	11/09/93	1603
05	SSTD050	33160	Z4942	11/09/93	1639

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Lab File ID: Z4981 DFTPP Injection Date: 11/12/93

Instrument ID: Z DFTPP Injection Time: 0922

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	35.6
68	Less than 2.0% of mass 69	0.5 (0.9)1
69	Mass 69 relative abundance	50.1
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	25.0 - 75.0% of mass 198	44.2
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	17.9
365	Greater than 0.75% of mass 198	2.50
441	Present, but less than mass 443	7.6
442	40.0 - 110.0% of mass 198	52.7
443	15.0 - 24.0% of mass 442	10.3 (19.6)2

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

THIS CHECK 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	32978	Z4982	11/12/93	0938
02	W-5(S)	12145	Z4990	11/12/93	1525
03	W-5(S)MS	12145MS	Z4991	11/12/93	1559
04	W-5(S)MSD	12145MSD	Z4992	11/12/93	1639
05	SBLK49	SBLK49	Z4998	11/12/93	2006

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Lab File ID: Z5003 DFTPP Injection Date: 11/13/93

Instrument ID: Z DFTPP Injection Time: 1005

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	31.6
68	Less than 2.0% of mass 69	0.1 (0.2)1
69	Mass 69 relative abundance	47.6
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	25.0 - 75.0% of mass 198	43.6
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.4
275	10.0 - 30.0% of mass 198	17.8
365	Greater than 0.75% of mass 198	2.70
441	Present, but less than mass 443	8.1
442	40.0 - 110.0% of mass 198	55.6
443	15.0 - 24.0% of mass 442	10.7 (19.2)2

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

THIS CHECK 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	32978	Z5004	11/13/93	1021
02	MW-12(S)	12305	Z5005	11/13/93	1101
03	MW-14(S)	12307	Z5006	11/13/93	1232

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

L' Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Lab File ID: Z5010 DFTPP Injection Date: 11/13/93

Instrument ID: Z DFTPP Injection Time: 1439

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	31.9
68	Less than 2.0% of mass 69	0.5 (1.2)1
69	Mass 69 relative abundance	44.7
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	25.0 - 75.0% of mass 198	43.7
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.6
275	10.0 - 30.0% of mass 198	15.2
365	Greater than 0.75% of mass 198	2.60
441	Present, but less than mass 443	7.8
442	40.0 - 110.0% of mass 198	52.3
443	15.0 - 24.0% of mass 442	10.3 (19.7)2

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

THIS CHECK 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	32978	Z5011	11/13/93	1456
02	MW-15(S)	12309	Z5012	11/13/93	1534
03	MW-11(S)	12311	Z5013	11/13/93	1608

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: VERSAR INC. Contract: _____

L. Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Lab File ID (Standard): Z4982 Date Analyzed: 11/12/93

Instrument ID: Z Time Analyzed: 0938

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	326957	6.53	1122804	8.66	529800	11.84
	UPPER LIMIT	653914	7.03	2245608	9.16	1059600	12.34
	LOWER LIMIT	163478	6.03	561402	8.16	264900	11.34
	EPA SAMPLE NO.						
01	W-5(S)	214784	6.53	781123	8.65	410719	11.82
02	W-5(S)MS	200960	6.53	738251	8.65	392215	11.82
03	W-5(S)MSD	191597	6.53	708642	8.64	368682	11.82
04	SBLK49	177641	6.54	653160	8.66	333769	11.84

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

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: VERSAR INC. Contract: _____

L Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Lab File ID (Standard): Z4982 Date Analyzed: 11/12/93

Instrument ID: Z Time Analyzed: 0938

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	934500	14.51	660140	19.39	632224	22.29
	UPPER LIMIT	1869000	15.01	1320280	19.89	1264448	22.79
	LOWER LIMIT	467250	14.01	330070	18.89	316112	21.79
	EPA SAMPLE NO.						
01	W-5(S)	661268	14.50	475318	19.37	359325	22.24
02	W-5(S)MS	635657	14.51	492543	19.37	382158	22.25
03	W-5(S)MSD	599900	14.51	456995	19.36	359749	22.25
04	SBLK49	544655	14.52	418381	19.38	363093	22.27

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

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Lab File ID (Standard): Z5004 Date Analyzed: 11/13/93

Instrument ID: Z Time Analyzed: 1021

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	304446	6.52	1052141	8.65	490800	11.83
	UPPER LIMIT	608892	7.02	2104282	9.15	981600	12.33
	LOWER LIMIT	152223	6.02	526070	8.15	245400	11.33
	EPA SAMPLE NO.						
01	MW-12(S)	265594	6.52	965169	8.64	492858	11.83
02	MW-14(S)	227809	6.53	831424	8.65	413525	11.83

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

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Lab File ID (Standard): Z5004 Date Analyzed: 11/13/93

Instrument ID: Z Time Analyzed: 1021

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	796047	14.51	563965	19.38	542263	22.27
	UPPER LIMIT	1592094	15.01	1127930	19.88	1084526	22.77
	LOWER LIMIT	398024	14.01	281982	18.88	271132	21.77
	EPA SAMPLE NO.						
01	MW-12(S)	753091	14.50	517214	19.38	413335	22.26
02	MW-14(S)	661247	14.51	421090	19.39	309984	22.28

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

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: VERSAR INC. Contract: _____

L. Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Lab File ID (Standard): Z5011 Date Analyzed: 11/13/93

Instrument ID: Z Time Analyzed: 1456

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	191590	6.53	660701	8.65	331251	11.82
	UPPER LIMIT	383180	7.03	1321402	9.15	662502	12.32
	LOWER LIMIT	95795	6.03	330350	8.15	165626	11.32
	EPA SAMPLE NO.						
01	MW-11(S)	181022	6.52	635331	8.65	292449	11.83
02	MW-15(S)	198332	6.52	689870	8.64	324966	11.83

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

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: VERSAR INC. Contract: _____

L Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Lab File ID (Standard): Z5011 Date Analyzed: 11/13/93

Instrument ID: Z Time Analyzed: 1456

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	512622	14.50	322712	19.37	260163	22.25
	UPPER LIMIT	1025244	15.00	645424	19.87	520326	22.75
	LOWER LIMIT	256311	14.00	161356	18.87	130082	21.75
	EPA SAMPLE NO.						
01	MW-11(S)	390069	14.50	253175	19.38	171113	22.27
02	MW-15(S)	466571	14.51	293696	19.37	182742	22.25

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

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

SAMPLE DATA

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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-11(S)

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12311

Sample wt/vol: 970 (g/mL) ML Lab File ID: Z5013

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/13/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	3- and 4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	4	J
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	26	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	26	U
83-32-9	Acenaphthene	5	J

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-11(S)

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12311

Sample wt/vol: 970 (g/mL) ML Lab File ID: Z5013

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/13/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	26	U
100-02-7	4-Nitrophenol	26	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	26	U
534-52-1	4,6-Dinitro-2-methylphenol	26	U
86-30-6	N-nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	26	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-ethylhexyl)phthalate	10	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-11(S)

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12311

Sample wt/vol: 970 (g/mL) ML Lab File ID: Z5013

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/13/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 20

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

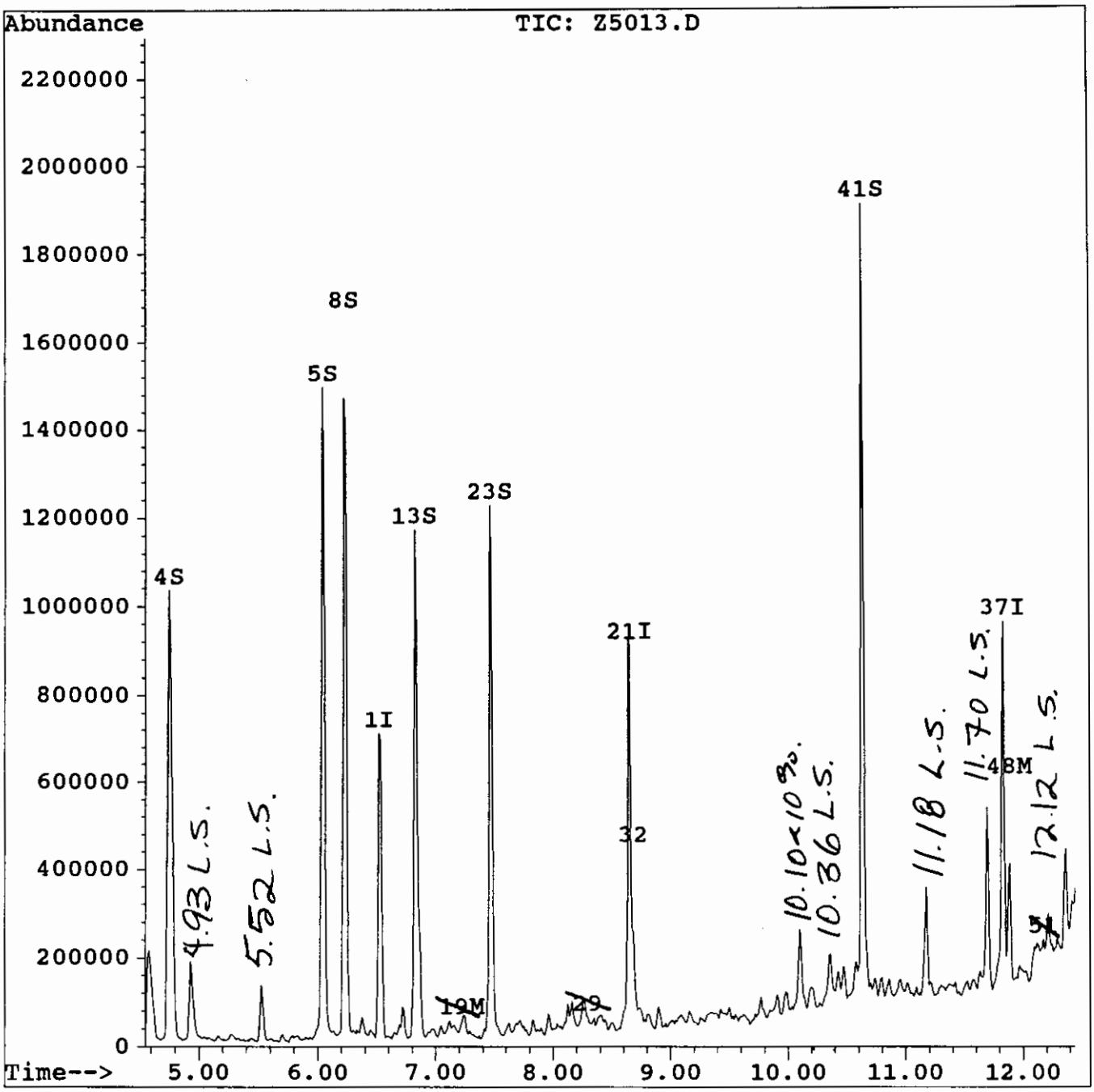
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.93	7	JNB
2.	UNKNOWN	5.52	4	JNB
3.	UNKNOWN	10.36	5	JN
4.	UNKNOWN	11.18	6	JN
5.	UNKNOWN	11.70	9	JN
6.	UNKNOWN	12.12	4	JN
7.	UNKNOWN	12.36	8	JN
8.	UNKNOWN	12.45	10	JN
9.	UNKNOWN	12.54	5	JN
10.	UNKNOWN	12.69	15	JN
11.	UNKNOWN	12.84	34	JN
12.	UNKNOWN	12.94	9	JN
13.	UNKNOWN	13.02	4	JN
14.	UNKNOWN	14.36	41	JN
15.	UNKNOWN	15.66	4	JN
16.	UNKNOWN	15.82	4	JN
17.	UNKNOWN	17.28	6	JN
18.	UNKNOWN	17.40	5	JN
19.	UNKNOWN	20.96	4	JN
20.	UNKNOWN	21.06	5	JN

Quantitation Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)
Quant Time: Nov 22 9:25 1993

Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Last Update : Mon Nov 22 08:10:30 1993
Response via : Single Level Calibration



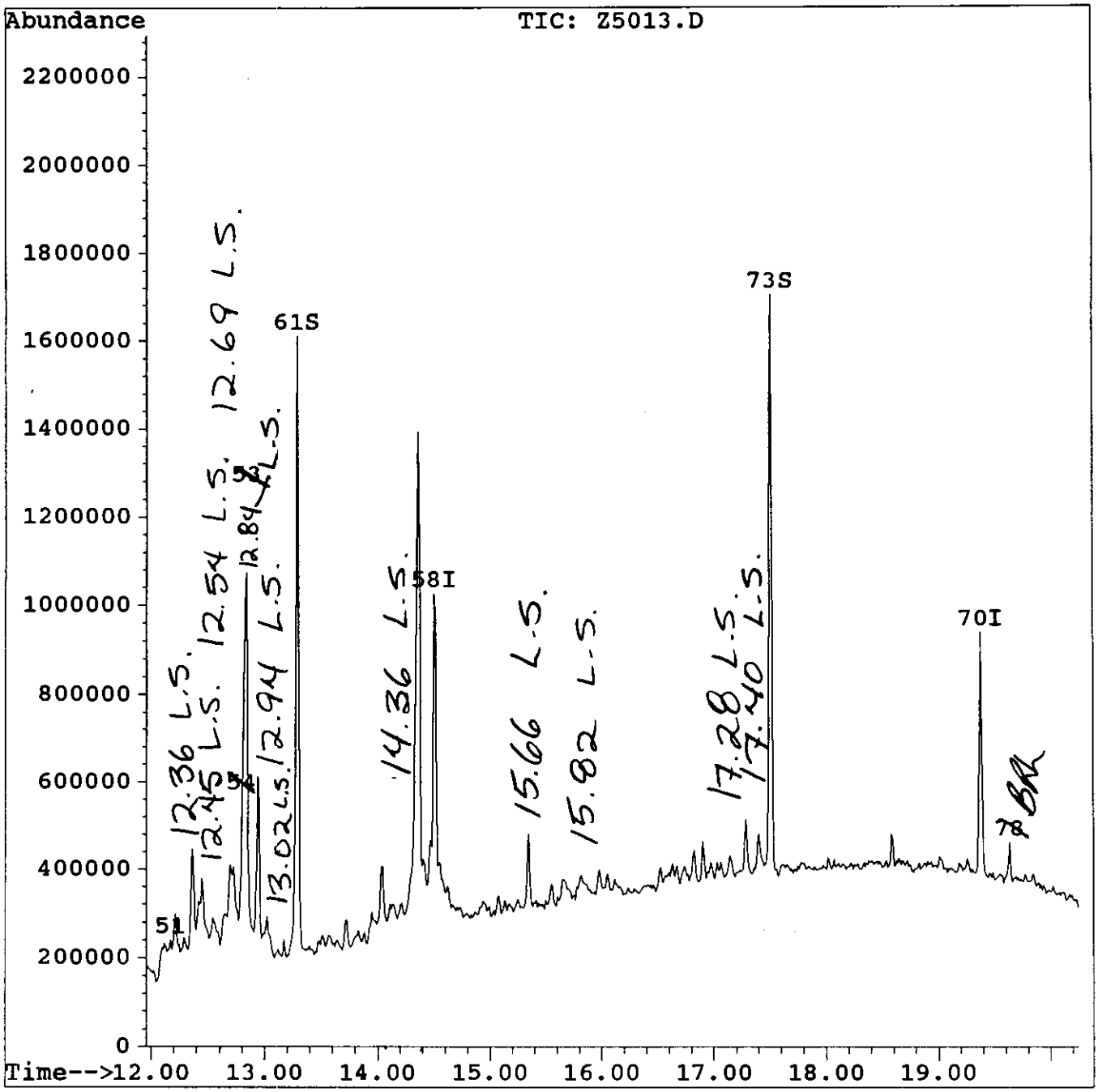
100023

Quantitation Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)
Quant Time: Nov 22 9:25 1993

Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Last Update : Mon Nov 22 08:10:30 1993
Response via : Single Level Calibration



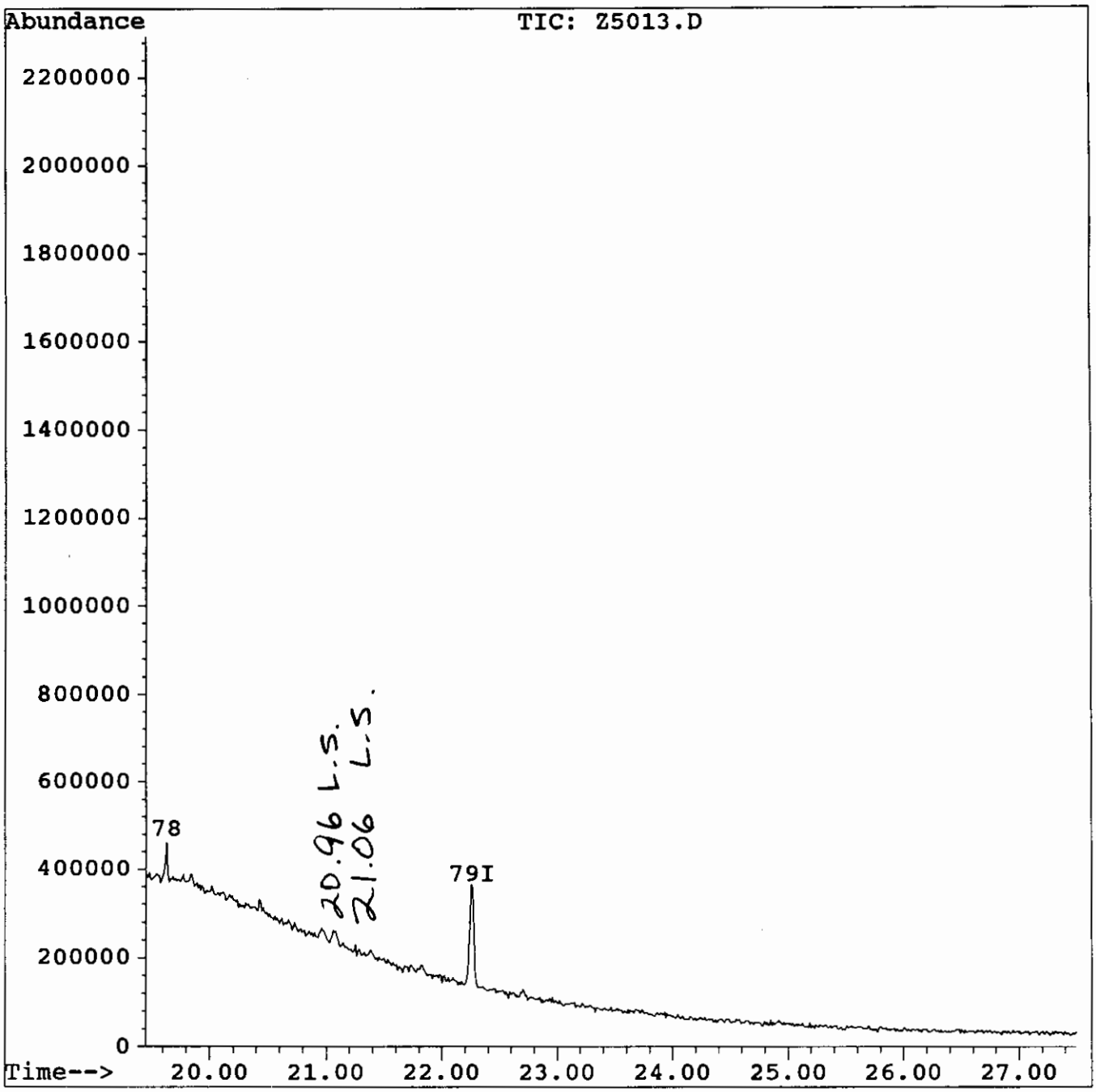
100024

Quantitation Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)
Quant Time: Nov 22 9:25 1993

Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Last Update : Mon Nov 22 08:10:30 1993
Response via : Single Level Calibration



100025

Quantitation Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)
Quant Time: Nov 22 9:25 1993

Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Last Update : Mon Nov 22 08:10:30 1993
Response via : Single Level Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) CI30 1,4-Dichlorobenzene-d	6.52	152	181022	20.00 ng/ul	0.00
21) CI40 Naphthalene-d8	8.65	136	635331	20.00 ng/ul	0.00
37) CI50 Acenaphthene-d10	11.83	164	292449	20.00 ng/ul	0.00
58) CI60 Phenanthrene-d10	14.50	188	390069	20.00 ng/ul	0.00
70) CI70 Chrysene-d12	19.38	240	253175	20.00 ng/ul	0.00
79) CI75 Perylene-d12	22.27	264	171113	20.00 ng/ul	0.01
System Monitoring Compounds					**%Recovery**
4) CS50 2-Fluorophenol	4.75	112	677273	47.05 ng/ul	62.73%
5) CS45 Phenol-d5	6.05	99	919773	57.94 ng/ul	77.25%
8) CS70 2-Chlorophenol d4	6.23	132	698526	66.32 ng/ul	88.43%
13) CS75 1,2-Dichlorobenzene-d	6.83	152	262447	31.30 ng/ul	62.61%
23) CS20 Nitrobenzene-d5	7.47	82	615397	37.27 ng/ul	74.54%
41) CS25 2-Fluorobiphenyl	10.64	172	796343	34.94 ng/ul	69.89%
61) CS55 2,4,6-Tribromophenol	13.29	330	224025	66.84 ng/ul	89.11%
73) CS30 Terphenyl-d14	17.51	244	572006	37.01 ng/ul	74.02%
Target Compounds					**Qvalue**
19) C370 n-Nitroso-di-n-propyl	7.22	70	9587	~~1.04 ng/ul#~~ BRL	0
29) C430 Benzoic Acid	8.30	122	7342	~~1.64 ng/ul#~~	0
32) C450 Naphthalene	8.69	128	128371	3.78 ng/ul	0
48) C550 Acenaphthene	11.89	153	79353	4.83 ng/ul	0
51) C565 Dibenzofuran	12.17	168	25910	~~1.02 ng/ul~~	0
53) C580 Diethylphthalate	12.84	149	44007	~~1.65 ng/ul#~~ BRL	0
54) C590 Fluorene	12.80	166	31553	~~1.63 ng/ul#~~	0
78) C741 bis(2-Ethylhexyl)phth	19.63	149	32987	~~1.99 ng/ul~~	0

Ready for forms

Compliant
Rev
AF
11/22/93

(#) = qualifier out of range (m) = manual integration

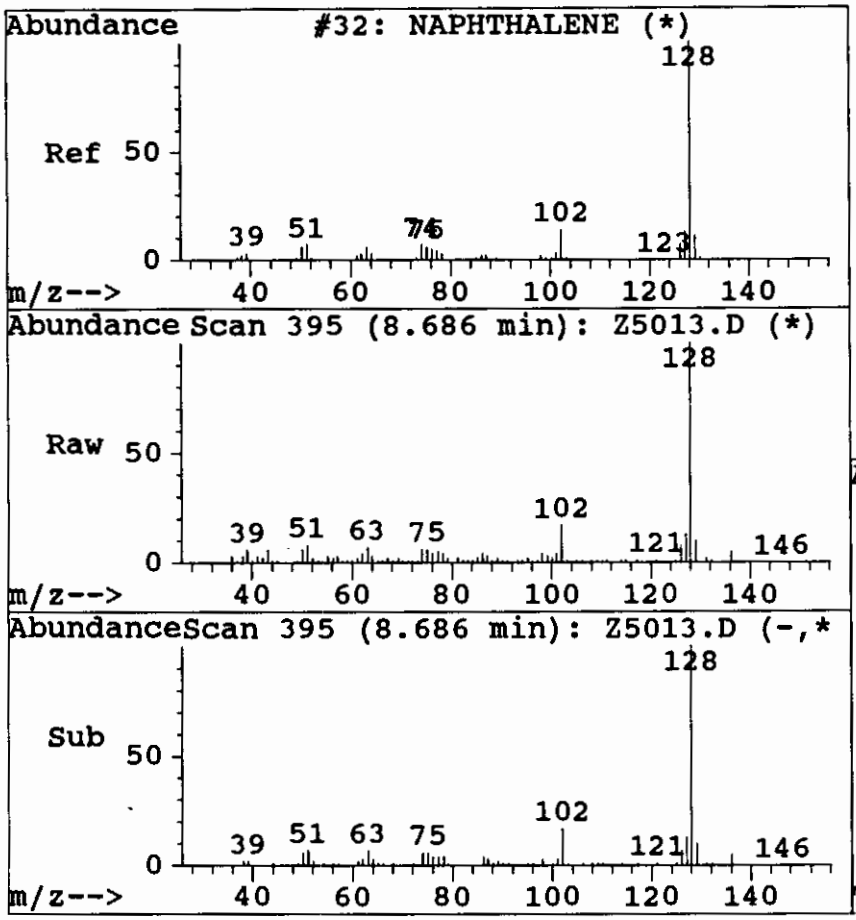
QACHK report

ata file C:\CHEMPC\DATA\Z111393\Z5013.D

Standard File: C:\CHEMPC\DATA\Z111393\Z5011.D 13 Nov 93 2:56 pm

ISTD Compound	Std Area	Samp Area	% rec
CI30 1,4-Dichlorobenzene-d4	191590	181022	94.5
CI40 Naphthalene-d8	660701	635331	96.2
CI50 Acenaphthene-d10	331251	292449	88.3
CI60 Phenanthrene-d10	512622	390069	76.1
CI70 Chrysene-d12	322712	253175	78.5
CI75 Perylene-d12	260163	171113	65.8

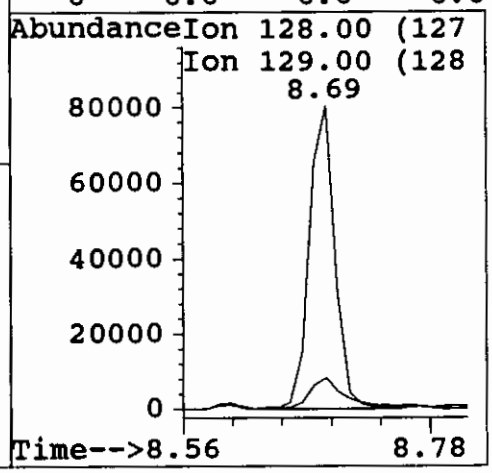
Surrogate Compound	Surr Conc	Surr Amt	%rec	Water limits
CS50 2-Fluorophenol	47.05	75.00	62.7	21-100
CS45 Phenol-d5	57.94	75.00	77.3	10- 94
CS70 2-Chlorophenol d4	66.32	75.00	88.4	33-110
CS75 1,2-Dichlorobenzene-d4	31.30	50.00	62.6	16-110
CS20 Nitrobenzene-d5	37.27	50.00	74.5	35-114
CS25 2-Fluorobiphenyl	34.94	50.00	69.9	43-116
CS55 2,4,6-Tribromophenol	66.84	75.00	89.1	10-123
CS30 Terphenyl-d14	37.01	50.00	74.0	33-141

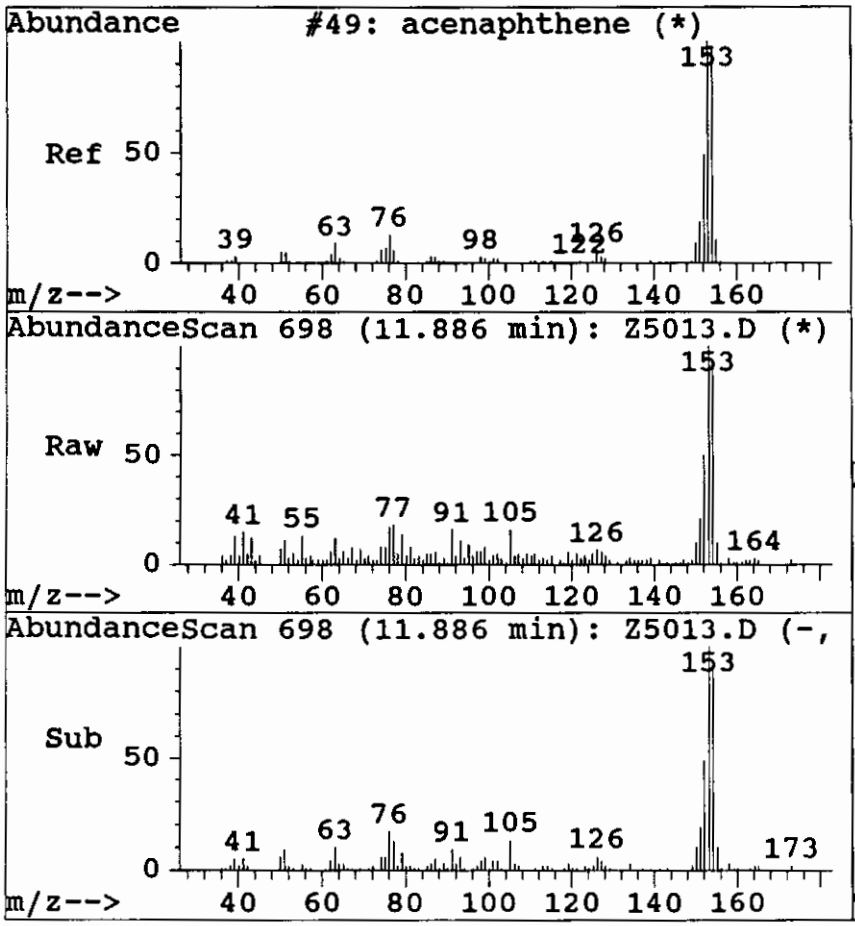


#32
C450 Naphthalene
Concen: 3.78 ng/ul
RT: 8.69 min Scan# 395
Delta R.T. -0.00 min
Lab File: Z5013.D
Acq: 13 Nov 93 4:08 pm

Tgt Ion:128 Resp: 128371

Ion	Ratio	Lower	Upper
128	100		
129	13.7	0.0	30.9
0	0.0	0.0	0.0
0	0.0	0.0	0.0

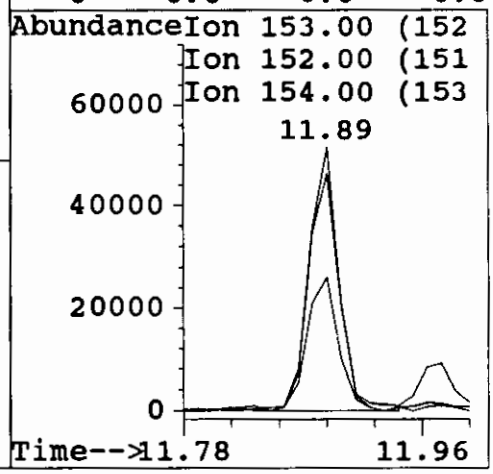




#48
C550 Acenaphthene
Concen: 4.83 ng/ul
RT: 11.89 min Scan# 698
Delta R.T. -0.00 min
Lab File: Z5013.D
Acq: 13 Nov 93 4:08 pm

Tgt Ion:153 Resp: 79353

Ion	Ratio	Lower	Upper
153	100		
152	54.0	30.5	70.5
154	90.7	73.8	113.8
0	0.0	0.0	0.0



100028

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

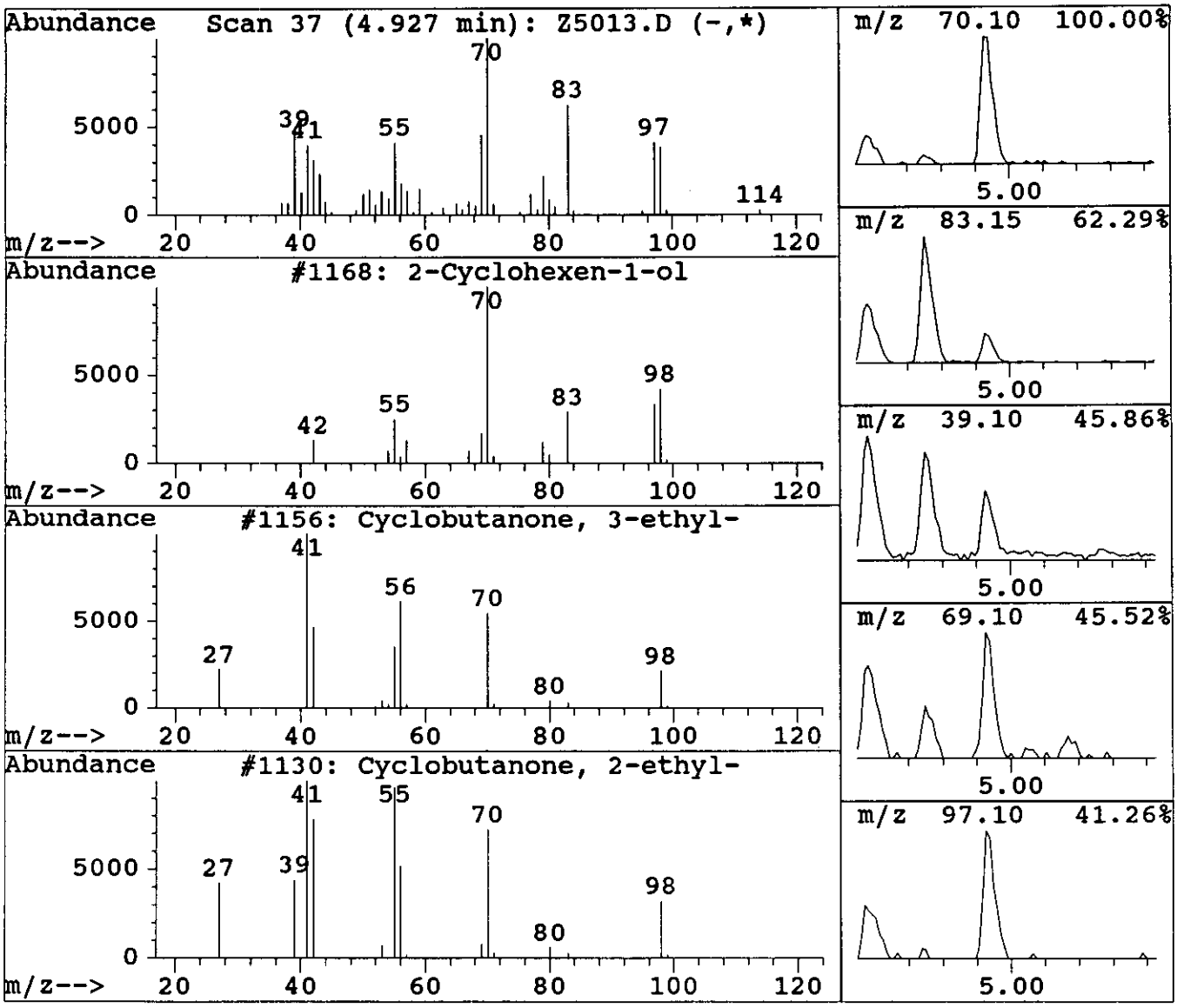
Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

Unk (B)

R.T.	Conc	Area	Relative to ISTD	R.T.
4.93	6.91 ng/ul	457512	CI30 1,4-Dichlorobenzene-d4	6.52

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	2-Cyclohexen-1-ol	1168	000822-67-3	74
2	Cyclobutanone, 3-ethyl-	1156	056335-73-0	27
3	Cyclobutanone, 2-ethyl-	1130	010374-14-8	27
4	2-Heptene, (E)-	1227	014686-13-6	22
5	Heptane, 3-methylene-	2416	001632-16-2	22



100029

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

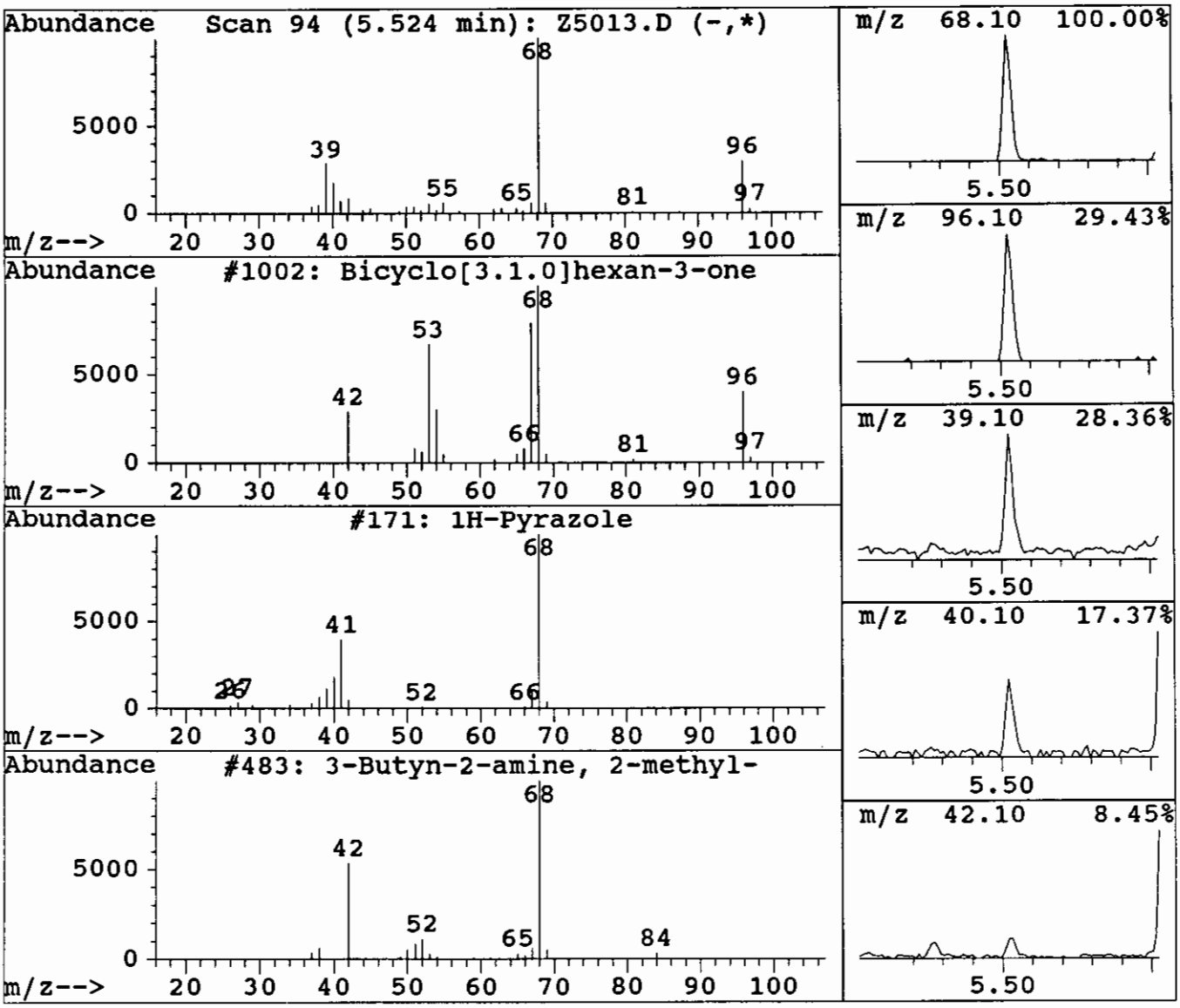
Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

mk (B)

R.T.	Conc	Area	Relative to ISTD	R.T.
5.52	3.55 ng/ul	234896	CI30 1,4-Dichlorobenzene-d4	6.52

Hit# of 6	Tentative ID	Ref#	CAS#	Qual
1	Bicyclo[3.1.0]hexan-3-one	1002	001755-04-0	78
2	1H-Pyrazole	171	000288-13-1	36
3	3-Butyn-2-amine, 2-methyl-	483	002978-58-7	25
4	2-Cyclohexen-1-one	1001	000930-68-7	10
5	2-Cyclopenten-1-one, 3-methyl-	998	002758-18-1	9



100030

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

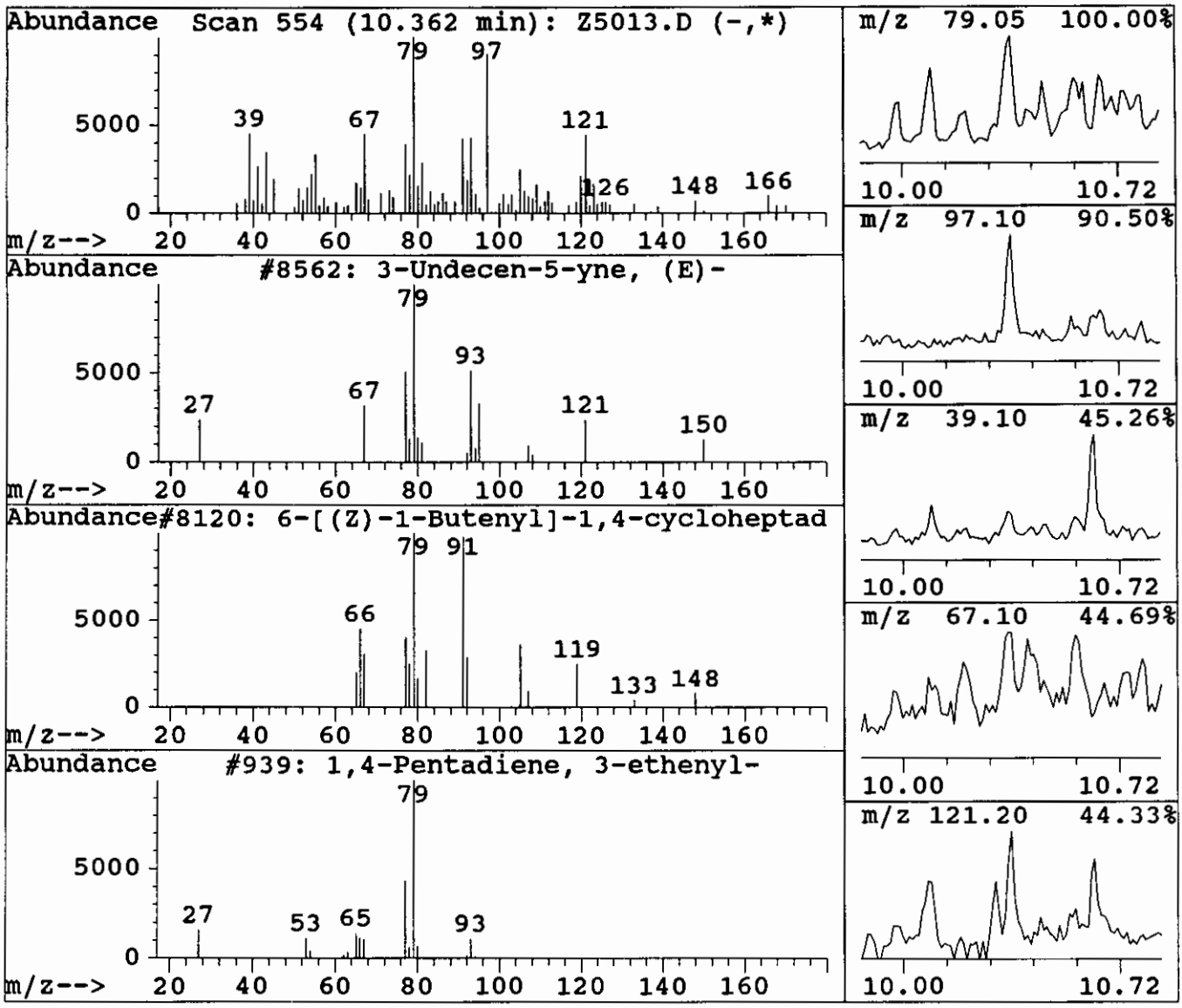
Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

unk

R.T.	Conc	Area	Relative to ISTD	R.T.
10.36	4.63 ng/ul	364744	CI50 Acenaphthene-d10	11.83

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	3-Undecen-5-yne, (E)-	8562	074744-29-9	37
2	6-[(Z)-1-Butenyl]-1,4-cycloheptadie	8120	033156-93-3	35
3	1,4-Pentadiene, 3-ethenyl-	939	026456-63-3	27
4	Bicyclo[2.2.1]hepta-2,5-dien-7-ol	1908	000822-80-0	25
5	p-Menth-2-en-7-ol, cis-	9482	019898-86-3	22



100031

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

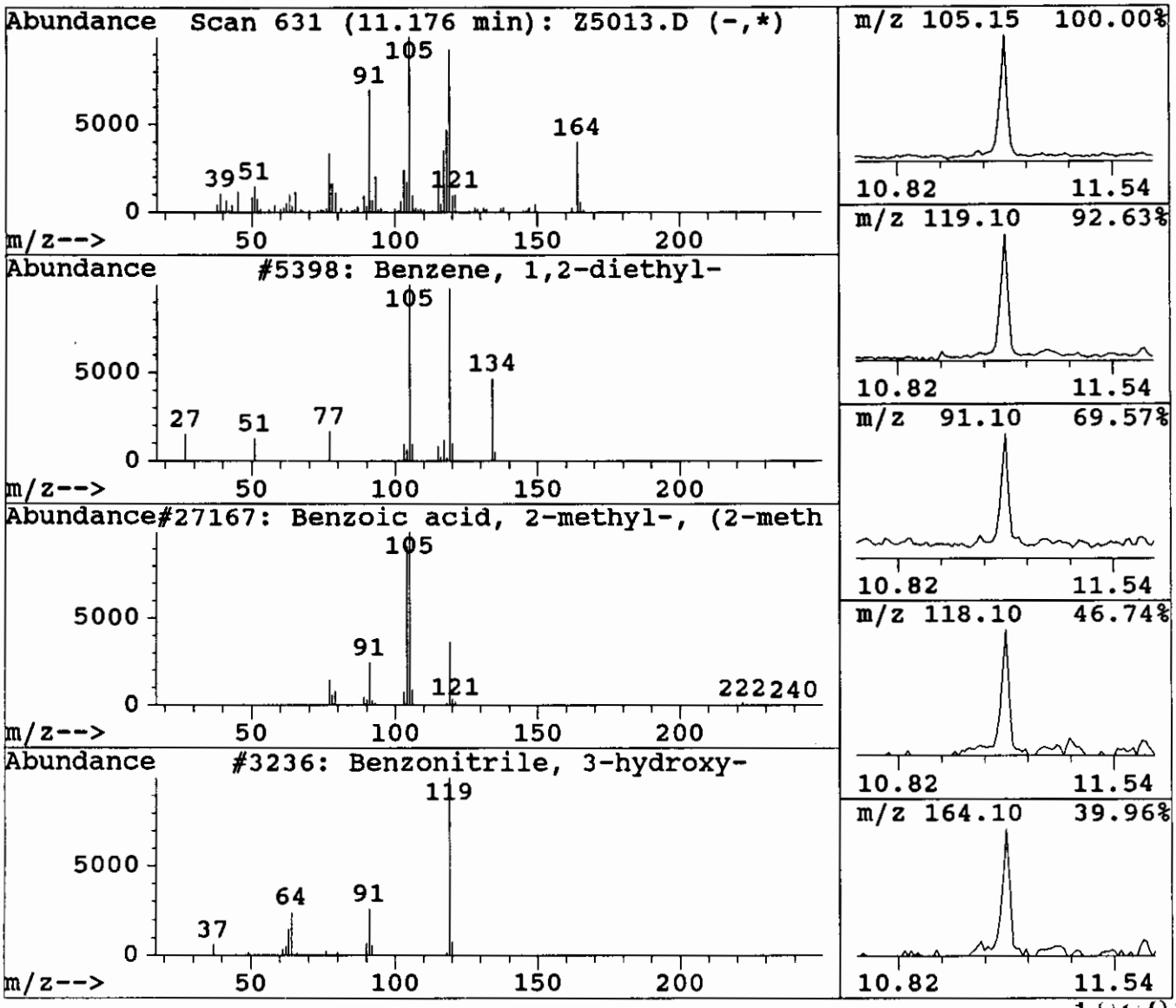
Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

link

R.T.	Conc	Area	Relative to ISTD	R.T.
11.18	5.97 ng/ul	469560	CI50 Acenaphthene-d10	11.83

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	Benzene, 1,2-diethyl-	5398	000135-01-3	38
2	Benzoic acid, 2-methyl-, (2-methylp	27167	055133-99-8	27
3	Benzonitrile, 3-hydroxy-	3236	000873-62-1	22
4	Ethanone, 1-(2-methylphenyl)-	5363	000577-16-2	22
5	Benzamide, 4-methyl-	5456	000619-55-6	22



100032

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

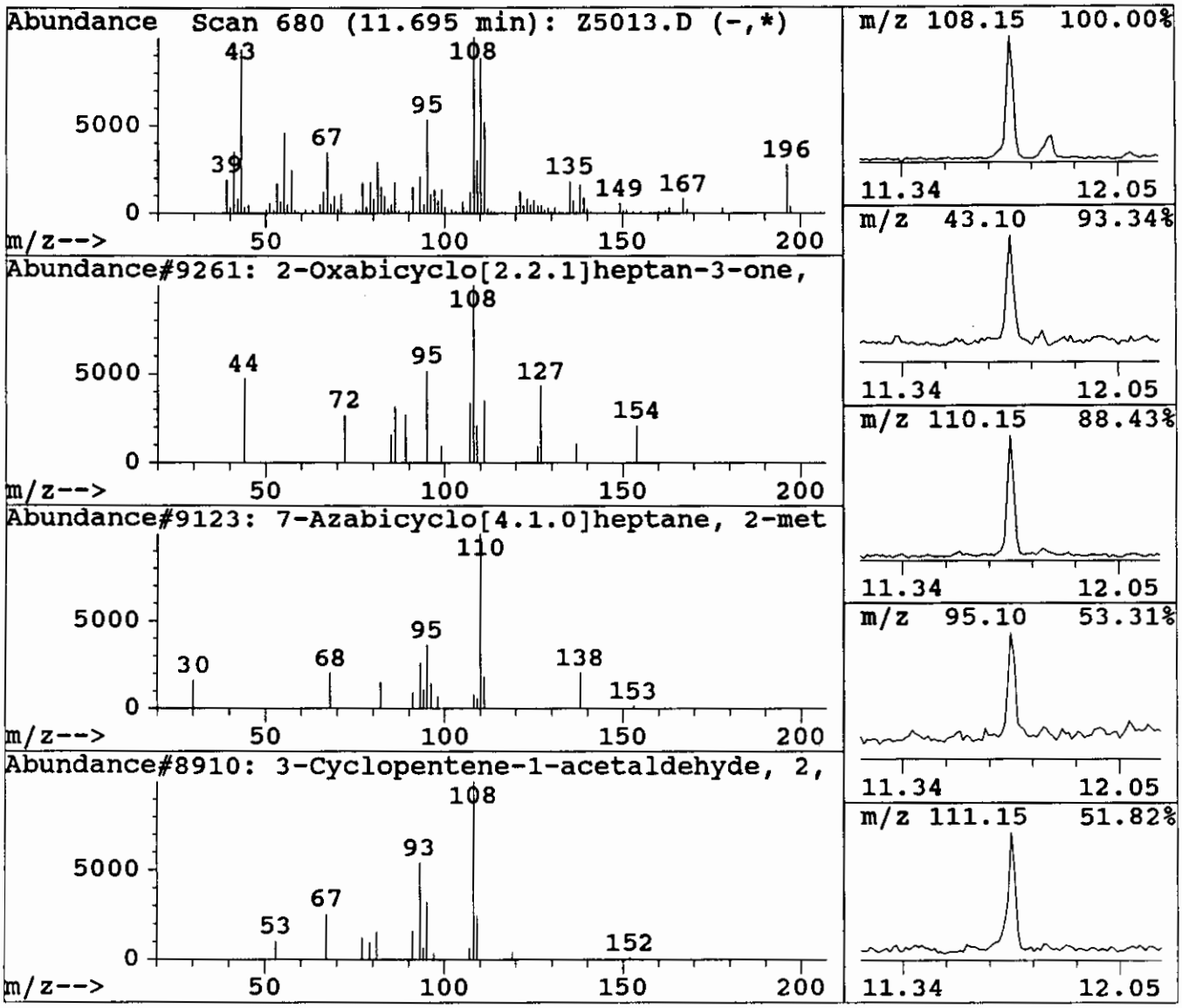
Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

Unk

R.T.	Conc	Area	Relative to ISTD	R.T.
11.70	8.66 ng/ul	681316	CI50 Acenaphthene-d10	11.83

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	2-Oxabicyclo[2.2.1]heptan-3-one, 1,	9261	019893-77-7	37
2	7-Azabicyclo[4.1.0]heptane, 2-methy	9123	055854-39-2	16
3	3-Cyclopentene-1-acetaldehyde, 2,2,	8910	004501-58-0	16
4	2-Propanol, 1-methoxy-3-(2-methylph	18559	039144-34-8	14
5	Pyrimidine, 4,6-dimethyl-	1901	001558-17-4	14



100033

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

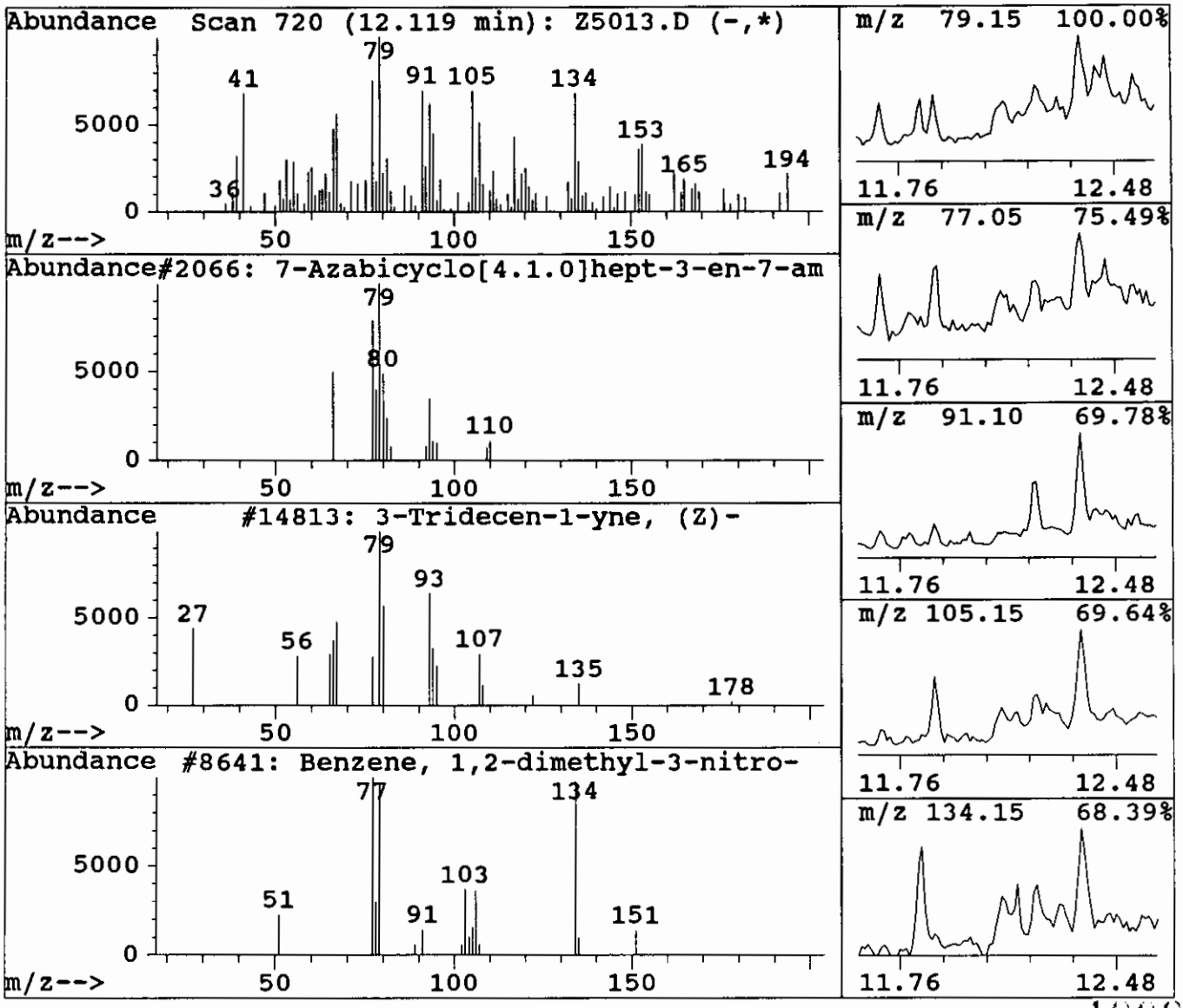
Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

link

R.T.	Conc	Area	Relative to ISTD	R.T.
12.12	4.09 ng/ul	321979	CI50 Acenaphthene-d10	11.83

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	7-Azabicyclo[4.1.0]hept-3-en-7-amin	2066	066387-76-6	49
2	3-Tridecen-1-yne, (Z)-	14813	037981-62-7	35
3	Benzene, 1,2-dimethyl-3-nitro-	8641	000083-41-0	25
4	2-Dodecen-4-yne, (E)-	11686	074744-38-0	25
5	1,Z-5,E-7-Dodecatriene	11673	083085-83-0	25



100034

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

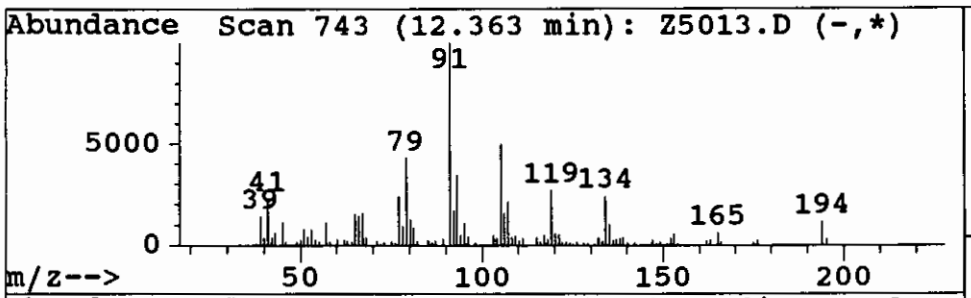
Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

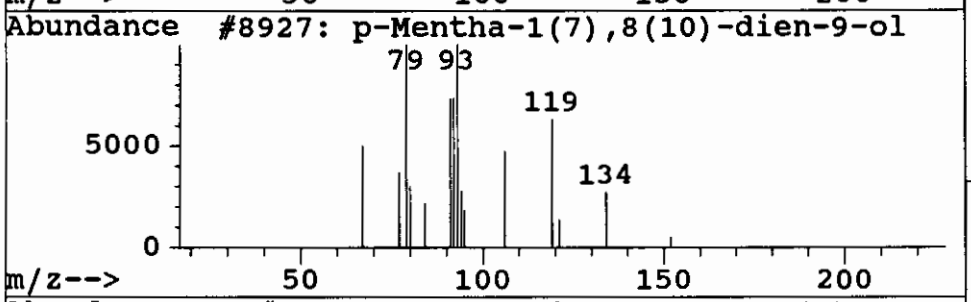
Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

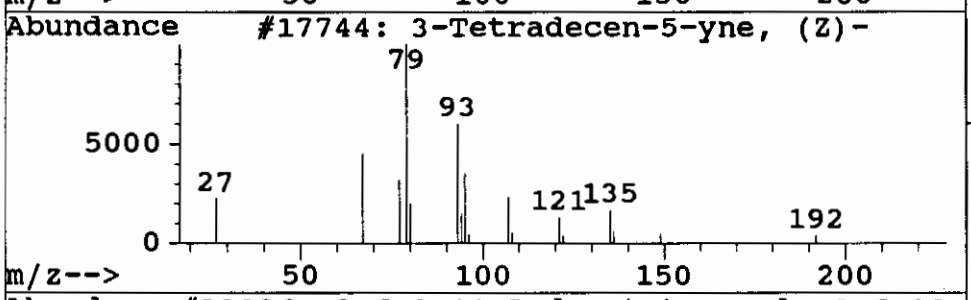
Unk

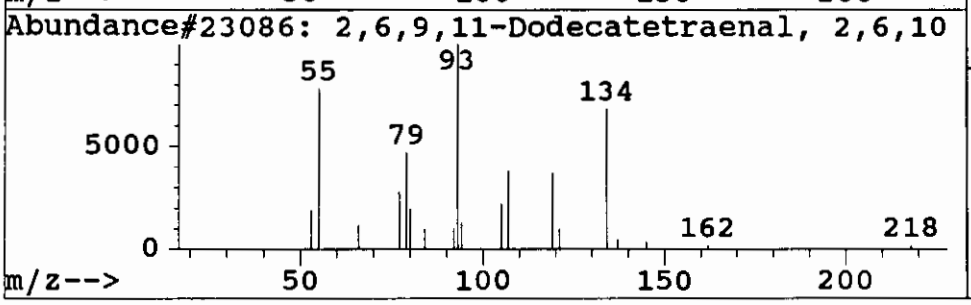
R.T.	Conc	Area	Relative to ISTD	R.T.
12.36	7.89 ng/ul	620639	CI50 Acenaphthene-d10	11.83

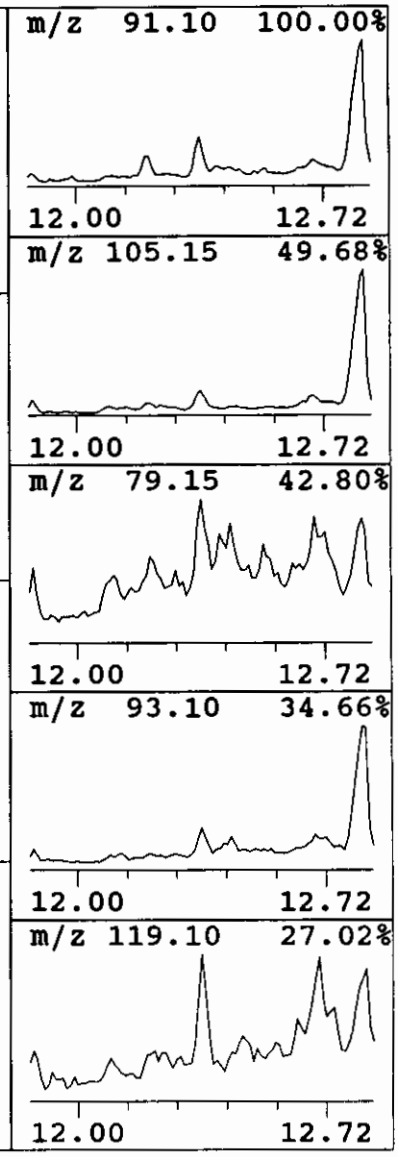
Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	p-Mentha-1(7),8(10)-dien-9-ol	8927	029548-13-8	49
2	3-Tetradecen-5-yne, (Z)-	17744	074663-68-6	35
3	2,6,9,11-Dodecatetraenal, 2,6,10-tr	23086	017909-77-2	35
4	ETHYL TRANS-BICYCLO[4.3.0]-3-NONENE	18105	000000-00-0	35
5	1-Nonen-3-yne	3520	057223-18-4	30











Library Search Compound Report

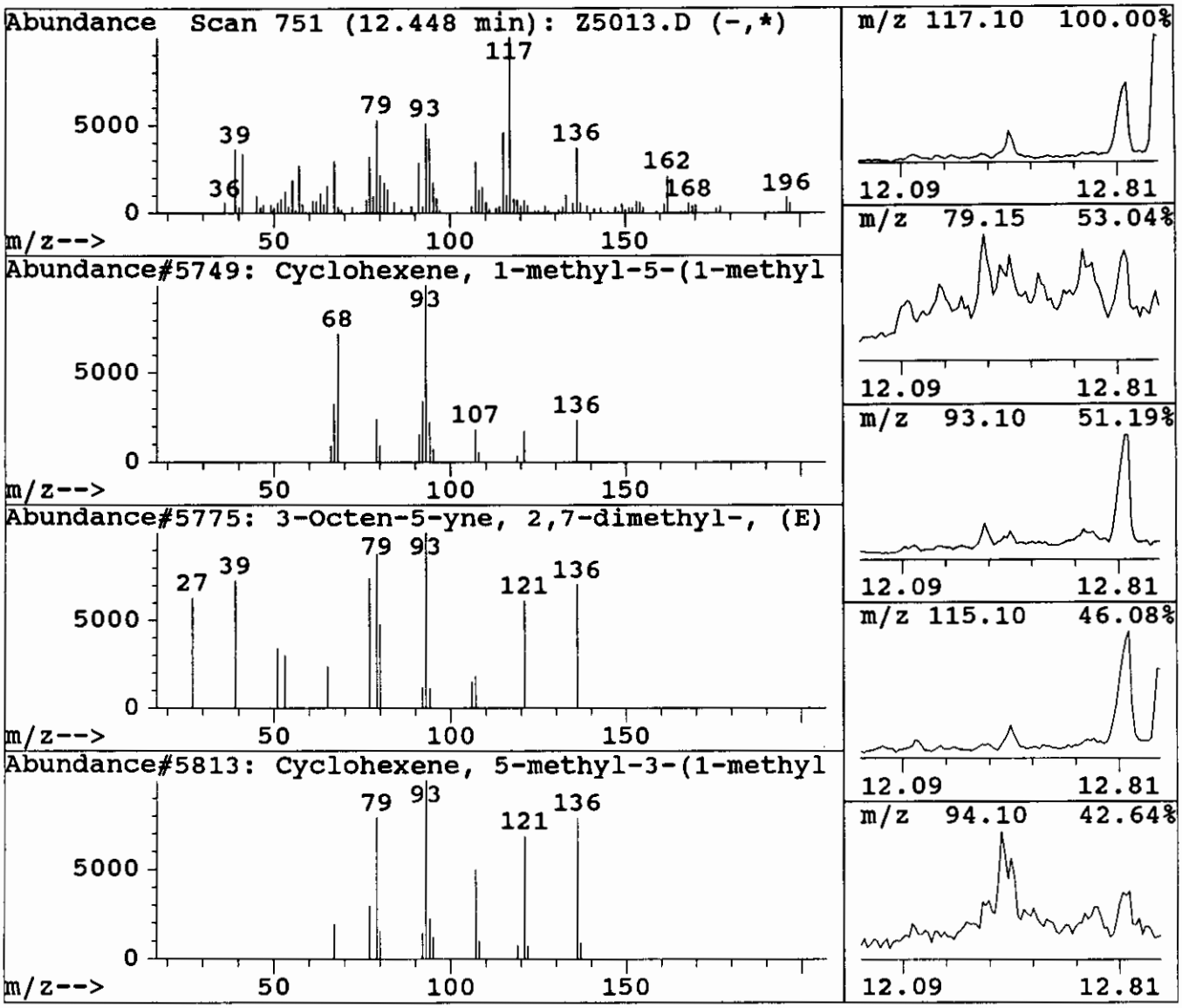
Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
12.45	9.95 ng/ul	783424	CI50 Acenaphthene-d10	11.83

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	Cyclohexene, 1-methyl-5-(1-methylet	5749	001461-27-4	42
2	3-Octen-5-yne, 2,7-dimethyl-, (E)-	5775	055956-33-7	30
3	Cyclohexene, 5-methyl-3-(1-methylet	5813	056816-08-1	30
4	2H-Inden-2-one, 1,3,3a,4,5,7a-hexah	5702	070501-26-7	22
5	3-Nonen-1-yne, (Z)-	3538	037981-61-6	18



100036

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

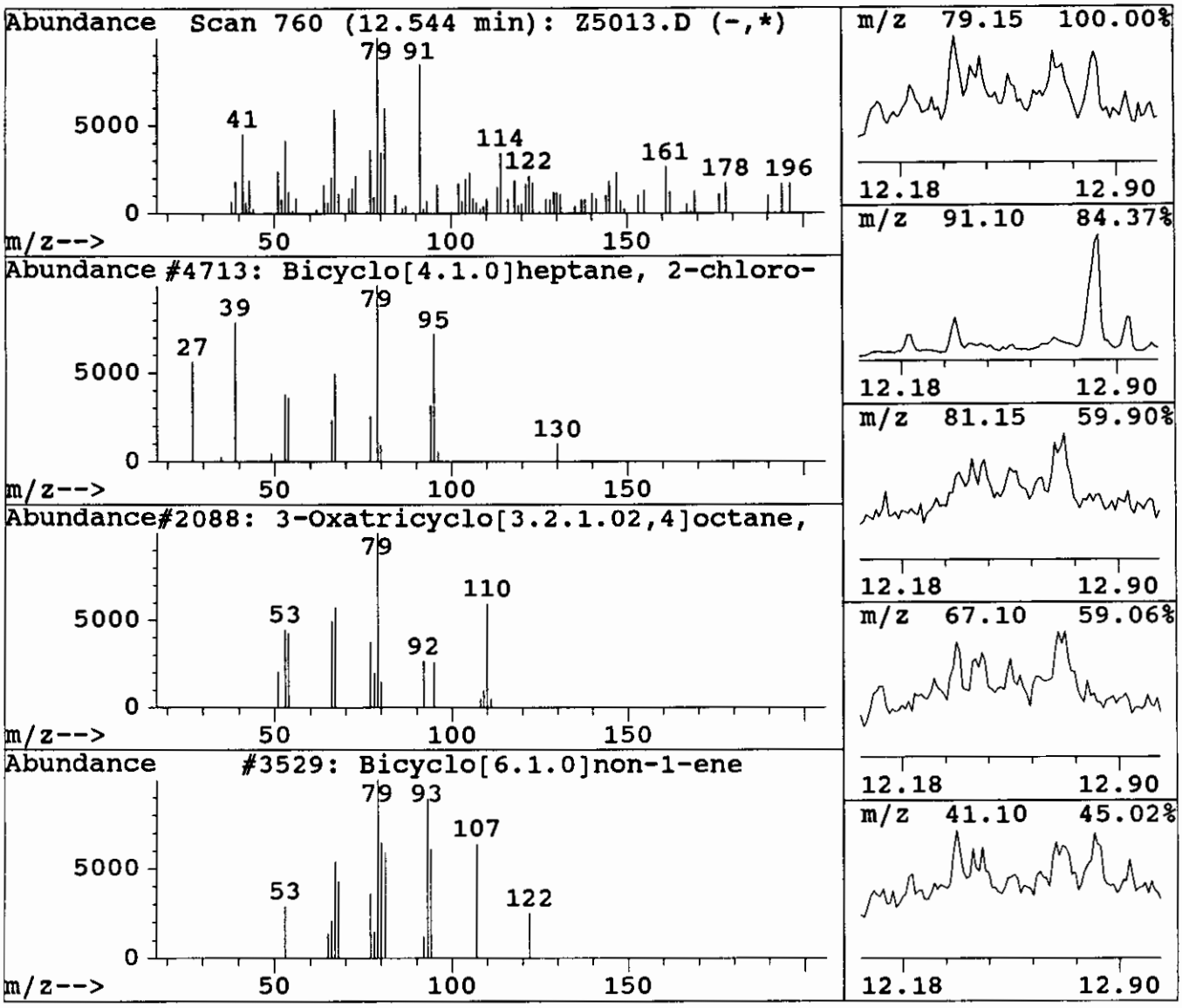
Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

Unk

R.T.	Conc	Area	Relative to ISTD	R.T.
12.54	4.86 ng/ul	382571	CI50 Acenaphthene-d10	11.83

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	Bicyclo[4.1.0]heptane, 2-chloro-	4713	034825-90-6	42
2	3-Oxatricyclo[3.2.1.02,4]octane, (1	2088	003146-39-2	37
3	Bicyclo[6.1.0]non-1-ene	3529	002570-06-1	25
4	Bicyclo[2.2.1]hept-2-en-7-ol	2079	053783-87-2	25
5	1,3,5,8-Undecatetraene	8139	050277-31-1	22



100037

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

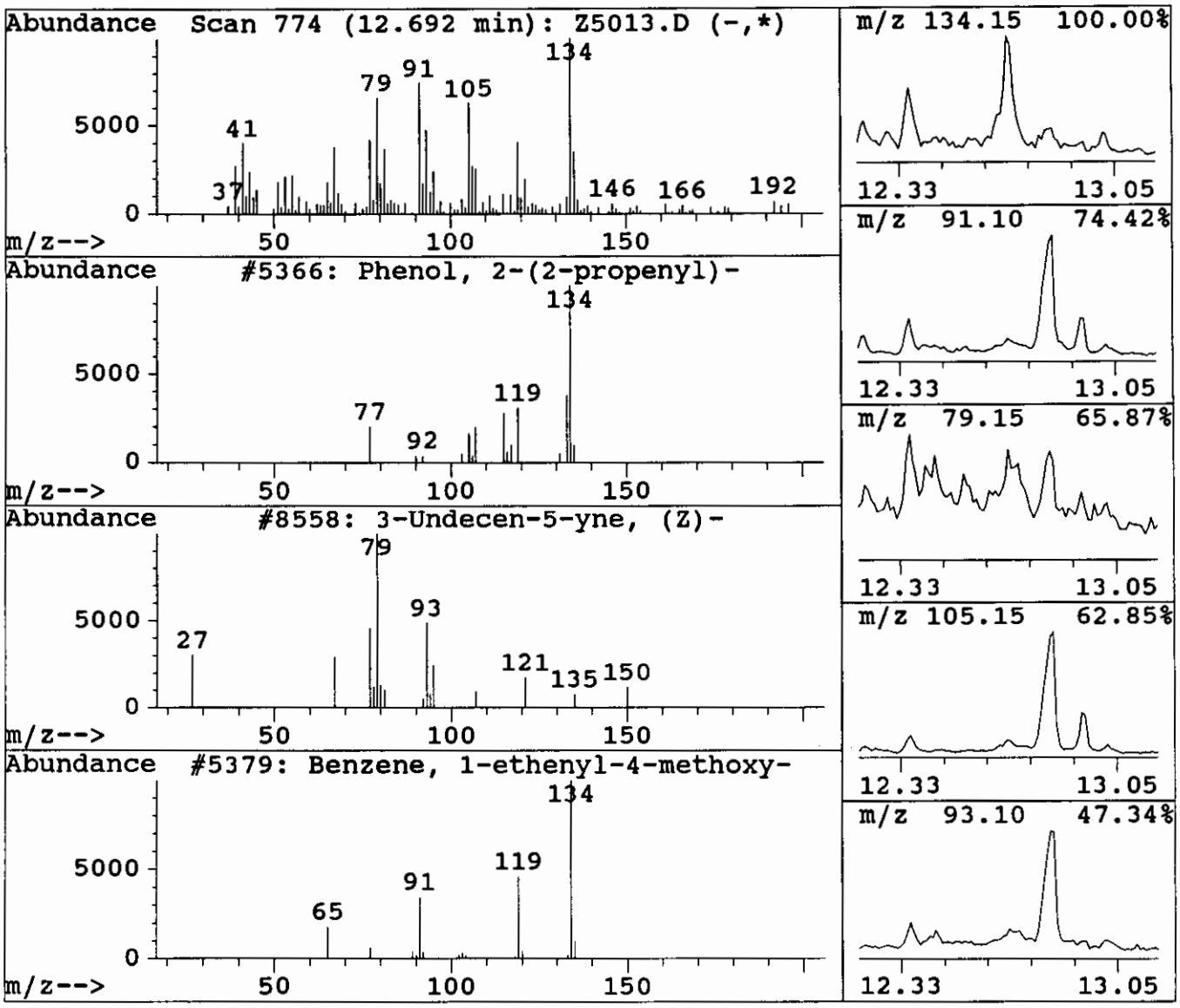
Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

Unk

R.T.	Conc	Area	Relative to ISTD	R.T.
12.69	14.86 ng/ul	1169513	CI50 Acenaphthene-d10	11.83

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	Phenol, 2-(2-propenyl)-	5366	001745-81-9	38
2	3-Undecen-5-yne, (Z)-	8558	074744-27-7	35
3	Benzene, 1-ethenyl-4-methoxy-	5379	000637-69-4	27
4	1,2,4-Triazolo[4,3-a]pyridin-3-amin	5281	000767-62-4	27
5	Dispiro[2.1.2.4]undecane, 8-methyle	11271	051567-08-9	27



100038

Library Search Compound Report

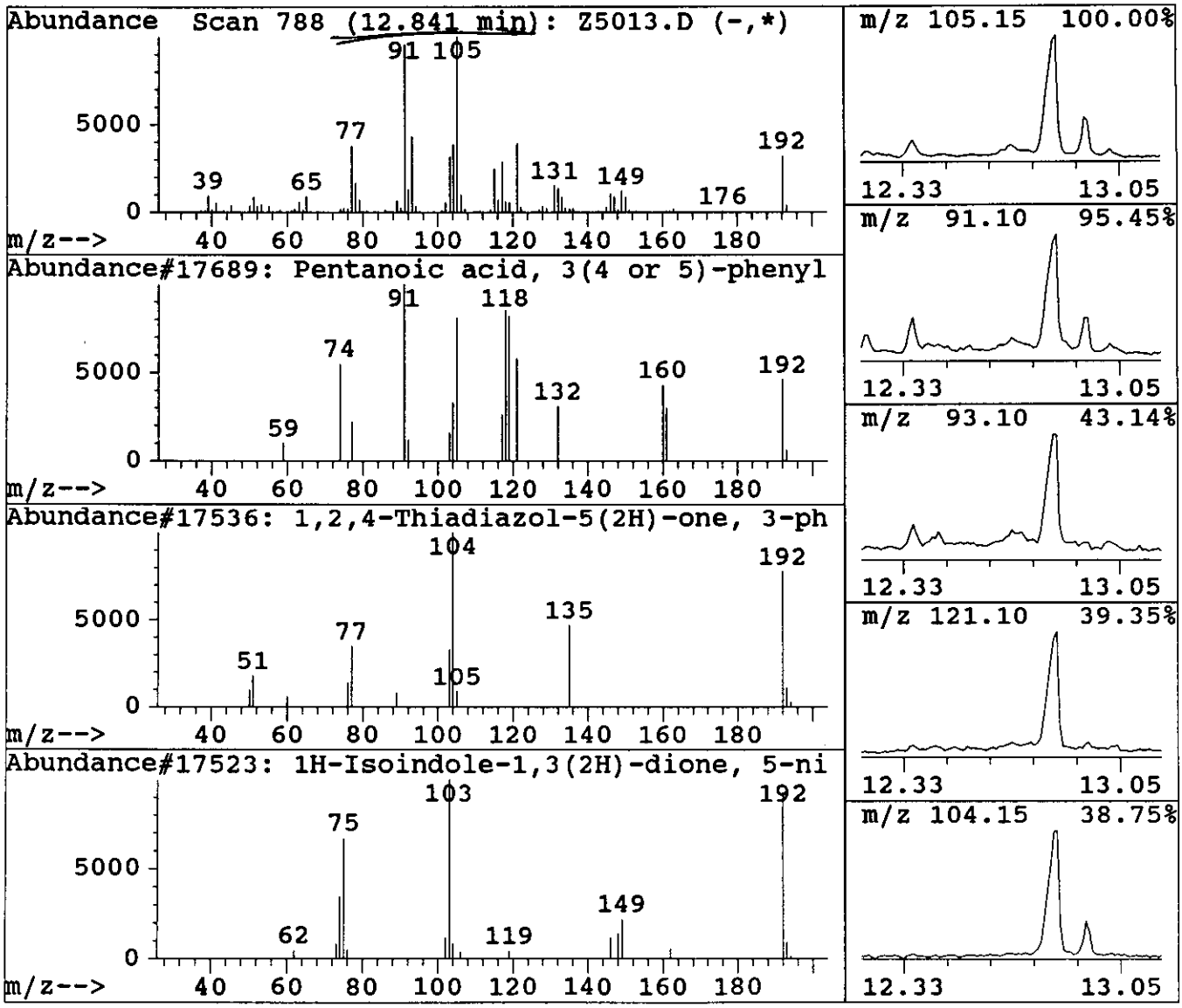
Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\METBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
~~12.69~~ 12.84	~~14.86~~ ng/ul 33.0	~~1169513~~ 2599517	CI50 Acenaphthene-d10	11.83

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	Pentanoic acid, 3(4 or 5)-phenyl-,	17689	072360-95-3	22
2	1,2,4-Thiadiazol-5(2H)-one, 3-pheny	17536	038379-75-8	22
3	1H-Isoindole-1,3(2H)-dione, 5-nitro	17523	000089-40-7	14
4	PHENYLBUTYRIC ACID PFB	41406	000000-00-0	12
5	1,3,5,7-Cyclooctatetraene	1759	000629-20-9	11



100039

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

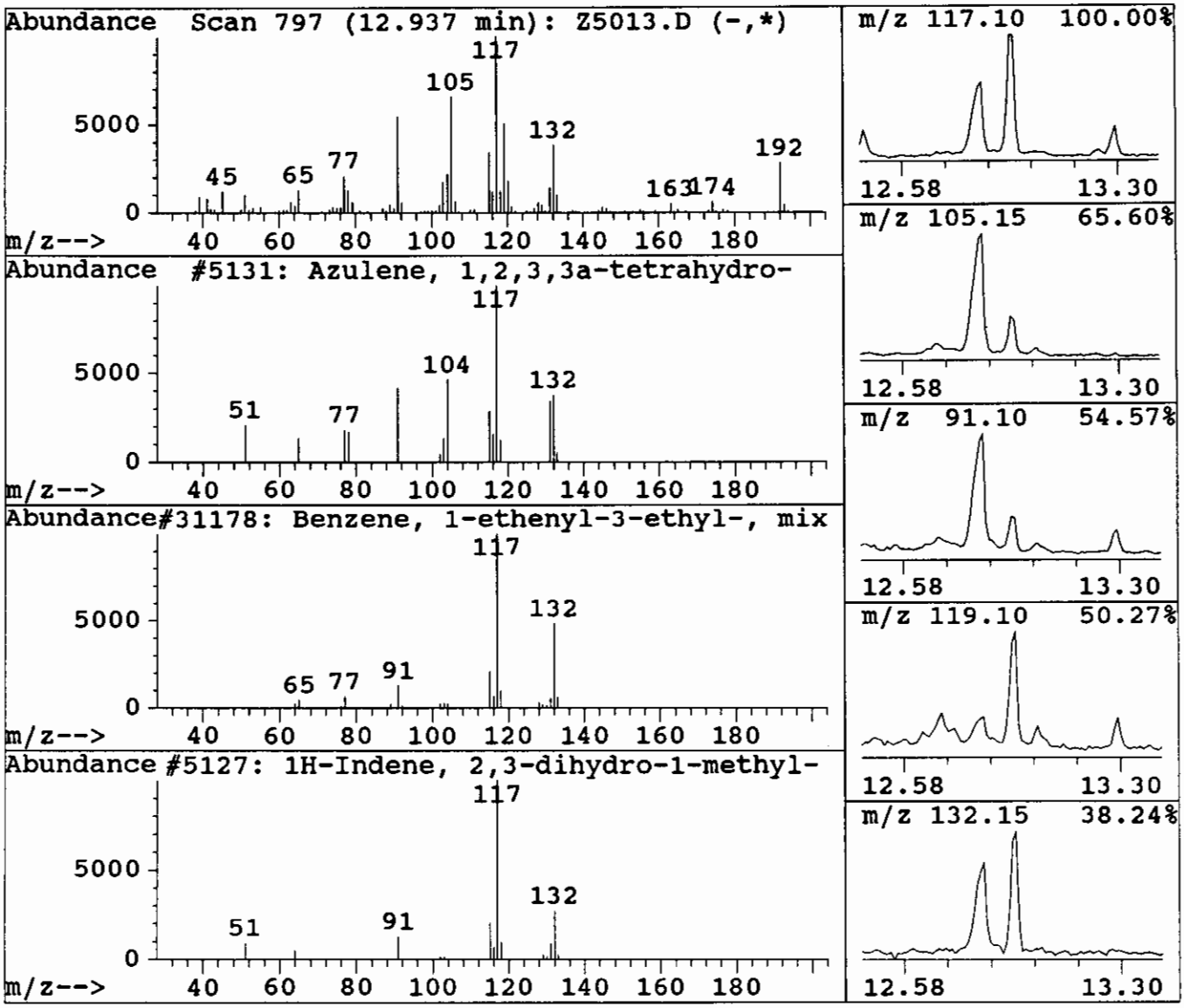
Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

Mnk

R.T.	Conc	Area	Relative to ISTD	R.T.
12.94	9.08 ng/ul	714668	CI50 Acenaphthene-d10	11.83

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	Azulene, 1,2,3,3a-tetrahydro-	5131	033877-87-1	55
2	Benzene, 1-ethenyl-3-ethyl-, mixt.	31178	055319-72-7	47
3	1H-Indene, 2,3-dihydro-1-methyl-	5127	000767-58-8	47
4	1H-Indene, 2,3-dihydro-4-methyl-	5138	000824-22-6	46
5	Benzene, 2-ethenyl-1,4-dimethyl-	5124	002039-89-6	46



100040

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

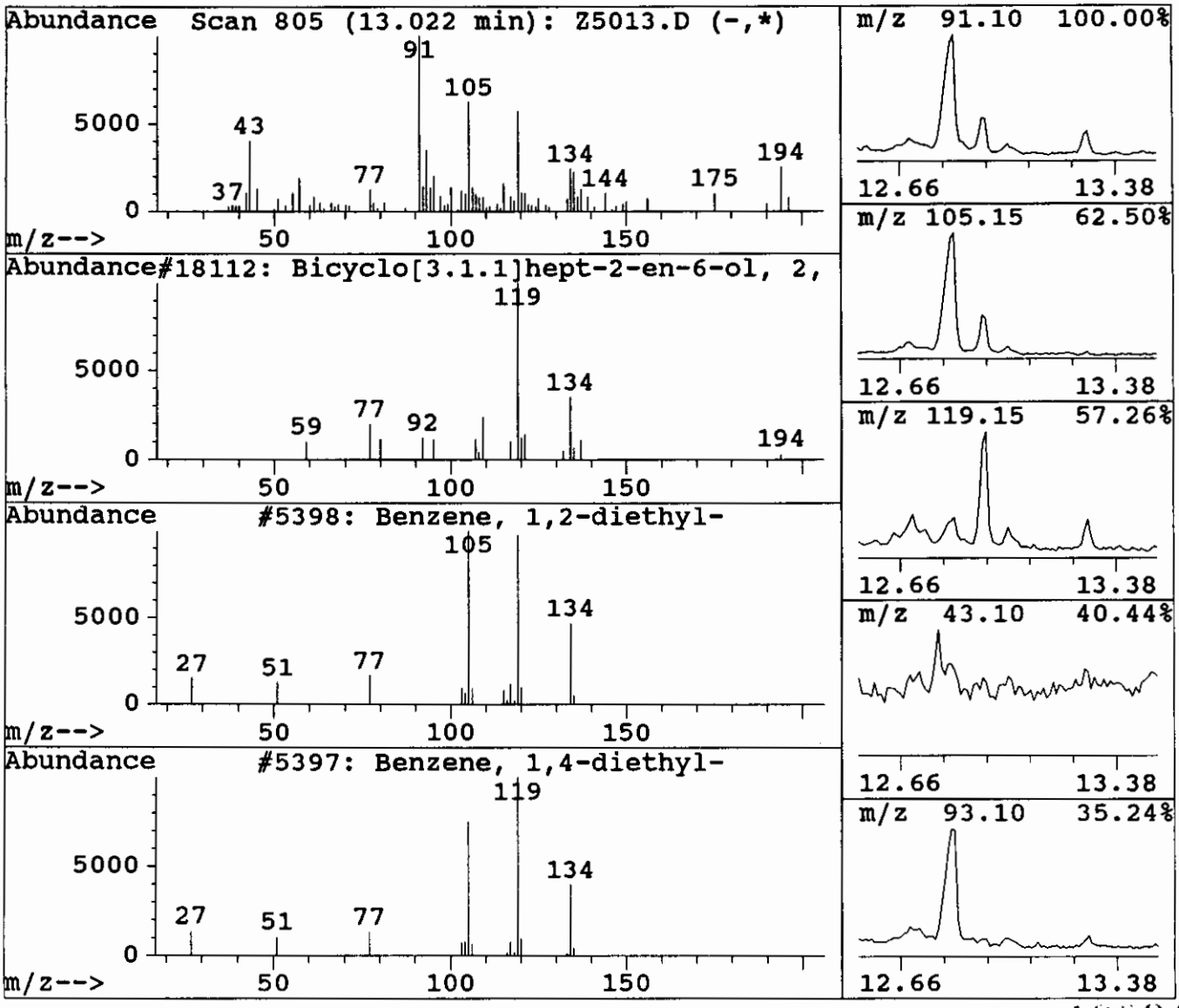
Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

link.

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
13.02	3.70 ng/ul	291567	CI50 Acenaphthene-d10	11.83

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	Bicyclo[3.1.1]hept-2-en-6-ol, 2,7,7	18112	050764-55-1	32
2	Benzene, 1,2-diethyl-	5398	000135-01-3	30
3	Benzene, 1,4-diethyl-	5397	000105-05-5	30
4	Benzene, 1,3-diethyl-	5400	000141-93-5	30
5	Azocine, 2-methoxy-3,5,6,8-tetramet	17470	027153-51-1	27



100041

Library Search Compound Report

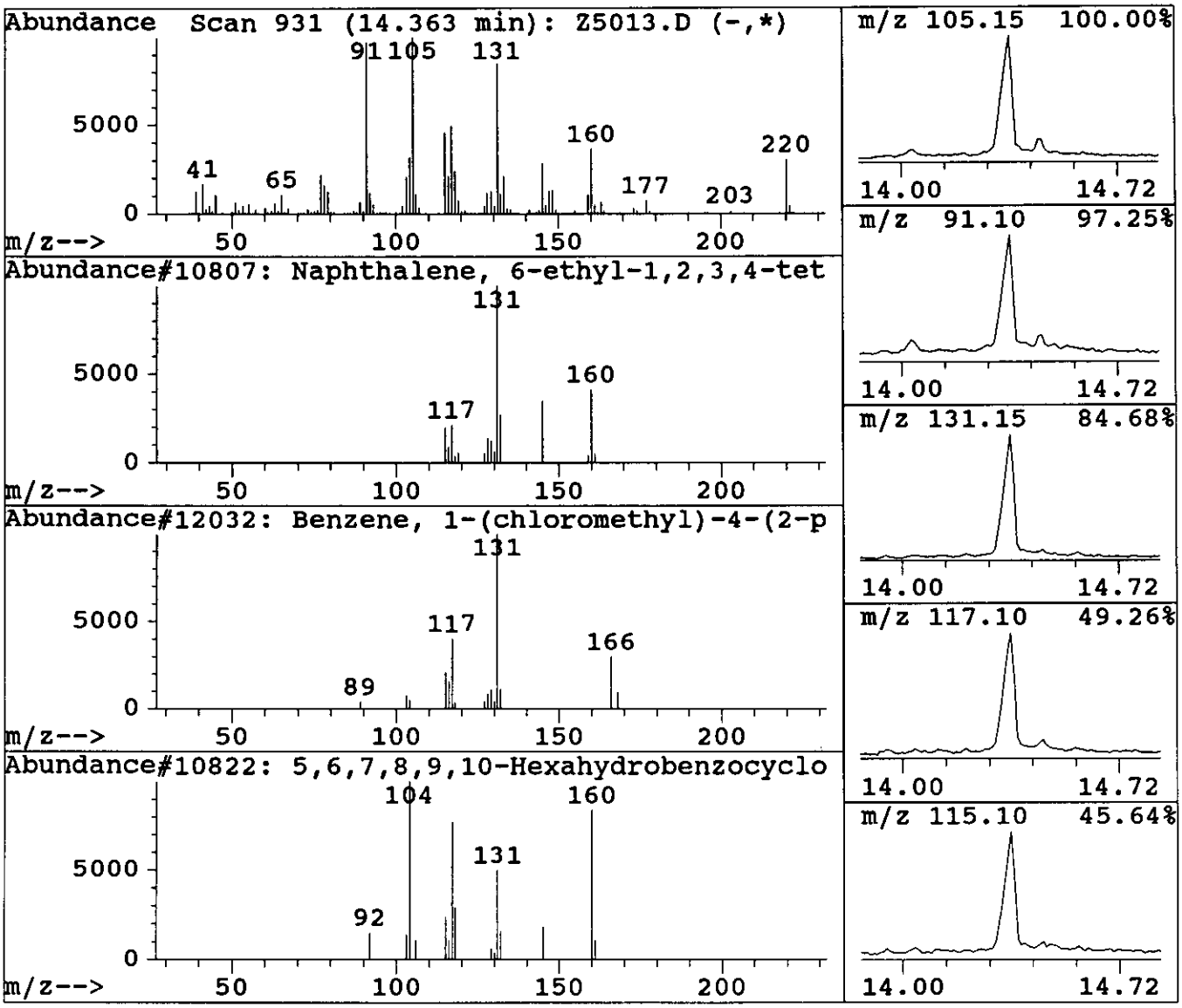
Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
14.36	39.70 ng/ul	3244466	CI60 Phenanthrene-d10	14.50

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	Naphthalene, 6-ethyl-1,2,3,4-tetrah	10807	022531-20-0	50
2	Benzene, 1-(chloromethyl)-4-(2-prop	12032	036875-10-2	38
3	5,6,7,8,9,10-Hexahydrobenzocyclooct	10822	001076-69-3	32
4	Benzene, 2-ethenyl-1,3,5-trimethyl-	7790	000769-25-5	32
5	1,3,5,7-Cyclooctatetraene, 1-butyl-	10781	013402-37-4	30



100042

Library Search Compound Report

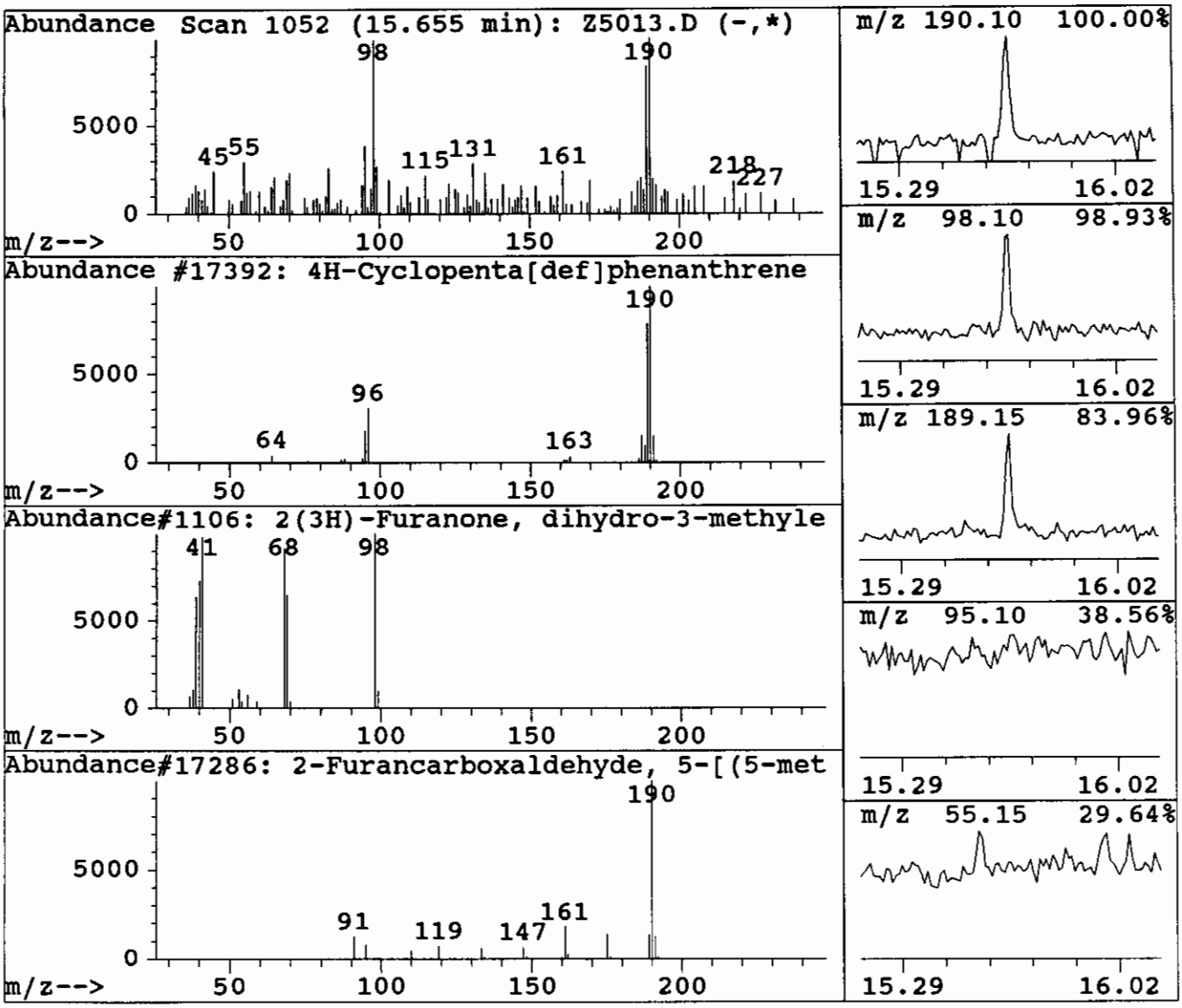
Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
15.66	3.78 ng/ul	309333	CI60 Phenanthrene-d10	14.50

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	4H-Cyclopenta[def]phenanthrene	17392	000203-64-5	38
2	2(3H)-Furanone, dihydro-3-methylene	1106	000547-65-9	14
3	2-Furancarboxaldehyde, 5-[(5-methyl	17286	034995-74-9	11
4	Naphtho[1,8-cd]-1,2-dithiole	17247	000209-22-3	11
5	Phenol, 2-cyclohexyl-4-methyl-	17353	001596-09-4	11



100043

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

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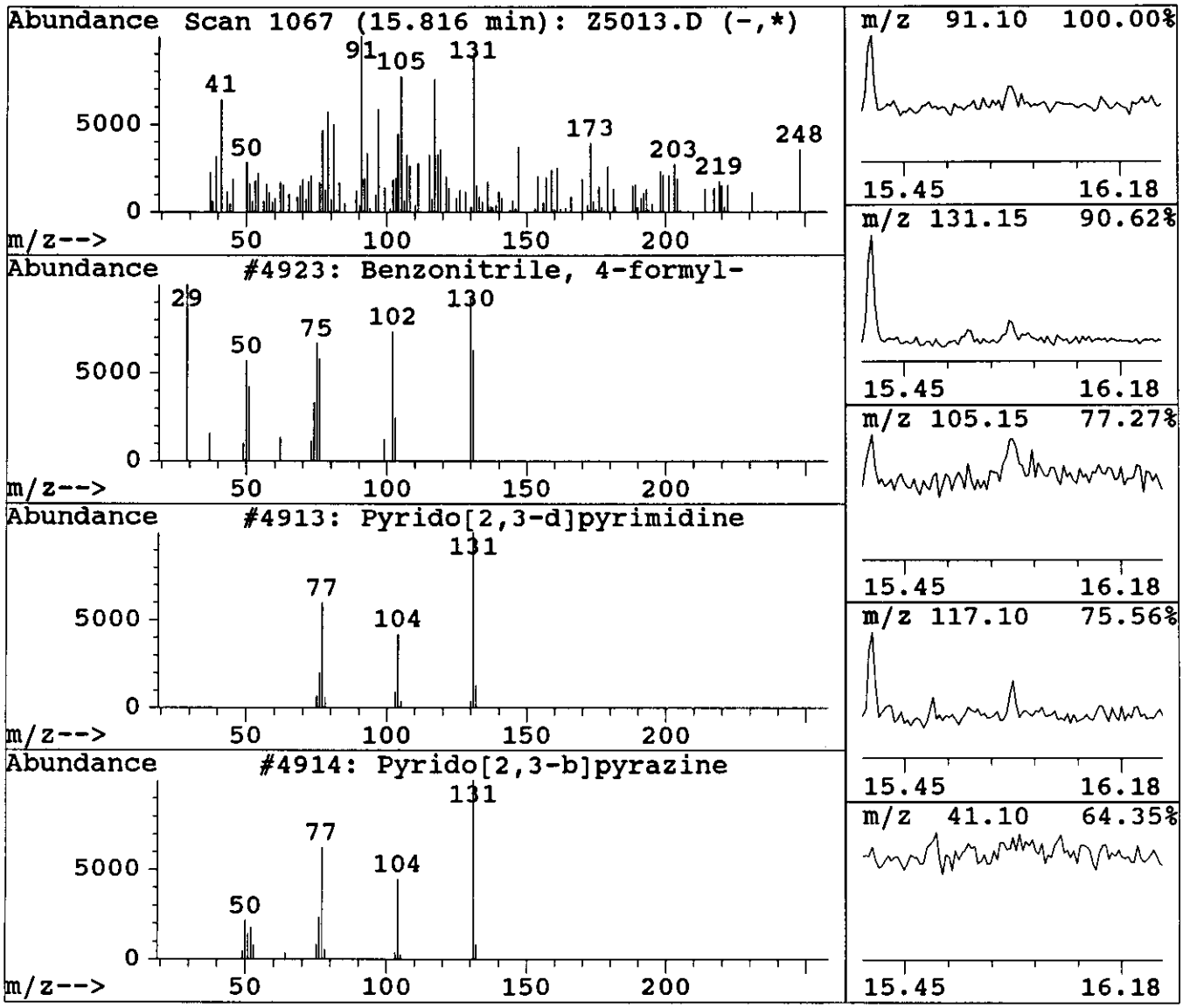
R.T.	Conc	Area	Relative to ISTD	R.T.
15.82	4.03 ng/ul	329484	CI60 Phenanthrene-d10	14.50

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	Benzonitrile, 4-formyl-	4923	000105-07-7	35
2	Pyrido[2,3-d]pyrimidine	4913	000254-61-5	25
3	Pyrido[2,3-b]pyrazine	4914	000322-46-3	14
4	1H-Indene-1,2(3H)-dione, 3,3-dimeth	13932	020651-88-1	12
5	2-Butanone, 4-(ethenylphenyl)-	13979	072361-18-3	12



100044

Library Search Compound Report

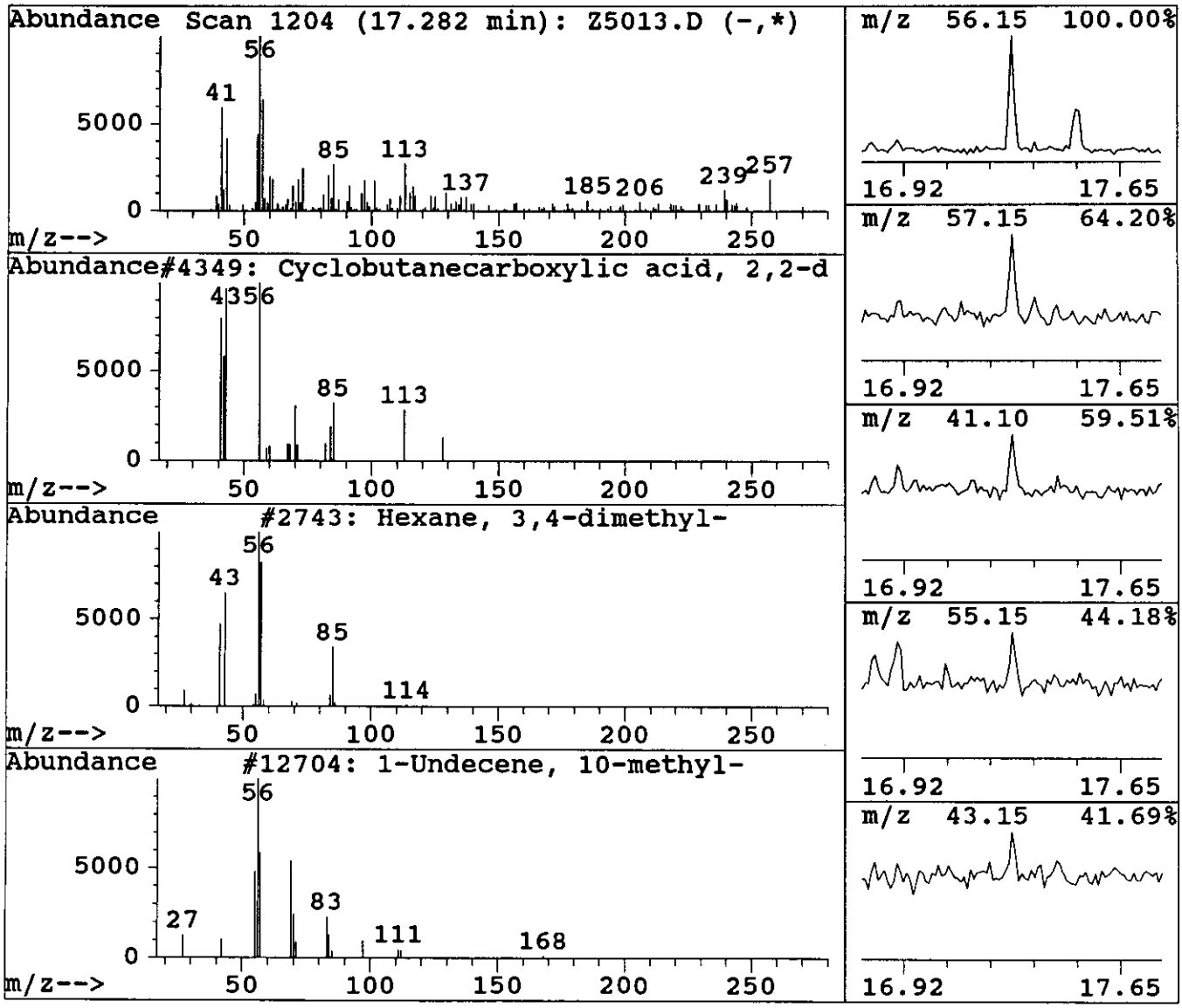
Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
17.28	6.00 ng/ul	281831	CI70 Chrysene-d12	19.38

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	Cyclobutanecarboxylic acid, 2,2-dim	4349	042836-66-8	40
2	Hexane, 3,4-dimethyl-	2743	000583-48-2	38
3	1-Undecene, 10-methyl-	12704	022370-55-4	30
4	Undecane, 5-methylene-	12676	005698-48-6	27
5	1-Hexene, 2-methyl-	1232	006094-02-6	27



100045

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

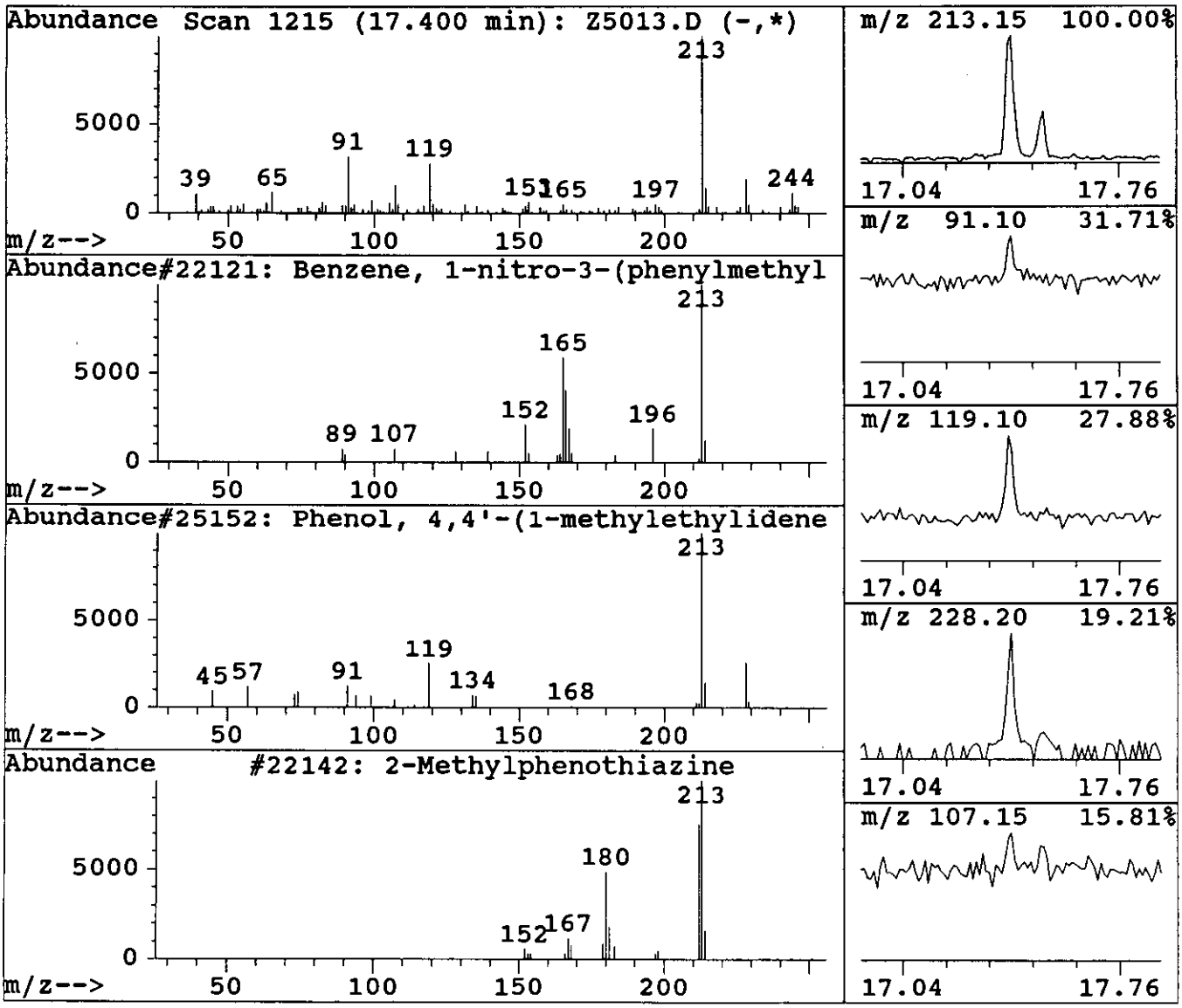
Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

link

R.T.	Conc	Area	Relative to ISTD	R.T.
17.40	5.13 ng/ul	240975	CI70 Chrysene-d12	19.38

Hit# of 11	Tentative ID	Ref#	CAS#	Qual
1	Benzene, 1-nitro-3-(phenylmethyl)-	22121	005840-41-5	43
2	Phenol, 4,4'-(1-methylethylidene)bi	25152	000080-05-7	40
3	2-Methylphenothiazine	22142	005828-51-3	40
4	As-Indacen-1(2H)-one, 3,6,7,8-tetra	25176	055591-18-9	38
5	Benzene, 1-nitro-4-(phenylmethyl)-	22132	001817-77-2	37



100046

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

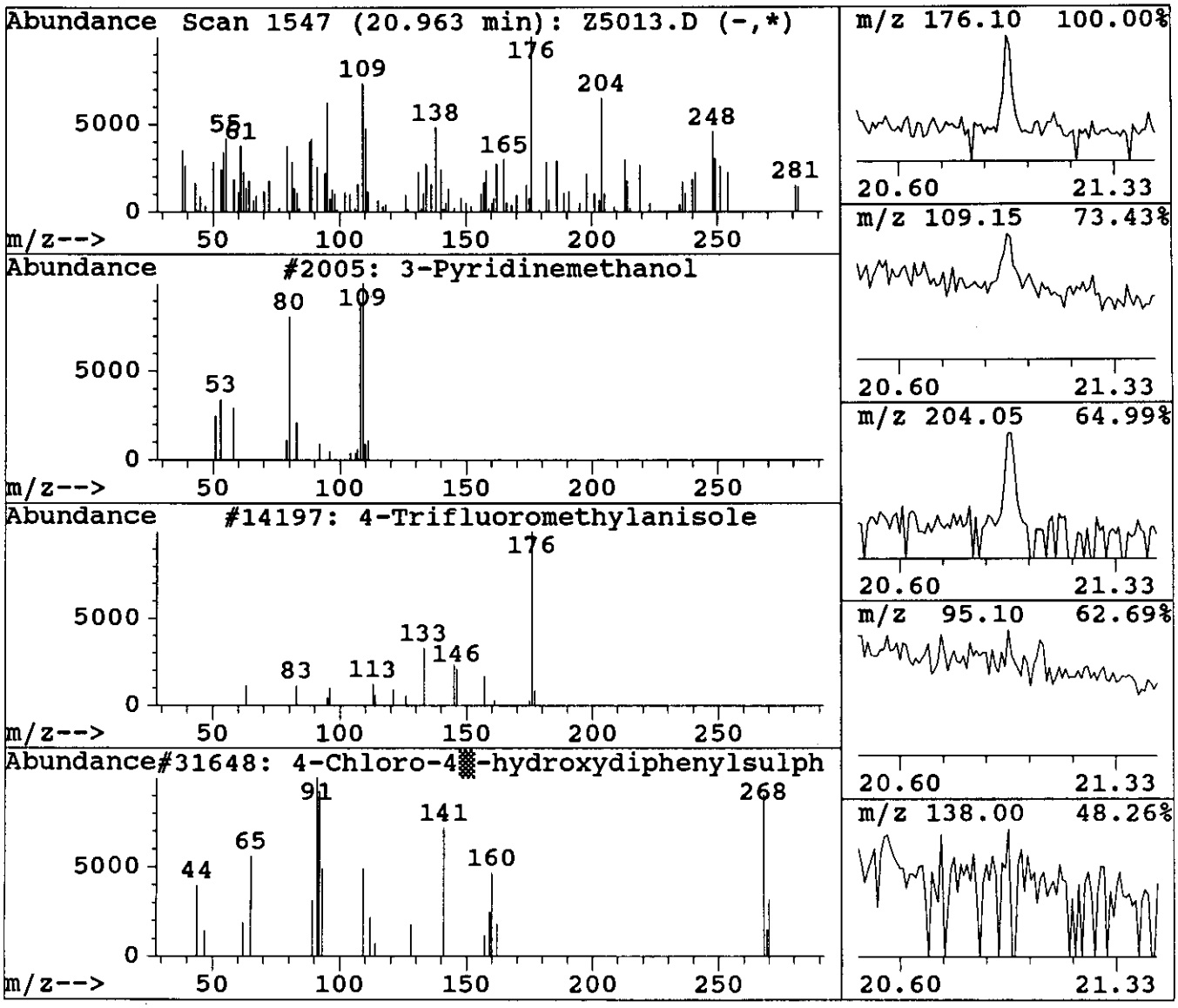
Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

Unk

R.T.	Conc	Area	Relative to ISTD	R.T.
20.96	4.09 ng/ul	123708	CI75 Perylene-d12	22.27

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	3-Pyridinemethanol	2005	000100-55-0	11
2	4-Trifluoromethylanisole	14197	000402-52-8	10
3	4-Chloro-4[illegible]-hydroxydiphenylsulphone	31648	007402-62-2	10
4	Benzeneethanol, 3-fluoro-	6369	052059-53-7	10
5	1H-Imidazole, 2-ethyl-4-methyl-	2065	000931-36-2	10



100047

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5013.D
Acq Time : 13 Nov 93 4:08 pm
Sample : MW-11(S),L,W,12311,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA)

Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

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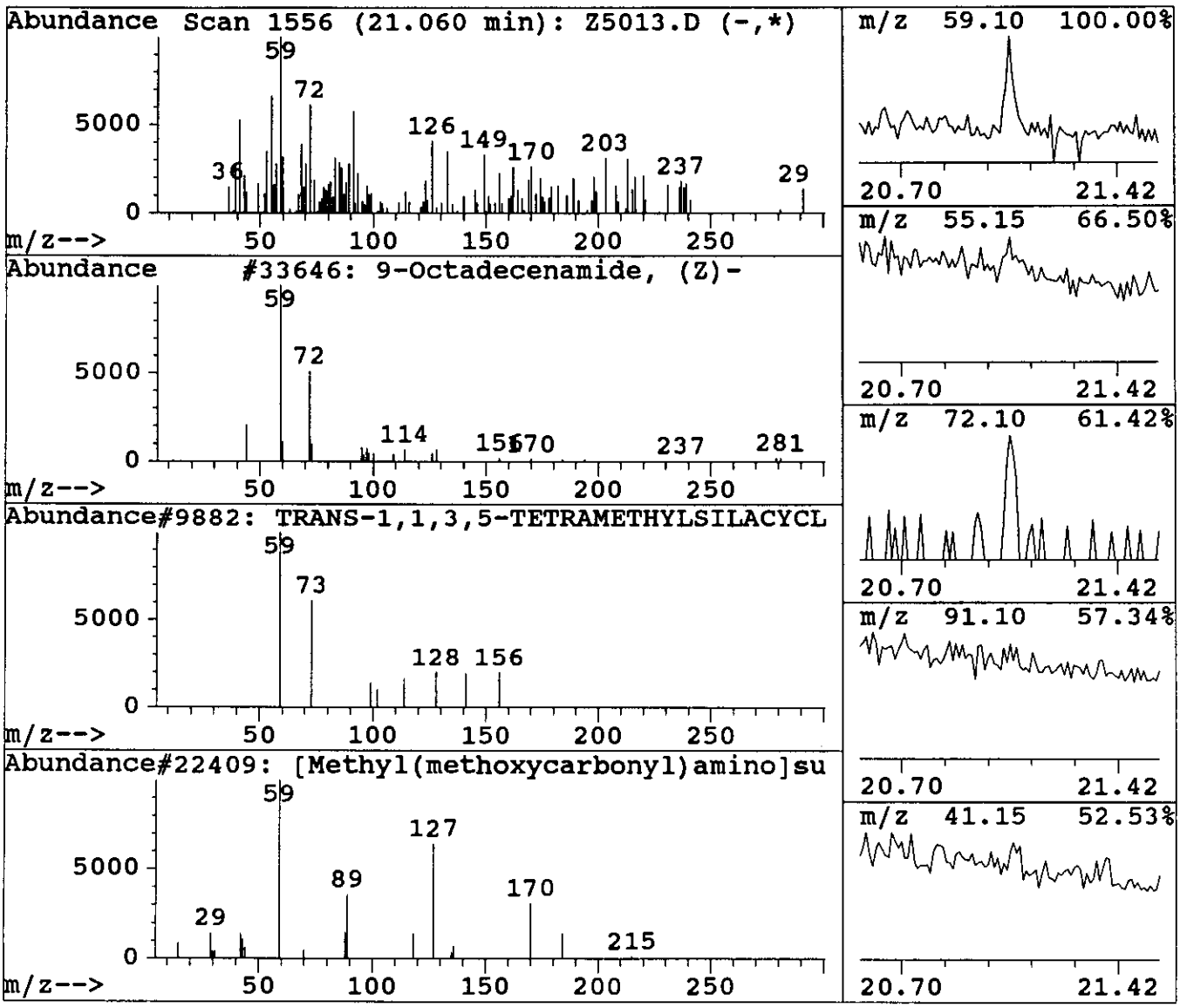
R.T.	Conc	Area	Relative to ISTD	R.T.
21.06	4.60 ng/ul	139170	CI75 Perylene-d12	22.27

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	9-Octadecenamide, (Z)-	33646	000301-02-0	35
2	TRANS-1,1,3,5-TETRAMETHYLSILACYCLOH	9882	000000-00-0	22
3	[Methyl(methoxycarbonyl)amino]sulph	22409	090598-21-3	12
4	Cyclopropanecarboxylic acid, 2,2-di	15468	001447-13-8	10
5	Anhydro-.beta.-rotunol	22720	034206-82-1	10



100048

TIC: Z5013.D

MW-11(S),L,W,12311,B,2UL

Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	4.581	rVB	0.105	439410	4.570	4.675
2	4.748	rVB	0.189	2616290	4.675	4.864
3	4.927	rBV	0.168	457512	4.864	5.032
4	5.524	rBV	0.105	234896	5.472	5.576
5	6.048	rBV	0.210	2848096	5.953	6.163
6	6.226	rVV	0.126	2923706	6.163	6.290
7	6.521	rVB	0.105	1324513	6.479	6.584
8	6.720	rBV	0.137	191812	6.626	6.762
9	6.825	rBV	0.147	2399084	6.762	6.910
10	7.466	rBV	0.200	2264879	7.382	7.582
11	7.718	rVB	0.137	158547	7.655	7.792
12	8.255	rBV	0.126	182001	8.202	8.328
13	8.644	rBV	0.253	2256977	8.539	8.792
14	9.771	rBV	0.148	211832	9.676	9.824
15	10.098	rBV	0.137	391850	10.024	10.161
16	10.362	rBV	0.116	364744	10.288	10.404
17	10.637	rBV	0.201	3051798	10.510	10.711
18	11.176	rVB	0.138	469560	11.113	11.250
19	11.695	rVB	0.085	681316	11.653	11.737
20	11.833	rBV	0.117	1574054	11.737	11.854
21	11.886	rVV	0.064	452896	11.854	11.918
22	12.119	rBV	0.096	321979	12.045	12.140
23	12.215	rVV	0.117	492288	12.140	12.257
24	12.289	rVV	0.064	200519	12.257	12.321
25	12.363	rVV	0.074	620639	12.321	12.395
26	12.448	rVV	0.117	783424	12.395	12.512
27	12.544	rVV	0.096	382571	12.512	12.607
8	12.692	rVV	0.159	1169513	12.607	12.767
29	12.841	rVV	0.138	2599517	12.767	12.905
30	12.937	rVV	0.074	714668	12.905	12.980
31	13.022	rVB	0.106	291567	12.980	13.086
32	13.288	rBV	0.171	2490496	13.192	13.363
33	13.948	rBV	0.085	233239	13.905	13.990
34	14.044	rBV	0.085	278394	13.990	14.076
35	14.363	rBV	0.203	3244466	14.235	14.438
36	14.502	rVB	0.171	1634532	14.438	14.609
37	15.345	rVV	0.085	277350	15.292	15.377
38	15.548	rBV	0.107	149948	15.484	15.591
39	15.655	rBV	0.150	309333	15.591	15.741
40	15.816	rVV	0.160	329484	15.762	15.922
41	15.976	rVV	0.064	150061	15.944	16.008
42	16.629	rVV	0.107	215357	16.543	16.650
43	16.821	rVV	0.075	162875	16.779	16.854
44	16.897	rVV	0.075	165765	16.854	16.929
45	17.282	rBV	0.150	281831	17.186	17.336
46	17.400	rBV	0.107	240975	17.336	17.443
47	17.508	rVB	0.129	2179396	17.443	17.572
48	19.376	rVB	0.118	938707	19.322	19.440
49	20.428	rVB	0.140	159178	20.406	20.546
50	22.255	rVB	0.128	604725	22.191	22.319

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-12(S)

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12305

Sample wt/vol: 1030 (g/mL) ML Lab File ID: Z5005

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/13/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	3- and 4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	10	U

100050

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-12(S)

I-` Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12305

Sample wt/vol: 1030 (g/mL) ML Lab File ID: Z5005

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/13/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
100-02-7	4-Nitrophenol	24	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-ethylhexyl)phthalate	10	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-12(S)

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12305

Sample wt/vol: 1030 (g/mL) ML Lab File ID: Z5005

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/13/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

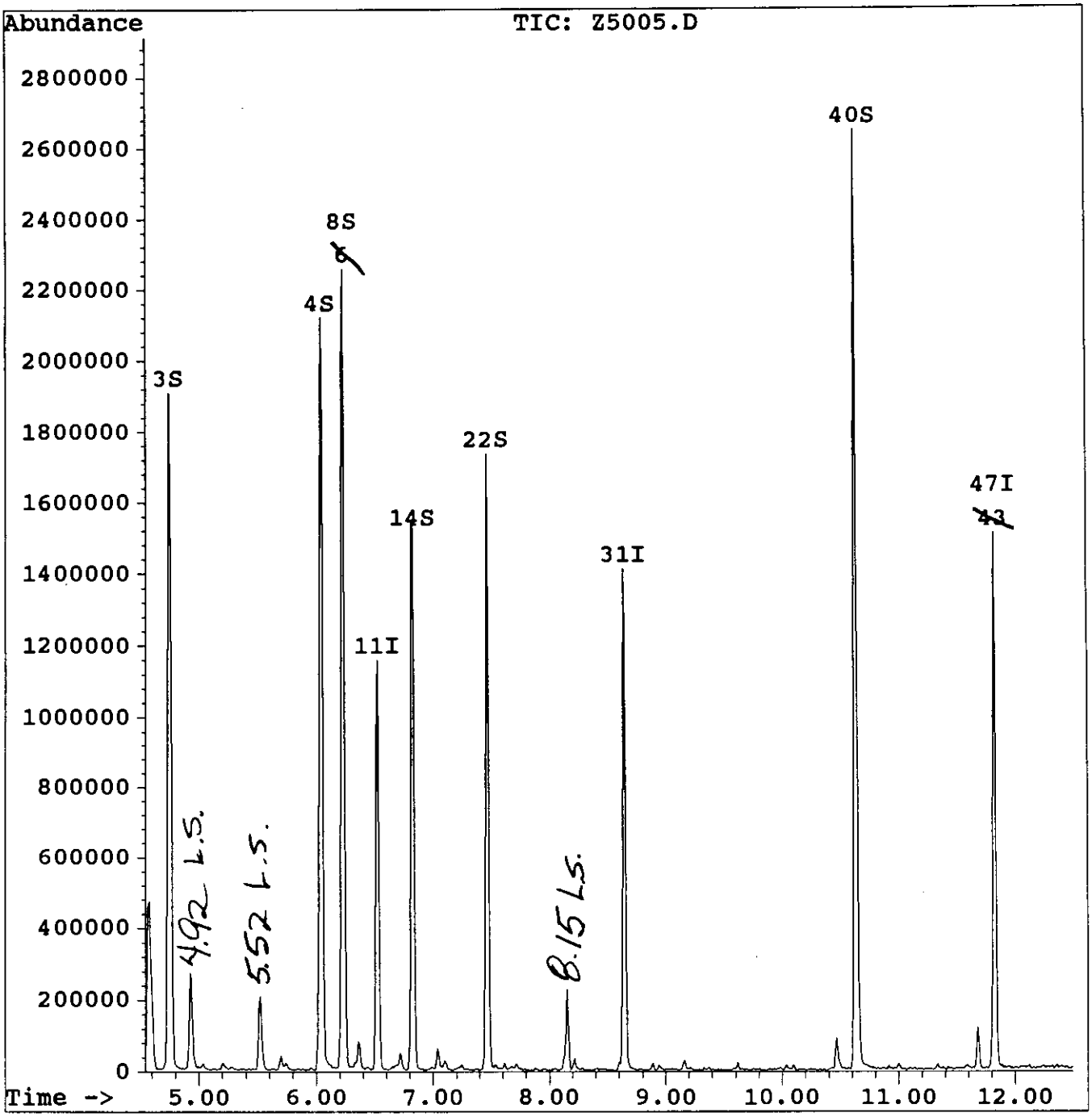
Number TICs found: 8

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.58	7	BJN
2.	UNKNOWN	4.92	5	BJN
3.	UNKNOWN	5.52	4	BJN
4.	UNKNOWN	8.15	3	BJN
5.	UNKNOWN	17.28	3	JN
6.	UNKNOWN	18.59	2	JN
7.	UNKNOWN HYDROCARBON	21.09	3	JN
8.	UNKNOWN HYDROCARBON	21.83	2	JN

QUANT REPORT

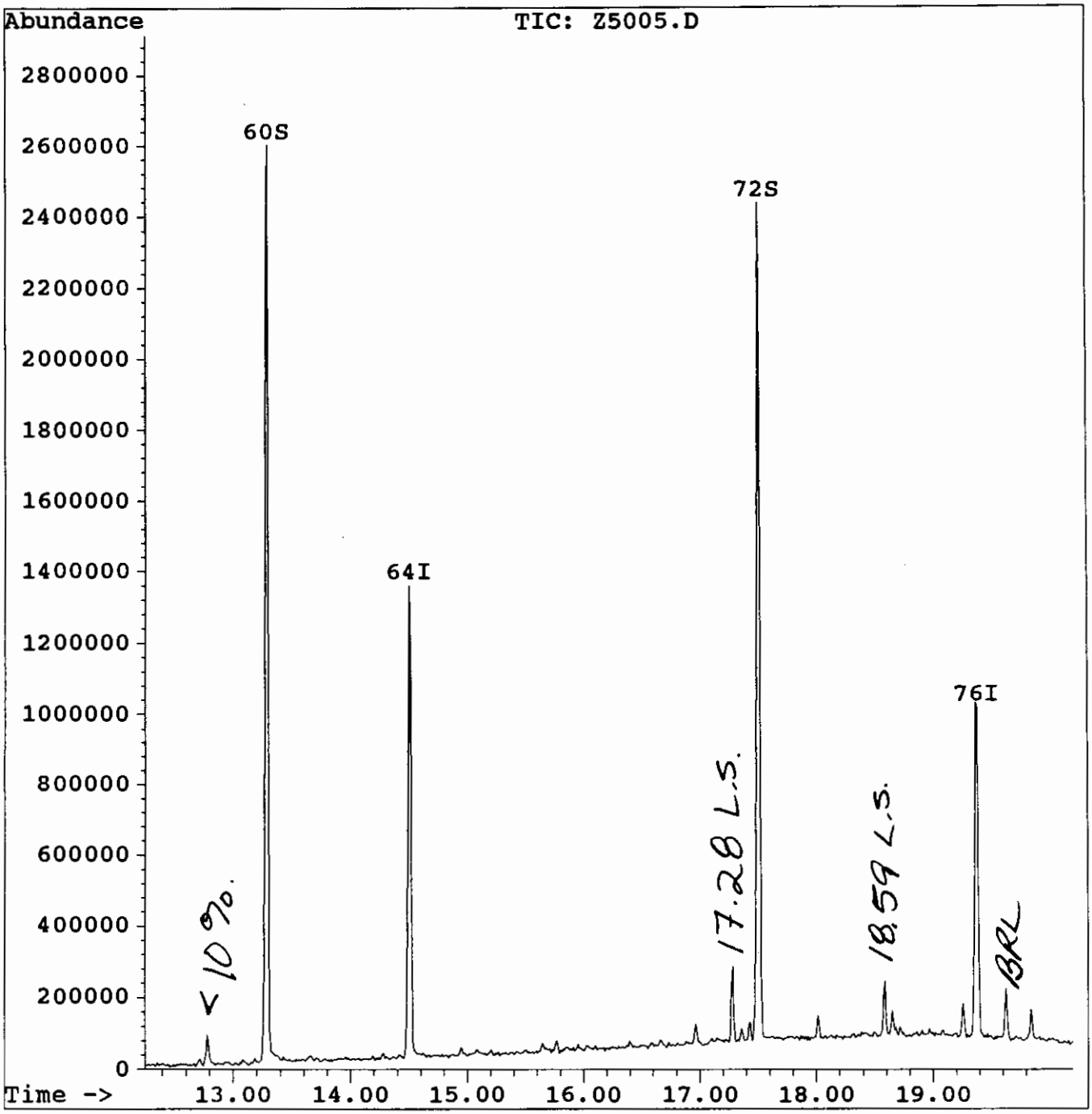
Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 11:01 am
Data File: C:\CHEMPC\DATA\Z111393\Z5005.D
Name: MW-12(S),L,W,12305,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Sat Nov 13 12:36:26 1993
Quantitated using Single Level Calibration Z5004.D



100053

QUANT REPORT

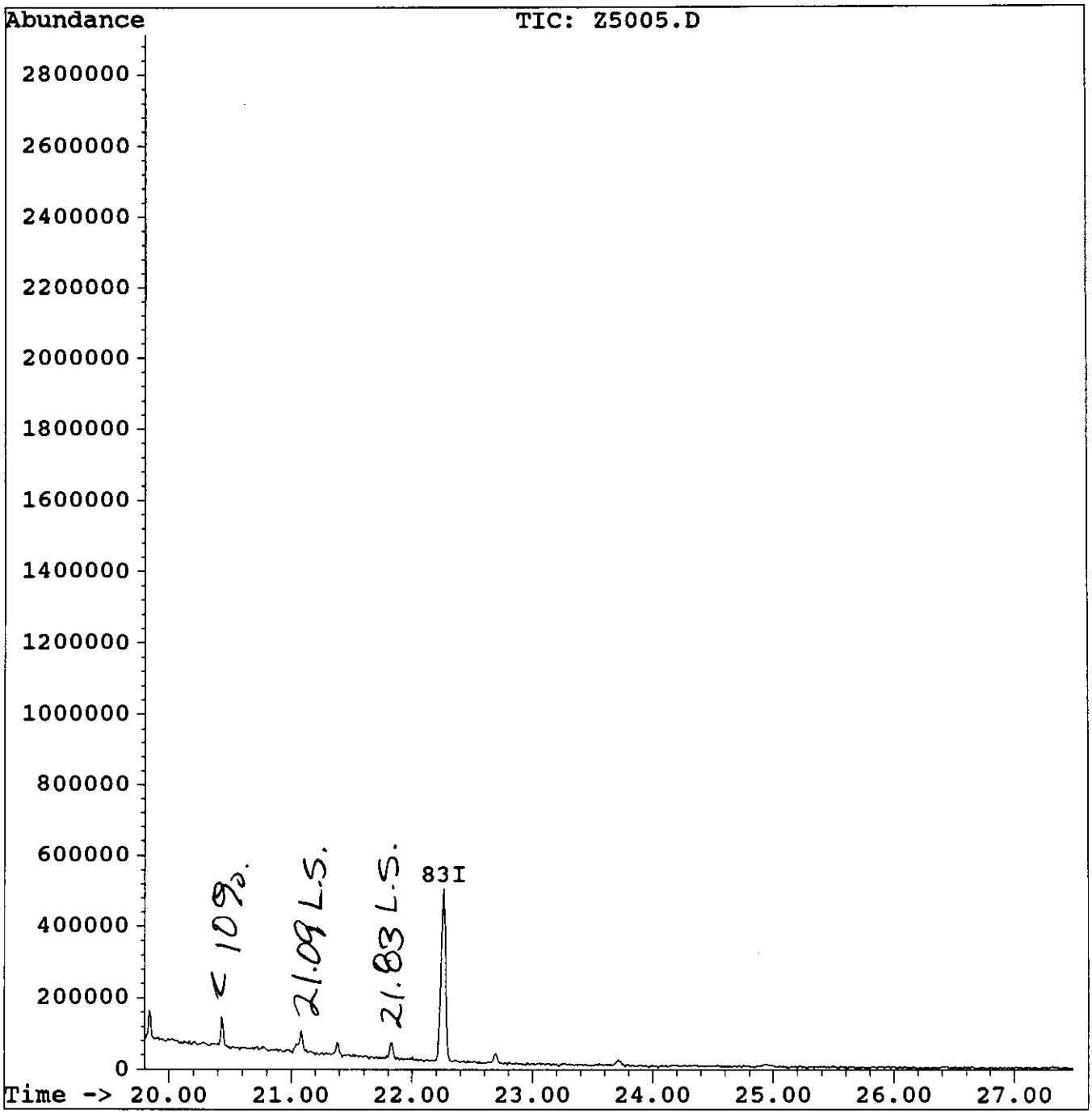
Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 11:01 am
Data File: C:\CHEMPC\DATA\Z111393\Z5005.D
Name: MW-12(S),L,W,12305,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Sat Nov 13 12:36:26 1993
Quantitated using Single Level Calibration Z5004.D



100054

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 11:01 am
Data File: C:\CHEMPC\DATA\Z111393\Z5005.D
Name: MW-12(S),L,W,12305,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Sat Nov 13 12:36:26 1993
Quantitated using Single Level Calibration Z5004.D



100055

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 11:01 am
Data File: C:\CHEMPC\DATA\Z111393\Z5005.D
Name: MW-12(S),L,W,12305,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Sat Nov 13 11:01:43 1993
Quantitated using Single Level Calibration Z5004.D

Internal Standards

Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
11) CI30 1,4-Dichlorobenzene-d	6.52	152	265594	20.00	ng/ul	0.01
31) CI40 Naphthalene-d8	8.64	136	965169	20.00	ng/ul	-0.01
47) CI50 Acenaphthene-d10	11.83	164	492858	20.00	ng/ul	-0.01
64) CI60 Phenanthrene-d10	14.50	188	753091	20.00	ng/ul	-0.01
76) CI70 Chrysene-d12	19.38	240	517214	20.00	ng/ul	-0.00
83) CI75 Perylene-d12	22.26	264	413335	20.00	ng/ul	-0.00

System Monitoring Compounds

						%Recovery
3) CS50 2-Fluorophenol	4.75	112	935676	41.23	ng/ul	54.97%
4) CS45 Phenol-d5	6.04	99	1280896	51.22	ng/ul	68.30%
8) CS70 2-Chlorophenol d4	6.23	132	957206	59.50	ng/ul	79.33%
14) CS75 1,2-Dichlorobenzene-d	6.83	152	362753	29.88	ng/ul	59.75%
22) CS20 Nitrobenzene-d5	7.47	82	896116	34.81	ng/ul	69.62%
40) CS25 2-Fluorobiphenyl	10.63	172	1161123	29.81	ng/ul	59.62%
60) CS55 2,4,6-Tribromophenol	13.29	330	478392	66.51	ng/ul	88.69%
72) CS30 Terphenyl-d14	17.51	244	1153152	37.09	ng/ul	74.18%

Target Compounds

						ISTD#
6) C320 Aniline	6.23	66	318033	~~38.29 ng/ul~~	NC	002#
43) C535 Dimethylphthalate	11.83	163	106984	~~2.58 ng/ul~~	BRL	003#
78) C741 bis(2-Ethylhexyl)phth	19.63	149	54230	~~1.69 ng/ul~~	BRL	005

Compliant Run
SJ
11/13/93.

Ready for Forms.

(#) = qualifier out of range

100056

QACHK report

ata file C:\CHEMPC\DATA\Z111393\Z5005.D

Standard File: C:\CHEMPC\DATA\Z111393\Z5004.D 13 Nov 93 10:21 am

ISTD	Compound	Std Area	Samp Area	% rec
CI30	1,4-Dichlorobenzene-d4	304446	265594	87.2
CI40	Naphthalene-d8	1052141	965169	91.7
CI50	Acenaphthene-d10	490800	492858	100.4
CI60	Phenanthrene-d10	796047	753091	94.6
CI70	Chrysene-d12	563965	517214	91.7
CI75	Perylene-d12	542263	413335	76.2

	Surrogate Compound	Surr Conc	Surr Amt	%rec	Water limits
CS50	2-Fluorophenol	41.23	75.00	55.0	21-100
CS45	Phenol-d5	51.22	75.00	68.3	10- 94
CS70	2-Chlorophenol d4	59.50	75.00	79.3	33-110
CS75	1,2-Dichlorobenzene-d4	29.88	50.00	59.8	16-110
CS20	Nitrobenzene-d5	34.81	50.00	69.6	35-114
CS25	2-Fluorobiphenyl	29.81	50.00	59.6	43-116
CS55	2,4,6-Tribromophenol	66.51	75.00	88.7	10-123
CS30	Terphenyl-d14	37.09	50.00	74.2	33-141

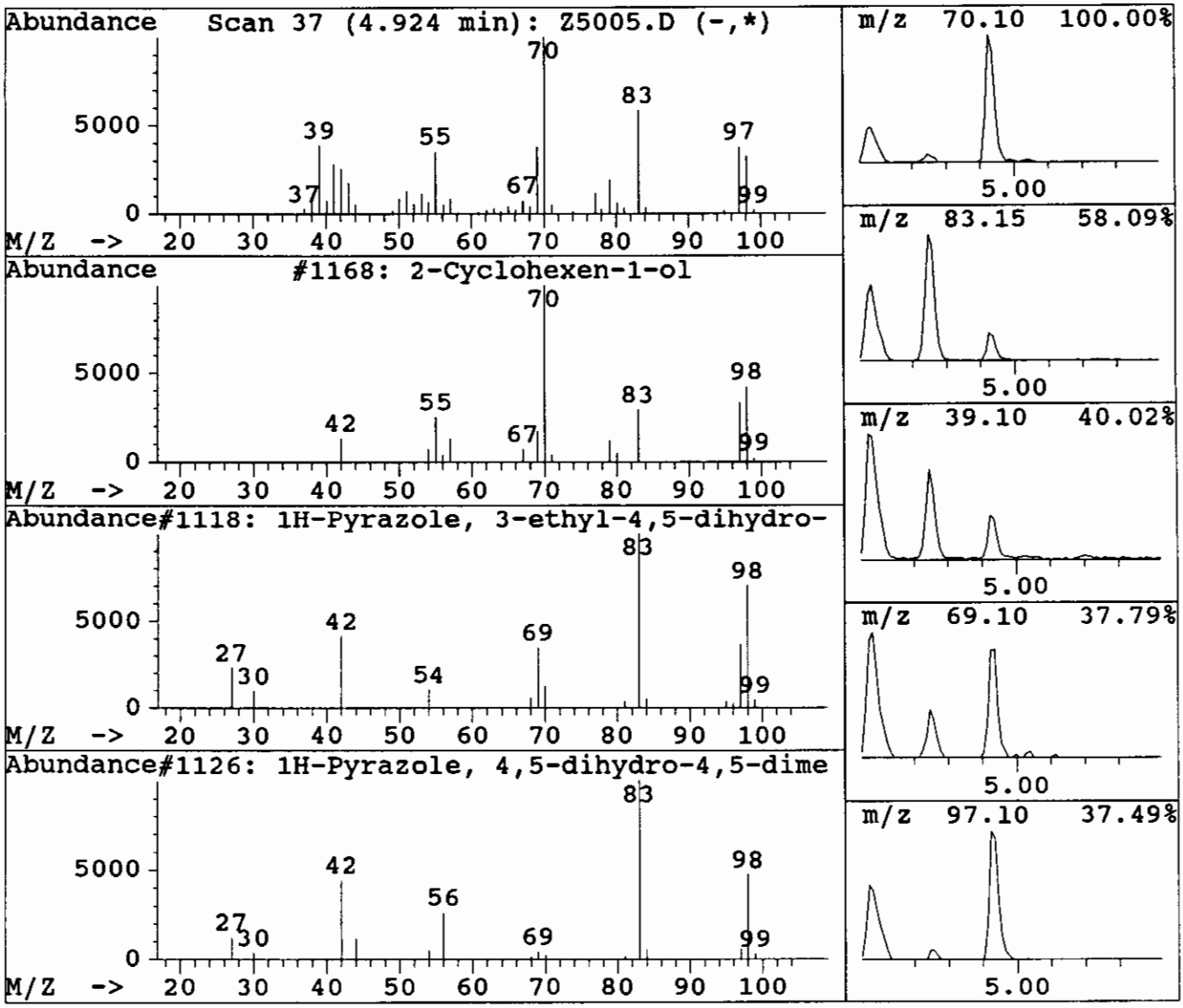
Tentatively Identified Compound (LSC)

Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 11:01 am
Data File: C:\CHEMPC\DATA\Z111393\Z5005.D
Name: MW-12(S),L,W,12305,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
4.92	5.37 ng/ul	523058	CI30 1,4-Dichlorobenzene-	6.52

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	2-Cyclohexen-1-ol	1168	000822-67-3	58
2	1H-Pyrazole, 3-ethyl-4,5-dihydro-	1118	005920-29-6	25
3	1H-Pyrazole, 4,5-dihydro-4,5-dimeth	1126	028019-94-5	14
4	2-Heptene	1217	000592-77-8	14
5	1-Butene, 2-ethyl-3-methyl-	1243	007357-93-9	12



100058

Tentatively Identified Compound (LSC)

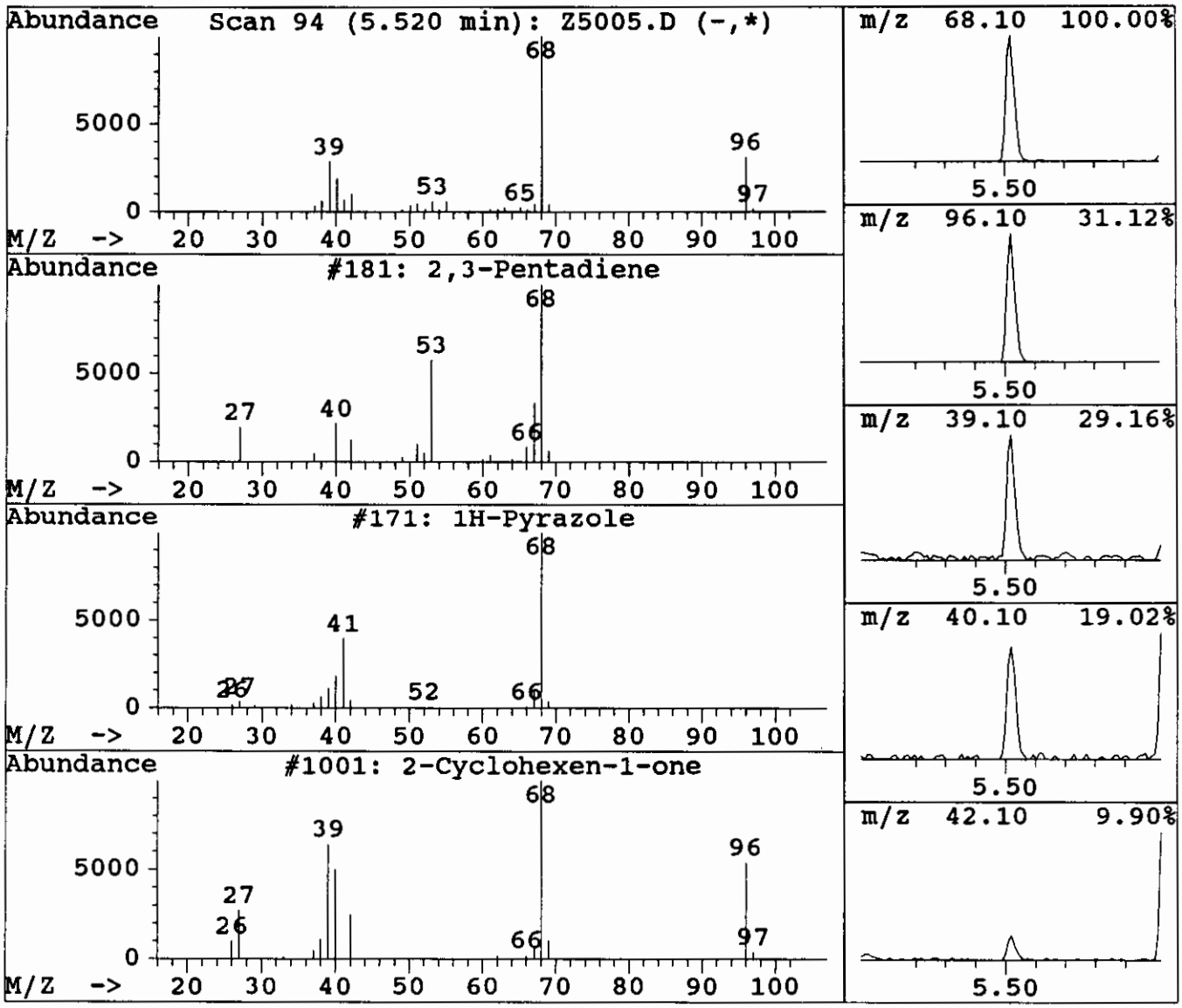
Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 11:01 am
Data File: C:\CHEMPC\DATA\Z111393\Z5005.D
Name: MW-12(S),L,W,12305,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Unk (B)

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
5.52	4.15 ng/ul	403927	CI30 1,4-Dichlorobenzene-	6.52

Hit# of 7	Tentative ID	Ref#	CAS#	Qual
1	2,3-Pentadiene	181	000591-96-8	36
2	1H-Pyrazole	171	000288-13-1	36
3	2-Cyclohexen-1-one	1001	000930-68-7	32
4	1,4-Pentadiene	179	000591-93-5	17
5	3-Butyn-2-amine, 2-methyl-	483	002978-58-7	16



100059

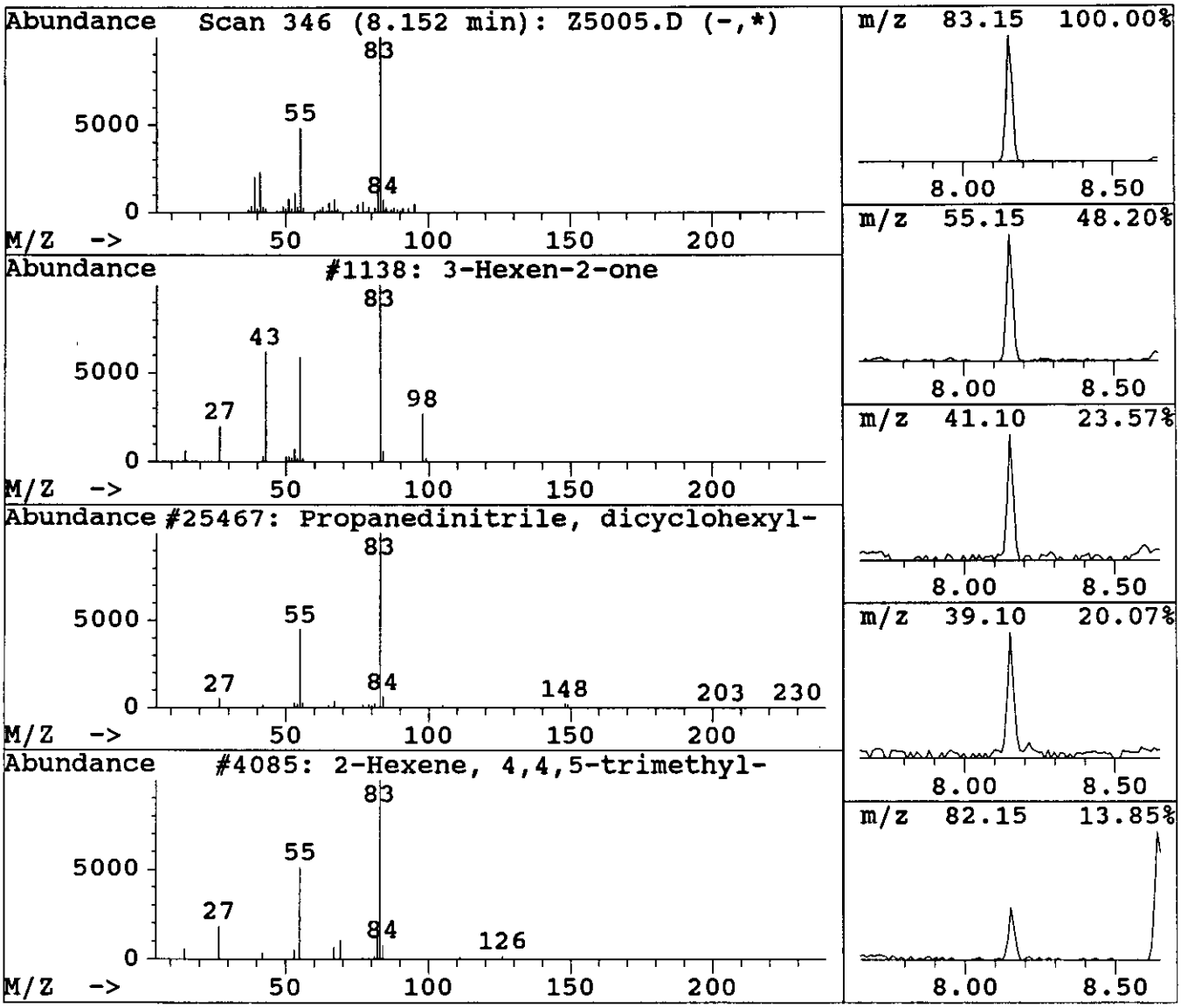
Tentatively Identified Compound (LSC)

Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 11:01 am
Data File: C:\CHEMPC\DATA\Z111393\Z5005.D
Name: MW-12(S),L,W,12305,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
8.15	3.08 ng/ul	364992	CI40 Naphthalene-d8	8.64

Hit# of 14	Tentative ID	Ref#	CAS#	Qual
1	3-Hexen-2-one	1138	000763-93-9	64
2	Propanedinitrile, dicyclohexyl-	25467	074764-28-6	59
3	2-Hexene, 4,4,5-trimethyl-	4085	055702-61-9	56
4	2-Pentene, 2,4-dimethyl-	1242	000625-65-0	42
5	2-Octen-4-one, 2-methyl-	6505	019860-71-0	39



100060

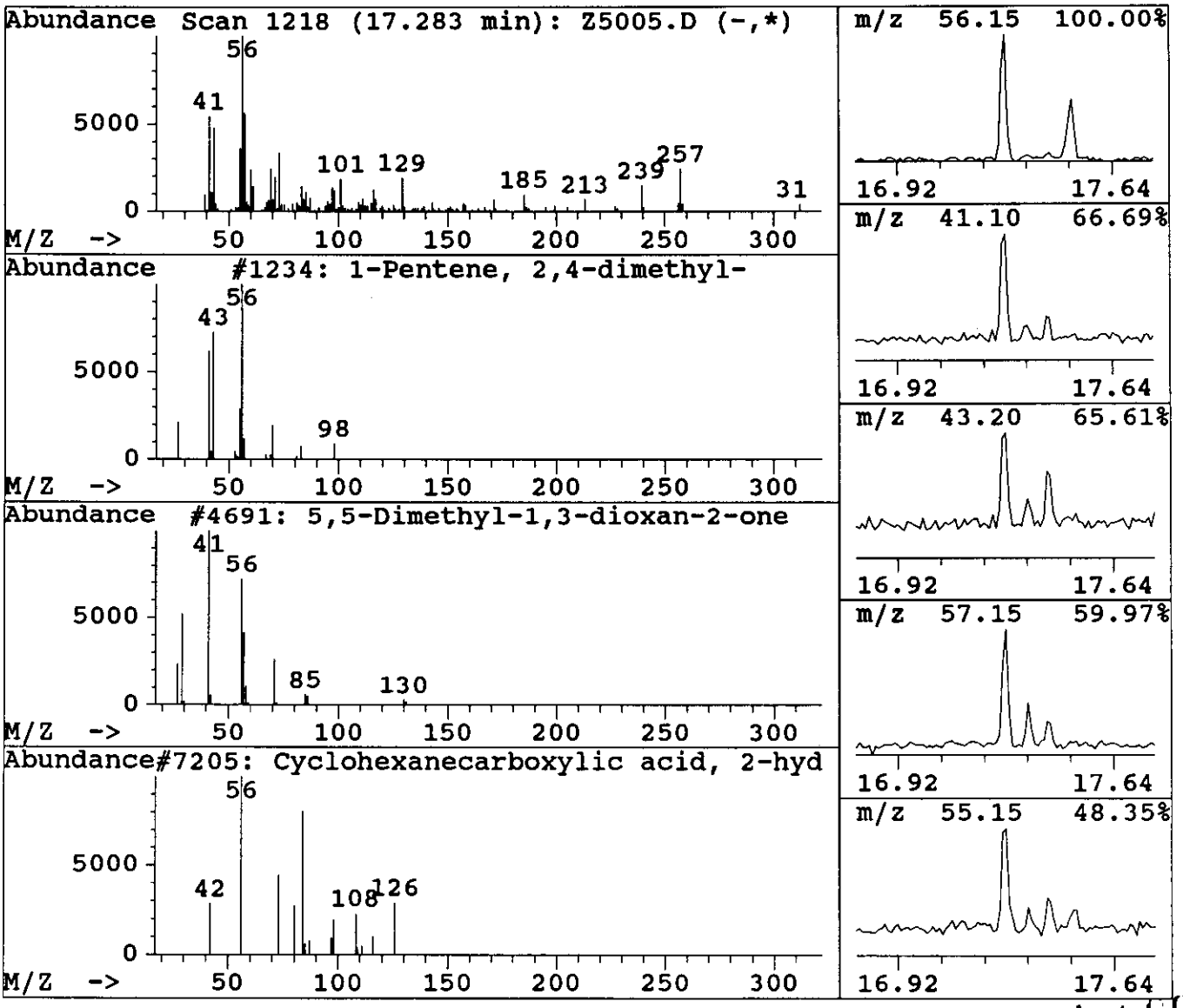
Tentatively Identified Compound (LSC)

Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 11:01 am
Data File: C:\CHEMPC\DATA\Z111393\Z5005.D
Name: MW-12(S),L,W,12305,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
17.28	3.26 ng/ul	306884	CI70 Chrysene-d12	19.38

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	1-Pentene, 2,4-dimethyl-	1234	002213-32-3	27
2	5,5-Dimethyl-1,3-dioxan-2-one	4691	003592-12-9	27
3	Cyclohexanecarboxylic acid, 2-hydro	7205	000609-69-8	25
4	Hexadecanoic acid, 1-(hydroxymethyl	52202	000761-35-3	18
5	Cyclobutane, 1-hexyl-2,3-dimethyl-	12626	055170-84-8	16



100061

Tentatively Identified Compound (LSC)

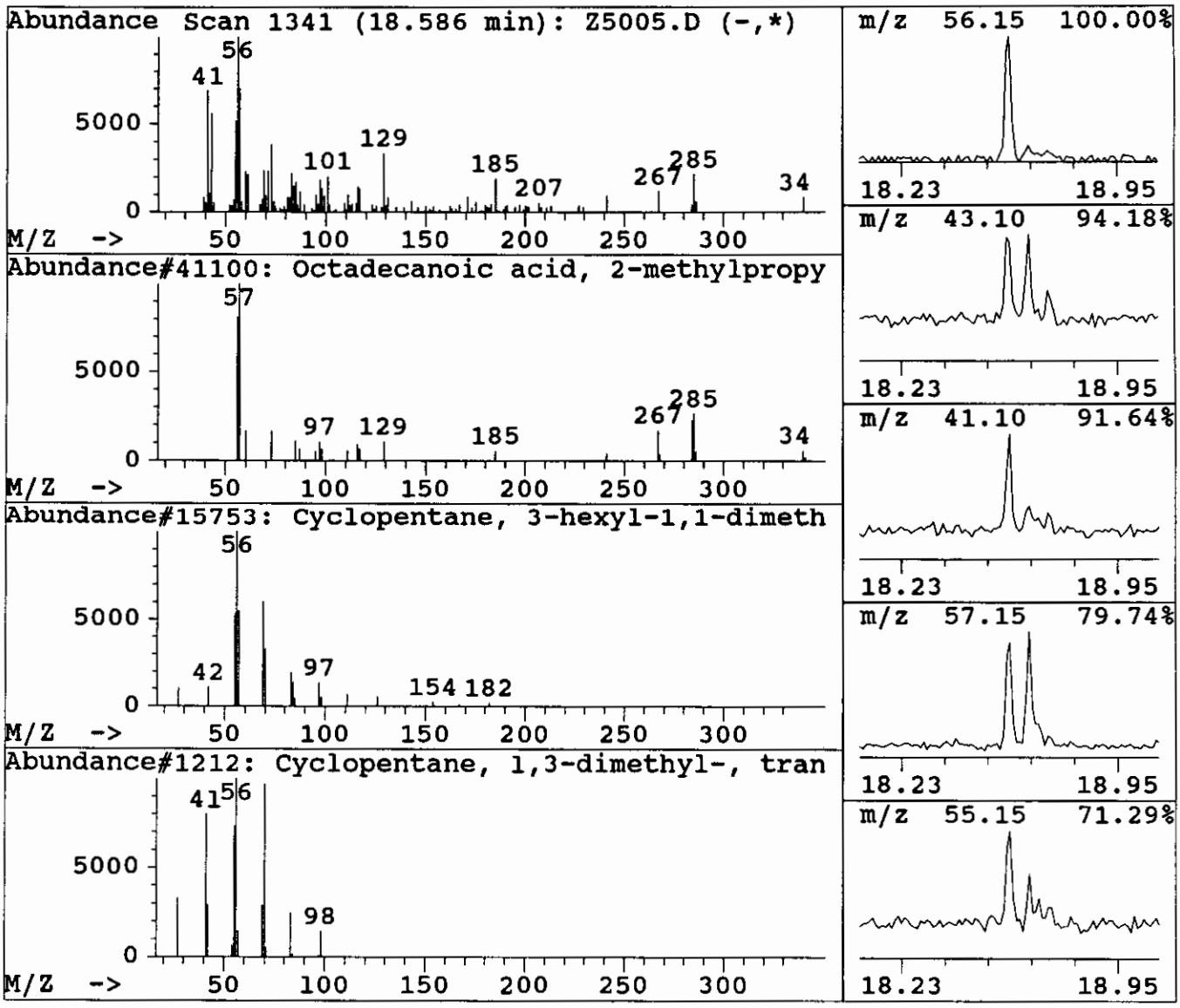
Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 11:01 am
Data File: C:\CHEMPC\DATA\Z111393\Z5005.D
Name: MW-12(S),L,W,12305,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Library Searched: nbs54k.l

link

R.T.	Conc	Area	Relative to ISTD	R.T.
18.59	2.41 ng/ul	226669	CI70 Chrysene-d12	19.38

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	Octadecanoic acid, 2-methylpropyl e	41100	000646-13-9	55
2	Cyclopentane, 3-hexyl-1,1-dimethyl-	15753	061142-65-2	38
3	Cyclopentane, 1,3-dimethyl-, trans-	1212	001759-58-6	25
4	Ethanamine, N-pentylidene-	2496	010599-76-5	22
5	1-Pentene, 2,4-dimethyl-	1234	002213-32-3	22



100062

Tentatively Identified Compound (LSC)

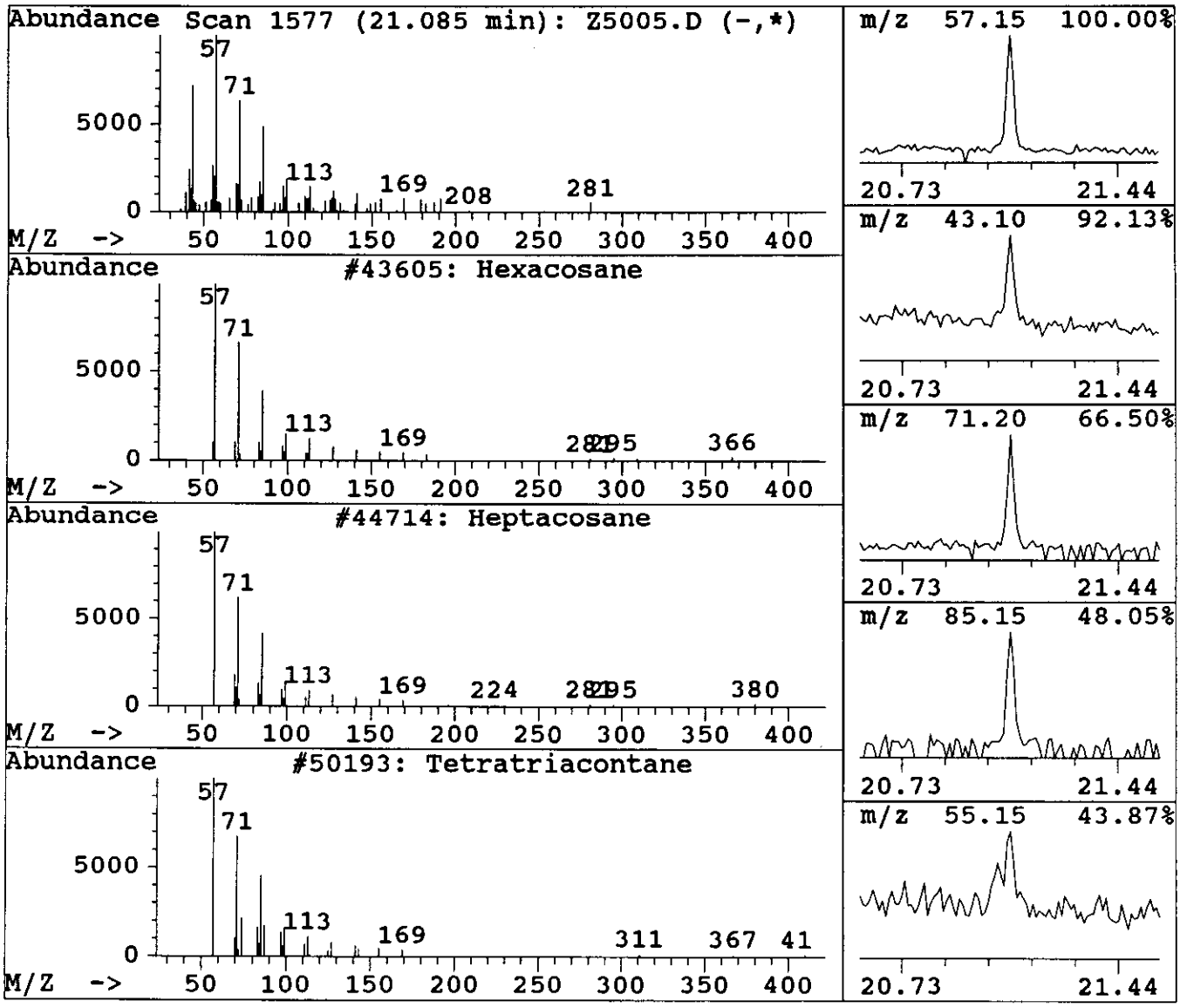
Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 11:01 am
Data File: C:\CHEMPC\DATA\Z111393\Z5005.D
Name: MW-12(S),L,W,12305,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Unk Hyd

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
21.09	2.94 ng/ul	187162	CI75 Perylene-d12	22.26

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	Hexacosane	43605	000630-01-3	91
2	Heptacosane	44714	000593-49-7	91
3	Tetratriacontane	50193	014167-59-0	91
4	Eicosane, 2-methyl-	35844	001560-84-5	91
5	Docosane	37669	000629-97-0	91



Tentatively Identified Compound (LSC)

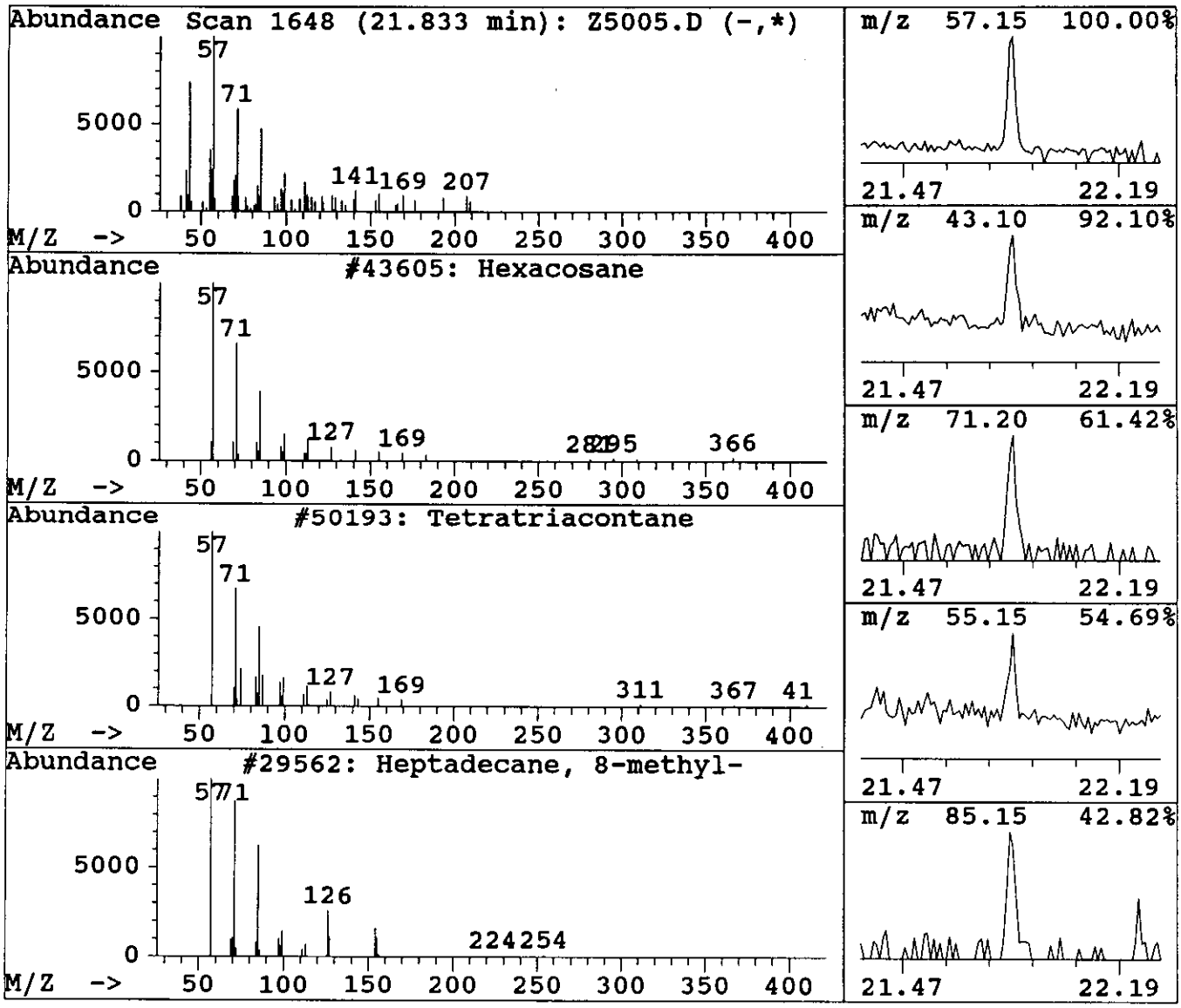
Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 11:01 am
Data File: C:\CHEMPC\DATA\Z111393\Z5005.D
Name: MW-12(S),L,W,12305,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Unk Hyd

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
21.83	2.04 ng/ul	130176	CI75 Perylene-d12	22.26

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	Hexacosane	43605	000630-01-3	58
2	Tetratriacontane	50193	014167-59-0	53
3	Heptadecane, 8-methyl-	29562	013287-23-5	53
4	Eicosane, 10-methyl-	35847	054833-23-7	53
5	Pentatriacontane	50625	000630-07-9	53



Tentatively Identified Compound (LSC) summary

Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 11:01 am
Data File: C:\CHEMPC\DATA\Z111393\Z5005.D
Name: MW-12(S),L,W,12305,B,2UL
'isc: VEOBRIEN,8650,5,WATER (3BNA)
.ethod: BN2MS.M
Title: VERSAR LABORATORIES INC.
Library Searched: nbs54k.l

TIC name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc
Unknown	4.58	7.6	ng/ul	737829	ISTD01	6.52	1948462	20.0
2-Cyclohexen-1-ol	4.92	5.4	ng/ul	523058	ISTD01	6.52	1948462	20.0
2,3-Pentadiene	5.52	4.1	ng/ul	403927	ISTD01	6.52	1948462	20.0
3-Hexen-2-one	8.15	3.1	ng/ul	364992	ISTD02	8.64	2373893	20.0
1-Pentene, 2,4-dimet	17.28	3.3	ng/ul	306884	ISTD05	19.38	1883585	20.0
Octadecanoic acid, 2	18.59	2.4	ng/ul	226669	ISTD05	19.38	~~1273126~~	20.0
Bis(2-ethylhexyl) ph	19.63	2.4	ng/ul	228552	ISTD05	19.38	~~1273126~~	20.0
Hexacosane	21.09	2.9	ng/ul	187162	ISTD06	22.26	1273126	20.0
Hexacosane	21.83	2.0	ng/ul	130176	ISTD06	22.26	1273126	20.0

TIC: Z5005.D

MW-12(S),L,W,12305,B,2UL

Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	4.579	RTE!	0.115	737829	4.568	4.684
2	4.746	RTE!	0.167	3721599	4.684	4.850
3	4.924	RTE!	0.136	523058	4.871	5.008
4	5.520	RTE!	0.136	403927	5.447	5.582
5	5.697	RTE!	0.073	72248	5.655	5.728
6	6.042	RTE!	0.189	4011082	5.979	6.168
7	6.231	RTE!	0.137	4130740	6.168	6.305
8	6.357	RTE!	0.105	157333	6.305	6.409
9	6.525	RTE!	0.147	1948462	6.462	6.608
10	6.713	RTE!	0.157	120212	6.608	6.765
11	6.818	RTE!	0.168	2763478	6.765	6.933
12	7.037	RTE!	0.073	92018	7.006	7.079
13	7.247	RTE!	0.167	63624	7.163	7.330
14	7.466	RTE!	0.125	2851805	7.393	7.518
15	8.152	RTE!	0.104	364992	8.079	8.183
16	8.641	RTE!	0.177	2373893	8.568	8.746
17	9.162	RTE!	0.166	62940	9.099	9.266
18	10.466	RTE!	0.178	199512	10.383	10.561
19	10.634	RTE!	0.252	4278408	10.561	10.812
20	11.681	RTE!	0.115	161745	11.628	11.744
21	11.828	RTE!	0.178	2302579	11.744	11.922
22	12.778	RTE!	0.105	158987	12.736	12.841
23	13.290	RTE!	0.199	4492166	13.217	13.416
24	14.283	RTE!	0.125	61810	14.210	14.335
25	14.502	RTE!	0.158	2385643	14.450	14.608
26	14.952	RTE!	0.084	60044	14.911	14.994
27	15.078	RTE!	0.168	90431	14.994	15.162
8	15.646	RTE!	0.116	91240	15.604	15.720
29	15.773	RTE!	0.074	70796	15.720	15.794
30	15.857	RTE!	0.084	61012	15.794	15.878
31	16.659	RTE!	0.095	57803	16.617	16.712
32	16.966	RTE!	0.106	108531	16.923	17.029
33	17.283	RTE!	0.106	306884	17.209	17.315
34	17.357	RTE!	0.074	58192	17.315	17.389
35	17.431	RTE!	0.064	73226	17.389	17.452
36	17.506	RTE!	0.138	4165620	17.452	17.591
37	18.014	RTE!	0.085	92826	17.972	18.057
38	18.586	RTE!	0.085	226669	18.544	18.629
39	18.650	RTE!	0.074	118335	18.629	18.703
40	19.254	RTE!	0.096	154895	19.212	19.307
41	19.371	RTE!	0.149	1883585	19.307	19.456
42	19.626	RTE!	0.085	228552	19.584	19.668
43	19.838	RTE!	0.117	158767	19.774	19.891
44	20.431	RTE!	0.116	171401	20.388	20.504
45	21.085	RTE!	0.137	187162	21.011	21.148
46	21.380	RTE!	0.095	102008	21.327	21.422
47	21.833	RTE!	0.158	130176	21.738	21.896
48	22.264	RTE!	0.148	1273126	22.180	22.328
49	22.695	RTE!	0.084	58170	22.653	22.737
50	23.712	RTE!	0.105	65215	23.670	23.775

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-14(S)

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12307

Sample wt/vol: 1030 (g/mL) ML Lab File ID: Z5006

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/13/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	3- and 4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-14(S)

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12307

Sample wt/vol: 1030 (g/mL) ML Lab File ID: Z5006

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/13/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
100-02-7	4-Nitrophenol	24	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-ethylhexyl)phthalate	10	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-14(S)

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12307

Sample wt/vol: 1030 (g/mL) ML Lab File ID: Z5006

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/13/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

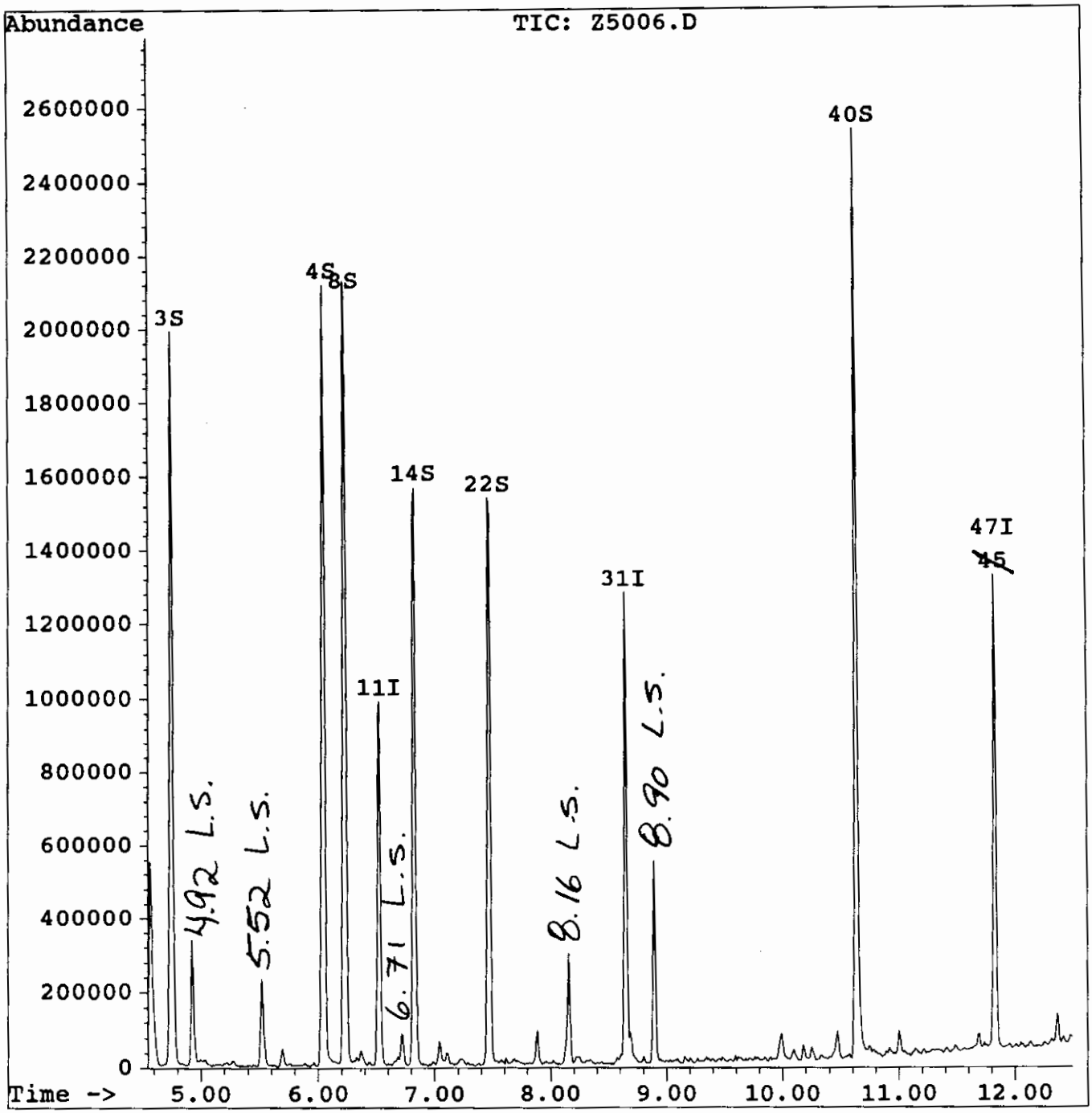
Number TICs found: 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.92	6	BJN
2.	UNKNOWN	5.52	5	BJN
3.	UNKNOWN	6.71	2	JN
4.	UNKNOWN	8.16	4	JN
5.	UNKNOWN	8.90	7	JN
6.	UNKNOWN	17.41	3	JN

QUANT REPORT

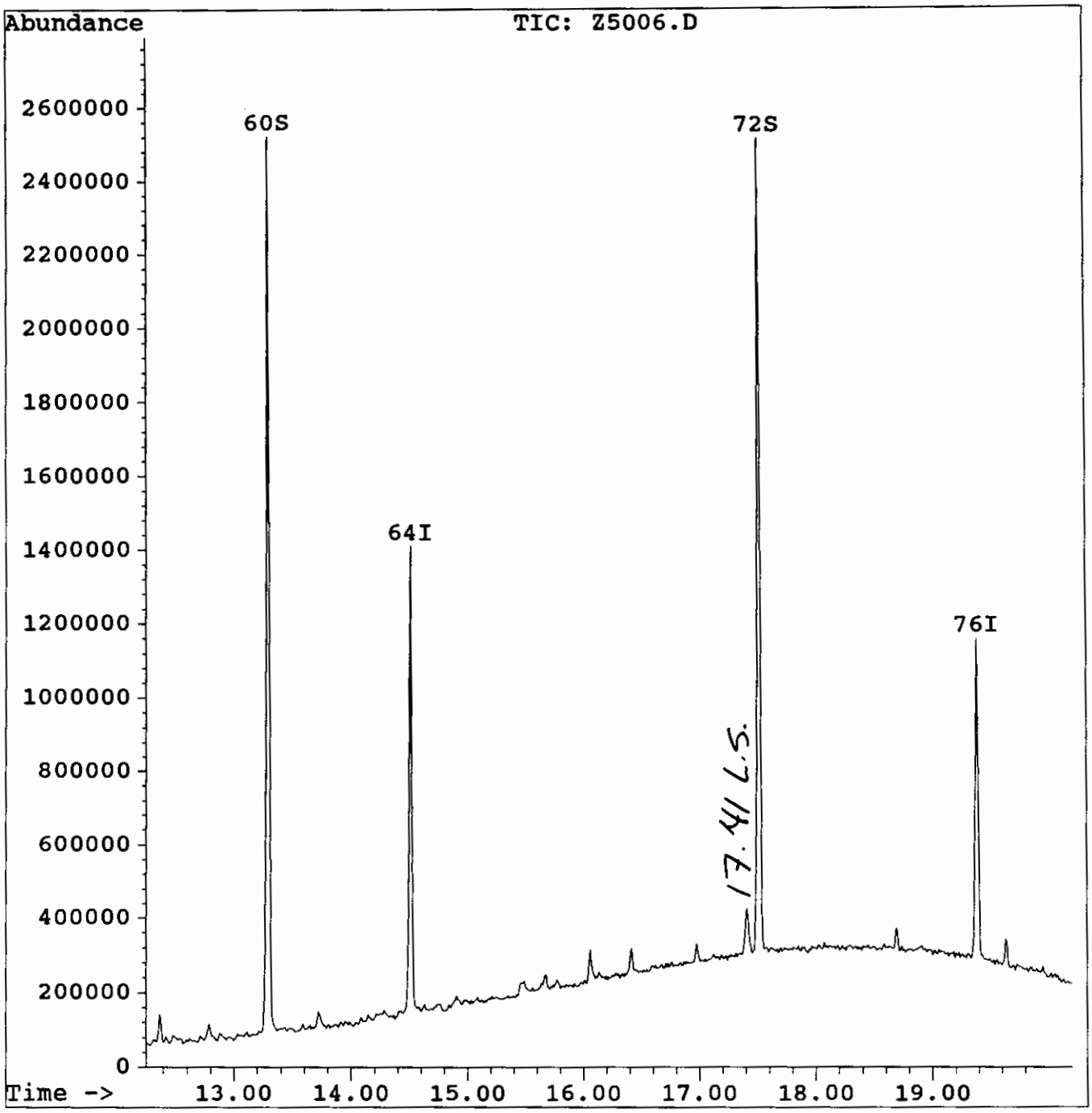
Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 12:32 pm
Data File: C:\CHEMPC\DATA\Z111393\Z5006.D
Name: MW-14(S),L,W,12307,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Sat Nov 13 12:36:26 1993
Quantitated using Single Level Calibration Z5004.D



100070

QUANT REPORT

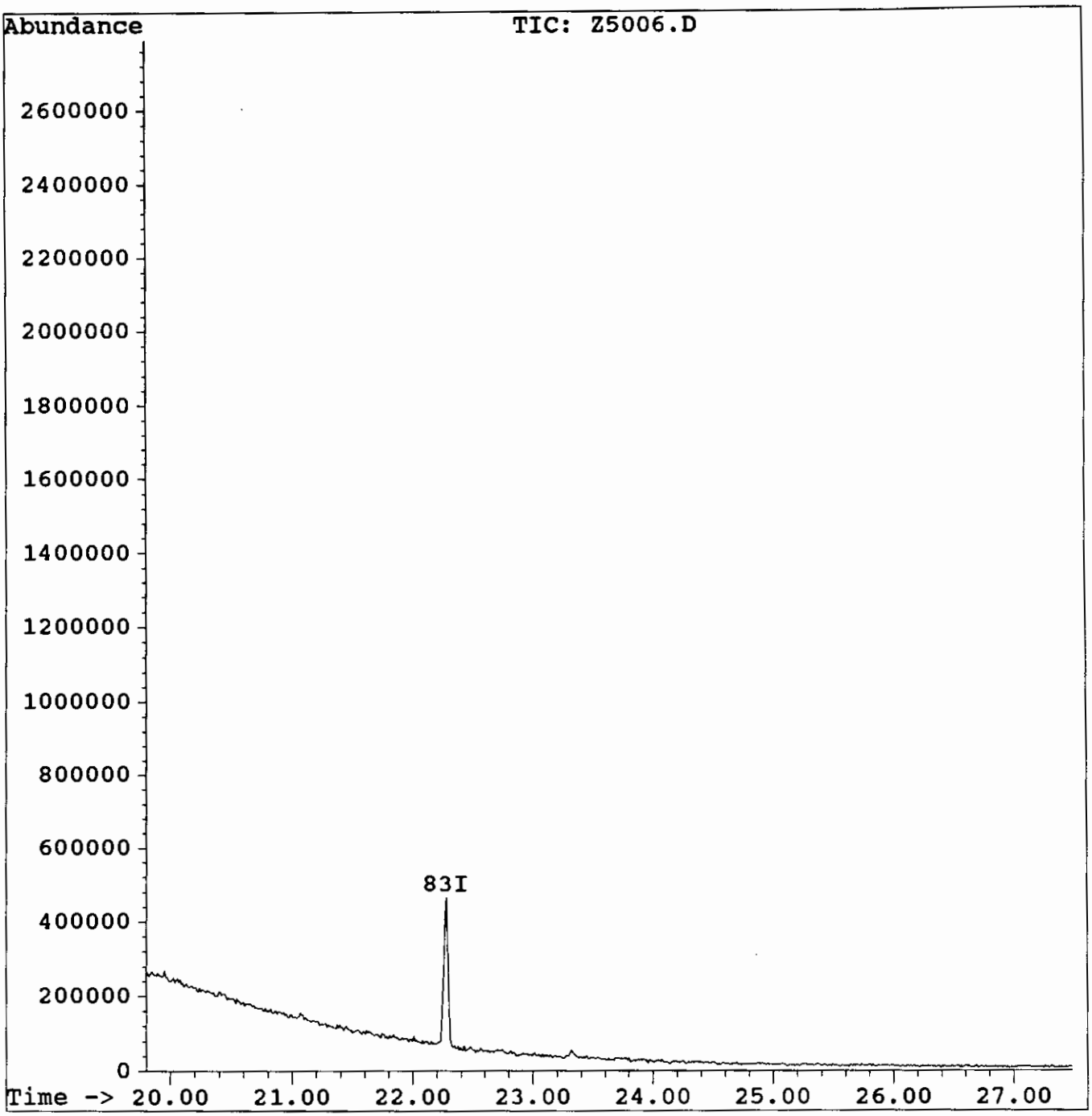
Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 12:32 pm
Data File: C:\CHEMPC\DATA\Z111393\Z5006.D
Name: MW-14(S),L,W,12307,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Sat Nov 13 12:36:26 1993
Quantitated using Single Level Calibration Z5004.D



100071

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 12:32 pm
Data File: C:\CHEMPC\DATA\Z111393\Z5006.D
Name: MW-14(S),L,W,12307,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Sat Nov 13 12:36:26 1993
Quantitated using Single Level Calibration Z5004.D



100072

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 12:32 pm
Data File: C:\CHEMPC\DATA\Z111393\Z5006.D
Name: MW-14(S),L,W,12307,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Sat Nov 13 12:37:45 1993
Quantitated using Single Level Calibration Z5004.D

Internal Standards

Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
11) CI30 1,4-Dichlorobenzene-d	6.53	152	227809	20.00	ng/ul	0.01
31) CI40 Naphthalene-d8	8.65	136	831424	20.00	ng/ul	-0.00
47) CI50 Acenaphthene-d10	11.83	164	413525	20.00	ng/ul	-0.00
64) CI60 Phenanthrene-d10	14.51	188	661247	20.00	ng/ul	0.00
76) CI70 Chrysene-d12	19.39	240	421090	20.00	ng/ul	0.00
83) CI75 Perylene-d12	22.28	264	309984	20.00	ng/ul	0.01

System Monitoring Compounds

						%Recovery
3) CS50 2-Fluorophenol	4.75	112	857739	44.06	ng/ul	58.75%
4) CS45 Phenol-d5	6.05	99	1215232	56.66	ng/ul	75.54%
8) CS70 2-Chlorophenol d4	6.23	132	901239	65.31	ng/ul	87.08%
14) CS75 1,2-Dichlorobenzene-d	6.83	152	343986	33.03	ng/ul	66.06%
22) CS20 Nitrobenzene-d5	7.47	82	866273	39.06	ng/ul	78.13%
40) CS25 2-Fluorobiphenyl	10.64	172	1127869	34.51	ng/ul	69.03%
60) CS55 2,4,6-Tribromophenol	13.29	330	436872	69.18	ng/ul	92.24%
72) CS30 Terphenyl-d14	17.52	244	1009974	39.90	ng/ul	79.81%

Target Compounds

						ISTD#
45) C544 2,6-Dinitrotoluene	11.83	165	55070	~~6.86~~	~~ng/ul~~ NC	003#

Compliant Run
SJF
11/13/93.

Ready for Comm.

(#) = qualifier out of range

100073

QACHK report

ata file C:\CHEMPC\DATA\Z111393\Z5006.D

Standard File: C:\CHEMPC\DATA\Z111393\Z5004.D 13 Nov 93 10:21 am

ISTD	Compound	Std Area	Samp Area	% rec
CI30	1,4-Dichlorobenzene-d4	304446	227809	74.8
CI40	Naphthalene-d8	1052141	831424	79.0
CI50	Acenaphthene-d10	490800	413525	84.3
CI60	Phenanthrene-d10	796047	661247	83.1
CI70	Chrysene-d12	563965	421090	74.7
CI75	Perylene-d12	542263	309984	57.2

	Surrogate Compound	Surr Conc	Surr Amt	%rec	Water limits
CS50	2-Fluorophenol	44.06	75.00	58.7	21-100
CS45	Phenol-d5	56.66	75.00	75.5	10- 94
CS70	2-Chlorophenol d4	65.31	75.00	87.1	33-110
CS75	1,2-Dichlorobenzene-d4	33.03	50.00	66.1	16-110
CS20	Nitrobenzene-d5	39.06	50.00	78.1	35-114
CS25	2-Fluorobiphenyl	34.51	50.00	69.0	43-116
CS55	2,4,6-Tribromophenol	69.18	75.00	92.2	10-123
CS30	Terphenyl-d14	39.90	50.00	79.8	33-141

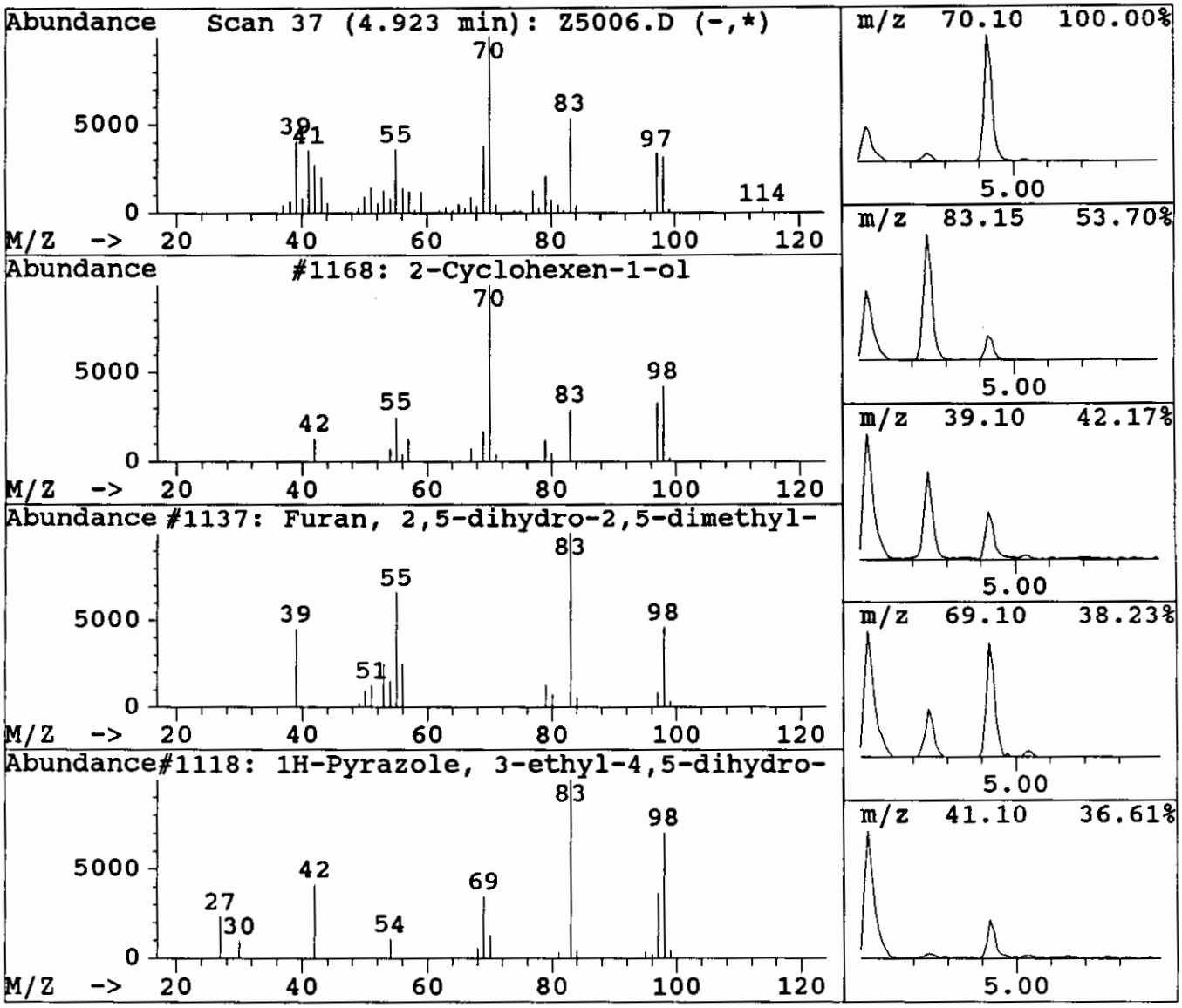
Tentatively Identified Compound (LSC)

Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 12:32 pm
Data File: C:\CHEMPC\DATA\Z111393\Z5006.D
Name: MW-14(S),L,W,12307,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
4.92	6.34 ng/ul	556295	CI30 1,4-Dichlorobenzene-	6.53

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	2-Cyclohexen-1-ol	1168	000822-67-3	62
2	Furan, 2,5-dihydro-2,5-dimethyl-	1137	059242-27-2	35
3	1H-Pyrazole, 3-ethyl-4,5-dihydro-	1118	005920-29-6	25
4	1H-Pyrazole, 4,5-dihydro-4,5-dimeth	1126	028019-94-5	25
5	1,3,2-Dioxaborolan-4-one, 2-ethyl-	2539	074646-12-1	16



Tentatively Identified Compound (LSC)

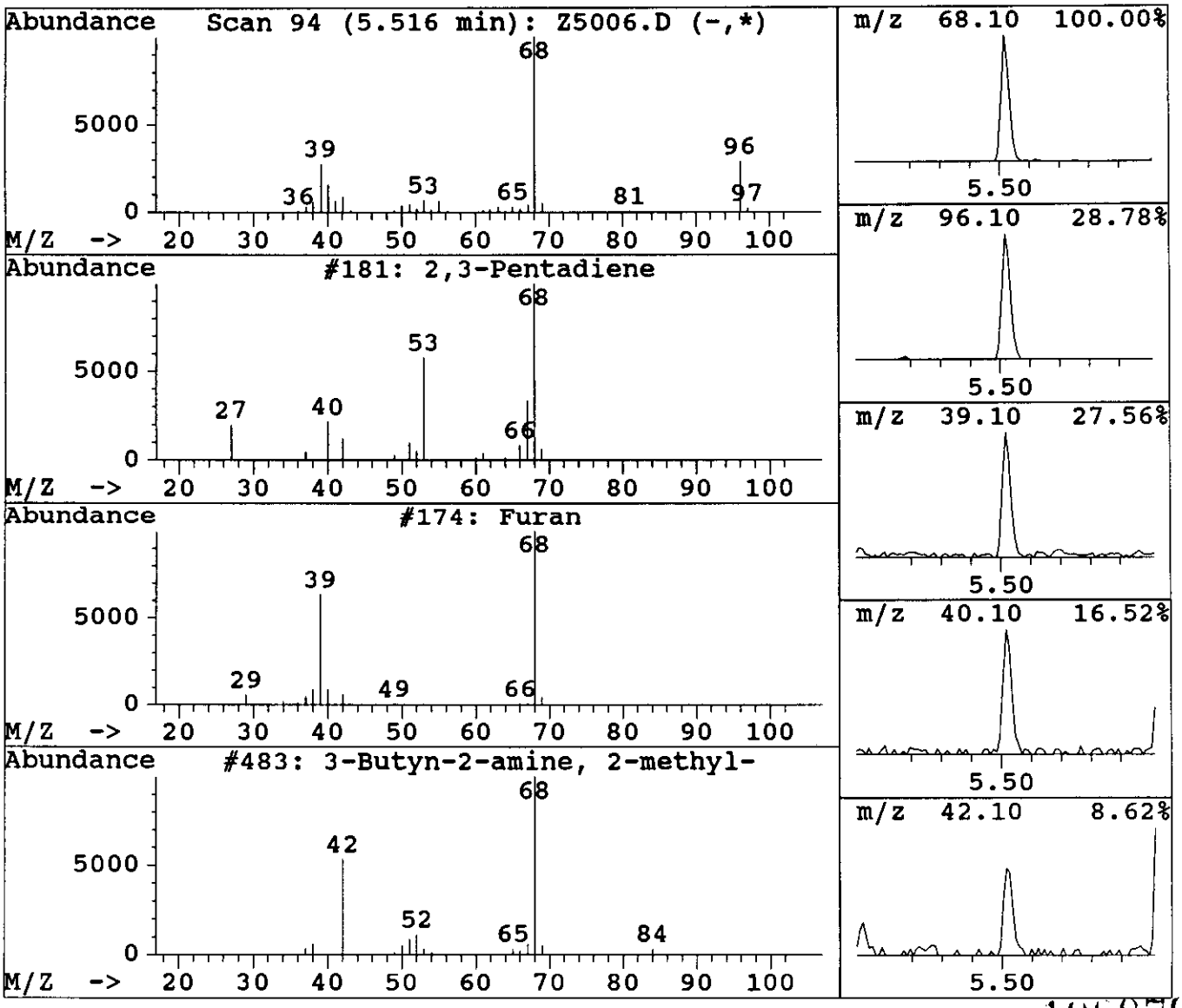
Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 12:32 pm
Data File: C:\CHEMPC\DATA\Z111393\Z5006.D
Name: MW-14(S),L,W,12307,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Unk (B)

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
5.52	5.08 ng/ul	446022	CI30 1,4-Dichlorobenzene-	6.53

Hit# of 8	Tentative ID	Ref#	CAS#	Qual
1	2,3-Pentadiene	181	000591-96-8	33
2	Furan	174	000110-00-9	33
3	3-Butyn-2-amine, 2-methyl-	483	002978-58-7	25
4	2-Cyclohexen-1-one	1001	000930-68-7	10
5	2-Cyclopenten-1-one, 3-methyl-	998	002758-18-1	9



100076

Tentatively Identified Compound (LSC)

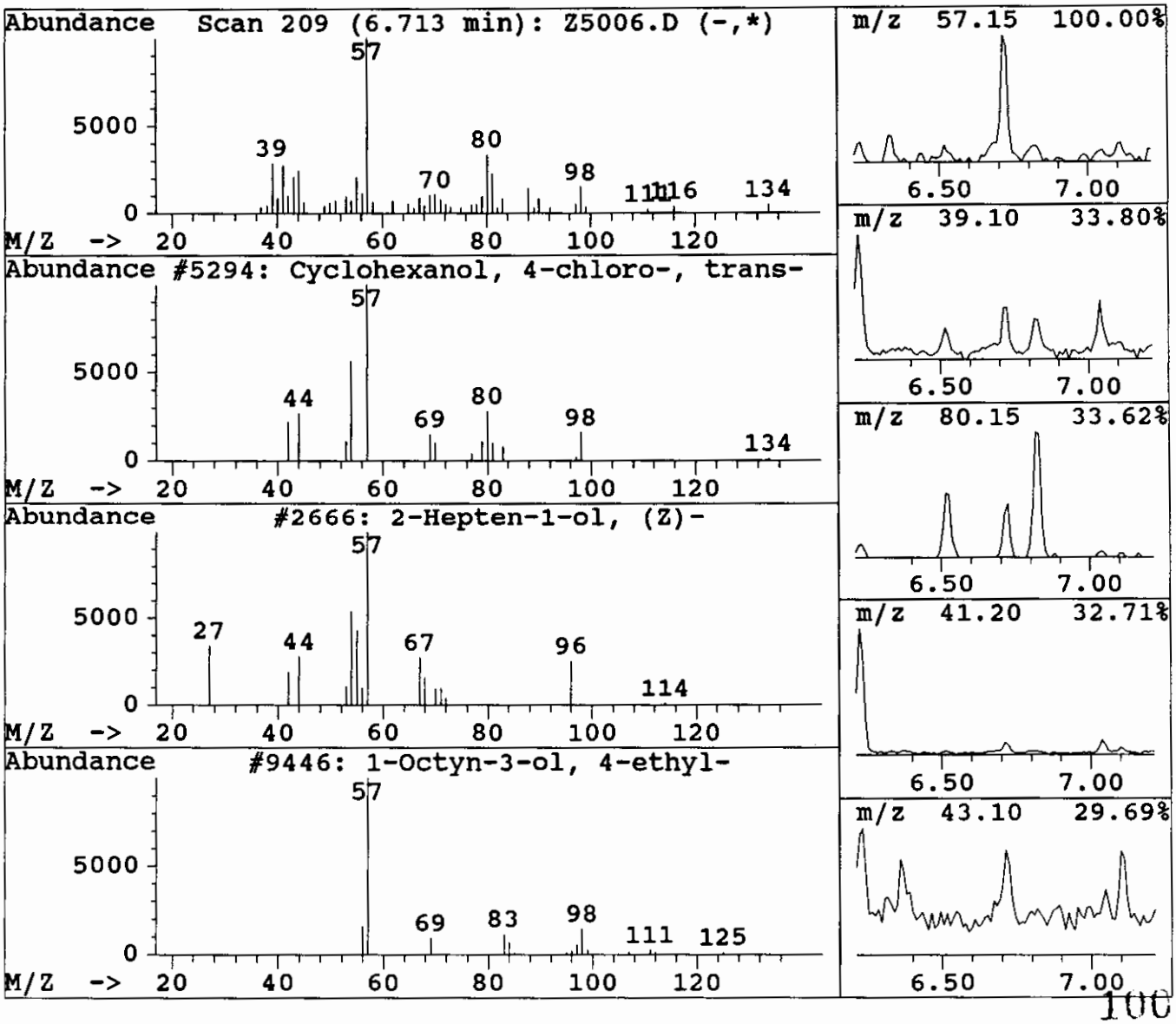
Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 12:32 pm
Data File: C:\CHEMPC\DATA\Z111393\Z5006.D
Name: MW-14(S),L,W,12307,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Ink

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
6.71	2.31 ng/ul	202977	CI30 1,4-Dichlorobenzene-	6.53

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	Cyclohexanol, 4-chloro-, trans-	5294	029538-77-0	53
2	2-Hepten-1-ol, (Z)-	2666	055454-22-3	12
3	1-Octyn-3-ol, 4-ethyl-	9446	005877-42-9	12
4	2-Hexen-1-ol, (Z)-	1413	000928-94-9	12
5	2-Hexen-4-yne, (E)-	405	033625-96-6	10



100077

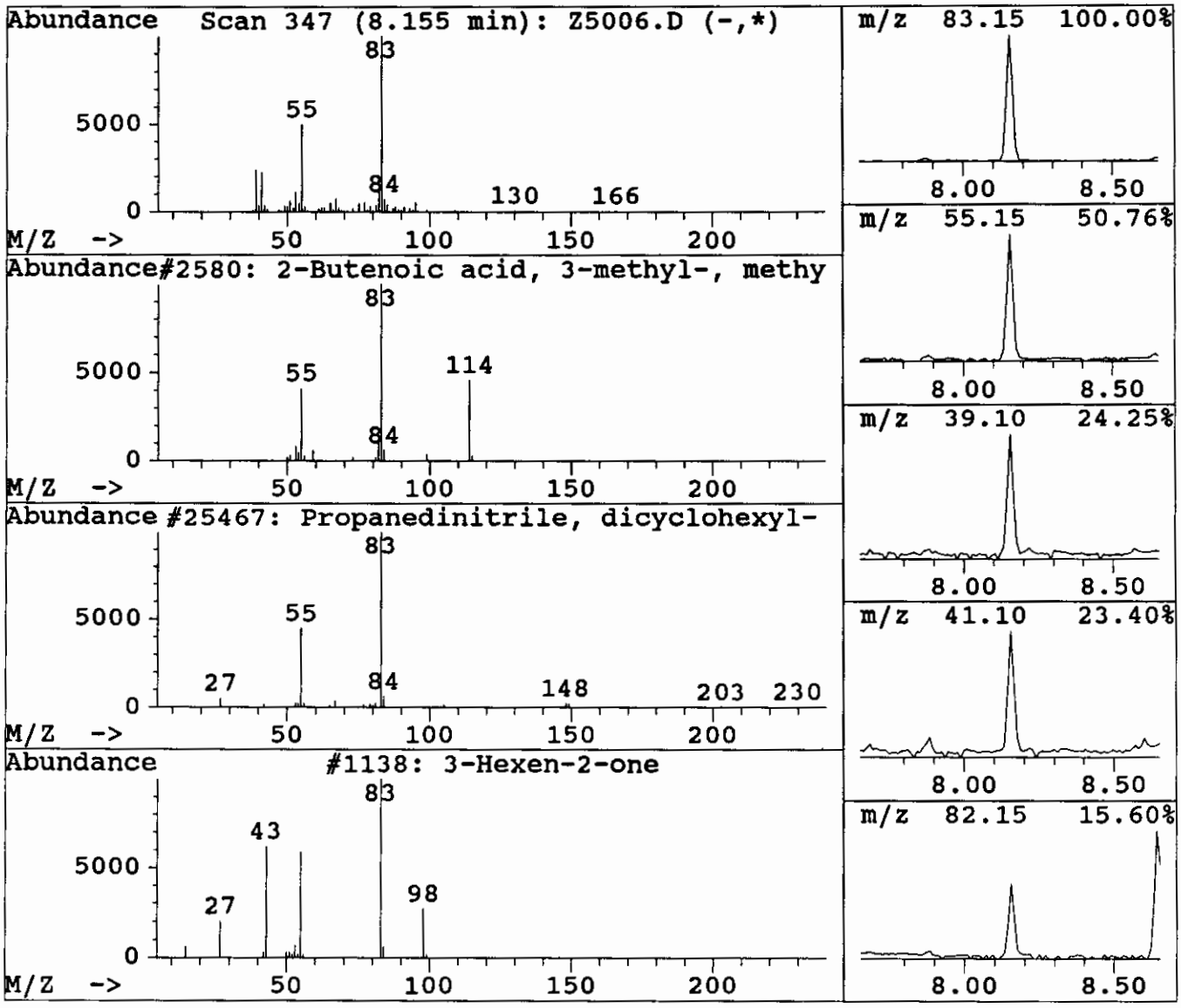
Tentatively Identified Compound (LSC)

Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 12:32 pm
Data File: C:\CHEMPC\DATA\Z111393\Z5006.D
Name: MW-14(S),L,W,12307,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
8.16	4.30 ng/ul	509226	CI40 Naphthalene-d8	8.65

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	2-Butenoic acid, 3-methyl-, methyl	2580	000924-50-5	72
2	Propanedinitrile, dicyclohexyl-	25467	074764-28-6	53
3	3-Hexen-2-one	1138	000763-93-9	50
4	Cyclohexane, bromo-	11006	000108-85-0	45
5	2-Octen-4-one, 2-methyl-	6505	019860-71-0	39



100078

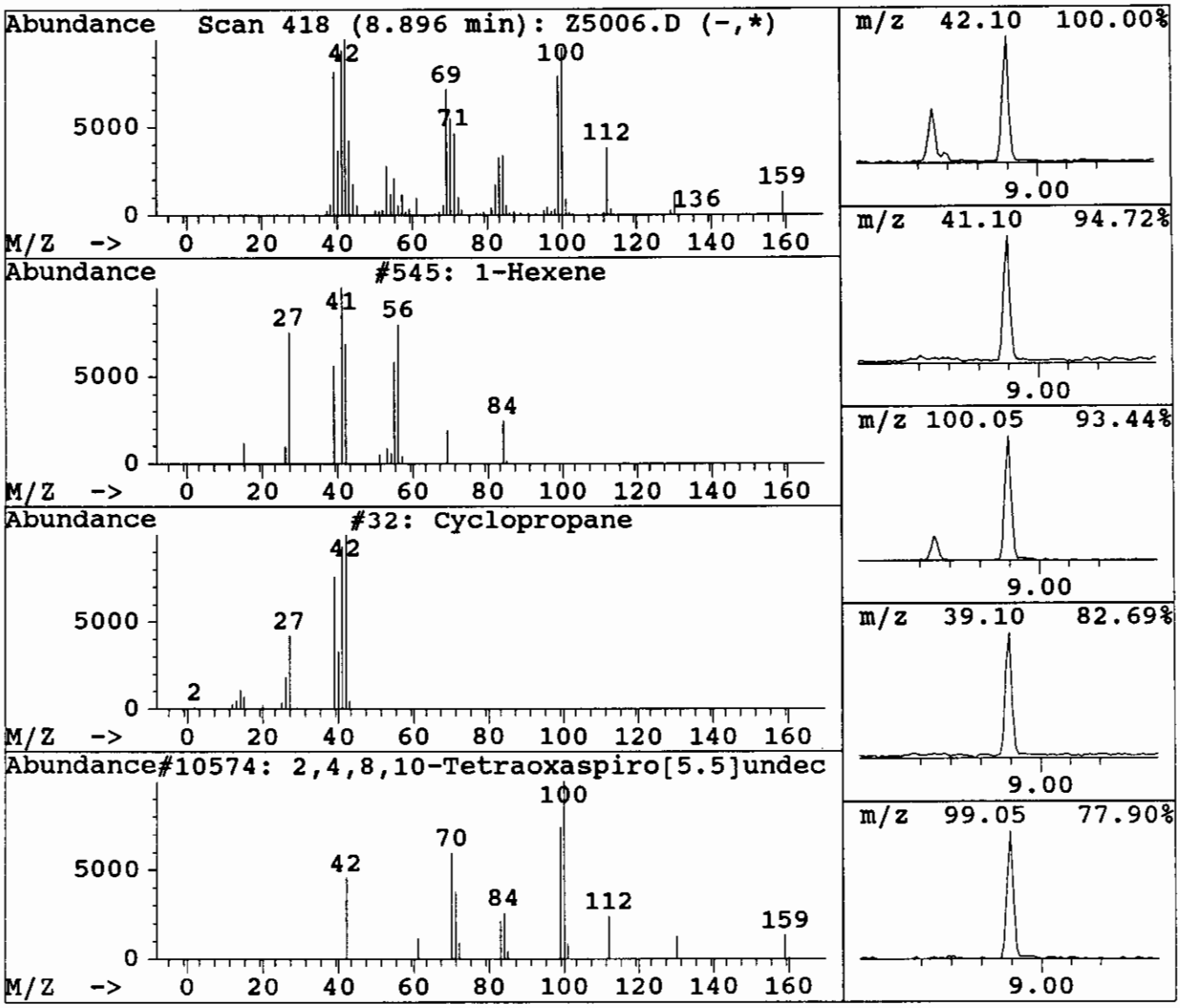
Tentatively Identified Compound (LSC)

Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 12:32 pm
Data File: C:\CHEMPC\DATA\Z111393\Z5006.D
Name: MW-14(S),L,W,12307,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
8.90	6.92 ng/ul	819186	CI40 Naphthalene-d8	8.65

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	1-Hexene	545	000592-41-6	43
2	Cyclopropane	32	000075-19-4	43
3	2,4,8,10-Tetraoxaspiro[5.5]undecane	10574	000126-54-5	38
4	Hexanoyl chloride	5291	000142-61-0	38
5	Aziridine, 2,2-dimethyl-	241	002658-24-4	38



100079

Tentatively Identified Compound (LSC)

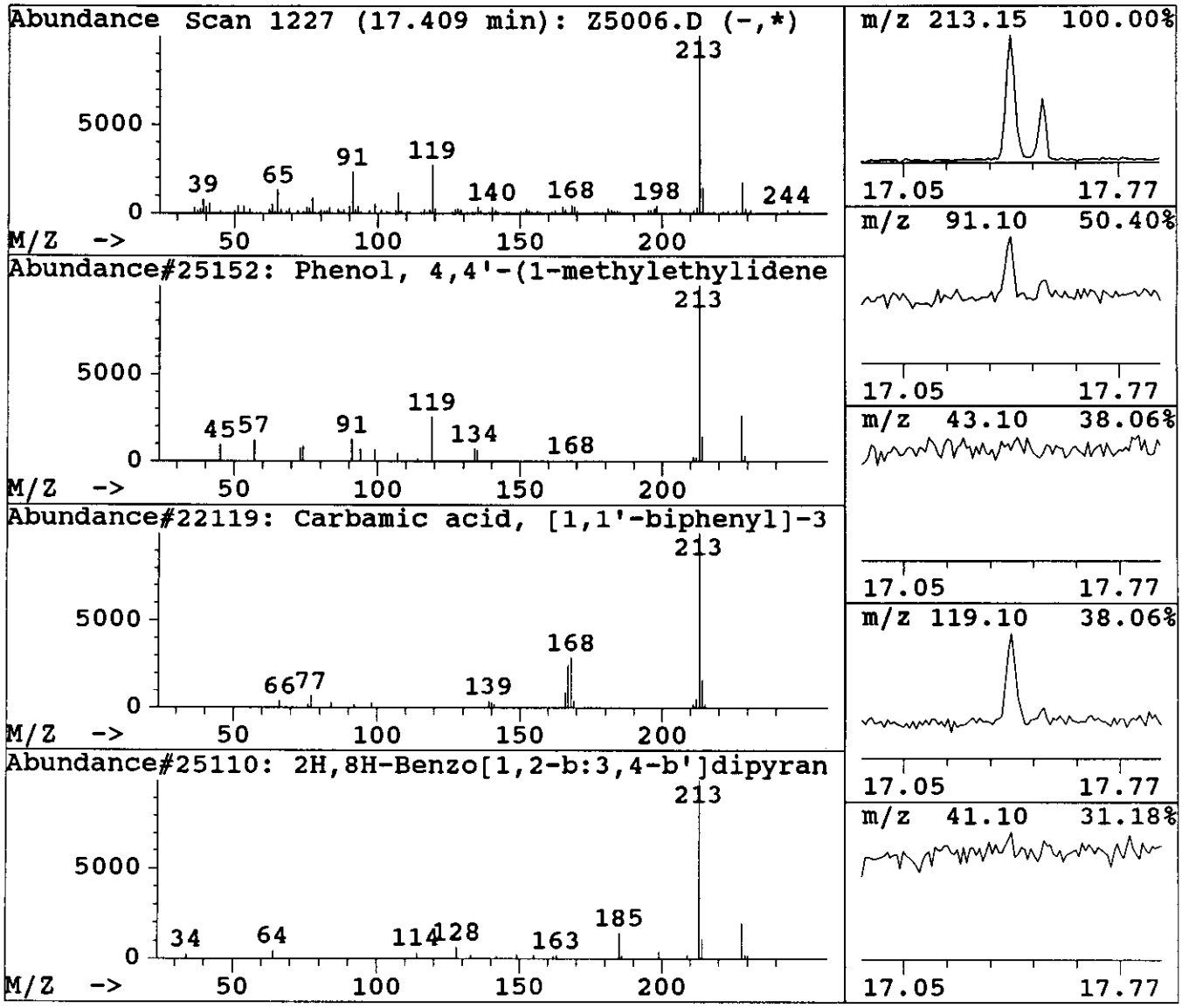
Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 12:32 pm
Data File: C:\CHEMPC\DATA\Z111393\Z5006.D
Name: MW-14(S),L,W,12307,B,2UL
Misc: VEOBRIEN,8650,5,WATER ~~(3BNA)~~
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Unk

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
17.41	3.56 ng/ul	282066	CI70 Chrysene-d12	19.39

Hit# of 9	Tentative ID	Ref#	CAS#	Qual
1	Phenol, 4,4'-(1-methylethylidene)bi	25152	000080-05-7	50
2	Carbamic acid, [1,1'-biphenyl]-3-yl	22119	055030-29-0	47
3	2H,8H-Benzo[1,2-b:3,4-b']dipyran-2-	25110	000523-59-1	40
4	4-ETHYL-2,2,4-TRIMETHYL-1,2,3,4-TET	27511	000000-00-0	40
5	As-Indacen-1(2H)-one, 3,6,7,8-tetra	25176	055591-18-9	38



100080

Tentatively Identified Compound (LSC) summary

Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 12:32 pm
Data File: C:\CHEMPC\DATA\Z111393\Z5006.D
Name: MW-14(S),L,W,12307,B,2UL
Misc: VEOBRIEN,8650,5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Library Searched: nbs54k.l

TIC name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc
2-Cyclohexen-1-ol	4.92	6.3	ng/ul	556295	ISTD01	6.53	1756187	20.0
2,3-Pentadiene	5.52	5.1	ng/ul	446022	ISTD01	6.53	1756187	20.0
Cyclohexanol, 4-chlo	6.71	2.3	ng/ul	202977	ISTD01	6.53	2367925	20.0
2-Butenoic acid, 3-m	8.16	4.3	ng/ul	509226	ISTD02	8.65	2367925	20.0
1-Hexene	8.90	6.9	ng/ul	819186	ISTD02	8.65	~~2089857~~	20.0
Phenol, 4,4'-(1-meth	17.41	3.6	ng/ul	282066	ISTD05	19.39	1585693	20.0

TIC: Z5006.D

MW-14(S),L,W,12307,B,2UL

Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	4.745	RTE!	0.208	3542400	4.662	4.870
2	4.923	RTE!	0.115	556295	4.870	4.985
3	5.516	RTE!	0.135	446022	5.474	5.609
4	5.692	RTE!	0.083	81650	5.651	5.734
5	6.046	RTE!	0.177	3930639	5.994	6.171
6	6.223	RTE!	0.126	4067029	6.171	6.297
7	6.359	RTE!	0.125	131545	6.297	6.422
8	6.526	RTE!	0.125	1756187	6.463	6.589
9	6.713	RTE!	0.136	202977	6.630	6.766
10	6.828	RTE!	0.178	2751555	6.766	6.944
11	7.038	RTE!	0.073	107215	7.006	7.080
12	7.100	RTE!	0.083	66085	7.080	7.163
13	7.466	RTE!	0.157	2835872	7.393	7.550
14	7.884	RTE!	0.146	148231	7.780	7.926
15	8.155	RTE!	0.136	509226	8.062	8.197
16	8.645	RTE!	0.251	2367925	8.520	8.771
17	8.896	RTE!	0.146	819186	8.833	8.979
18	9.991	RTE!	0.146	162654	9.918	10.064
19	10.179	RTE!	0.084	64345	10.137	10.221
20	10.252	RTE!	0.073	59580	10.221	10.294
21	10.471	RTE!	0.125	163685	10.387	10.513
22	10.638	RTE!	0.136	4147059	10.586	10.722
23	10.743	RTE!	0.136	106968	10.722	10.858
24	10.921	RTE!	0.094	66152	10.858	10.952
25	11.005	RTE!	0.125	140793	10.973	11.099
26	11.695	RTE!	0.125	97201	11.590	11.716
27	11.831	RTE!	0.137	2089857	11.768	11.905
8	12.368	RTE!	0.063	117884	12.336	12.399
29	12.787	RTE!	0.105	101045	12.745	12.850
30	13.291	RTE!	0.179	4157181	13.186	13.365
31	13.723	RTE!	0.105	112547	13.681	13.786
32	14.081	RTE!	0.095	64646	14.017	14.113
33	14.281	RTE!	0.137	121775	14.186	14.323
34	14.513	RTE!	0.159	2137448	14.439	14.597
35	14.735	RTE!	0.095	62296	14.703	14.799
36	14.905	RTE!	0.128	151999	14.820	14.947
37	15.487	RTE!	0.127	179135	15.413	15.540
38	15.677	RTE!	0.106	113143	15.603	15.709
39	16.059	RTE!	0.074	175272	16.027	16.102
40	16.410	RTE!	0.106	155782	16.367	16.473
41	16.973	RTE!	0.085	87084	16.951	17.036
42	17.409	RTE!	0.086	282066	17.366	17.452
43	17.516	RTE!	0.139	3713937	17.452	17.591
44	18.694	RTE!	0.064	84429	18.662	18.726
45	19.388	RTE!	0.182	1585693	19.334	19.516
46	19.633	RTE!	0.074	126454	19.601	19.675
47	20.409	RTE!	0.096	59280	20.388	20.484
48	21.067	RTE!	0.116	76431	21.046	21.162
49	22.280	RTE!	0.169	1032260	22.196	22.364
50	23.319	RTE!	0.115	62756	23.266	23.381

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-15(S)

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12309

Sample wt/vol: 1040 (g/mL) ML Lab File ID: Z5012

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/13/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	3- and 4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-15(S)

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12309

Sample wt/vol: 1040 (g/mL) ML Lab File ID: Z5012

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/13/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
100-02-7	4-Nitrophenol	24	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-ethylhexyl)phthalate	10	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-15(S)

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12309

Sample wt/vol: 1040 (g/mL) ML Lab File ID: Z5012

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/13/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 5

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

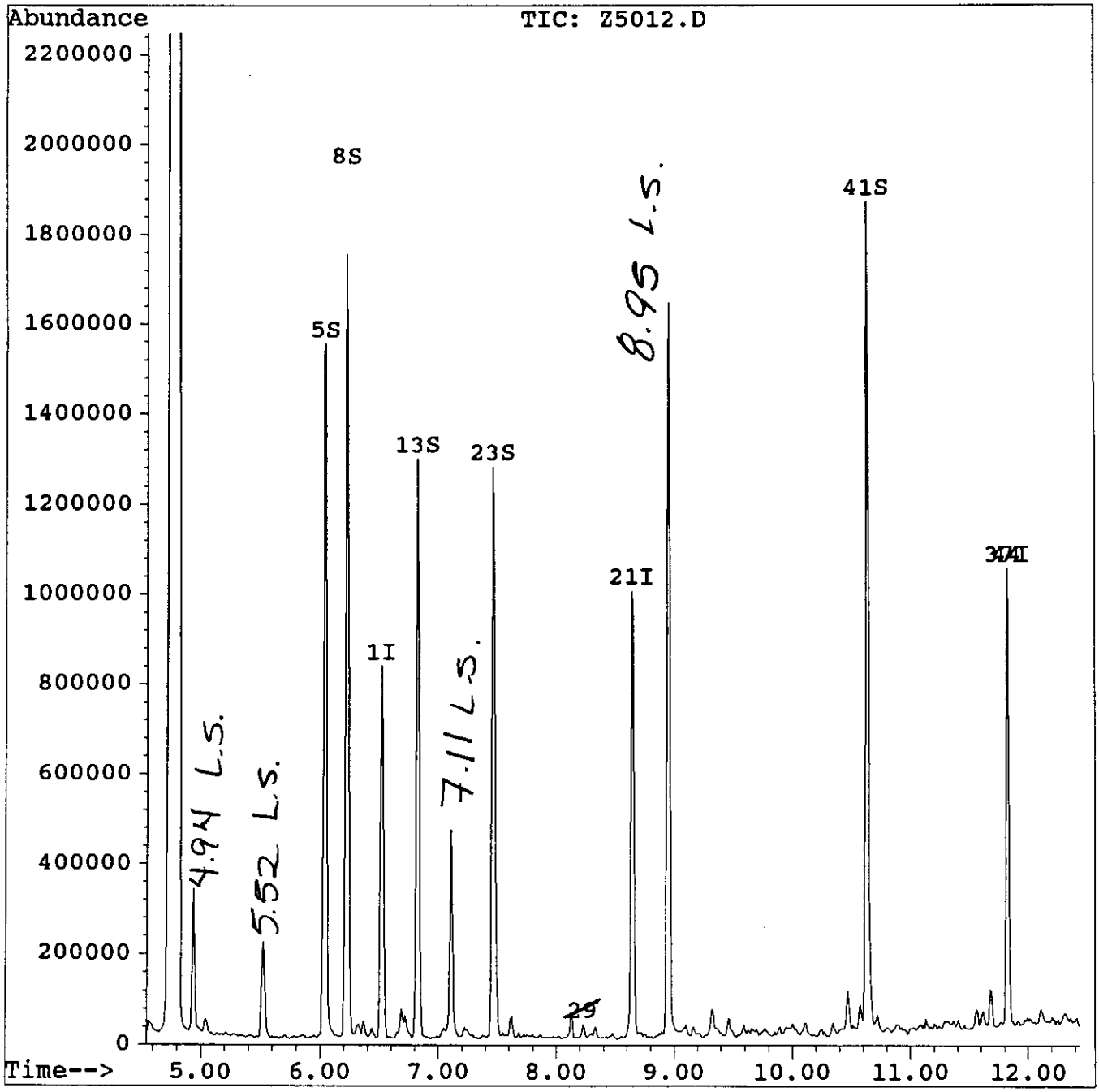
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.94	7	BJN
2.	UNKNOWN	5.52	5	BJN
3.	UNKNOWN	7.11	7	JN
4.	UNKNOWN CYCLIC COMPOUND	8.95	31	JN
5.	UNKNOWN	14.21	2	JN

Quantitation Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5012.D
Acq Time : 13 Nov 93 3:34 pm
Sample : MW-15(S),L,W,12309,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA) RE-INJ.
Quant Time: Nov 22 9:12 1993

Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Last Update : Mon Nov 22 08:10:30 1993
Response via : Single Level Calibration



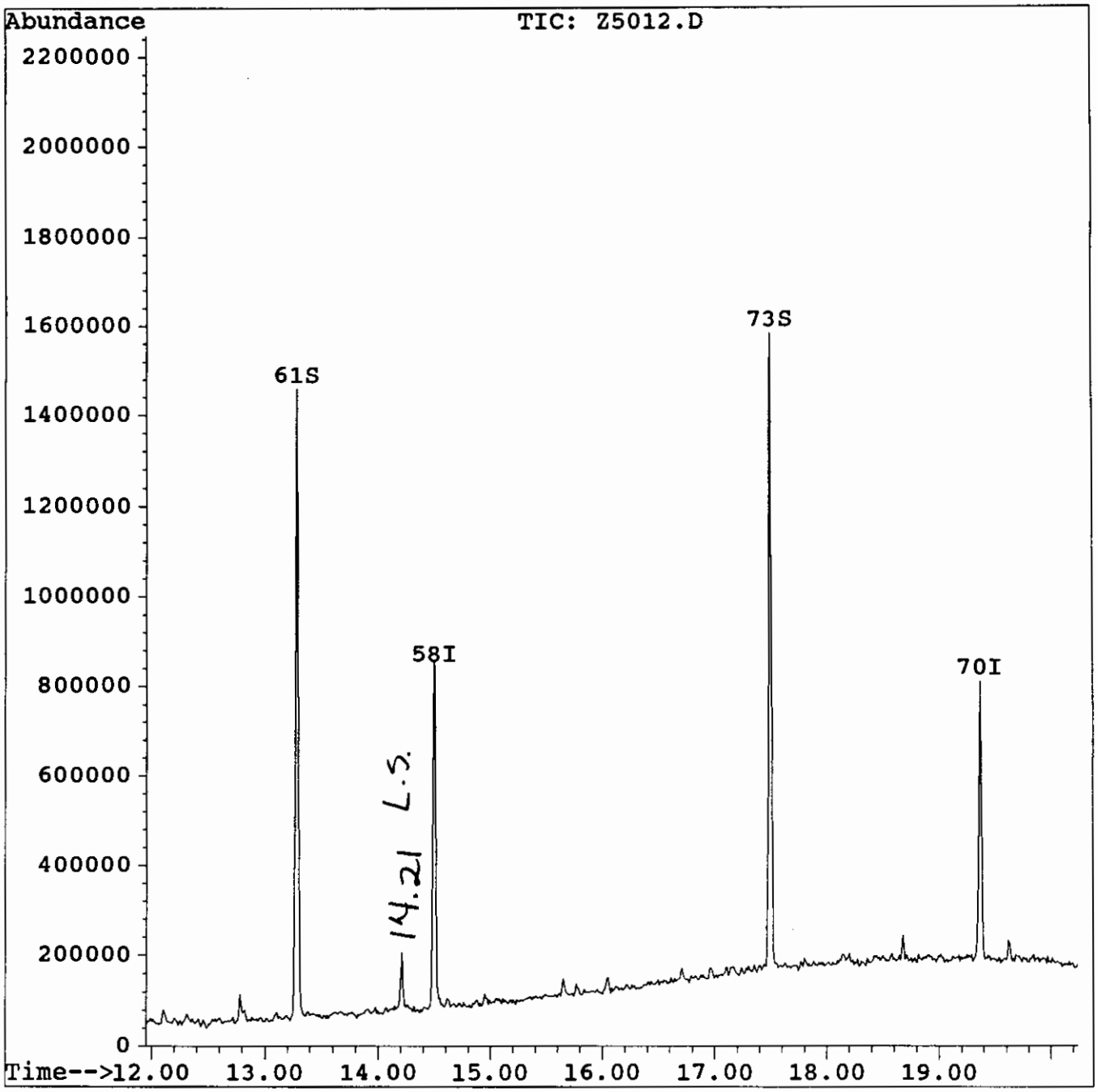
100086

Quantitation Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5012.D
Acq Time : 13 Nov 93 3:34 pm
Sample : MW-15(S),L,W,12309,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA) RE-INJ.
Quant Time: Nov 22 9:12 1993

Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Last Update : Mon Nov 22 08:10:30 1993
Response via : Single Level Calibration



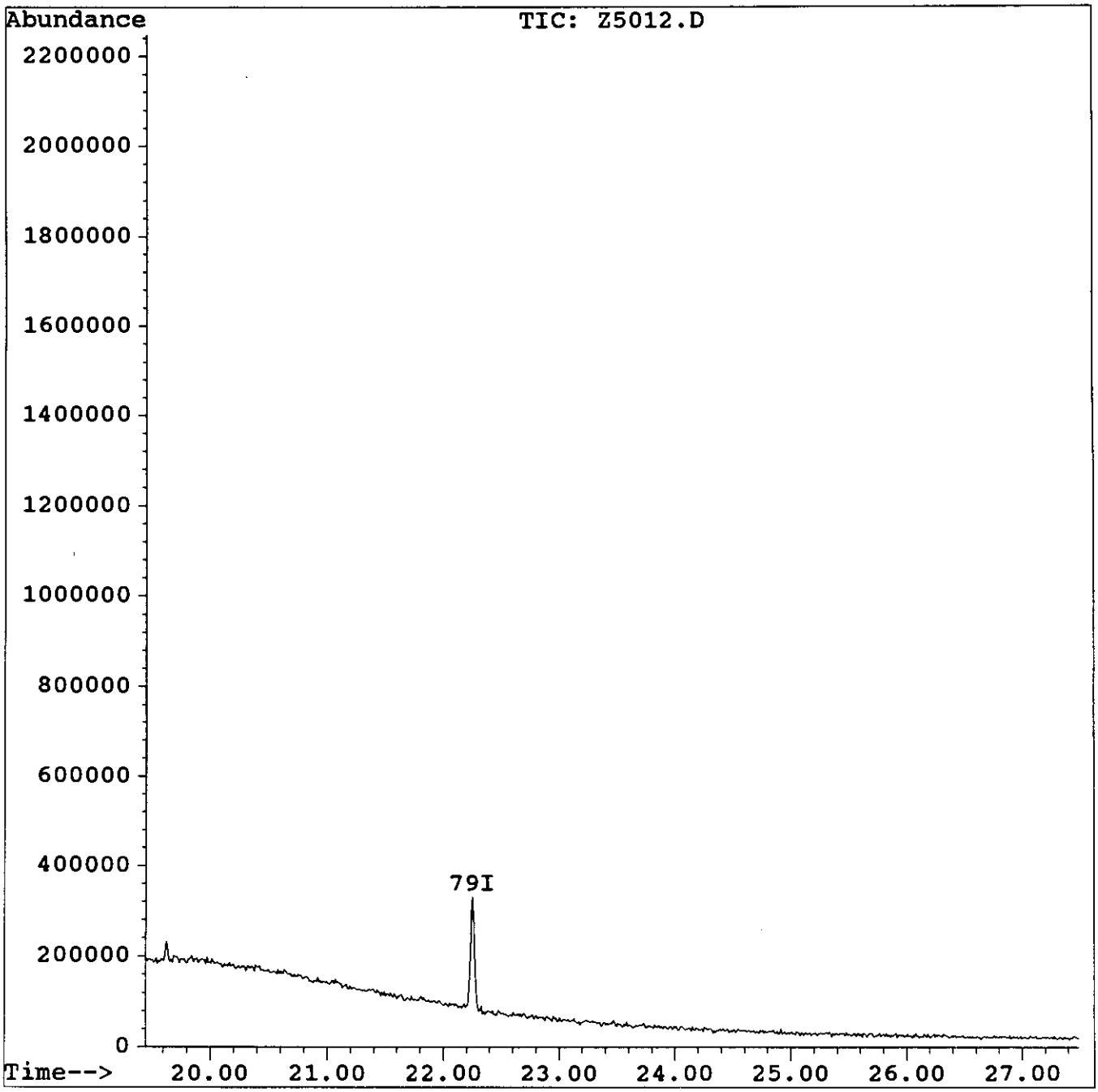
100087

Quantitation Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5012.D
Acq Time : 13 Nov 93 3:34 pm
Sample : MW-15(S),L,W,12309,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA) RE-INJ.
Quant Time: Nov 22 9:12 1993

Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Last Update : Mon Nov 22 08:10:30 1993
Response via : Single Level Calibration



100088

Quantitation Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5012.D
Acq Time : 13 Nov 93 3:34 pm
Sample : MW-15(S),L,W,12309,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA) RE-INJ.
Quant Time: Nov 22 9:12 1993

Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Last Update : Mon Nov 22 08:10:30 1993
Response via : Single Level Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) CI30 1,4-Dichlorobenzene-d	6.52	152	198332	20.00 ng/ul	-0.01
21) CI40 Naphthalene-d8	8.64	136	689870	20.00 ng/ul	0.00
37) CI50 Acenaphthene-d10	11.83	164	324966	20.00 ng/ul	0.00
58) CI60 Phenanthrene-d10	14.51	188	466571	20.00 ng/ul	0.00
70) CI70 Chrysene-d12	19.37	240	293696	20.00 ng/ul	0.00
79) CI75 Perylene-d12	22.25	264	182742	20.00 ng/ul	0.00
System Monitoring Compounds					**%Recovery**
4) CS50 2-Fluorophenol	4.80	112	604920	38.35 ng/ul	51.14%
5) CS45 Phenol-d5	6.05	99	957659	55.06 ng/ul	73.42%
8) CS70 2-Chlorophenol d4	6.23	132	732025	63.44 ng/ul	84.58%
13) CS75 1,2-Dichlorobenzene-d	6.82	152	282195	30.72 ng/ul	61.44%
23) CS20 Nitrobenzene-d5	7.46	82	644279	35.94 ng/ul	71.87%
41) CS25 2-Fluorobiphenyl	10.63	172	822995	32.50 ng/ul	65.00%
61) CS55 2,4,6-Tribromophenol	13.29	330	232980	58.11 ng/ul	77.48%
73) CS30 Terphenyl-d14	17.50	244	637268	35.54 ng/ul	71.08%
Target Compounds					**Qvalue**
29) C430 Benzoic Acid	8.23	122	7795	~~1.60 ng/ul~~ BRL	0
44) C535 Dimethylphthalate	11.83	163	73964	~~2.08 ng/ul~~ BRL	0

100089

(#) = qualifier out of range (m) = manual integration

QACHK report

.ata file C:\CHEMPC\DATA\Z111393\Z5012.D

Standard File: C:\CHEMPC\DATA\Z111393\Z5011.D 13 Nov 93 2:56 pm

ISTD	Compound	Std Area	Samp Area	% rec
CI30	1,4-Dichlorobenzene-d4	191590	198332	103.5
CI40	Naphthalene-d8	660701	689870	104.4
CI50	Acenaphthene-d10	331251	324966	98.1
CI60	Phenanthrene-d10	512622	466571	91.0
CI70	Chrysene-d12	322712	293696	91.0
CI75	Perylene-d12	260163	182742	70.2

	Surrogate Compound	Surr Conc	Surr Amt	%rec	Water limits
CS50	2-Fluorophenol	38.35	75.00	51.1	21-100
CS45	Phenol-d5	55.06	75.00	73.4	10- 94
CS70	2-Chlorophenol d4	63.44	75.00	84.6	33-110
CS75	1,2-Dichlorobenzene-d4	30.72	50.00	61.4	16-110
CS20	Nitrobenzene-d5	35.94	50.00	71.9	35-114
CS25	2-Fluorobiphenyl	32.50	50.00	65.0	43-116
CS55	2,4,6-Tribromophenol	58.11	75.00	77.5	10-123
CS30	Terphenyl-d14	35.54	50.00	71.1	33-141

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5012.D
Acq Time : 13 Nov 93 3:34 pm
Sample : MW-15(S),L,W,12309,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA) RE-INJ.

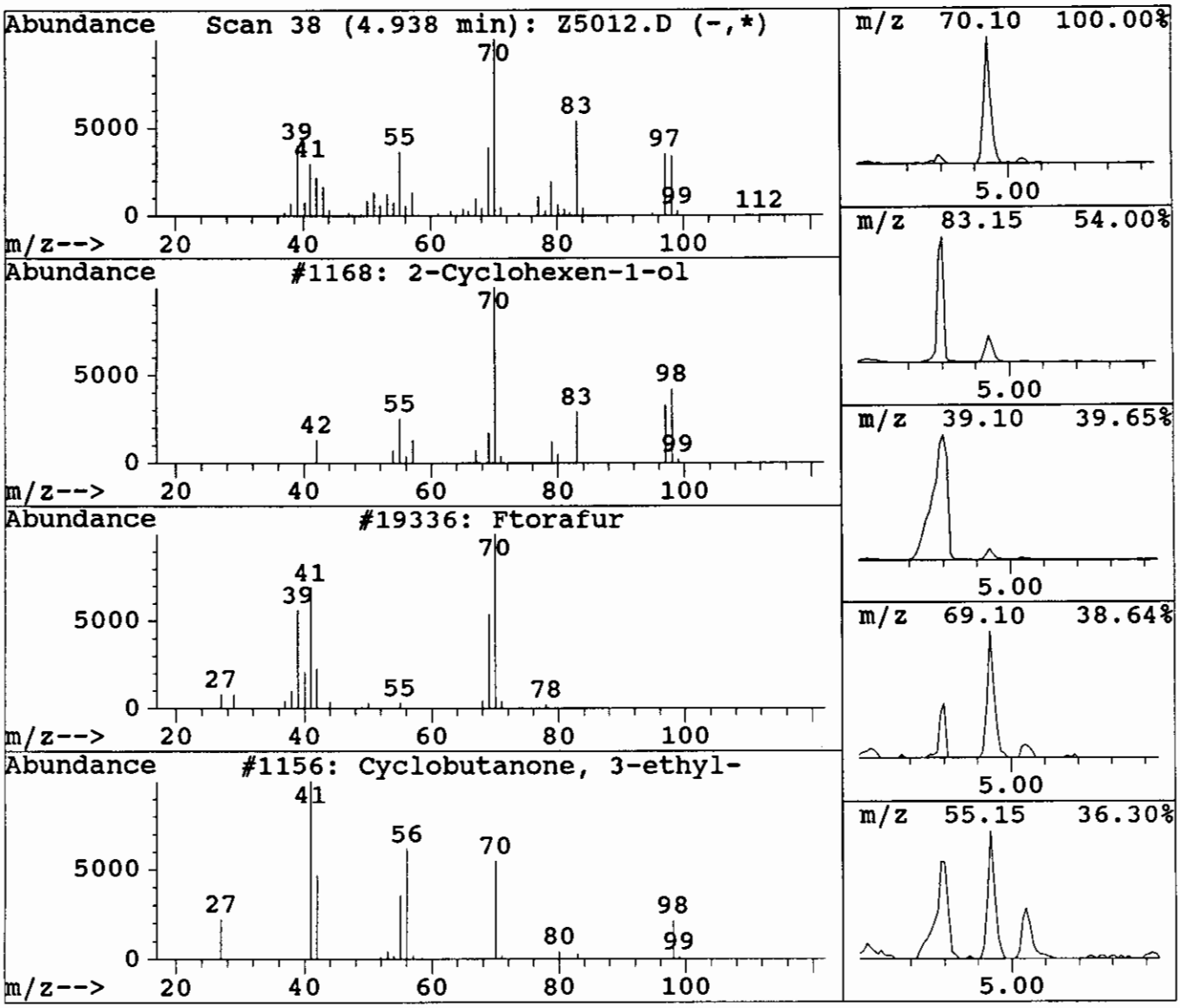
Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

link (B)

R.T.	Conc	Area	Relative to ISTD	R.T.
4.94	6.82 ng/ul	490244	CI30 1,4-Dichlorobenzene-d4	6.52

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	2-Cyclohexen-1-ol	1168	000822-67-3	76
2	Ftorafur	19336	017902-23-7	32
3	Cyclobutanone, 3-ethyl-	1156	056335-73-0	27
4	1-Butene, 2-ethyl-3-methyl-	1243	007357-93-9	25
5	1H-Pyrazole, 3-ethyl-4,5-dihydro-	1118	005920-29-6	25



100091

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5012.D
Acq Time : 13 Nov 93 3:34 pm
Sample : MW-15(S),L,W,12309,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA) RE-INJ.

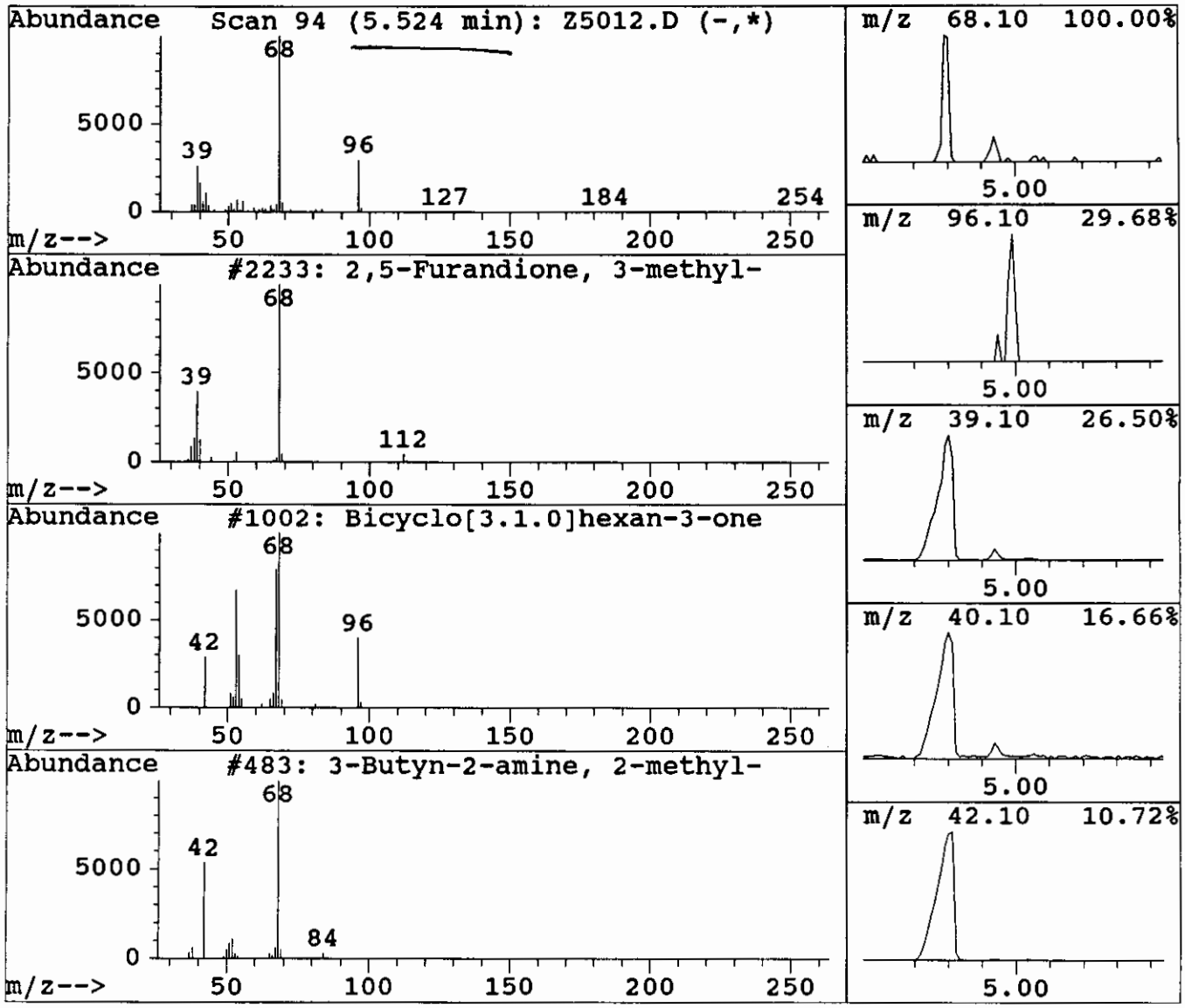
Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\METBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

Unk (B)

R.T.	Conc	Area	Relative to ISTD	R.T.
~~4.94~~ 5.524	~~6.82 ng/ul~~ 5.6	~~490244~~ 399858	CI30 1,4-Dichlorobenzene-d4	6.52

Hit# of 9	Tentative ID	Ref#	CAS#	Qual
1	2,5-Furandione, 3-methyl-	2233	000616-02-4	33
2	Bicyclo[3.1.0]hexan-3-one	1002	001755-04-0	32
3	3-Butyn-2-amine, 2-methyl-	483	002978-58-7	25
4	4(3H)-Pyrimidinone	978	051953-17-4	12
5	1,4-Pentadiene	179	000591-93-5	12



100092

TIC: Z5012.D

MW-15(S),L,W,12309,B,2UL

Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	5.524	rm	0.074	399858	5.493	5.566

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5012.D
Acq Time : 13 Nov 93 3:34 pm
Sample : MW-15(S),L,W,12309,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA) RE-INJ.

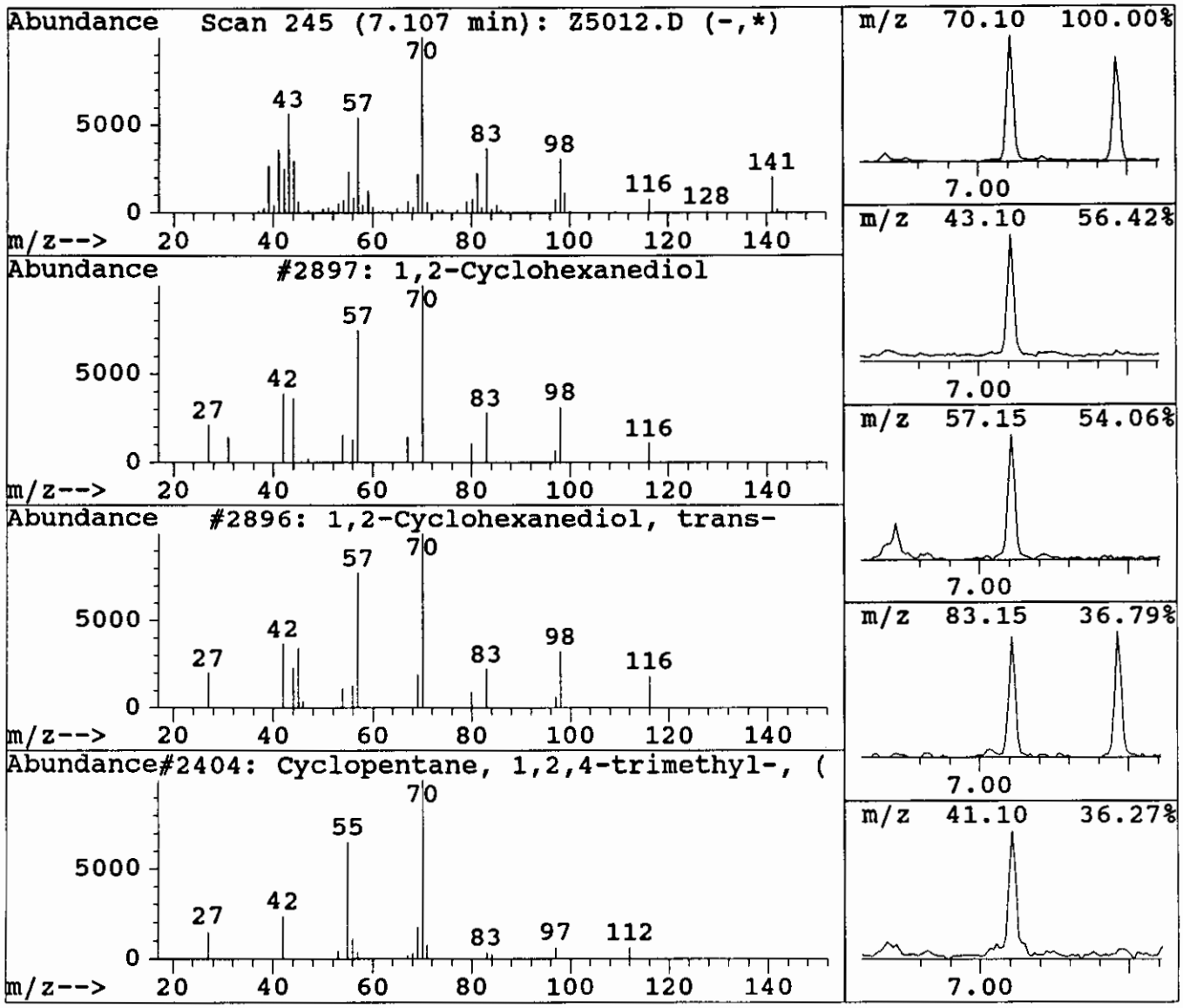
Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

link

R.T.	Conc	Area	Relative to ISTD	R.T.
7.11	10.40 ng/ul	747140	CI30 1,4-Dichlorobenzene-d4	6.52

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	1,2-Cyclohexanediol	2897	000931-17-9	52
2	1,2-Cyclohexanediol, trans-	2896	001460-57-7	42
3	Cyclopentane, 1,2,4-trimethyl-, (1.	2404	004850-28-6	32
4	1,4-Cyclohexanediol, trans-	2892	006995-79-5	27
5	1-Octene, 3-ethyl-	6567	074630-08-3	25



100094

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5012.D
Acq Time : 13 Nov 93 3:34 pm
Sample : MW-15(S),L,W,12309,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA) RE-INJ.

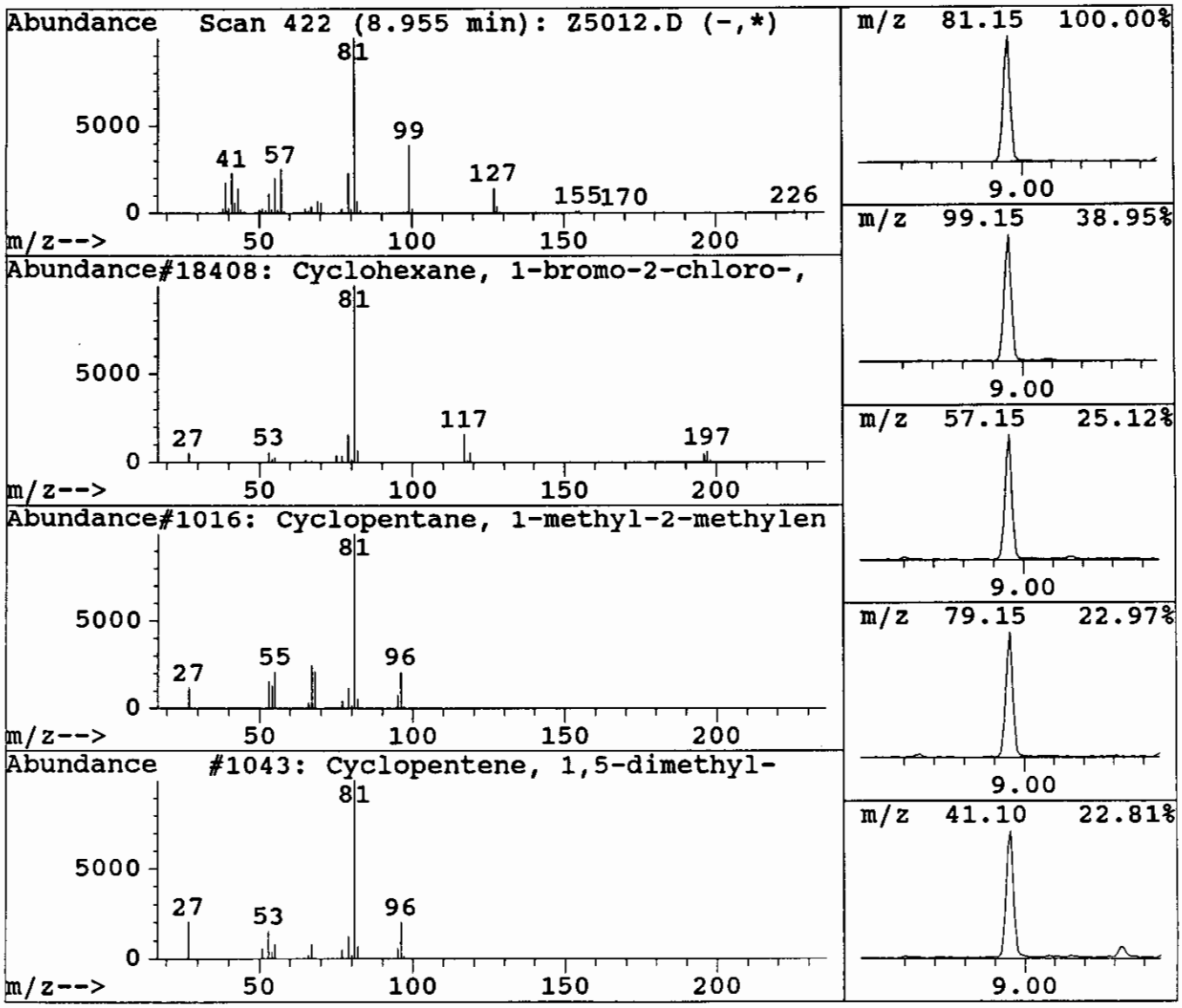
Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STDBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

Unk cyclic cmpd.

R.T.	Conc	Area	Relative to ISTD	R.T.
8.95	32.67 ng/ul	2767839	CI40 Naphthalene-d8	8.64

Hit# of 5	Tentative ID	Ref#	CAS#	Qual
1	Cyclohexane, 1-bromo-2-chloro-, cis	18408	051422-75-4	28
2	Cyclopentane, 1-methyl-2-methylene-	1016	041158-41-2	25
3	Cyclopentene, 1,5-dimethyl-	1043	016491-15-9	25
4	2-Propanol, 1,1,1,3,3,3-hexafluoro-	12303	000920-66-1	10
5	Heptane, 2-iodo-	24550	018589-29-2	7



100095

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\Z111393\Z5012.D
Acq Time : 13 Nov 93 3:34 pm
Sample : MW-15(S),L,W,12309,B,2UL
Misc : VEOBRIEN,8650,5,WATER (3BNA) RE-INJ.

Operator: INSTRUMENT
Inst : MS_5971
Multiplr: 1.00

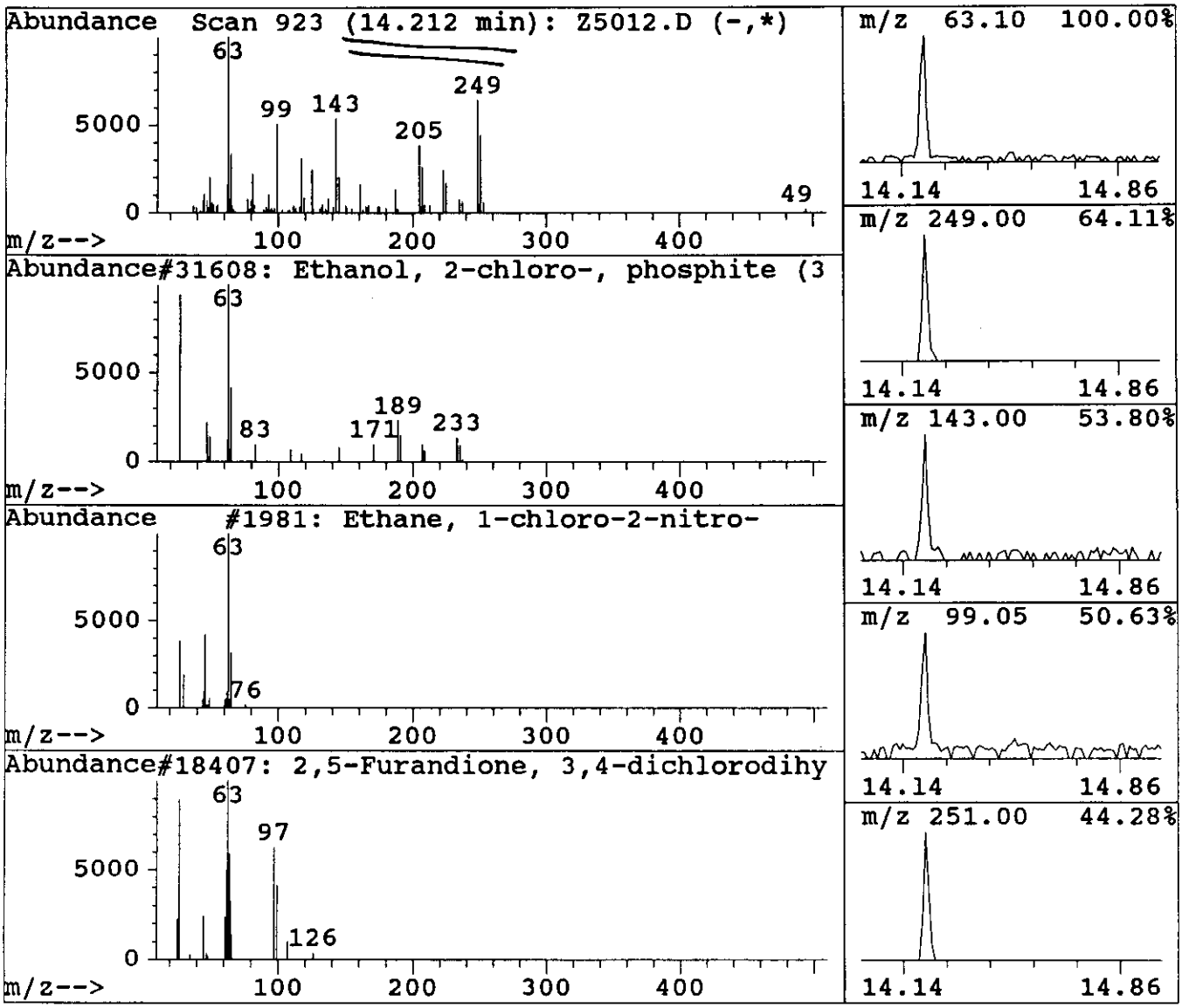
Method : C:\HPCHEM\1\METHODS\METBN2.M
Title : VERSAR LABORATORIES INC.
Library : C:\DATABASE\NBS54K.L

link.

R.T.	Conc	Area	Relative to ISTD	R.T.
~~14.50~~ 14.212	~~20.00 ng/ul~~ 2.0	~~1484883~~ 149641	CI60 Phenanthrene-d10	14.51

Hit# of 12

Hit#	Tentative ID	Ref#	CAS#	Qual
1	Ethanol, 2-chloro-, phosphite (3:1)	31608	000140-08-9	37
2	Ethane, 1-chloro-2-nitro-	1981	000625-47-8	32
3	2,5-Furandione, 3,4-dichlorodihydro	18407	054845-45-3	32
4	Benzene, 2,4-dibromo-1-methoxy-	30967	021702-84-1	25
5	Propanoic acid, 2-chloro-	1861	000598-78-7	23



100056

TIC: Z5012.D

MW-15(S),L,W,12309,B,2UL

Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	14.212	rm	0.042	149641	14.191	14.234

4th IS area
1484883

TIC: Z5012.D

MW-15(S),L,W,12309,B,2UL

Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	4.801	rBV	0.252	48244399	4.633	4.885
2	4.938	rVB	0.126	490244	4.885	5.011
3	6.048	rBV	0.199	2867564	5.974	6.173
4	6.226	rBV	0.105	3037071	6.173	6.278
5	6.519	rBV	0.095	1437112	6.477	6.572
6	6.823	rVB	0.158	2133594	6.781	6.939
7	7.107	rVB	0.126	747140	7.065	7.190
8	7.463	rBV	0.126	2285724	7.410	7.536
9	8.642	rBV	0.125	1694592	8.569	8.694
10	8.955	rBV	0.219	2767839	8.819	9.038
11	10.629	rVB	0.095	2903660	10.597	10.692
12	11.826	rBV	0.158	1594561	11.741	11.899
13	13.286	rBV	0.138	2410779	13.222	13.360
14	14.497	rBV	0.137	1484883 IS	14.444	14.581
15	17.503	rBV	0.148	2338170	17.419	17.567
16	19.368	rBV	0.127	1084322	19.305	19.432
17	22.253	rVB	0.117	634364	22.189	22.306

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W-5(S)

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12145

Sample wt/vol: 1040 (g/mL) ML Lab File ID: Z4990

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	3- and 4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	24	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	24	U
83-32-9	Acenaphthene	10	U

100059

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W-5(S)

L Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12145

Sample wt/vol: 1040 (g/mL) ML Lab File ID: Z4990

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	24	U
100-02-7	4-Nitrophenol	24	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	24	U
534-52-1	4,6-Dinitro-2-methylphenol	24	U
86-30-6	N-nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	24	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-ethylhexyl)phthalate	10	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

W-5(S)

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12145

Sample wt/vol: 1040 (g/mL) ML Lab File ID: Z4990

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

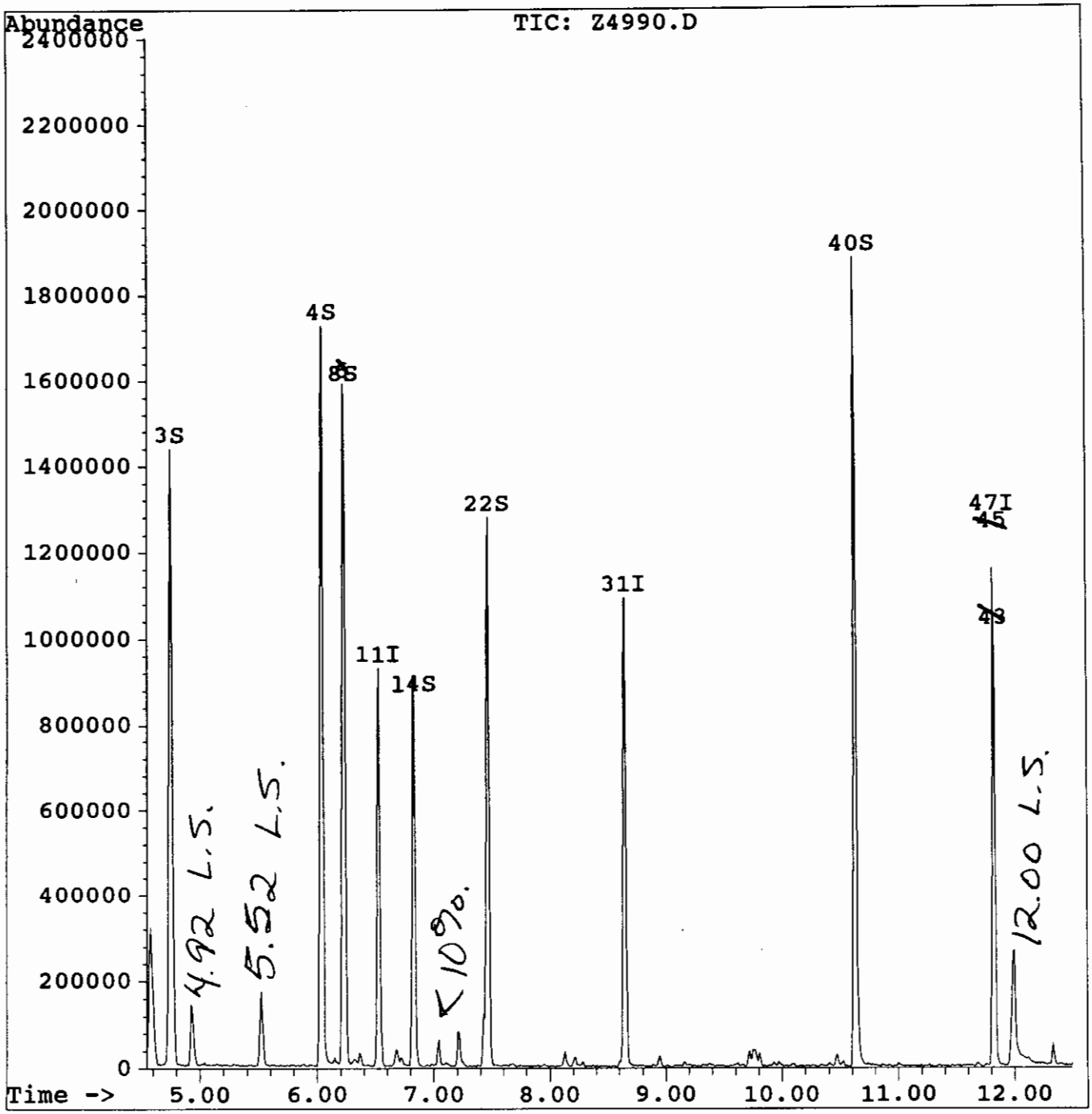
Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.92	4	BJN
2.	UNKNOWN	5.52	4	BJN
3. 50840	BENZOIC ACID, 2,4-DICHLORO-	12.00	7	JN
4.	UNKNOWN	17.35	6	JN

QUANT REPORT

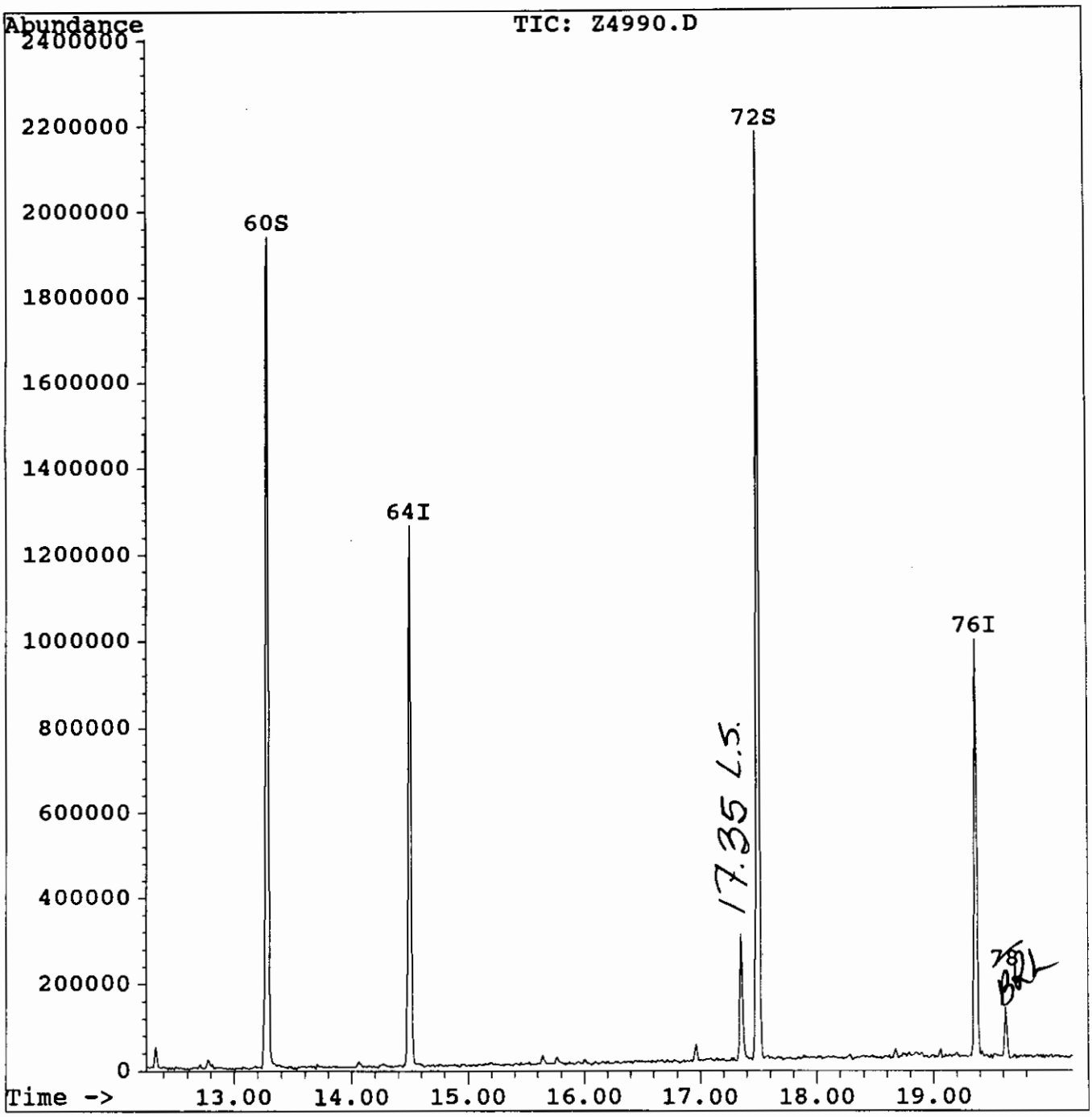
Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 3:25 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4990.D
Name: W-5(S),L,W,12145,B,2UL
Misc: VEOBRIEN,8632,4,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Fri Nov 12 17:02:46 1993
Quantitated using Single Level Calibration Z4982.D



100102

QUANT REPORT

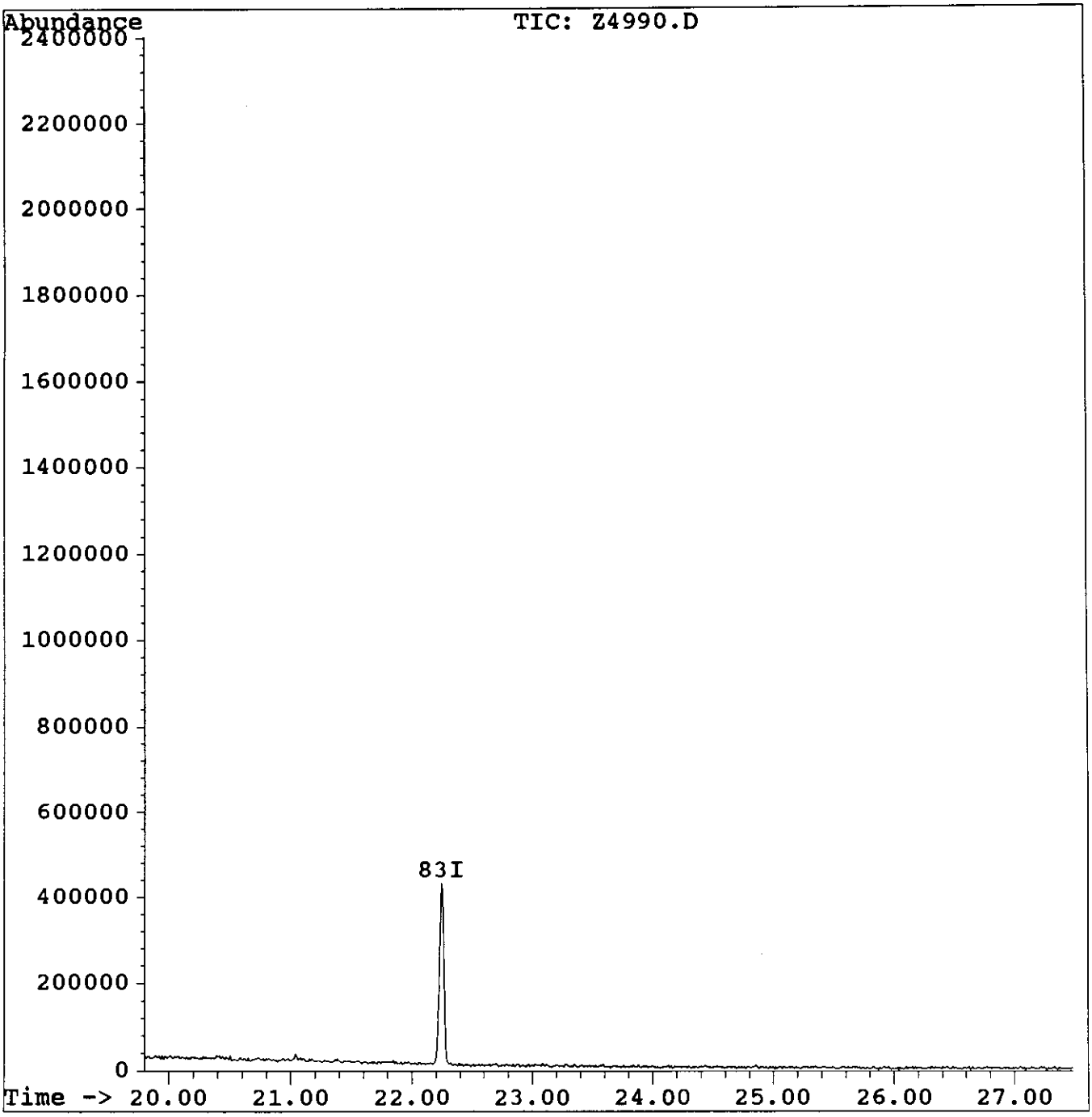
Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 3:25 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4990.D
Name: W-5(S),L,W,12145,B,2UL
Misc: VEOBRIEN,8632,4,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Fri Nov 12 17:02:46 1993
Quantitated using Single Level Calibration Z4982.D



100103

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 3:25 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4990.D
Name: W-5(S),L,W,12145,B,2UL
Misc: VEOBRIEN,8632,4,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Fri Nov 12 17:02:46 1993
Quantitated using Single Level Calibration Z4982.D



100104

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 3:25 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4990.D
Name: W-5(S),L,W,12145,B,2UL
Misc: VEOBRIEN,8632,4,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Fri Nov 12 17:00:29 1993
Quantitated using Single Level Calibration Z4982.D

Internal Standards

Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
11) CI30 1,4-Dichlorobenzene-d	6.53	152	214784	20.00	ng/ul	-0.00
31) CI40 Naphthalene-d8	8.65	136	781123	20.00	ng/ul	-0.01
47) CI50 Acenaphthene-d10	11.82	164	410719	20.00	ng/ul	-0.01
64) CI60 Phenanthrene-d10	14.50	188	661268	20.00	ng/ul	-0.01
76) CI70 Chrysene-d12	19.37	240	475318	20.00	ng/ul	-0.03
83) CI75 Perylene-d12	22.24	264	359325	20.00	ng/ul	-0.04

System Monitoring Compounds

						%Recovery
3) CS50 2-Fluorophenol	4.75	112	660500	36.51	ng/ul	48.68%
4) CS45 Phenol-d5	6.04	99	972537	47.90	ng/ul	63.86%
8) CS70 2-Chlorophenol d4	6.23	132	683963	53.26	ng/ul	71.01%
14) CS75 1,2-Dichlorobenzene-d	6.83	152	214540	22.14	ng/ul	44.29%
22) CS20 Nitrobenzene-d5	7.47	82	642987	30.11	ng/ul	60.21%
40) CS25 2-Fluorobiphenyl	10.63	172	846895	25.68	ng/ul	51.36%
60) CS55 2,4,6-Tribromophenol	13.29	330	349057	57.97	ng/ul	77.29%
72) CS30 Terphenyl-d14	17.50	244	999190	35.32	ng/ul	70.65%

Target Compounds

						ISTD#
6) C320 Aniline	6.22	66	230010	~~36.51 ng/ul~~	NC	002#
43) C535 Dimethylphthalate	11.83	163	91126	~~2.62 ng/ul~~	BRL	003#
45) C544 2,6-Dinitrotoluene	11.82	165	51764	~~6.49 ng/ul~~	NC	003#
78) C741 bis(2-Ethylhexyl)phth	19.62	149	46669	~~1.68 ng/ul~~	BRL	005

Ready for forms SJF 11/13/93. Compliant Run SJF 11/12/93

(#) = qualifier out of range

100105

QACHK report

ata file C:\CHEMPC\DATA\Z111293\Z4990.D

Standard File: C:\CHEMPC\DATA\Z111293\Z4982.D 12 Nov 93 9:38 am

ISTD Compound	Std Area	Samp Area	% rec
CI30 1,4-Dichlorobenzene-d4	326957	214784	65.7
CI40 Naphthalene-d8	1122804	781123	69.6
CI50 Acenaphthene-d10	529800	410719	77.5
CI60 Phenanthrene-d10	934500	661268	70.8
CI70 Chrysene-d12	660140	475318	72.0
CI75 Perylene-d12	632224	359325	56.8

Surrogate Compound	Surr Conc	Surr Amt	%rec	Water limits
CS50 2-Fluorophenol	36.51	75.00	48.7	21-100
CS45 Phenol-d5	47.90	75.00	63.9	10- 94
CS70 2-Chlorophenol d4	53.26	75.00	71.0	33-110
CS75 1,2-Dichlorobenzene-d4	22.14	50.00	44.3	16-110
CS20 Nitrobenzene-d5	30.11	50.00	60.2	35-114
CS25 2-Fluorobiphenyl	25.68	50.00	51.4	43-116
CS55 2,4,6-Tribromophenol	57.97	75.00	77.3	10-123
CS30 Terphenyl-d14	35.32	50.00	70.6	33-141

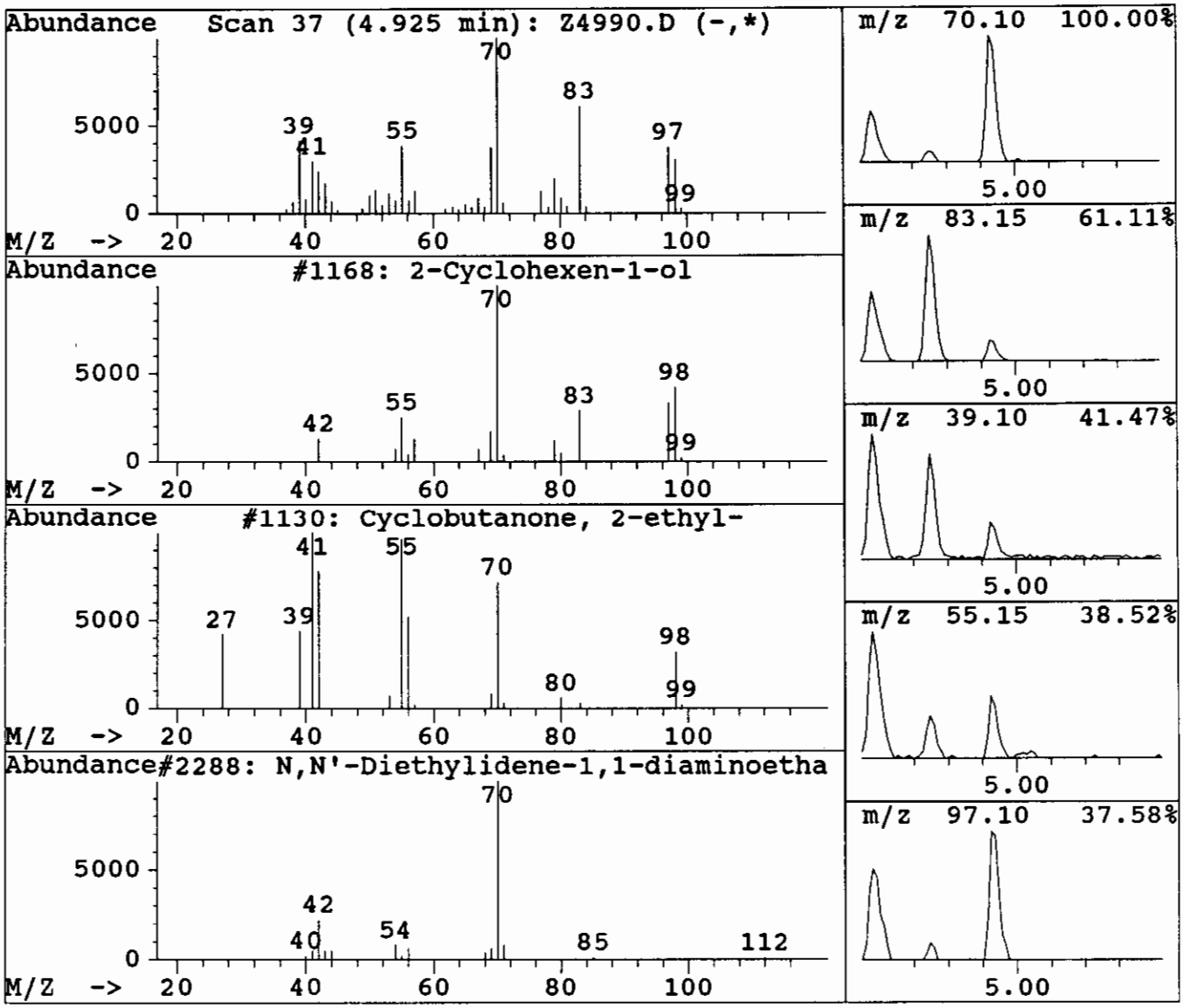
Tentatively Identified Compound (LSC)

Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 3:25 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4990.D
Name: W-5(S),L,W,12145,B,2UL
Misc: VEOBRIEN,8632,4,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
4.92	3.68 ng/ul	283611	CI30 1,4-Dichlorobenzene-	6.53

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	2-Cyclohexen-1-ol	1168	000822-67-3	58
2	Cyclobutanone, 2-ethyl-	1130	010374-14-8	25
3	N,N'-Diethylidene-1,1-diaminoethane	2288	000623-75-6	25
4	1H-Pyrazole, 4,5-dihydro-4,5-dimeth	1126	028019-94-5	22
5	1H-Pyrazole, 3-ethyl-4,5-dihydro-	1118	005920-29-6	22



100107

Tentatively Identified Compound (LSC)

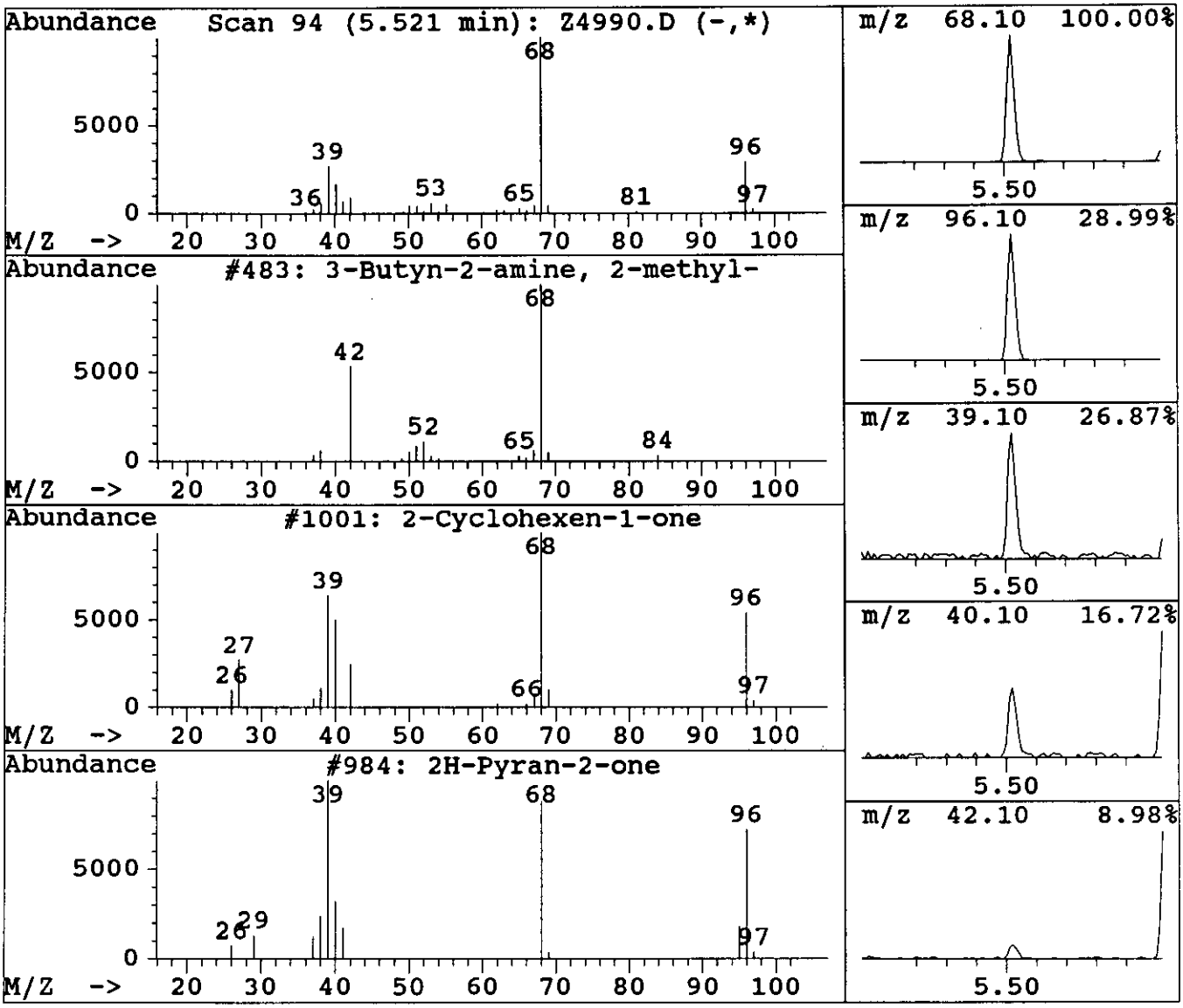
Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 3:25 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4990.D
Name: W-5(S),L,W,12145,B,2UL
Misc: VEOBRIEN,8632,4,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Unk B

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
5.52	4.04 ng/ul	311570	CI30 1,4-Dichlorobenzene-	6.53

Hit# of 5	Tentative ID	Ref#	CAS#	Qual
1	3-Butyn-2-amine, 2-methyl-	483	002978-58-7	33
2	2-Cyclohexen-1-one	1001	000930-68-7	10
3	2H-Pyran-2-one	984	000504-31-4	10
4	2-Cyclopenten-1-one, 3-methyl-	998	002758-18-1	9
5	1H-Pyrazole, 3,5-dimethyl-	991	000067-51-6	9



100108

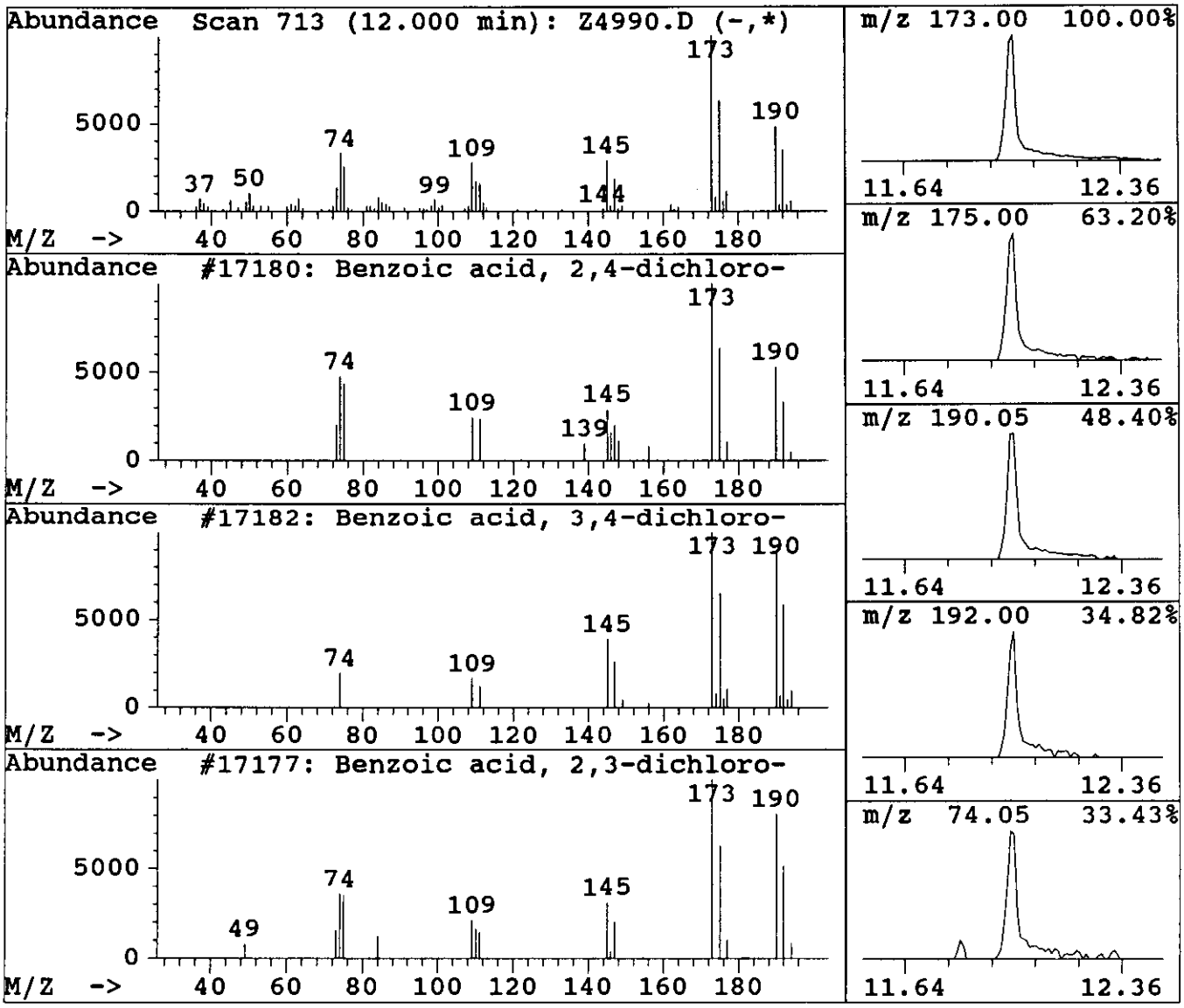
Tentatively Identified Compound (LSC)

Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 3:25 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4990.D
Name: W-5(S),L,W,12145,B,2UL
Misc: VEOBRIEN,8632,4,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
12.00	7.28 ng/ul	697705	CI50 Acenaphthene-d10	11.82

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	Benzoic acid, 2,4-dichloro-	17180	000050-84-0	91
2	Benzoic acid, 3,4-dichloro-	17182	000051-44-5	70
3	Benzoic acid, 2,3-dichloro-	17177	000050-45-3	64
4	Benzoic acid, 2,5-dichloro-	17178	000050-79-3	58
5	Benzoyl chloride, 2,4-dichloro-	20951	000089-75-8	58



100109

Tentatively Identified Compound (LSC)

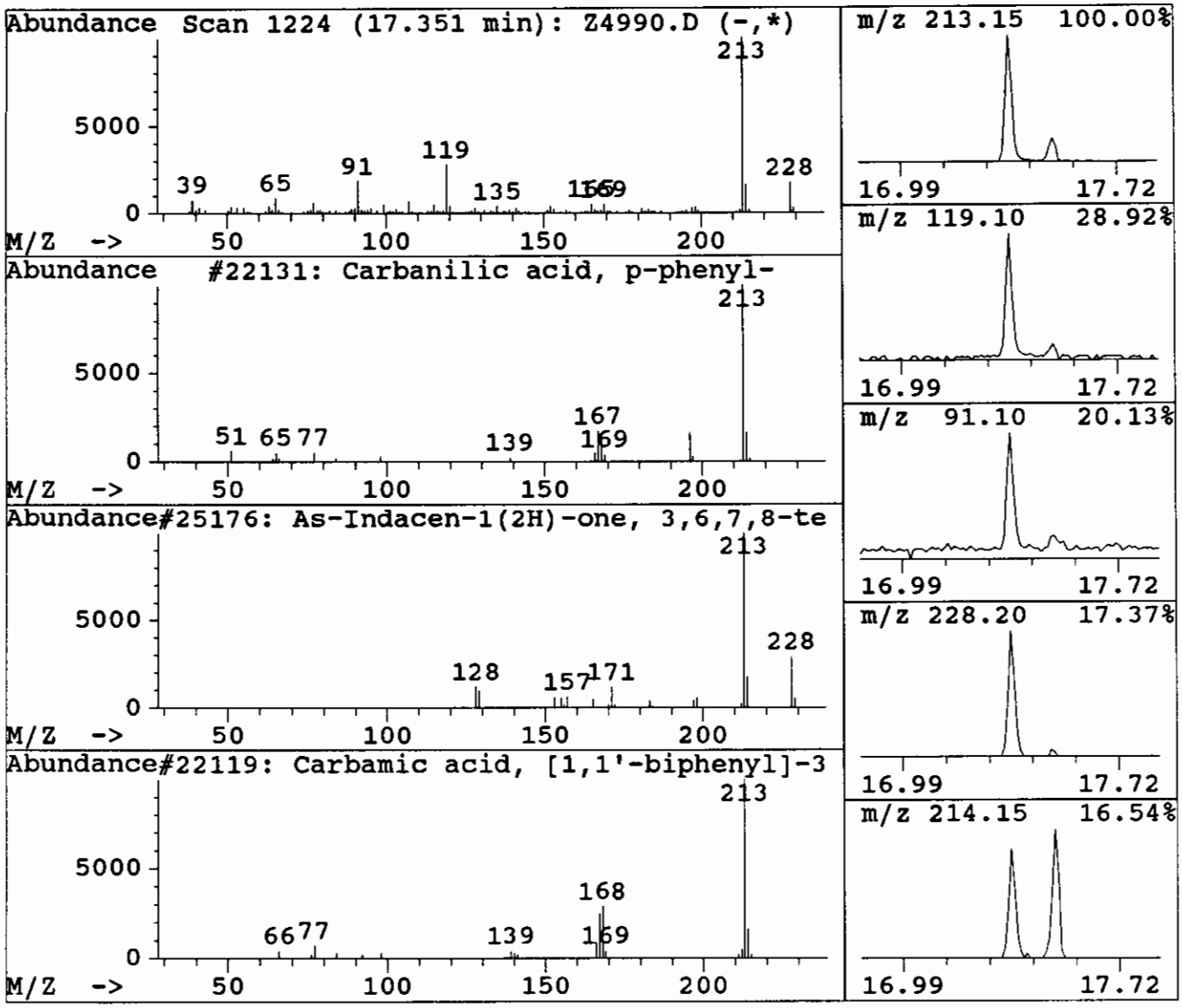
Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 3:25 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4990.D
Name: W-5(S),L,W,12145,B,2UL
Misc: VEOBRIEN,8632,4,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Ink

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
17.35	6.18 ng/ul	504123	CI70 Chrysene-d12	19.37

Hit# of 8	Tentative ID	Ref#	CAS#	Qual
1	Carbanilic acid, p-phenyl-	22131	004474-53-7	70
2	As-Indacen-1(2H)-one, 3,6,7,8-tetra	25176	055591-18-9	43
3	Carbamic acid, [1,1'-biphenyl]-3-yl	22119	055030-29-0	40
4	Phenol, 4,4'-(1-methylethylidene)bi	25152	000080-05-7	35
5	Phenol, 2-[1-(4-hydroxyphenyl)-1-me	25156	000837-08-1	12



100110

Tentatively Identified Compound (LSC) summary

Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 3:25 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4990.D
Name: W-5(S),L,W,12145,B,2UL
'isc: VEOBRIEN,8632,4,WATER (3BNA)
ethod: BN2MS.M
Title: VERSAR LABORATORIES INC.
Library Searched: nbs54k.l

TIC name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc
Benzenethiol, 2-amin	4.58	7.1	ng/ul	549293	ISTD01	6.53	1542815	20.0
2-Cyclohexen-1-ol	4.92	3.7	ng/ul	283611	ISTD01	6.53	1542815	20.0
3-Butyn-2-amine, 2-m	5.52	4.0	ng/ul	311570	ISTD01	6.53	1542815	20.0
Benzoic acid, 2,4-di	12.00	7.3	ng/ul	697705	ISTD03	11.82	2035246	20.0
Carbanilic acid, p-p	17.35	6.2	ng/ul	504123	ISTD05	19.37	1630418	20.0

TIC: Z4990.D

W-5(S),L,W,12145,B,2UL

Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	4.579	RTE!	0.105	549293	4.568	4.673
2	4.747	RTE!	0.199	2736325	4.673	4.872
3	4.925	RTE!	0.126	283611	4.872	4.998
4	5.521	RTE!	0.136	311570	5.458	5.594
5	6.044	RTE!	0.136	2991023	5.981	6.118
6	6.223	RTE!	0.105	2902098	6.181	6.286
7	6.359	RTE!	0.063	39888	6.349	6.411
8	6.527	RTE!	0.126	1542815	6.474	6.600
9	6.673	RTE!	0.094	83698	6.610	6.705
10	6.820	RTE!	0.136	1585671	6.768	6.904
11	7.040	RTE!	0.084	86617	6.998	7.082
12	7.207	RTE!	0.126	149117	7.166	7.291
13	7.469	RTE!	0.199	2192455	7.333	7.532
14	8.128	RTE!	0.126	55246	8.045	8.170
15	8.212	RTE!	0.084	41527	8.170	8.254
16	8.652	RTE!	0.199	1897746	8.557	8.756
17	8.945	RTE!	0.073	36529	8.913	8.986
18	9.719	RTE!	0.052	60649	9.687	9.740
19	9.760	RTE!	0.052	89430	9.740	9.792
20	10.471	RTE!	0.063	42892	10.440	10.503
21	10.628	RTE!	0.200	2909448	10.565	10.765
22	11.821	RTE!	0.137	1916016	11.779	11.916
23	12.000	RTE!	0.189	697705	11.916	12.105
24	12.334	RTE!	0.094	64770	12.283	12.376
25	12.773	RTE!	0.105	42882	12.741	12.846
26	13.286	RTE!	0.231	3434277	13.202	13.433
27	14.501	RTE!	0.137	2035246	14.438	14.575
8	15.642	RTE!	0.094	38553	15.590	15.684
29	15.768	RTE!	0.105	42383	15.737	15.841
30	16.963	RTE!	0.094	67603	16.900	16.994
31	17.351	RTE!	0.126	504123	17.309	17.435
32	17.499	RTE!	0.106	3508344	17.446	17.552
33	18.402	RTE!	0.105	35606	18.308	18.412
34	18.675	RTE!	0.074	39582	18.633	18.706
35	19.368	RTE!	0.116	1630418	19.294	19.410
36	19.620	RTE!	0.084	172075	19.589	19.673
37	21.038	RTE!	0.147	56118	20.996	21.143
38	22.245	RTE!	0.169	1075682	22.171	22.340

STANDARDS DATA

6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: VERSAR INC. Contract: _____

I Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Instrument ID: Z Calibration Date(s): 11/09/93 11/09/93

Calibration Times: 1414 1639

LAB FILE ID: RRF20 = Z4941 RRF50 = Z4942
RRF80 = Z4940 RRF120= Z4939 RRF160= Z4938

COMPOUND	RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD
Phenol *	1.955	1.867	1.799	1.645	1.584	1.770	8.7*
bis(2-Chloroethyl)ether *	1.492	1.455	1.382	1.281	1.239	1.370	7.9*
2-Chlorophenol *	1.469	1.392	1.321	1.277	1.233	1.338	7.0*
1,3-Dichlorobenzene *	1.458	1.416	1.353	1.297	1.279	1.361	5.6*
1,4-Dichlorobenzene *	1.478	1.439	1.376	1.322	1.296	1.382	5.5*
1,2-Dichlorobenzene *	1.411	1.340	1.258	1.198	1.164	1.274	8.0*
2-Methylphenol *	1.383	1.329	1.245	1.184	1.148	1.258	7.8*
2,2'-oxybis(1-Chloropropane	1.269	1.194	1.128	1.064	1.091	1.149	7.2
3- and 4-Methylphenol *	1.440	1.385	1.337	1.287	1.289	1.348	4.9*
N-Nitroso-di-n-propylamine *	1.021	1.016	0.956	0.904	0.866	0.953	7.2*
Hexachloroethane *	0.878	0.848	0.833	0.778	0.747	0.817	6.5*
Nitrobenzene *	0.489	0.471	0.473	0.465	0.432	0.466	4.5*
Isophorone *	0.944	0.896	0.885	0.853	0.853	0.886	4.2*
Nitrophenol *	0.278	0.273	0.271	0.257	0.243	0.264	5.4*
2,4-Dimethylphenol *	0.550	0.541	0.535	0.542	0.520	0.538	2.1*
bis(2-Chloroethoxy)methane *	0.504	0.475	0.461	0.452	0.427	0.464	6.1*
2,4-Dichlorophenol *	0.349	0.338	0.328	0.322	0.314	0.330	4.1*
1,2,4-Trichlorobenzene *	0.429	0.416	0.401	0.396	0.390	0.406	3.9*
Naphthalene *	1.147	1.048	1.018	0.956	0.907	1.015	9.0*
4-Chloroaniline	0.486	0.463	0.444	0.420	0.404	0.443	7.4
Hexachlorobutadiene	0.307	0.305	0.304	0.306	0.310	0.306	0.8
4-Chloro-3-methylphenol *	0.522	0.499	0.489	0.466	0.460	0.487	5.2*
2-Methylnaphthalene *	0.728	0.662	0.621	0.595	0.595	0.640	8.8*
Hexachlorocyclopentadiene	0.293	0.358	0.354	0.431	0.438	0.375	16.1
2,4,6-Trichlorophenol *	0.530	0.524	0.526	0.548	0.545	0.535	2.1*
2,4,5-Trichlorophenol *	0.564	0.571	0.566	0.574	0.558	0.567	1.1*
2-Chloronaphthalene *	1.206	1.202	1.168	1.180	1.131	1.177	2.6*
2-Nitroaniline	0.469	0.475	0.491	0.501	0.481	0.483	2.6
Dimethylphthalate	1.712	1.624	1.642	1.635	1.648	1.652	2.1
Acenaphthylene *	1.655	1.615	1.582	1.598	1.528	1.596	2.9*
2,6-Dinitrotoluene *	0.371	0.365	0.376	0.378	0.363	0.371	1.8*
3-Nitroaniline	0.399	0.378	0.374	0.374	0.356	0.376	4.1
Acenaphthene *	1.176	1.130	1.124	1.125	1.080	1.127	3.0*
2,4-Dinitrophenol	0.283	0.308	0.330	0.353	0.355	0.326	9.4
4-Nitrophenol	0.425	0.452	0.485	0.508	0.515	0.477	8.0
Dibenzofuran	1.817	1.744	1.748	1.759	1.711	1.756	2.2
2,4-Dinitrotoluene *	0.533	0.505	0.536	0.544	0.533	0.530	2.8*

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

100114

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: VERSAR INC. Contract: _____

I Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Instrument ID: Z Calibration Date(s): 11/09/93 11/09/93

Calibration Times: 1414 1639

LAB FILE ID: RRF20 = Z4941 RRF50 = Z4942
RRF80 = Z4940 RRF120= Z4939 RRF160= Z4938

COMPOUND	RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD
Diethylphthalate	2.004	1.862	1.858	1.892	1.901	1.903	3.1
4-Chlorophenyl-phenylether *	0.779	0.748	0.726	0.751	0.764	0.754	2.6*
Fluorene *	1.438	1.327	1.297	1.321	1.364	1.349	4.1*
4-Nitroaniline	0.386	0.359	0.376	0.383	0.371	0.375	2.9
4,6-Dinitro-2-methylphenol	0.221	0.237	0.239	0.236	0.231	0.233	3.1
N-nitrosodiphenylamine (1)	0.561	0.550	0.515	0.488	0.486	0.520	6.7
4-Bromophenyl-phenylether *	0.235	0.230	0.215	0.215	0.218	0.223	4.2*
Hexachlorobenzene *	0.287	0.287	0.280	0.286	0.293	0.287	1.6*
Pentachlorophenol *	0.185	0.186	0.190	0.191	0.192	0.189	1.6*
Phenanthrene *	1.209	1.132	1.108	1.069	1.071	1.118	5.1*
Anthracene *	1.132	1.049	1.023	1.002	0.979	1.037	5.7*
Carbazole	1.060	0.962	0.938	0.898	0.884	0.948	7.4
-n-butylphthalate	1.821	1.579	1.541	1.454	1.493	1.578	9.1
.uoranthene *	1.363	1.245	1.247	1.202	1.195	1.250	5.4*
Pyrene *	1.740	1.716	1.779	1.678	1.584	1.699	4.4*
Butylbenzylphthalate	1.049	0.955	1.022	0.937	0.928	0.978	5.5
3,3'-Dichlorobenzidine	0.350	0.344	0.348	0.380	0.408	0.366	7.5
Benzo(a)anthracene *	1.396	1.324	1.366	1.387	1.372	1.369	2.0*
Chrysene *	1.134	1.104	1.128	1.122	1.116	1.121	1.0*
bis(2-ethylhexyl)phthalate *	1.297	1.144	1.194	1.114	1.150	1.180	6.1*
Di-n-octyl phthalate *	2.356	2.164	2.634	2.142	2.043	2.268	10.3*
Benzo(b)fluoranthene *	1.265	1.215	1.359	1.271	1.338	1.290	4.5*
Benzo(k)fluoranthene *	1.122	1.112	1.078	1.094	0.926	1.066	7.5*
Benzo(a)pyrene *	1.107	1.084	1.105	1.112	1.083	1.098	1.2*
Indeno(1,2,3-cd)pyrene *	0.991	0.909	0.885	0.853	0.951	0.918	5.9*
Dibenz(a,h)anthracene *	0.961	0.899	0.859	0.845	0.922	0.897	5.2*
Benzo(g,h,i)perylene *	1.012	0.923	0.890	0.850	0.938	0.923	6.5*
Nitrobenzene-d5	0.556	0.555	0.552	0.545	0.521	0.546	2.7
2-Fluorobiphenyl	1.549	1.542	1.488	1.515	1.499	1.519	1.7
Terphenyl-d14	1.150	1.109	1.137	1.126	1.141	1.133	1.4
Phenol-d5	1.733	1.689	1.627	1.555	1.513	1.623	5.6
2-Fluorophenol	1.544	1.568	1.590	1.500	1.454	1.531	3.6
2,4,6-Tribromophenol	0.170	0.174	0.170	0.174	0.183	0.174	3.1
2-Chlorophenol-d4	1.128	1.102	1.028	0.982	0.959	1.040	7.1
1,2-Dichlorobenzene-d4	0.967	0.932	0.885	0.844	0.820	0.890	6.8

* Compounds with required minimum RRF and maximum %RSD values.
.l other compounds must meet a minimum RRF of 0.010.

100115

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: VERSAR INC. Contract: _____

I Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Instrument ID: Z Calibration date: 11/12/93 Time: 0938

Lab File ID: Z4982 Init. Calib. Date(s): 11/09/93 11/09/93

Init. Calib. Times: 1414 1639

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.770	2.069	0.800	-16.9	25.0
bis(2-Chloroethyl)ether	1.370	1.566	0.700	-14.3	25.0
2-Chlorophenol	1.338	1.491	0.800	-11.4	25.0
1,3-Dichlorobenzene	1.361	1.459	0.600	-7.2	25.0
1,4-Dichlorobenzene	1.382	1.487	0.500	-7.6	25.0
1,2-Dichlorobenzene	1.274	1.339	0.400	-5.1	25.0
2-Methylphenol	1.258	1.430	0.700	-13.7	25.0
2,2'-oxybis(1-Chloropropane)	1.149	1.492		-29.8	
3- and 4-Methylphenol	1.348	1.526	0.600	-13.2	25.0
N-Nitroso-di-n-propylamine	0.953	1.102	0.050	-15.6	25.0
Hexachloroethane	0.817	0.861	0.300	-5.4	25.0
Nitrobenzene	0.466	0.468	0.200	-0.4	25.0
Isophorone	0.886	0.869	0.400	1.9	25.0
2-Nitrophenol	0.264	0.265	0.100	-0.4	25.0
2,4-Dimethylphenol	0.538	0.509	0.200	5.4	25.0
bis(2-Chloroethoxy)methane	0.464	0.463	0.300	0.2	25.0
2,4-Dichlorophenol	0.330	0.314	0.200	4.8	25.0
1,2,4-Trichlorobenzene	0.406	0.388	0.200	4.4	25.0
Naphthalene	1.015	1.013	0.700	0.2	25.0
4-Chloroaniline	0.443	0.458		-3.4	
Hexachlorobutadiene	0.306	0.297		2.9	
4-Chloro-3-methylphenol	0.487	0.483	0.200	0.8	25.0
2-Methylnaphthalene	0.640	0.639	0.400	0.2	25.0
Hexachlorocyclopentadiene	0.375	0.381		-1.6	
2,4,6-Trichlorophenol	0.535	0.540	0.200	-0.9	25.0
2,4,5-Trichlorophenol	0.567	0.588	0.200	-3.7	25.0
2-Chloronaphthalene	1.177	1.272	0.900	-8.1	25.0
2-Nitroaniline	0.483	0.547		-13.2	
Dimethylphthalate	1.652	1.697		-2.7	
Acenaphthylene	1.596	1.730	1.400	-8.4	25.0
2,6-Dinitrotoluene	0.371	0.388	0.200	-4.6	25.0
3-Nitroaniline	0.376	0.399		-6.1	
Acenaphthene	1.127	1.139	0.900	-1.1	25.0
2,4-Dinitrophenol	0.326	0.362		-11.0	
4-Nitrophenol	0.477	0.518		-8.6	
Dibenzofuran	1.756	1.846	0.300	-5.1	25.0
2,4-Dinitrotoluene	0.530	0.563	0.200	-6.2	25.0

All other compounds must meet a minimum RRF of 0.010.

100116

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Instrument ID: Z Calibration date: 11/12/93 Time: 0938

Lab File ID: Z4982 Init. Calib. Date(s): 11/09/93 11/09/93

Init. Calib. Times: 1414 1639

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Diethylphthalate	1.903	1.892		0.6	
4-Chlorophenyl-phenylether	0.754	0.753	0.500	0.1	25.0
Fluorene	1.349	1.323	1.100	1.9	25.0
4-Nitroaniline	0.375	0.412		-9.9	
4,6-Dinitro-2-methylphenol	0.233	0.237		-1.7	
N-nitrosodiphenylamine (1)	0.520	0.531		-2.1	25.0
4-Bromophenyl-phenylether	0.223	0.232	0.100	-4.0	25.0
Hexachlorobenzene	0.287	0.291	0.100	-1.4	25.0
Pentachlorophenol	0.189	0.192	0.100	-1.6	25.0
Phenanthrene	1.118	1.096	0.700	2.0	25.0
Anthracene	1.037	1.039	0.700	-0.2	25.0
Carbazole	0.948	1.008		-6.3	
Di-n-butylphthalate	1.578	1.572		0.4	
Fluoranthene	1.250	1.257	0.600	-0.6	25.0
Pyrene	1.699	1.742	0.700	-2.5	25.0
Butylbenzylphthalate	0.978	0.991		-1.3	
3,3'-Dichlorobenzidine	0.366	0.355		3.0	
Benzo(a)anthracene	1.369	1.342	0.900	2.0	25.0
Chrysene	1.121	1.100	0.900	1.9	25.0
bis(2-ethylhexyl)phthalate	1.180	1.166	0.900	1.2	25.0
Di-n-octyl phthalate	2.268	2.217		2.2	
Benzo(b)fluoranthene	1.290	1.352	0.700	-4.8	25.0
Benzo(k)fluoranthene	1.066	1.017	0.700	4.6	25.0
Benzo(a)pyrene	1.098	1.118	0.600	-1.8	25.0
Indeno(1,2,3-cd)pyrene	0.918	0.918	0.400	0.0	25.0
Dibenz(a,h)anthracene	0.897	0.864	0.300	3.7	25.0
Benzo(g,h,i)perylene	0.923	0.930	0.200	-0.8	25.0
Nitrobenzene-d5	0.546	0.547		-0.2	
2-Fluorobiphenyl	1.519	1.606	0.700	-5.7	25.0
Terphenyl-d14	1.133	1.190	0.500	-5.0	25.0
Phenol-d5	1.623	1.891	0.800	-16.5	25.0
2-Fluorophenol	1.531	1.684	0.600	-10.0	25.0
2,4,6-Tribromophenol	0.174	0.182		-4.6	
2-Chlorophenol-d4	1.040	1.196	0.800	-15.0	25.0
1,2-Dichlorobenzene-d4	0.890	0.902	0.400	-1.3	25.0

All other compounds must meet a minimum RRF of 0.010.

100117

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Instrument ID: Z Calibration date: 11/13/93 Time: 1021

Lab File ID: Z5004 Init. Calib. Date(s): 11/09/93 11/09/93

Init. Calib. Times: 1414 1639

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.770	2.066	0.800	-16.7	25.0
bis(2-Chloroethyl)ether	1.370	1.554	0.700	-13.4	25.0
2-Chlorophenol	1.338	1.501	0.800	-12.2	25.0
1,3-Dichlorobenzene	1.361	1.504	0.600	-10.5	25.0
1,4-Dichlorobenzene	1.382	1.511	0.500	-9.3	25.0
1,2-Dichlorobenzene	1.274	1.377	0.400	-8.1	25.0
2-Methylphenol	1.258	1.428	0.700	-13.5	25.0
2,2'-oxybis(1-Chloropropane)	1.149	1.477		-28.6	
3- and 4-Methylphenol	1.348	1.528	0.600	-13.4	25.0
N-Nitroso-di-n-propylamine	0.953	1.089	0.050	-14.3	25.0
Hexachloroethane	0.817	0.871	0.300	-6.6	25.0
Nitrobenzene	0.466	0.461	0.200	1.1	25.0
Isophorone	0.886	0.861	0.400	2.8	25.0
2-Nitrophenol	0.264	0.263	0.100	0.4	25.0
2,4-Dimethylphenol	0.538	0.504	0.200	6.3	25.0
bis(2-Chloroethoxy)methane	0.464	0.461	0.300	0.6	25.0
2,4-Dichlorophenol	0.330	0.316	0.200	4.2	25.0
1,2,4-Trichlorobenzene	0.406	0.385	0.200	5.2	25.0
Naphthalene	1.015	1.014	0.700	0.1	25.0
4-Chloroaniline	0.443	0.458		-3.4	
Hexachlorobutadiene	0.306	0.289		5.6	
4-Chloro-3-methylphenol	0.487	0.468	0.200	3.9	25.0
2-Methylnaphthalene	0.640	0.624	0.400	2.5	25.0
Hexachlorocyclopentadiene	0.375	0.375		0.0	
2,4,6-Trichlorophenol	0.535	0.541	0.200	-1.1	25.0
2,4,5-Trichlorophenol	0.567	0.587	0.200	-3.5	25.0
2-Chloronaphthalene	1.177	1.256	0.900	-6.7	25.0
2-Nitroaniline	0.483	0.538		-11.4	
Dimethylphthalate	1.652	1.680		-1.7	
Acenaphthylene	1.596	1.707	1.400	-7.0	25.0
2,6-Dinitrotoluene	0.371	0.388	0.200	-4.6	25.0
3-Nitroaniline	0.376	0.399		-6.1	
Acenaphthene	1.127	1.143	0.900	-1.4	25.0
2,4-Dinitrophenol	0.326	0.338		-3.7	
4-Nitrophenol	0.477	0.496		-4.0	
Dibenzofuran	1.756	1.810	0.300	-3.1	25.0
2,4-Dinitrotoluene	0.530	0.537	0.200	-1.3	25.0

All other compounds must meet a minimum RRF of 0.010.

100118

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: VERSAR INC. Contract: _____

1 Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Instrument ID: Z Calibration date: 11/13/93 Time: 1021

Lab File ID: Z5004 Init. Calib. Date(s): 11/09/93 11/09/93

Init. Calib. Times: 1414 1639

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Diethylphthalate	1.903	1.863		2.1	
4-Chlorophenyl-phenylether	0.754	0.737	0.500	2.3	25.0
Fluorene	1.349	1.294	1.100	4.1	25.0
4-Nitroaniline	0.375	0.401		-6.9	
4,6-Dinitro-2-methylphenol	0.233	0.239		-2.6	
N-nitrosodiphenylamine (1)	0.520	0.571		-9.8	25.0
4-Bromophenyl-phenylether	0.223	0.249	0.100	-11.7	25.0
Hexachlorobenzene	0.287	0.305	0.100	-6.3	25.0
Pentachlorophenol	0.189	0.187	0.100	1.1	25.0
Phenanthrene	1.118	1.128	0.700	-0.9	25.0
Anthracene	1.037	1.062	0.700	-2.4	25.0
Carbazole	0.948	1.044		-10.1	
Di-n-butylphthalate	1.578	1.705		-8.0	
Fluoranthene	1.250	1.258	0.600	-0.6	25.0
Pyrene	1.699	1.779	0.700	-4.7	25.0
Butylbenzylphthalate	0.978	1.007		-3.0	
3,3'-Dichlorobenzidine	0.366	0.350		4.4	
Benzo(a)anthracene	1.369	1.376	0.900	-0.5	25.0
Chrysene	1.121	1.089	0.900	2.9	25.0
bis(2-ethylhexyl)phthalate	1.180	1.243	0.900	-5.3	25.0
Di-n-octyl phthalate	2.268	2.337		-3.0	
Benzo(b)fluoranthene	1.290	1.232	0.700	4.5	25.0
Benzo(k)fluoranthene	1.066	1.105	0.700	-3.7	25.0
Benzo(a)pyrene	1.098	1.100	0.600	-0.2	25.0
Indeno(1,2,3-cd)pyrene	0.918	0.878	0.400	4.4	25.0
Dibenz(a,h)anthracene	0.897	0.843	0.300	6.0	25.0
Benzo(g,h,i)perylene	0.923	0.905	0.200	2.0	25.0
Nitrobenzene-d5	0.546	0.533		2.4	
2-Fluorobiphenyl	1.519	1.580	0.700	-4.0	25.0
Terphenyl-d14	1.133	1.202	0.500	-6.1	25.0
Phenol-d5	1.623	1.883	0.800	-16.0	25.0
2-Fluorophenol	1.531	1.709	0.600	-11.6	25.0
2,4,6-Tribromophenol	0.174	0.191		-9.8	
2-Chlorophenol-d4	1.040	1.212	0.800	-16.5	25.0
1,2-Dichlorobenzene-d4	0.890	0.914	0.400	-2.7	25.0

All other compounds must meet a minimum RRF of 0.010.

100119

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: VERSAR INC. Contract: _____

L Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Instrument ID: Z Calibration date: 11/13/93 Time: 1456

Lab File ID: Z5011 Init. Calib. Date(s): 11/09/93 11/09/93

Init. Calib. Times: 1414 1639

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.770	1.960	0.800	-10.7	25.0
bis(2-Chloroethyl)ether	1.370	1.559	0.700	-13.8	25.0
2-Chlorophenol	1.338	1.458	0.800	-9.0	25.0
1,3-Dichlorobenzene	1.361	1.476	0.600	-8.4	25.0
1,4-Dichlorobenzene	1.382	1.505	0.500	-8.9	25.0
1,2-Dichlorobenzene	1.274	1.410	0.400	-10.7	25.0
2-Methylphenol	1.258	1.397	0.700	-11.0	25.0
2,2'-oxybis(1-Chloropropane)	1.149	1.380		-20.1	
3- and 4-Methylphenol	1.348	1.447	0.600	-7.3	25.0
N-Nitroso-di-n-propylamine	0.953	1.022	0.050	-7.2	25.0
Hexachloroethane	0.817	0.876	0.300	-7.2	25.0
Nitrobenzene	0.466	0.453	0.200	2.8	25.0
Isophorone	0.886	0.870	0.400	1.8	25.0
2-Nitrophenol	0.264	0.256	0.100	3.0	25.0
2,4-Dimethylphenol	0.538	0.499	0.200	7.2	25.0
bis(2-Chloroethoxy)methane	0.464	0.461	0.300	0.6	25.0
2,4-Dichlorophenol	0.330	0.309	0.200	6.4	25.0
1,2,4-Trichlorobenzene	0.406	0.396	0.200	2.5	25.0
Naphthalene	1.015	1.070	0.700	-5.4	25.0
4-Chloroaniline	0.443	0.436		1.6	
Hexachlorobutadiene	0.306	0.298		2.6	
4-Chloro-3-methylphenol	0.487	0.465	0.200	4.5	25.0
2-Methylnaphthalene	0.640	0.655	0.400	-2.3	25.0
Hexachlorocyclopentadiene	0.375	0.327		12.8	
2,4,6-Trichlorophenol	0.535	0.505	0.200	5.6	25.0
2,4,5-Trichlorophenol	0.567	0.547	0.200	3.5	25.0
2-Chloronaphthalene	1.177	1.208	0.900	-2.6	25.0
2-Nitroaniline	0.483	0.466		3.5	
Dimethylphthalate	1.652	1.582		4.2	
Acenaphthylene	1.596	1.638	1.400	-2.6	25.0
2,6-Dinitrotoluene	0.371	0.341	0.200	8.1	25.0
3-Nitroaniline	0.376	0.356		5.3	
Acenaphthene	1.127	1.122	0.900	0.4	25.0
2,4-Dinitrophenol	0.326	0.250		23.3	
4-Nitrophenol	0.477	0.375		21.4	
Dibenzofuran	1.756	1.738	0.300	1.0	25.0
2,4-Dinitrotoluene	0.530	0.480	0.200	9.4	25.0

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Instrument ID: Z Calibration date: 11/13/93 Time: 1456

Lab File ID: Z5011 Init. Calib. Date(s): 11/09/93 11/09/93

Init. Calib. Times: 1414 1639

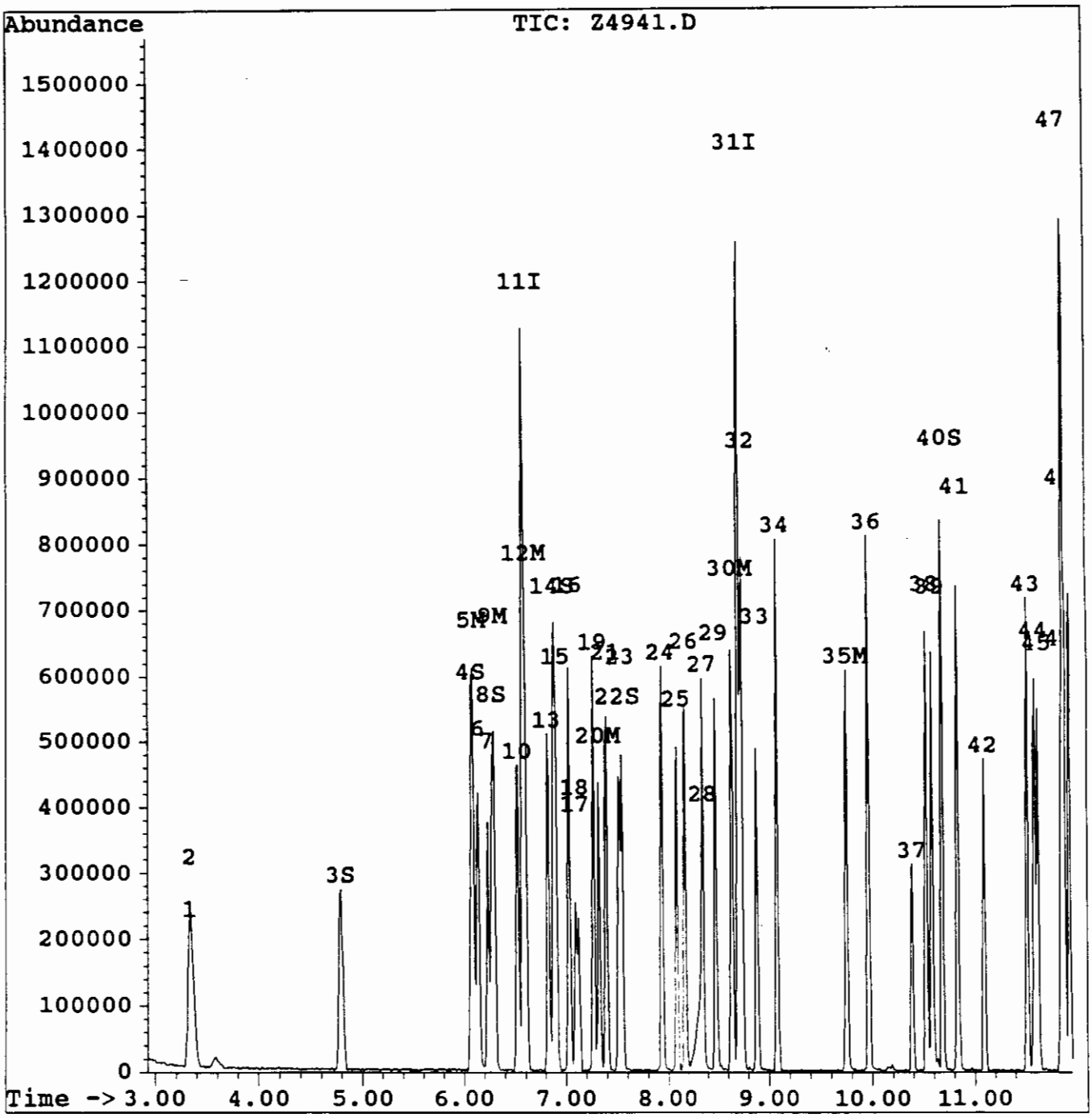
COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Diethylphthalate	1.903	1.819		4.4	
4-Chlorophenyl-phenylether	0.754	0.728	0.500	3.4	25.0
Fluorene	1.349	1.328	1.100	1.6	25.0
4-Nitroaniline	0.375	0.333		11.2	
4,6-Dinitro-2-methylphenol	0.233	0.215		7.7	
N-nitrosodiphenylamine (1)	0.520	0.568		-9.2	25.0
4-Bromophenyl-phenylether	0.223	0.240	0.100	-7.6	25.0
Hexachlorobenzene	0.287	0.288	0.100	-0.3	25.0
Pentachlorophenol	0.189	0.158	0.100	16.4	25.0
Phenanthrene	1.118	1.153	0.700	-3.1	25.0
Anthracene	1.037	1.070	0.700	-3.2	25.0
Carbazole	0.948	1.005		-6.0	
Di-n-butylphthalate	1.578	1.663		-5.4	
Fluoranthene	1.250	1.173	0.600	6.2	25.0
Pyrene	1.699	1.891	0.700	-11.3	25.0
Butylbenzylphthalate	0.978	1.040		-6.3	
3,3'-Dichlorobenzidine	0.366	0.279		23.8	
Benzo(a)anthracene	1.369	1.340	0.900	2.1	25.0
Chrysene	1.121	1.138	0.900	-1.5	25.0
bis(2-ethylhexyl)phthalate	1.180	1.312	0.900	-11.2	25.0
Di-n-octyl phthalate	2.268	2.767		-22.0	
Benzo(b)fluoranthene	1.290	1.280	0.700	0.8	25.0
Benzo(k)fluoranthene	1.066	1.208	0.700	-13.3	25.0
Benzo(a)pyrene	1.098	1.090	0.600	0.7	25.0
Indeno(1,2,3-cd)pyrene	0.918	0.755	0.400	17.8	25.0
Dibenz(a,h)anthracene	0.897	0.742	0.300	17.3	25.0
Benzo(g,h,i)perylene	0.923	0.770	0.200	16.6	25.0
Nitrobenzene-d5	0.546	0.520		4.8	
2-Fluorobiphenyl	1.519	1.558	0.700	-2.6	25.0
Terphenyl-d14	1.133	1.221	0.500	-7.8	25.0
Phenol-d5	1.623	1.754	0.800	-8.1	25.0
2-Fluorophenol	1.531	1.590	0.600	-3.9	25.0
2,4,6-Tribromophenol	0.174	0.172		1.1	
2-Chlorophenol-d4	1.040	1.164	0.800	-11.9	25.0
1,2-Dichlorobenzene-d4	0.890	0.926	0.400	-4.0	25.0

All other compounds must meet a minimum RRF of 0.010.

100121

QUANT REPORT

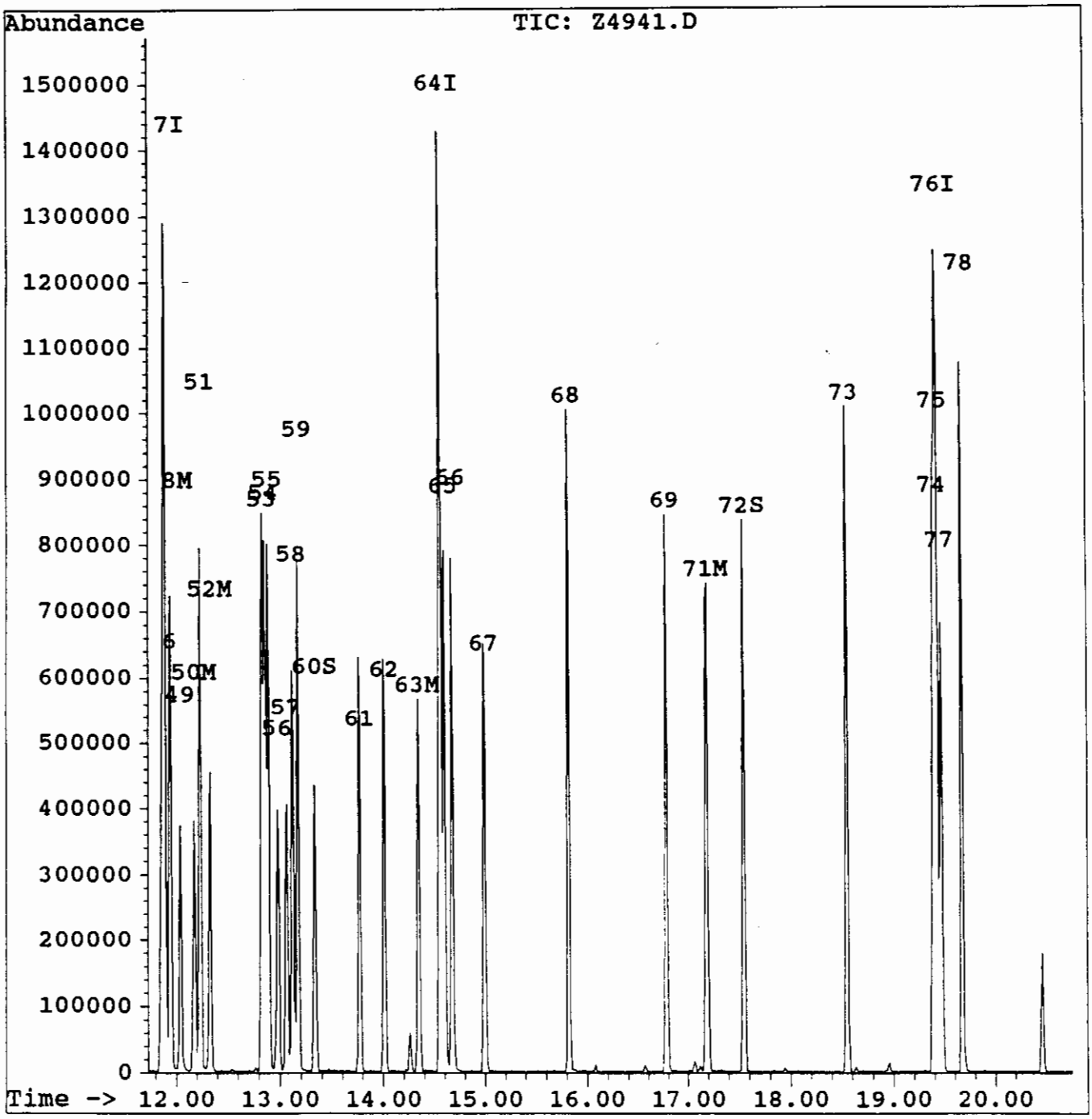
Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 4:03 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4941.D
Name: V#32982,STAND,SSTD-020,B,10NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration



100122

QUANT REPORT

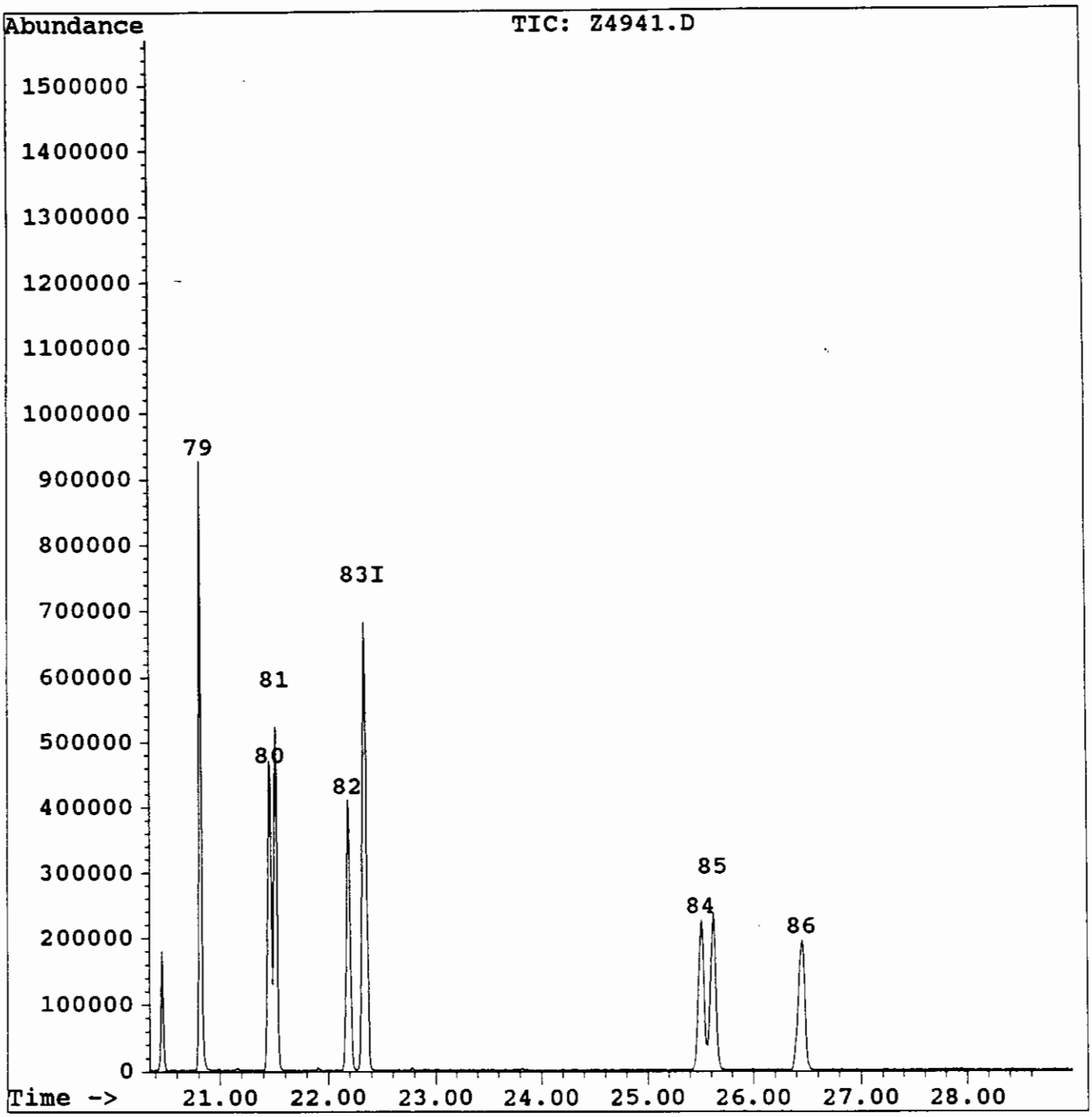
Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 4:03 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4941.D
Name: V#32982,STAND,SSTD-020,B,10NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration



100123

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 4:03 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4941.D
Name: V#32982,STAND,SSTD-020,B,10NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration



100124

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 4:03 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4941.D
Name: V#32982,STAND,SSTD-020,B,10NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration

Internal Standards

	Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
11)	CI30 1,4-Dichlorobenzene-d	6.58	152	271186	20.00	ng/ul	-0.00
31)	CI40 Naphthalene-d8	8.71	136	861186	20.00	ng/ul	-0.00
47)	CI50 Acenaphthene-d10	11.88	164	484747	20.00	ng/ul	-0.01
64)	CI60 Phenanthrene-d10	14.56	188	832119	20.00	ng/ul	-0.00
76)	CI70 Chrysene-d12	19.43	240	661402	20.00	ng/ul	-0.01
83)	CI75 Perylene-d12	22.35	264	661005	20.00	ng/ul	-0.00

System Monitoring Compounds

							%Recovery
3)	CS50 2-Fluorophenol	4.79	112	209323	10.08	ng/ul	13.44%
4)	CS45 Phenol-d5	6.08	99	234963	10.67	ng/ul	14.23%
8)	CS70 2-Chlorophenol d4	6.28	132	152993	10.85	ng/ul	14.47%
14)	CS75 1,2-Dichlorobenzene-d	6.88	152	131053	10.87	ng/ul	21.73%
22)	CS20 Nitrobenzene-d5	7.51	82	239451	10.19	ng/ul	20.38%
40)	CS25 2-Fluorobiphenyl	10.69	172	375411	10.20	ng/ul	20.40%
60)	CS55 2,4,6-Tribromophenol	13.34	330	70845	9.77	ng/ul	13.03%
72)	CS30 Terphenyl-d14	17.54	244	380385	10.15	ng/ul	20.31%

Target Compounds

							ISTD#
1)	C032 Pyridine	3.33	79	178003	10.35	ng/ul	001#
2)	C310 n-Nitrosodimethylamin	3.34	42	106839	9.59	ng/ul	001
5)	C315 Phenol	6.09	94	265103	11.05	ng/ul	001
6)	C320 Aniline	6.14	93	292070	10.56	ng/ul	002
7)	C325 bis(2-Chloroethyl)eth	6.23	93	202238	10.89	ng/ul	001
9)	C330 2-Chlorophenol	6.30	128	199157	10.97	ng/ul	001
10)	C335 1,3-Dichlorobenzene	6.53	146	197644	10.71	ng/ul	001
12)	C340 1,4-Dichlorobenzene	6.60	146	200479	10.70	ng/ul	001
13)	C345 Benzyl Alcohol	6.82	108	126610	10.34	ng/ul	001
15)	C350 1,2-Dichlorobenzene	6.91	146	191358	11.08	ng/ul	001
16)	C355 2-Methylphenol	7.03	108	187576	11.00	ng/ul	001
17)	C357 2,2'-Oxybis(1chloropr	7.09	45	172022	11.04	ng/ul	001#
18)	C360 bis(2-chloroisopropyl	7.09	45	172022	11.04	ng/ul	001#
19)	C365 4-Methylphenol	7.27	108	195279	10.69	ng/ul	001
20)	C370 n-Nitroso-di-n-propyl	7.33	70	138492	10.72	ng/ul	001
21)	C375 Hexachloroethane	7.40	117	119093	10.75	ng/ul	001
23)	C410 Nitrobenzene	7.55	77	210583	10.49	ng/ul	002
24)	C415 Isophorone	7.94	82	406448	10.65	ng/ul	002
25)	C420 2-Nitrophenol	8.09	139	119772	10.52	ng/ul	002
26)	C425 2,4-Dimethylphenol	8.17	107	236800	10.23	ng/ul	002
27)	C435 bis(2-Chloroethoxy)me	8.35	93	216883	10.86	ng/ul	002
28)	C430 Benzoic Acid	8.36	122	118911	9.46	ng/ul	002
29)	C440 2,4-Dichlorophenol	8.48	162	150230	10.57	ng/ul	002
30)	C445 1,2,4-Trichlorobenzen	8.63	180	184571	10.55	ng/ul	002
32)	C450 Naphthalene	8.74	128	493921	11.30	ng/ul	002
33)	C455 4-Chloroaniline	8.88	127	209367	10.96	ng/ul	002

(#) = qualifier out of range

100125

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 4:03 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4941.D
Name: V#32982,STAND,SSTD-020,B,10NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration

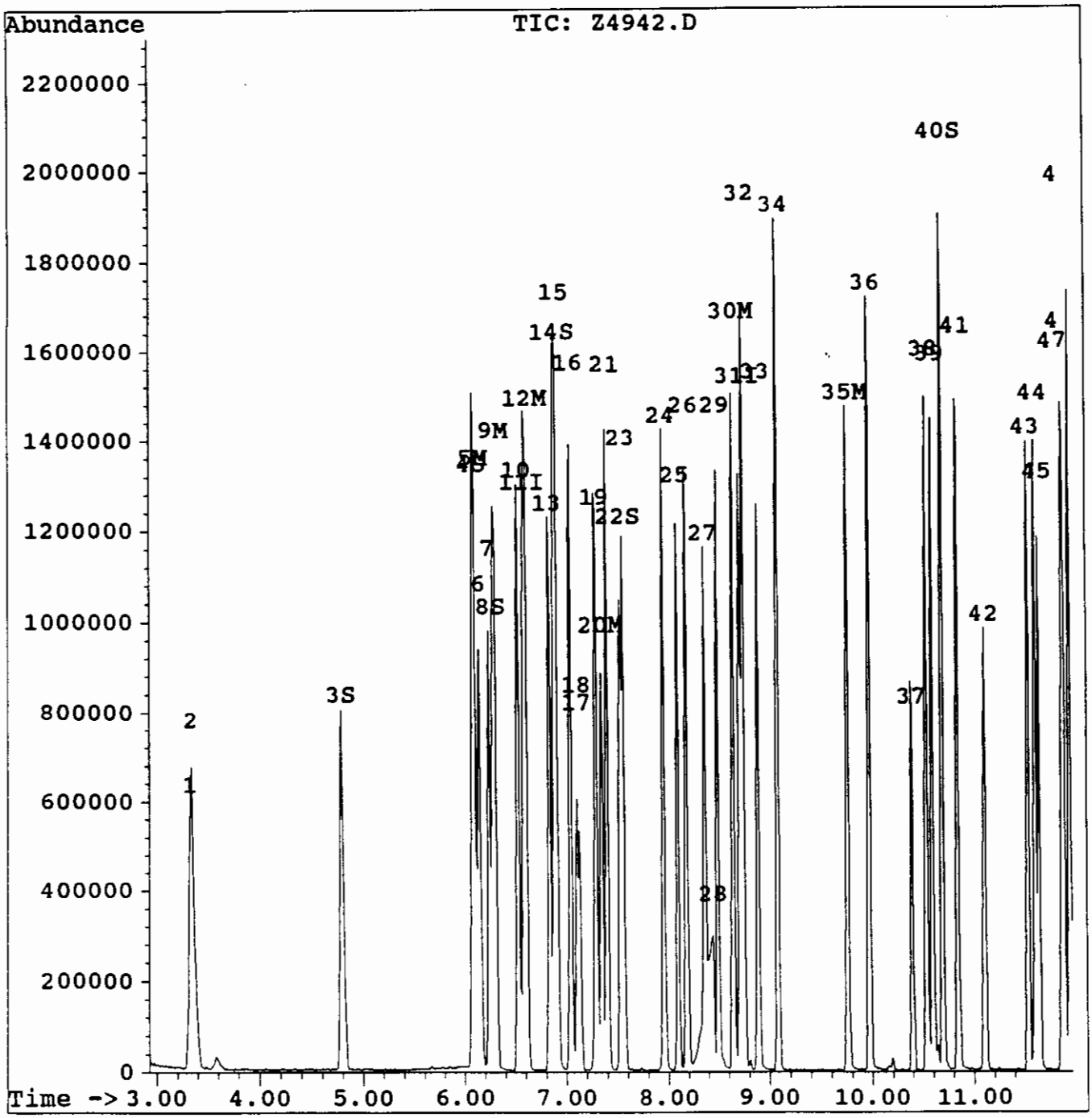
Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
34) C460 Hexachlorobutadiene	9.07	225	132016	10.01	ng/ul	002
35) C465 4-Chloro-3-methylphen	9.75	107	224660	10.71	ng/ul	002
36) C470 2-Methylnaphthalene	9.96	142	313408	11.37	ng/ul	002
37) C510 Hexachlorocyclopentad	10.39	237	71082	7.82	ng/ul	003
38) C515 2,4,6-Trichlorophenol	10.53	196	128342	9.91	ng/ul	003
39) C520 2,4,5-Trichlorophenol	10.58	196	136620	9.95	ng/ul	003
41) C525 2-Chloronaphthalene	10.83	162	292349	10.24	ng/ul	003
42) C530 2-Nitroaniline	11.10	65	113718	9.71	ng/ul	003
43) C535 Dimethylphthalate	11.52	163	414913	10.36	ng/ul	003
44) C540 Acenaphthylene	11.60	152	401091	10.37	ng/ul	003
45) C544 2,6-Dinitrotoluene	11.63	165	89805	10.01	ng/ul	003
46) C545 3-Nitroaniline	11.86	138	96699	10.61	ng/ul	003#
48) C550 Acenaphthene	11.94	153	285132	10.44	ng/ul	003
49) C555 2,4-Dinitrophenol	12.04	184	68508	8.68	ng/ul	003#
50) C560 4-Nitrophenol	12.17	109	102895	8.90	ng/ul	003#
51) C565 Dibenzofuran	12.23	168	440428	10.35	ng/ul	003
52) C570 2,4-Dinitrotoluene	12.33	165	129173	10.05	ng/ul	003
53) C580 Diethylphthalate	12.83	149	485593	10.53	ng/ul	003
54) C590 Fluorene	12.86	166	348450	10.65	ng/ul	003#
55) C585 4-Chlorophenyl-phenyl	12.89	204	188802	10.34	ng/ul	003
56) C595 4-Nitroaniline	12.98	138	93602	10.30	ng/ul	003#
57) C610 4,6-Dinitro-2-methylp	13.07	198	92044	9.51	ng/ul	004
58) C615 n-Nitrosodiphenylamin	13.12	169	233607	10.80	ng/ul	004
59) C620 1,2-Diphenylhydrazine	13.17	77	428879	10.17	ng/ul	003#
61) C625 4-Bromophenyl-phenyle	13.78	248	97747	10.55	ng/ul	004#
62) C630 Hexachlorobenzene	14.02	284	119264	10.00	ng/ul	004
63) C635 Pentachlorophenol	14.34	266	77097	9.80	ng/ul	004
65) C640 Phenanthrene	14.61	178	502967	10.81	ng/ul	004#
66) C645 Anthracene	14.68	178	471200	10.92	ng/ul	004
67) C647 Carbazole	15.00	167	441110	11.18	ng/ul	004
68) C650 Di-n-butylphthalate	15.82	149	757533	11.54	ng/ul	004
69) C655 Fluoranthene	16.78	202	566962	10.90	ng/ul	004
71) C715 Pyrene	17.19	202	575303	10.24	ng/ul	005
73) C720 Butylbenzylphthalate	18.55	149	346904	10.73	ng/ul	005
74) C730 Benzo[a]anthracene	19.40	228	461667	10.20	ng/ul	005
75) C725 3,3'-Dichlorobenzidin	19.41	252	115832	9.57	ng/ul	005
77) C740 Chrysene	19.47	228	374913	10.12	ng/ul	005
78) C741 bis(2-Ethylhexyl)phth	19.68	149	428958	10.99	ng/ul	005
79) C760 Di-n-octylphthalate	20.82	149	778610	10.39	ng/ul	006
80) C765 Benzo[b]fluoranthene	21.47	252	418128	9.81	ng/ul	006
81) C770 Benzo[k]fluoranthene	21.52	252	370684	10.52	ng/ul	006
82) C775 Benzo[a]pyrene	22.19	252	366010	10.08	ng/ul	006
84) C780 Indeno[1,2,3-cd]pyren	25.51	276	327675	10.80	ng/ul	006
85) C785 Dibenz[a,h]anthracene	25.63	278	317649	10.71	ng/ul	006
86) C790 Benzo[g,h,i]perylene	26.46	276	334455	10.97	ng/ul	006

(#) = qualifier out of range

100126

QUANT REPORT

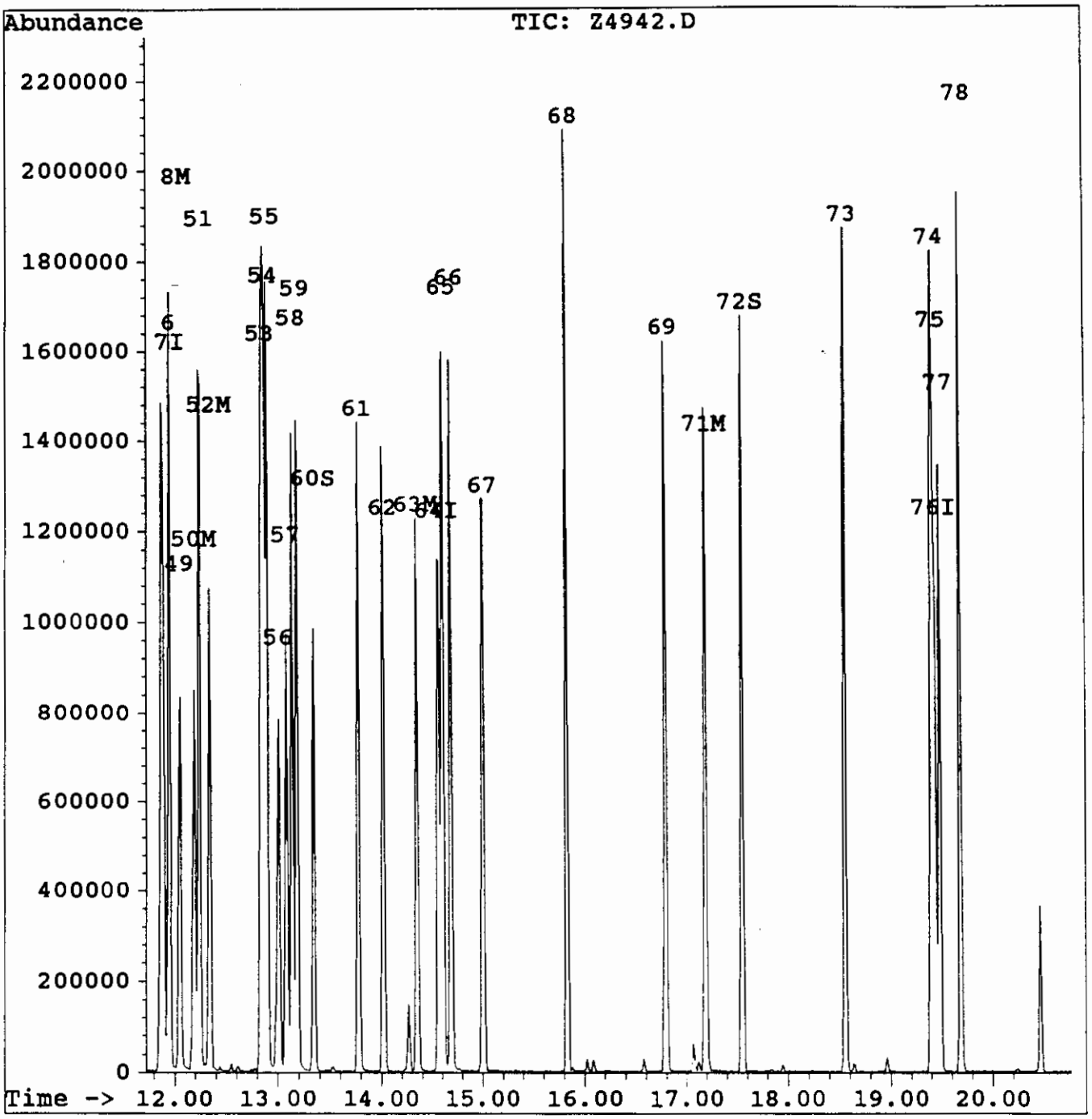
Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 4:39 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4942.D
Name: V#33160,STAND,SSTD-050,B,25NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration



100127

QUANT REPORT

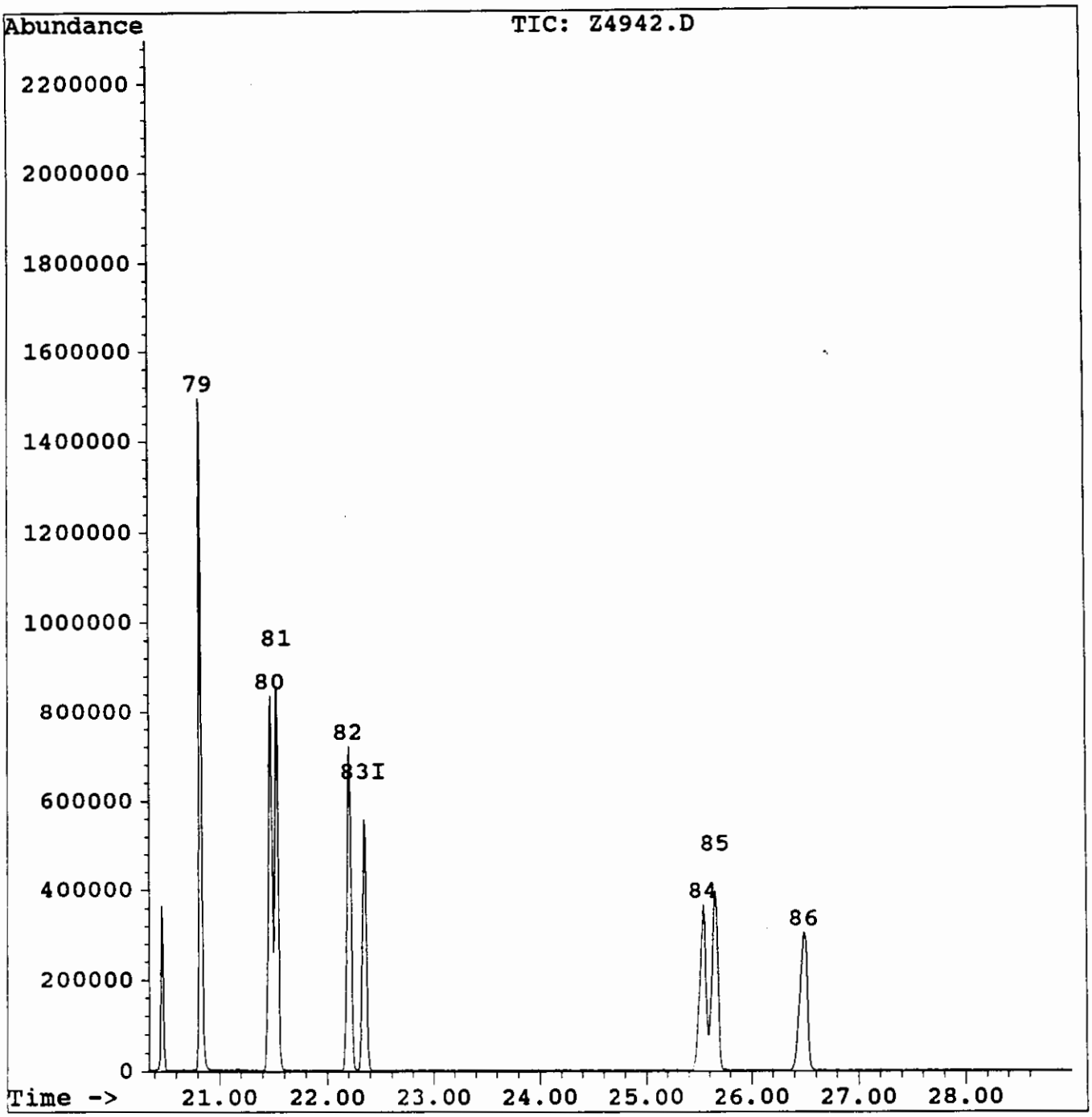
Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 4:39 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4942.D
Name: V#33160,STAND,SSTD-050,B,25NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration



100128

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 4:39 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4942.D
Name: V#33160,STAND,SSTD-050,B,25NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration



100129

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 4:39 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4942.D
Name: V#33160,STAND,SSTD-050,B,25NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration

Internal Standards

Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
11) CI30 1,4-Dichlorobenzene-d	6.58	152	276400	20.00	ng/ul	-0.00
31) CI40 Naphthalene-d8	8.71	136	877402	20.00	ng/ul	-0.00
47) CI50 Acenaphthene-d10	11.89	164	457906	20.00	ng/ul	-0.00
64) CI60 Phenanthrene-d10	14.56	188	758630	20.00	ng/ul	-0.00
76) CI70 Chrysene-d12	19.44	240	546347	20.00	ng/ul	-0.00
83) CI75 Perylene-d12	22.35	264	510907	20.00	ng/ul	-0.00

System Monitoring Compounds

						%Recovery
3) CS50 2-Fluorophenol	4.79	112	541600	25.60	ng/ul	34.13%
4) CS45 Phenol-d5	6.09	99	583663	26.01	ng/ul	34.68%
8) CS70 2-Chlorophenol d4	6.28	132	380573	26.49	ng/ul	35.32%
14) CS75 1,2-Dichlorobenzene-d	6.89	152	322086	26.20	ng/ul	52.40%
22) CS20 Nitrobenzene-d5	7.53	82	608208	25.41	ng/ul	50.81%
40) CS25 2-Fluorobiphenyl	10.69	172	882571	25.38	ng/ul	50.77%
60) CS55 2,4,6-Tribromophenol	13.35	330	164709	24.92	ng/ul	33.23%
72) CS30 Terphenyl-d14	17.56	244	757356	24.47	ng/ul	48.95%

Target Compounds

						ISTD#
1) C032 Pyridine	3.33	79	454745	25.93	ng/ul	001#
2) C310 n-Nitrosodimethylamin	3.34	42	294040	25.91	ng/ul	001
5) C315 Phenol	6.11	94	645158	26.37	ng/ul	001
6) C320 Aniline	6.15	93	720415	25.57	ng/ul	002
7) C325 bis(2-Chloroethyl)eth	6.25	93	502610	26.56	ng/ul	001
9) C330 2-Chlorophenol	6.31	128	480888	26.00	ng/ul	001
10) C335 1,3-Dichlorobenzene	6.53	146	489176	26.02	ng/ul	001
12) C340 1,4-Dichlorobenzene	6.61	146	497183	26.03	ng/ul	001
13) C345 Benzyl Alcohol	6.83	108	321213	25.74	ng/ul	001
15) C350 1,2-Dichlorobenzene	6.91	146	462921	26.29	ng/ul	001
16) C355 2-Methylphenol	7.04	108	459054	26.41	ng/ul	001
17) C357 2,2'-Oxybis(1chloropr	7.11	45	412585	25.98	ng/ul	001#
18) C360 bis(2-chloroisopropyl	7.11	45	412585	25.98	ng/ul	001
19) C365 4-Methylphenol	7.30	108	478588	25.70	ng/ul	001
20) C370 n-Nitroso-di-n-propyl	7.35	70	351165	26.67	ng/ul	001
21) C375 Hexachloroethane	7.40	117	292937	25.95	ng/ul	001
23) C410 Nitrobenzene	7.56	77	517059	25.29	ng/ul	002
24) C415 Isophorone	7.96	82	983215	25.29	ng/ul	002
25) C420 2-Nitrophenol	8.09	139	298988	25.79	ng/ul	002
26) C425 2,4-Dimethylphenol	8.18	107	593173	25.14	ng/ul	002
27) C435 bis(2-Chloroethoxy)me	8.37	93	521042	25.62	ng/ul	002
28) C430 Benzoic Acid	8.45	122	332310	25.95	ng/ul	002
29) C440 2,4-Dichlorophenol	8.49	162	370544	25.59	ng/ul	002
30) C445 1,2,4-Trichlorobenzen	8.65	180	456064	25.58	ng/ul	002
32) C450 Naphthalene	8.74	128	1149853	25.81	ng/ul	002
33) C455 4-Chloroaniline	8.89	127	508230	26.13	ng/ul	002

(#) = qualifier out of range

100130

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 4:39 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4942.D
Name: V#33160,STAND,SSTD-050,B,25NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration

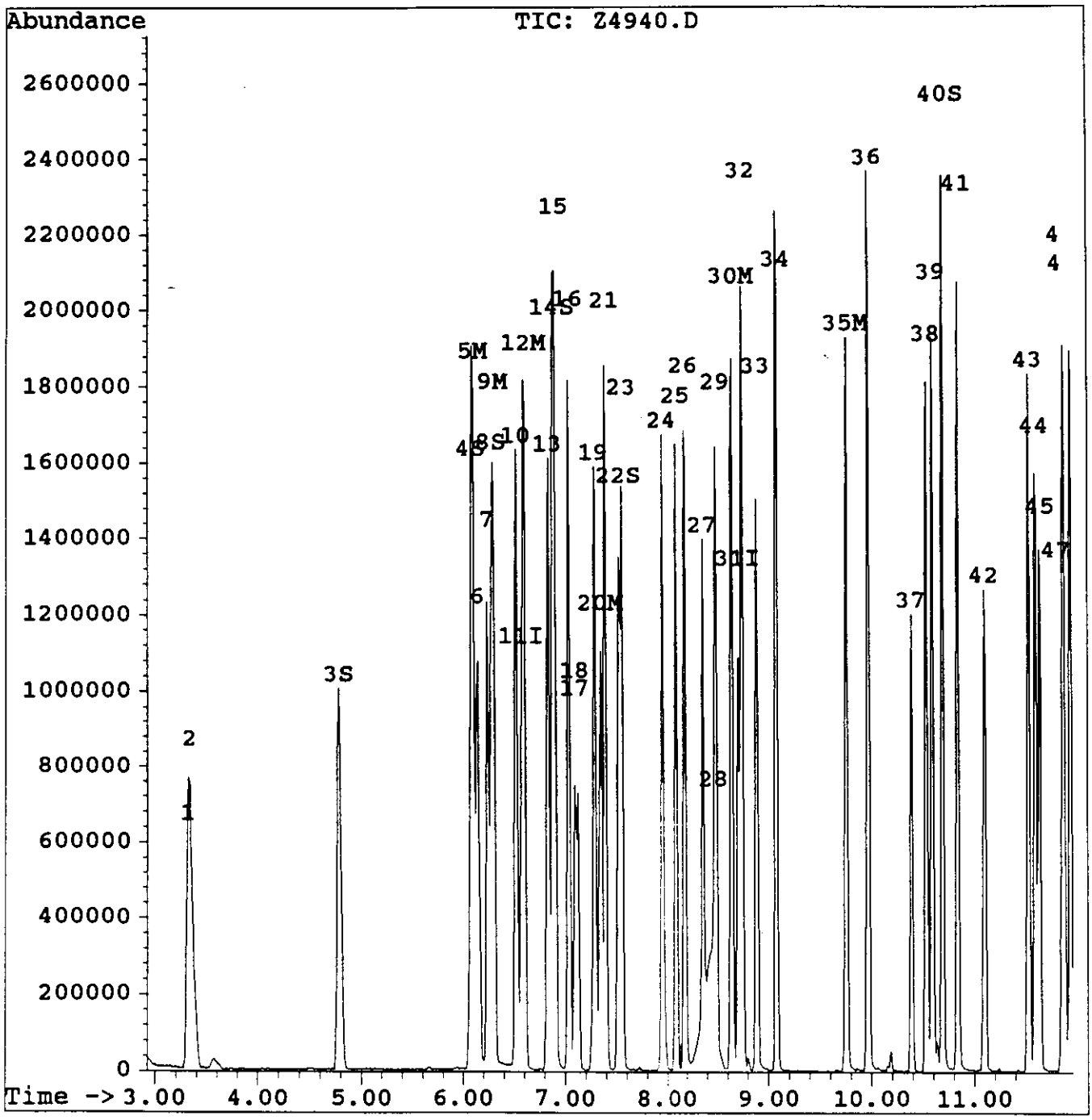
	Compound	R.T.	Qion	Area	Conc Unit	Dev(Min)
34)	C460 Hexachlorobutadiene	9.08	225	334233	24.87 ng/ul	002
35)	C465 4-Chloro-3-methylphen	9.76	107	547391	25.61 ng/ul	002
36)	C470 2-Methylnaphthalene	9.97	142	725767	25.85 ng/ul	002
37)	C510 Hexachlorocyclopentad	10.40	237	204796	23.85 ng/ul	003
38)	C515 2,4,6-Trichlorophenol	10.54	196	299691	24.50 ng/ul	003
39)	C520 2,4,5-Trichlorophenol	10.60	196	326666	25.19 ng/ul	003
41)	C525 2-Chloronaphthalene	10.85	162	687846	25.52 ng/ul	003
42)	C530 2-Nitroaniline	11.11	65	271726	24.55 ng/ul	003
43)	C535 Dimethylphthalate	11.53	163	929689	24.58 ng/ul	003
44)	C540 Acenaphthylene	11.61	152	924387	25.30 ng/ul	003
45)	C544 2,6-Dinitrotoluene	11.65	165	209059	24.66 ng/ul	003
46)	C545 3-Nitroaniline	11.88	138	216349	25.12 ng/ul	003
48)	C550 Acenaphthene	11.95	153	646979	25.07 ng/ul	003
49)	C555 2,4-Dinitrophenol	12.06	184	176133	23.62 ng/ul	003#
50)	C560 4-Nitrophenol	12.19	109	258914	23.72 ng/ul	003#
51)	C565 Dibenzofuran	12.25	168	998450	24.83 ng/ul	003
52)	C570 2,4-Dinitrotoluene	12.34	165	289071	23.81 ng/ul	003
53)	C580 Diethylphthalate	12.84	149	1065862	24.46 ng/ul	003
54)	C590 Fluorene	12.87	166	759484	24.58 ng/ul	003#
55)	C585 4-Chlorophenyl-phenyl	12.90	204	428351	24.82 ng/ul	003
56)	C595 4-Nitroaniline	13.01	138	205241	23.90 ng/ul	003#
57)	C610 4,6-Dinitro-2-methylp	13.09	198	224466	25.44 ng/ul	004
58)	C615 n-Nitrosodiphenylamin	13.14	169	521539	26.44 ng/ul	004
59)	C620 1,2-Diphenylhydrazine	13.18	77	991739	24.89 ng/ul	003#
61)	C625 4-Bromophenyl-phenyle	13.78	248	218066	25.82 ng/ul	004#
62)	C630 Hexachlorobenzene	14.03	284	272580	25.08 ng/ul	004
63)	C635 Pentachlorophenol	14.35	266	176709	24.64 ng/ul	004
65)	C640 Phenanthrene	14.62	178	1073644	25.32 ng/ul	004#
66)	C645 Anthracene	14.69	178	995154	25.30 ng/ul	004
67)	C647 Carbazole	15.02	167	911918	25.35 ng/ul	004
68)	C650 Di-n-butylphthalate	15.83	149	1497005	25.02 ng/ul	004
69)	C655 Fluoranthene	16.79	202	1180520	24.89 ng/ul	004
71)	C715 Pyrene	17.20	202	1172177	25.25 ng/ul	005
73)	C720 Butylbenzylphthalate	18.56	149	652450	24.42 ng/ul	005
74)	C730 Benzo[a]anthracene	19.41	228	904104	24.18 ng/ul	005
75)	C725 3,3'-Dichlorobenzidin	19.42	252	235094	23.52 ng/ul	005
77)	C740 Chrysene	19.48	228	754213	24.64 ng/ul	005
78)	C741 bis(2-Ethylhexyl)phth	19.68	149	781631	24.25 ng/ul	005
79)	C760 Di-n-octylphthalate	20.82	149	1382140	23.86 ng/ul	006
80)	C765 Benzo[b]fluoranthene	21.48	252	775812	23.55 ng/ul	006
81)	C770 Benzo[k]fluoranthene	21.55	252	709879	26.06 ng/ul	006
82)	C775 Benzo[a]pyrene	22.22	252	692477	24.68 ng/ul	006
84)	C780 Indeno[1,2,3-cd]pyren	25.55	276	580666	24.76 ng/ul	006
85)	C785 Dibenz[a,h]anthracene	25.67	278	573817	25.03 ng/ul	006
86)	C790 Benzo[g,h,i]perylene	26.49	276	589394	25.01 ng/ul	006

(#) = qualifier out of range

100131

QUANT REPORT

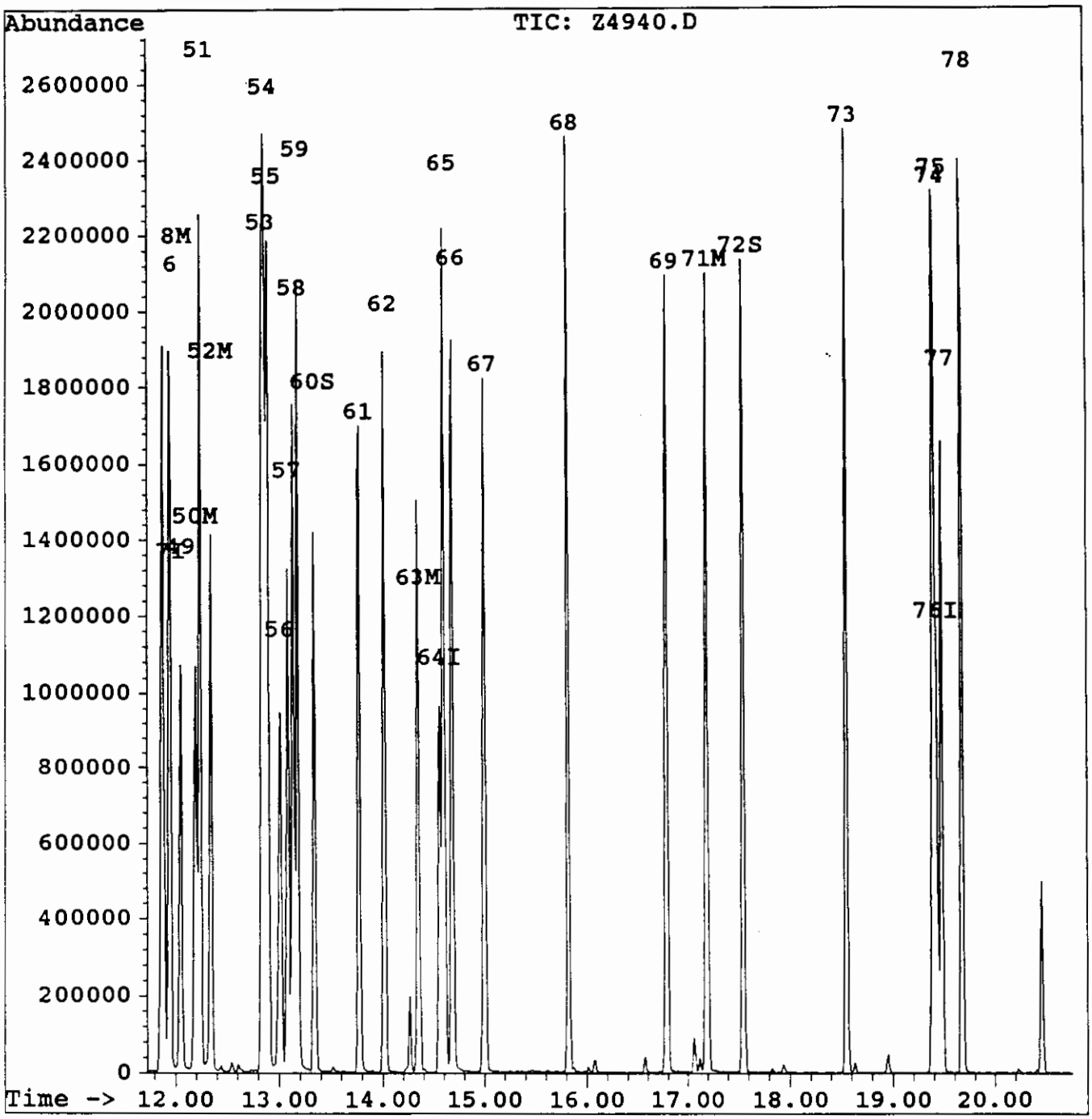
Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 3:27 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4940.D
Name: V#32981,STAND,SSTD-080,B,40NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration



100132

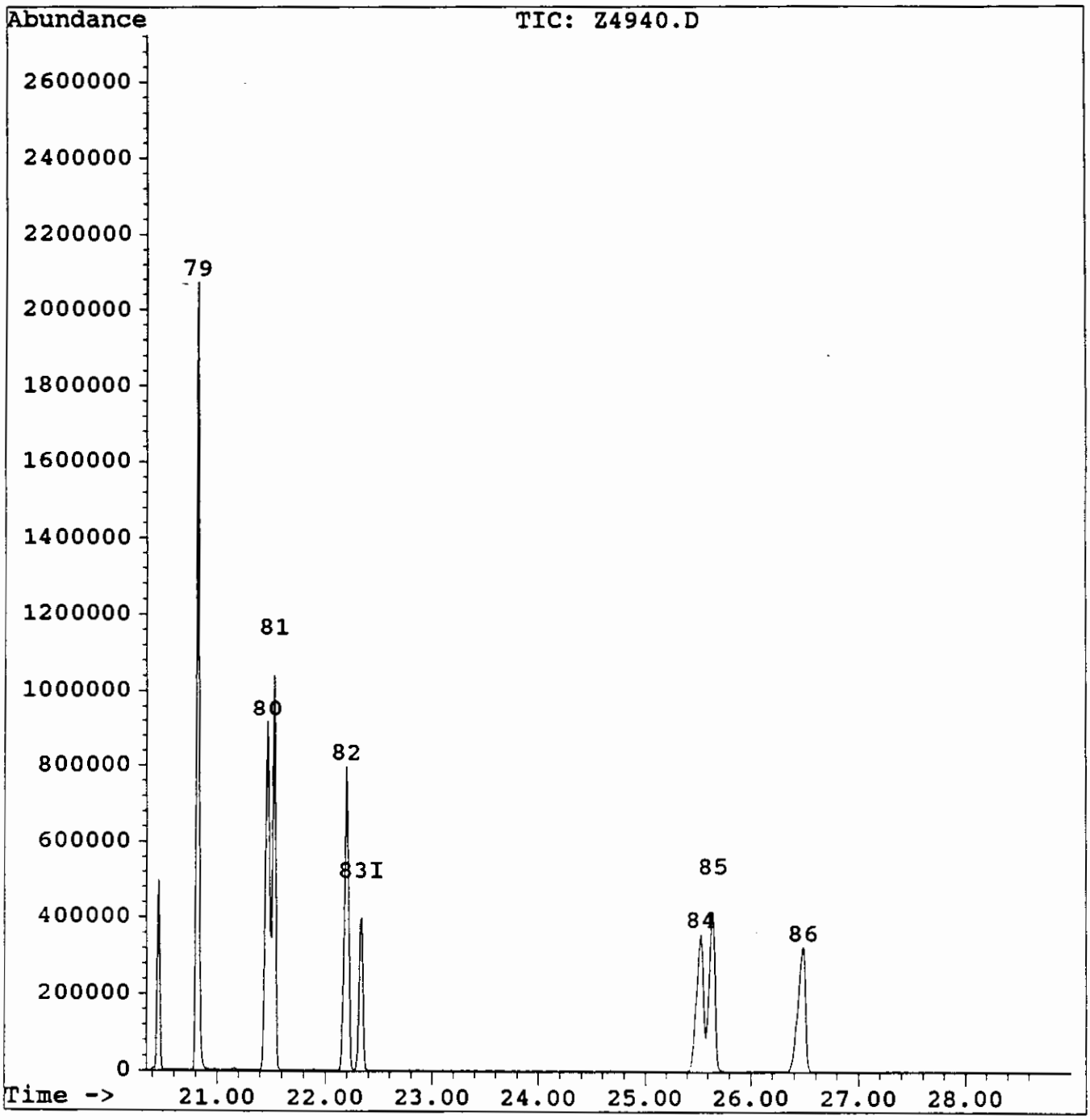
QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 3:27 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4940.D
Name: V#32981,STAND,SSTD-080,B,40NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration



QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 3:27 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4940.D
Name: V#32981,STAND,SSTD-080,B,40NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration



100134

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 3:27 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4940.D
Name: V#32981,STAND,SSTD-080,B,40NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration

Internal Standards

	Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
11)	CI30 1,4-Dichlorobenzene-d	6.58	152	233035	20.00	ng/ul	-0.01
31)	CI40 Naphthalene-d8	8.71	136	722411	20.00	ng/ul	-0.01
47)	CI50 Acenaphthene-d10	11.89	164	370387	20.00	ng/ul	0.00
64)	CI60 Phenanthrene-d10	14.57	188	645309	20.00	ng/ul	0.00
76)	CI70 Chrysene-d12	19.43	240	443760	20.00	ng/ul	-0.01
83)	CI75 Perylene-d12	22.34	264	354270	20.00	ng/ul	-0.01

System Monitoring Compounds

							%Recovery
3)	CS50 2-Fluorophenol	4.78	112	741029	41.54	ng/ul	55.39%
4)	CS45 Phenol-d5	6.09	99	758426	40.09	ng/ul	53.45%
8)	CS70 2-Chlorophenol d4	6.28	132	479324	39.57	ng/ul	52.76%
14)	CS75 1,2-Dichlorobenzene-d	6.88	152	412601	39.81	ng/ul	79.61%
22)	CS20 Nitrobenzene-d5	7.53	82	797161	40.45	ng/ul	80.89%
40)	CS25 2-Fluorobiphenyl	10.69	172	1101926	39.18	ng/ul	78.36%
60)	CS55 2,4,6-Tribromophenol	13.34	330	219890	39.11	ng/ul	52.15%
72)	CS30 Terphenyl-d14	17.55	244	1009421	40.16	ng/ul	80.32%

Target Compounds

							ISTD#
1)	C032 Pyridine	3.32	79	599639	40.56	ng/ul	001#
2)	C310 n-Nitrosodimethylamin	3.34	42	384540	40.19	ng/ul	001
5)	C315 Phenol	6.11	94	838360	40.65	ng/ul	001
6)	C320 Aniline	6.15	93	949946	40.95	ng/ul	002
7)	C325 bis(2-Chloroethyl)eth	6.24	93	643868	40.35	ng/ul	001
9)	C330 2-Chlorophenol	6.31	128	615731	39.48	ng/ul	001
10)	C335 1,3-Dichlorobenzene	6.52	146	630397	39.77	ng/ul	001
12)	C340 1,4-Dichlorobenzene	6.61	146	641399	39.83	ng/ul	001
13)	C345 Benzyl Alcohol	6.84	108	413604	39.31	ng/ul	001
15)	C350 1,2-Dichlorobenzene	6.90	146	586303	39.50	ng/ul	001
16)	C355 2-Methylphenol	7.04	108	580438	39.61	ng/ul	001
17)	C357 2,2'-Oxybis(1chloropr	7.10	45	525495	39.25	ng/ul	001#
18)	C360 bis(2-chloroisopropyl	7.10	45	525495	39.25	ng/ul	001#
19)	C365 4-Methylphenol	7.29	108	623055	39.68	ng/ul	001
20)	C370 n-Nitroso-di-n-propyl	7.35	70	445794	40.15	ng/ul	001
21)	C375 Hexachloroethane	7.39	117	388235	40.79	ng/ul	001
23)	C410 Nitrobenzene	7.56	77	683301	40.59	ng/ul	002
24)	C415 Isophorone	7.95	82	1279069	39.95	ng/ul	002
25)	C420 2-Nitrophenol	8.09	139	391485	41.01	ng/ul	002
26)	C425 2,4-Dimethylphenol	8.17	107	773647	39.83	ng/ul	002
27)	C435 bis(2-Chloroethoxy)me	8.36	93	665455	39.73	ng/ul	002
28)	C430 Benzoic Acid	8.47	122	434423	41.20	ng/ul	002
29)	C440 2,4-Dichlorophenol	8.49	162	473455	39.71	ng/ul	002
30)	C445 1,2,4-Trichlorobenzen	8.64	180	579555	39.47	ng/ul	002
32)	C450 Naphthalene	8.74	128	1470513	40.09	ng/ul	002
33)	C455 4-Chloroaniline	8.88	127	641524	40.05	ng/ul	002

(#) = qualifier out of range

100135

QUANT REPORT

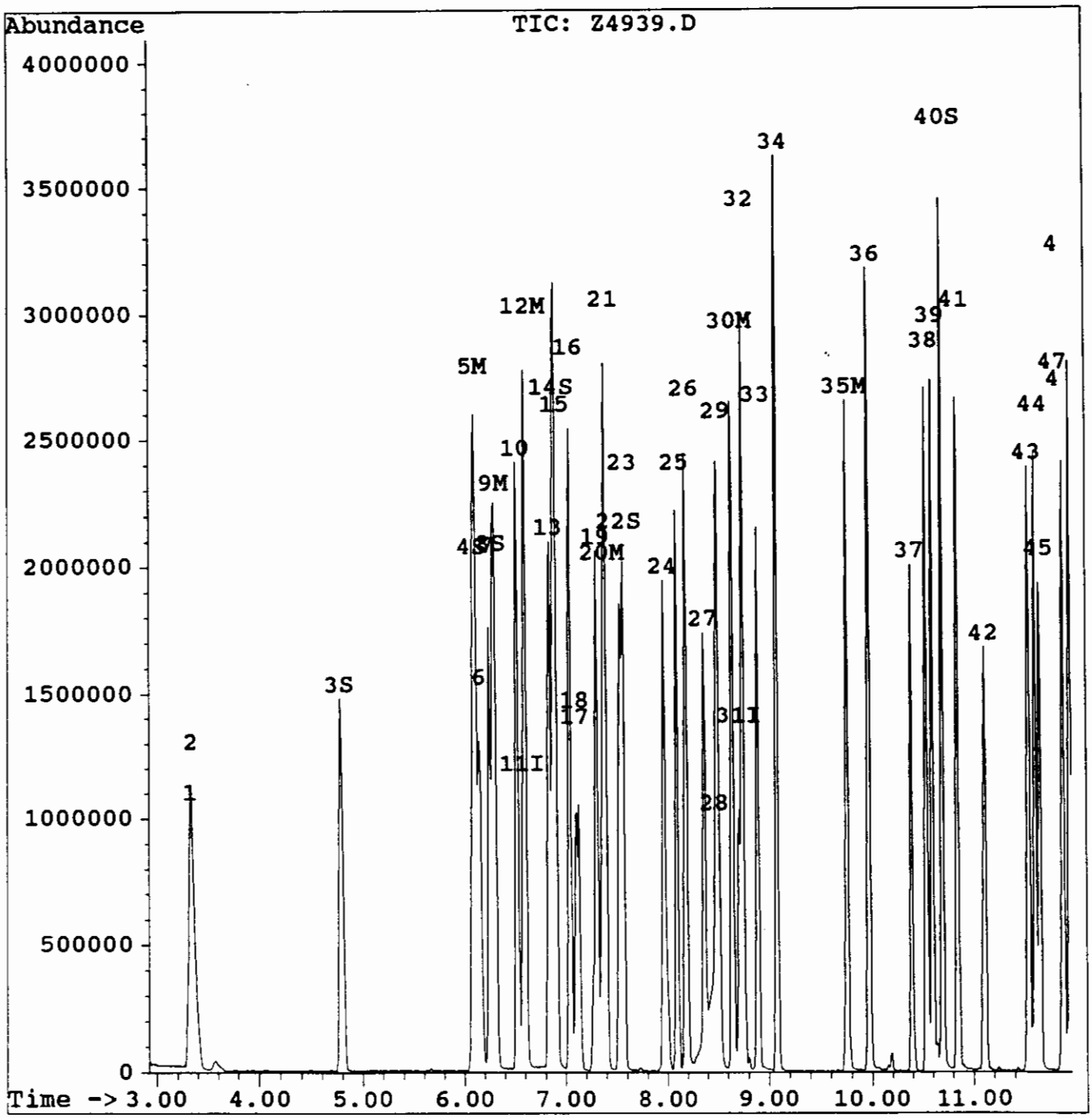
Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 3:27 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4940.D
Name: V#32981,STAND,SSTD-080,B,40NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration

Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
34) C460 Hexachlorobutadiene	9.08	225	438596	39.64	ng/ul	002
35) C465 4-Chloro-3-methylphen	9.76	107	706000	40.12	ng/ul	002
36) C470 2-Methylnaphthalene	9.97	142	896908	38.80	ng/ul	002
37) C510 Hexachlorocyclopentad	10.39	237	262598	37.81	ng/ul	003
38) C515 2,4,6-Trichlorophenol	10.54	196	389298	39.35	ng/ul	003
39) C520 2,4,5-Trichlorophenol	10.59	196	419435	39.99	ng/ul	003
41) C525 2-Chloronaphthalene	10.84	162	865292	39.69	ng/ul	003
42) C530 2-Nitroaniline	11.10	65	363843	40.65	ng/ul	003
43) C535 Dimethylphthalate	11.53	163	1216226	39.75	ng/ul	003
44) C540 Acenaphthylene	11.60	152	1172057	39.67	ng/ul	003
45) C544 2,6-Dinitrotoluene	11.65	165	278182	40.56	ng/ul	003
46) C545 3-Nitroaniline	11.88	138	276736	39.73	ng/ul	003#
48) C550 Acenaphthene	11.94	153	832326	39.88	ng/ul	003
49) C555 2,4-Dinitrophenol	12.06	184	244661	40.56	ng/ul	003#
50) C560 4-Nitrophenol	12.19	109	359046	40.67	ng/ul	003#
51) C565 Dibenzofuran	12.24	168	1295278	39.83	ng/ul	003#
52) C570 2,4-Dinitrotoluene	12.34	165	396995	40.43	ng/ul	003
53) C580 Diethylphthalate	12.84	149	1376295	39.05	ng/ul	003
54) C590 Fluorene	12.87	166	960611	38.44	ng/ul	003#
55) C585 4-Chlorophenyl-phenyl	12.90	204	537865	38.53	ng/ul	003
56) C595 4-Nitroaniline	13.01	138	278759	40.14	ng/ul	003#
57) C610 4,6-Dinitro-2-methylp	13.09	198	308120	41.05	ng/ul	004
58) C615 n-Nitrosodiphenylamin	13.14	169	664121	39.57	ng/ul	004
59) C620 1,2-Diphenylhydrazine	13.18	77	1281234	39.76	ng/ul	003#
61) C625 4-Bromophenyl-phenyle	13.78	248	277431	38.62	ng/ul	004#
62) C630 Hexachlorobenzene	14.02	284	360922	39.04	ng/ul	004
63) C635 Pentachlorophenol	14.36	266	245476	40.24	ng/ul	004
65) C640 Phenanthrene	14.61	178	1430027	39.65	ng/ul	004#
66) C645 Anthracene	14.69	178	1320186	39.45	ng/ul	004
67) C647 Carbazole	15.01	167	1210526	39.56	ng/ul	004
68) C650 Di-n-butylphthalate	15.82	149	1988908	39.08	ng/ul	004
69) C655 Fluoranthene	16.80	202	1609319	39.89	ng/ul	004
71) C715 Pyrene	17.19	202	1578729	41.87	ng/ul	005
73) C720 Butylbenzylphthalate	18.55	149	906712	41.78	ng/ul	005
74) C730 Benzo[a]anthracene	19.40	228	1212355	39.91	ng/ul	005
75) C725 3,3'-Dichlorobenzidin	19.41	252	308966	38.05	ng/ul	005
77) C740 Chrysene	19.49	228	1001069	40.26	ng/ul	005
78) C741 bis(2-Ethylhexyl)phth	19.68	149	1059504	40.47	ng/ul	005
79) C760 Di-n-octylphthalate	20.82	149	1866348	46.46	ng/ul	006
80) C765 Benzo[b]fluoranthene	21.47	252	963082	42.16	ng/ul	006
81) C770 Benzo[k]fluoranthene	21.54	252	763446	40.42	ng/ul	006
82) C775 Benzo[a]pyrene	22.21	252	783086	40.25	ng/ul	006
84) C780 Indeno[1,2,3-cd]pyren	25.54	276	627351	38.58	ng/ul	006
85) C785 Dibenz[a,h]anthracene	25.65	278	608716	38.30	ng/ul	006
86) C790 Benzo[g,h,i]perylene	26.49	276	630727	38.59	ng/ul	006

(#) = qualifier out of range

QUANT REPORT

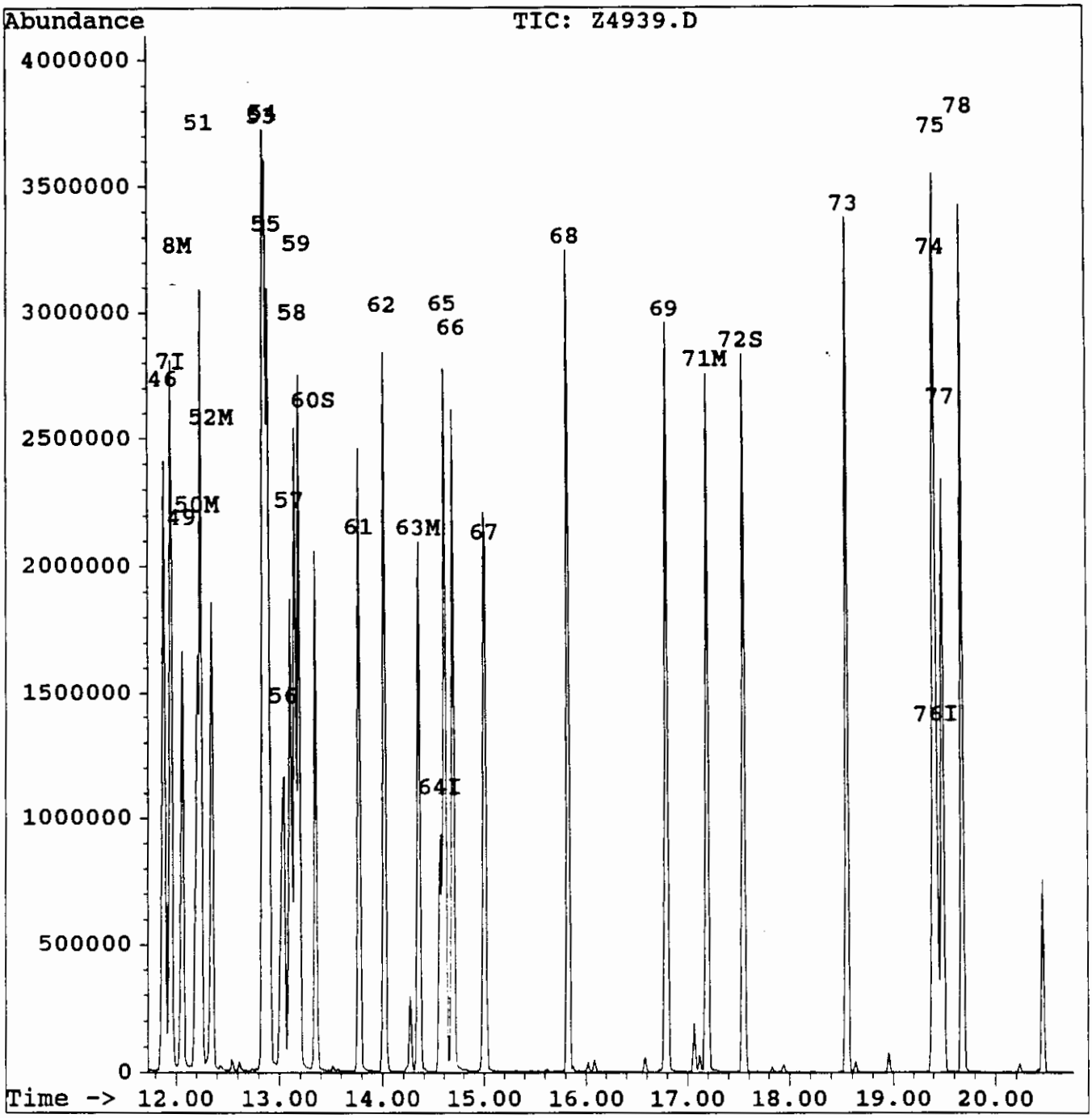
Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 2:50 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4939.D
Name: V#33159,STAND,SSTD-120,B,60NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration



100137

QUANT REPORT

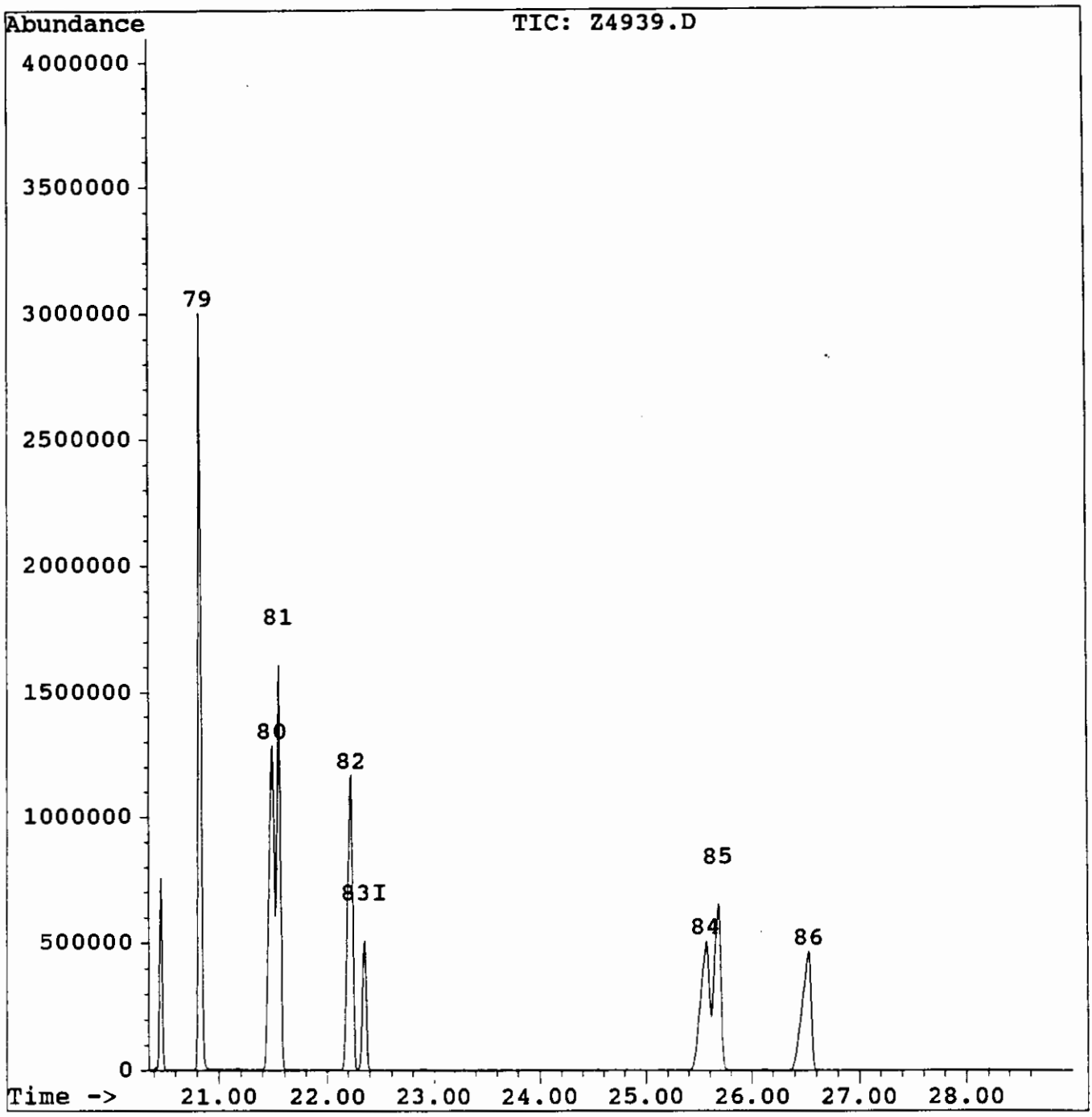
Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 2:50 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4939.D
Name: V#33159,STAND,SSTD-120,B,60NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration



100138

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 2:50 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4939.D
Name: V#33159,STAND,SSTD-120,B,60NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration



QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 2:50 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4939.D
Name: V#33159,STAND,SSTD-120,B,60NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 14:12:02 1993
Quantitated using Multiple Level Calibration

Internal Standards

	Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
11)	CI30 1,4-Dichlorobenzene-d	6.58	152	233683	20.00	ng/ul	-0.00
31)	CI40 Naphthalene-d8	8.72	136	720980	20.00	ng/ul	0.00
47)	CI50 Acenaphthene-d10	11.89	164	355924	20.00	ng/ul	0.00
64)	CI60 Phenanthrene-d10	14.57	188	643372	20.00	ng/ul	0.01
76)	CI70 Chrysene-d12	19.44	240	448967	20.00	ng/ul	-0.00
83)	CI75 Perylene-d12	22.35	264	422130	20.00	ng/ul	0.00

System Monitoring Compounds

							%Recovery
3)	CS50 2-Fluorophenol	4.78	112	1051741	58.79	ng/ul	78.39%
4)	CS45 Phenol-d5	6.10	99	1090436	57.48	ng/ul	76.64%
8)	CS70 2-Chlorophenol d4	6.29	132	688106	56.64	ng/ul	75.53%
14)	CS75 1,2-Dichlorobenzene-d	6.88	152	591688	56.93	ng/ul	113.85%
22)	CS20 Nitrobenzene-d5	7.54	82	1178728	59.92	ng/ul	119.85%
40)	CS25 2-Fluorobiphenyl	10.70	172	1618009	59.87	ng/ul	119.74%
60)	CS55 2,4,6-Tribromophenol	13.35	330	336075	59.95	ng/ul	79.94%
72)	CS30 Terphenyl-d14	17.56	244	1516949	59.65	ng/ul	119.30%

Target Compounds

							ISTD#
1)	C032 Pyridine	3.33	79	858653	57.91	ng/ul	001#
2)	C310 n-Nitrosodimethylamin	3.34	42	582013	60.66	ng/ul	001
5)	C315 Phenol	6.12	94	1153494	55.77	ng/ul	001#
6)	C320 Aniline	6.16	93	1362479	58.85	ng/ul	002#
7)	C325 bis(2-Chloroethyl)eth	6.25	93	897761	56.11	ng/ul	001
9)	C330 2-Chlorophenol	6.32	128	895264	57.25	ng/ul	001
10)	C335 1,3-Dichlorobenzene	6.53	146	909235	57.20	ng/ul	001
12)	C340 1,4-Dichlorobenzene	6.61	146	926587	57.37	ng/ul	001
13)	C345 Benzyl Alcohol	6.85	108	629654	59.67	ng/ul	001
15)	C350 1,2-Dichlorobenzene	6.91	146	839555	56.40	ng/ul	001
16)	C355 2-Methylphenol	7.05	108	829720	56.46	ng/ul	001
17)	C357 2,2'-Oxybis(1chloropr	7.10	45	745560	55.53	ng/ul	001#
18)	C360 bis(2-chloroisopropyl	7.10	45	745560	55.53	ng/ul	001#
19)	C365 4-Methylphenol	7.31	108	902120	57.29	ng/ul	001
20)	C370 n-Nitroso-di-n-propyl	7.37	70	633937	56.94	ng/ul	001
21)	C375 Hexachloroethane	7.40	117	545391	57.15	ng/ul	001
23)	C410 Nitrobenzene	7.57	77	1005391	59.83	ng/ul	002
24)	C415 Isophorone	7.97	82	1844562	57.73	ng/ul	002
25)	C420 2-Nitrophenol	8.10	139	556154	58.37	ng/ul	002#
26)	C425 2,4-Dimethylphenol	8.19	107	1173123	60.51	ng/ul	002
27)	C435 bis(2-Chloroethoxy)me	8.37	93	977733	58.50	ng/ul	002
28)	C430 Benzoic Acid	8.53	122	630803	59.95	ng/ul	002m
29)	C440 2,4-Dichlorophenol	8.51	162	696407	58.53	ng/ul	002
30)	C445 1,2,4-Trichlorobenzen	8.64	180	857534	58.52	ng/ul	002
32)	C450 Naphthalene	8.75	128	2068077	56.50	ng/ul	002
33)	C455 4-Chloroaniline	8.90	127	908047	56.80	ng/ul	002

(#) = qualifier out of range

100140

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 2:50 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4939.D
Name: V#33159,STAND,SSTD-120,B,60NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 14:12:02 1993
Quantitated using Multiple Level Calibration

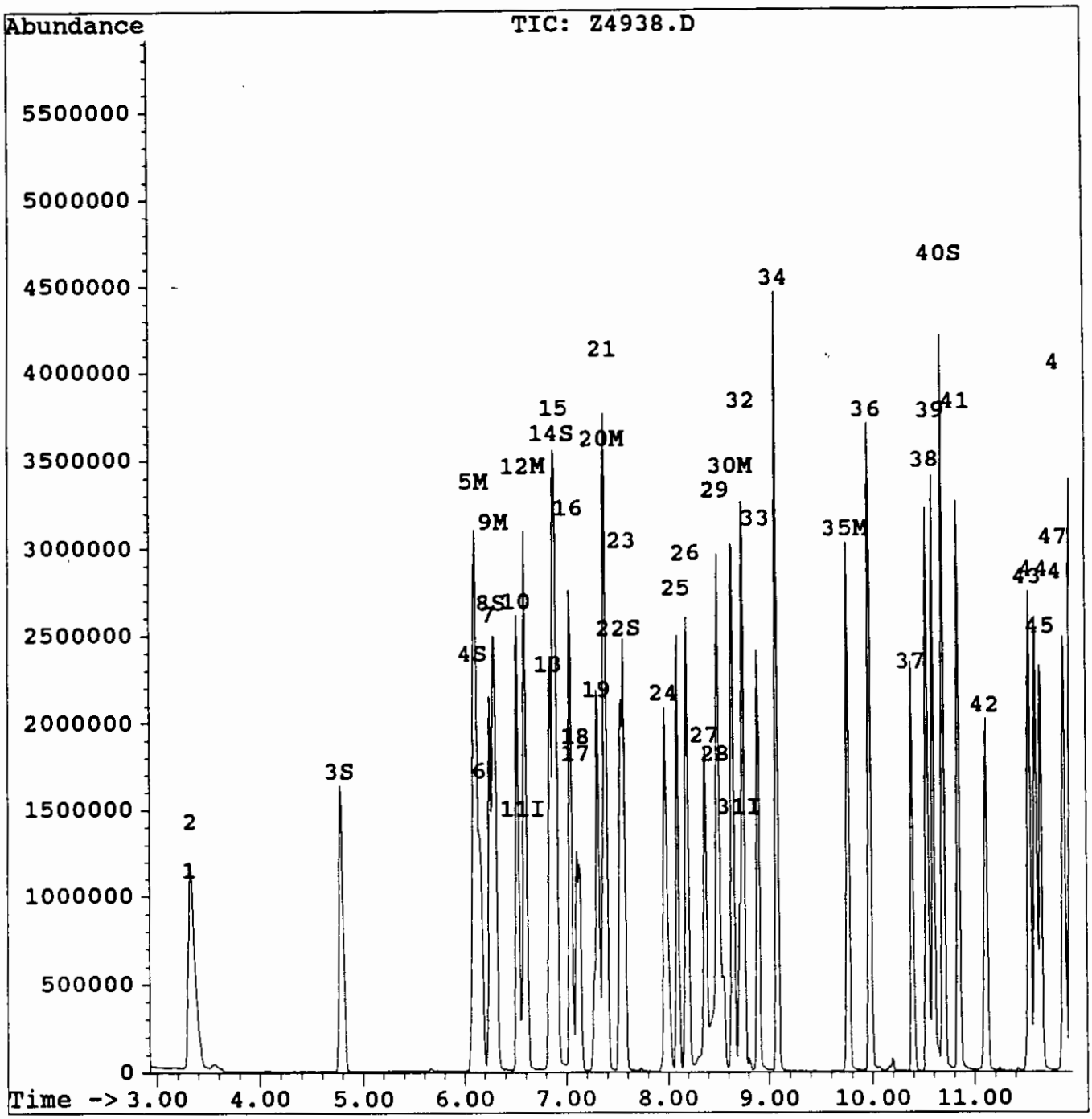
Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
34) C460 Hexachlorobutadiene	9.08	225	662837	60.02	ng/ul	002
35) C465 4-Chloro-3-methylphen	9.76	107	1008124	57.40	ng/ul	002
36) C470 2-Methylnaphthalene	9.97	142	1286960	55.78	ng/ul	002
37) C510 Hexachlorocyclopentad	10.39	237	460640	69.02	ng/ul	003
38) C515 2,4,6-Trichlorophenol	10.54	196	584939	61.53	ng/ul	003
39) C520 2,4,5-Trichlorophenol	10.60	196	612378	60.75	ng/ul	003
41) C525 2-Chloronaphthalene	10.84	162	1259482	60.11	ng/ul	003
42) C530 2-Nitroaniline	11.12	65	534833	62.18	ng/ul	003
43) C535 Dimethylphthalate	11.54	163	1745645	59.37	ng/ul	003
44) C540 Acenaphthylene	11.61	152	1706103	60.09	ng/ul	003
45) C544 2,6-Dinitrotoluene	11.66	165	403200	61.18	ng/ul	003
46) C545 3-Nitroaniline	11.89	138	399205	59.64	ng/ul	003#
48) C550 Acenaphthene	11.95	153	1200948	59.88	ng/ul	003
49) C555 2,4-Dinitrophenol	12.07	184	376808	65.00	ng/ul	003#
50) C560 4-Nitrophenol	12.22	109	541896	63.87	ng/ul	003#
51) C565 Dibenzofuran	12.25	168	1878223	60.10	ng/ul	003#
52) C570 2,4-Dinitrotoluene	12.35	165	580764	61.55	ng/ul	003
53) C580 Diethylphthalate	12.86	149	2020550	59.65	ng/ul	003
54) C590 Fluorene	12.88	166	1410374	58.73	ng/ul	003#
55) C585 4-Chlorophenyl-phenyl	12.90	204	801860	59.78	ng/ul	003
56) C595 4-Nitroaniline	13.05	138	408579	61.22	ng/ul	003#
57) C610 4,6-Dinitro-2-methylp	13.11	198	454714	60.76	ng/ul	004
58) C615 n-Nitrosodiphenylamin	13.15	169	942591	56.34	ng/ul	004
59) C620 1,2-Diphenylhydrazine	13.19	77	1813354	58.56	ng/ul	003#
61) C625 4-Bromophenyl-phenyle	13.79	248	415836	58.06	ng/ul	004#
62) C630 Hexachlorobenzene	14.03	284	551094	59.79	ng/ul	004
63) C635 Pentachlorophenol	14.36	266	368996	60.67	ng/ul	004
65) C640 Phenanthrene	14.61	178	2063772	57.39	ng/ul	004#
66) C645 Anthracene	14.70	178	1933289	57.95	ng/ul	004
67) C647 Carbazole	15.02	167	1732851	56.80	ng/ul	004
68) C650 Di-n-butylphthalate	15.83	149	2806383	55.31	ng/ul	004
69) C655 Fluoranthene	16.80	202	2320341	57.69	ng/ul	004
71) C715 Pyrene	17.20	202	2259978	59.24	ng/ul	005
73) C720 Butylbenzylphthalate	18.56	149	1261561	57.46	ng/ul	005
74) C730 Benzo[a]anthracene	19.41	228	1868092	60.79	ng/ul	005
75) C725 3,3'-Dichlorobenzidin	19.42	252	511337	62.24	ng/ul	005
77) C740 Chrysene	19.49	228	1510870	60.06	ng/ul	005
78) C741 bis(2-Ethylhexyl)phth	19.68	149	1500768	56.66	ng/ul	005
79) C760 Di-n-octylphthalate	20.83	149	2713303	56.68	ng/ul	006
80) C765 Benzo[b]fluoranthene	21.50	252	1609266	59.12	ng/ul	006
81) C770 Benzo[k]fluoranthene	21.56	252	1385300	61.56	ng/ul	006
82) C775 Benzo[a]pyrene	22.24	252	1408452	60.75	ng/ul	006
84) C780 Indeno[1,2,3-cd]pyren	25.57	276	1080219	55.75	ng/ul	006
85) C785 Dibenz[a,h]anthracene	25.69	278	1070603	56.53	ng/ul	006
86) C790 Benzo[g,h,i]perylene	26.54	276	1076780	55.30	ng/ul	006

(#) = qualifier out of range

M = manually appended SJG 11/10/93

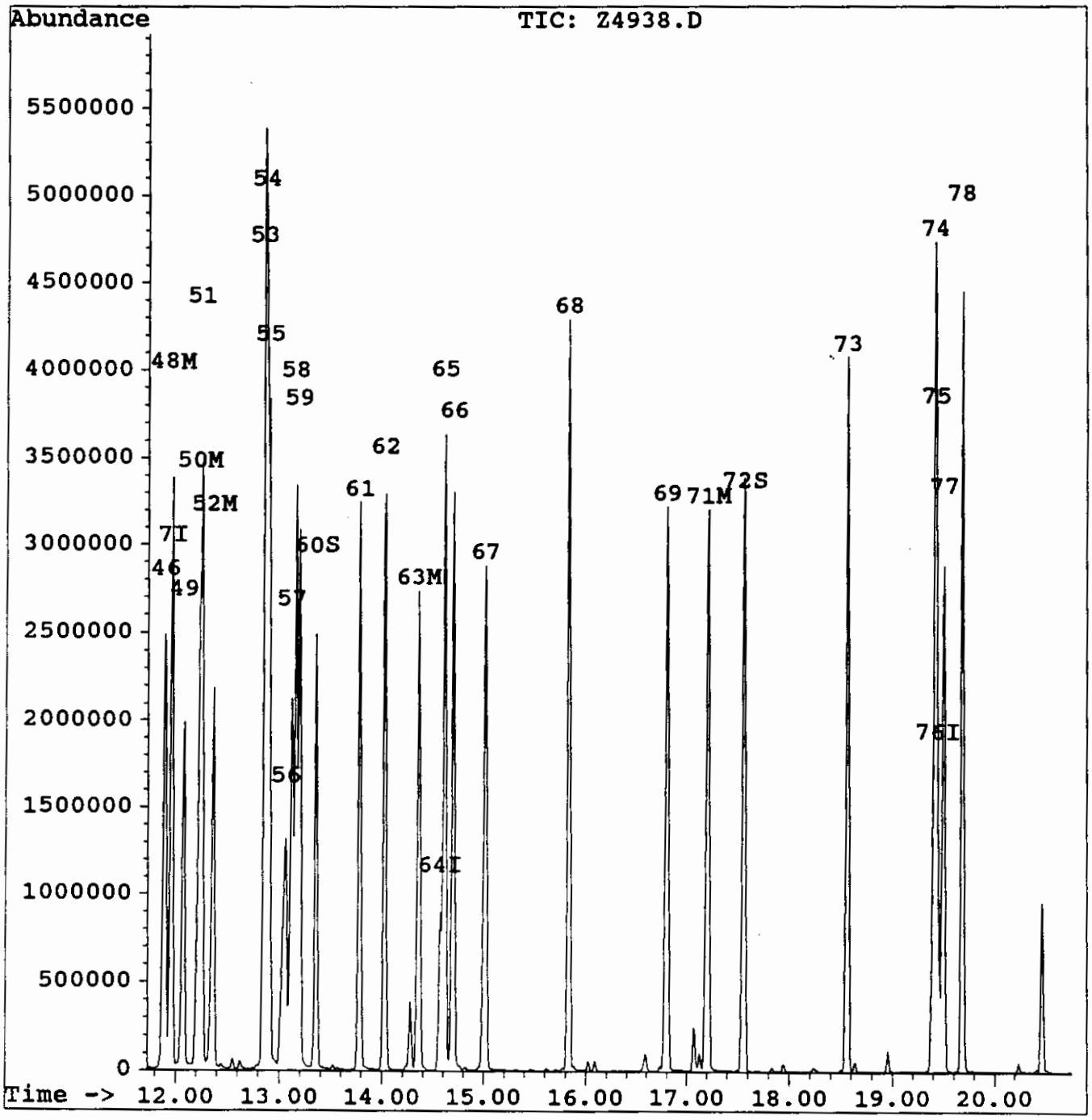
QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 2:14 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4938.D
Name: V#33158,STAND,SSTD-160,B,80NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration



QUANT REPORT

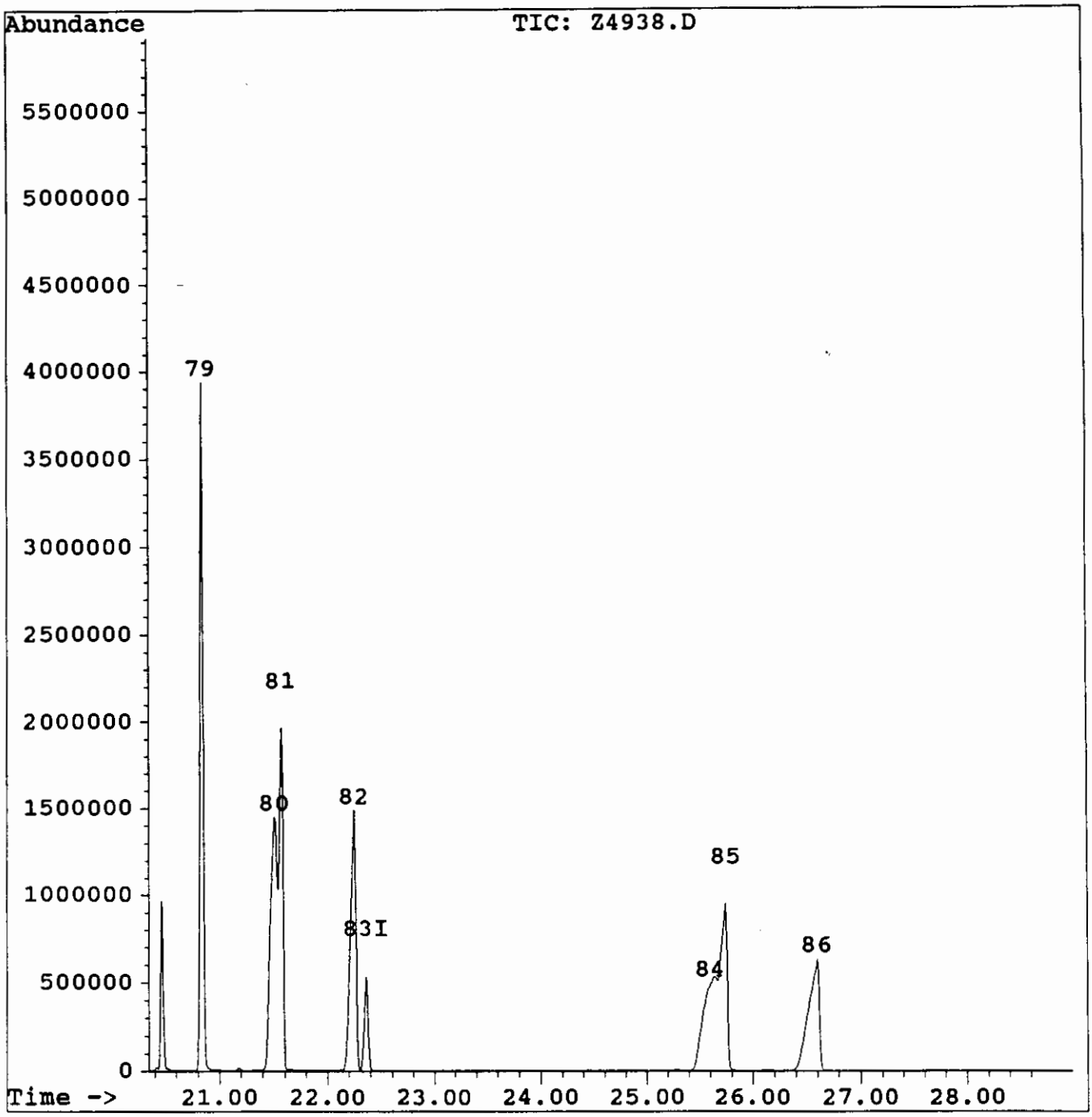
Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 2:14 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4938.D
Name: V#33158,STAND,SSTD-160,B,80NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration



100143

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 2:14 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4938.D
Name: V#33158,STAND,SSTD-160,B,80NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 13:42:49 1993
Quantitated using Multiple Level Calibration



100144

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 2:14 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4938.D
Name: V#33158,STAND,SSTD-160,B,80NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 14:08:39 1993
Quantitated using Multiple Level Calibration

Internal Standards

	Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
11)	CI30 1,4-Dichlorobenzene-d	6.59	152	209798	20.00	ng/ul	0.00
31)	CI40 Naphthalene-d8	8.72	136	676735	20.00	ng/ul	0.01
47)	CI50 Acenaphthene-d10	11.89	164	342324	20.00	ng/ul	0.00
64)	CI60 Phenanthrene-d10	14.57	188	614165	20.00	ng/ul	0.01
76)	CI70 Chrysene-d12	19.45	240	453863	20.00	ng/ul	0.01
83)	CI75 Perylene-d12	22.36	264	459661	20.00	ng/ul	0.01

System Monitoring Compounds

							%Recovery
3)	CS50 2-Fluorophenol	4.78	112	1219959	75.96	ng/ul	101.28%
4)	CS45 Phenol-d5	6.10	99	1269773	74.55	ng/ul	99.41%
8)	CS70 2-Chlorophenol d4	6.29	132	804428	73.76	ng/ul	98.35%
14)	CS75 1,2-Dichlorobenzene-d	6.89	152	687931	73.72	ng/ul	147.44%
22)	CS20 Nitrobenzene-d5	7.54	82	1410198	76.38	ng/ul	152.76%
40)	CS25 2-Fluorobiphenyl	10.70	172	2053117	78.99	ng/ul	157.98%
60)	CS55 2,4,6-Tribromophenol	13.36	330	449117	83.93	ng/ul	111.91%
72)	CS30 Terphenyl-d14	17.57	244	2072036	80.60	ng/ul	161.20%

Target Compounds

							ISTD#
1)	C032 Pyridine	3.32	79	1010674	75.93	ng/ul	001#
2)	C310 n-Nitrosodimethylamin	3.33	42	681316	79.09	ng/ul	001
5)	C315 Phenol	6.12	94	1328849	71.57	ng/ul	001#
6)	C320 Aniline	6.16	93	1593673	73.33	ng/ul	002#
7)	C325 bis(2-Chloroethyl)eth	6.26	93	1039528	72.37	ng/ul	001
9)	C330 2-Chlorophenol	6.31	128	1034710	73.70	ng/ul	001
10)	C335 1,3-Dichlorobenzene	6.53	146	1073231	75.21	ng/ul	001
12)	C340 1,4-Dichlorobenzene	6.61	146	1087239	74.99	ng/ul	001
13)	C345 Benzyl Alcohol	6.85	108	726976	76.74	ng/ul	001
15)	C350 1,2-Dichlorobenzene	6.91	146	976427	73.06	ng/ul	001
16)	C355 2-Methylphenol	7.05	108	963154	73.00	ng/ul	001
17)	C357 2,2'-Oxybis(1chloropr	7.11	45	915845	75.98	ng/ul	001#
18)	C360 bis(2-chloroisopropyl	7.11	45	915845	75.98	ng/ul	001#
19)	C365 4-Methylphenol	7.32	108	1081613	76.51	ng/ul	001
20)	C370 n-Nitroso-di-n-propyl	7.38	70	726748	72.70	ng/ul	001
21)	C375 Hexachloroethane	7.39	117	626880	73.16	ng/ul	001
23)	C410 Nitrobenzene	7.57	77	1170241	74.20	ng/ul	002
24)	C415 Isophorone	7.98	82	2309997	77.02	ng/ul	002
25)	C420 2-Nitrophenol	8.11	139	656953	73.46	ng/ul	002#
26)	C425 2,4-Dimethylphenol	8.20	107	1408423	77.40	ng/ul	002
27)	C435 bis(2-Chloroethoxy)me	8.38	93	1155733	73.67	ng/ul	002
28)	C430 Benzoic Acid	8.55	122	775637	78.53	ng/ul	002m
29)	C440 2,4-Dichlorophenol	8.51	162	849916	76.10	ng/ul	002
30)	C445 1,2,4-Trichlorobenzen	8.66	180	1056454	76.81	ng/ul	002
32)	C450 Naphthalene	8.76	128	2456396	71.50	ng/ul	002
33)	C455 4-Chloroaniline	8.90	127	1092883	72.84	ng/ul	002

(#) = qualifier out of range

100145

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 9 Nov 93 2:14 pm
Data File: C:\CHEMPC\DATA\Z110993\Z4938.D
Name: V#33158,STAND,SSTD-160,B,80NG/UL,2UL
Misc: INITIAL CALIBRATION STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 14:08:39 1993
Quantitated using Multiple Level Calibration

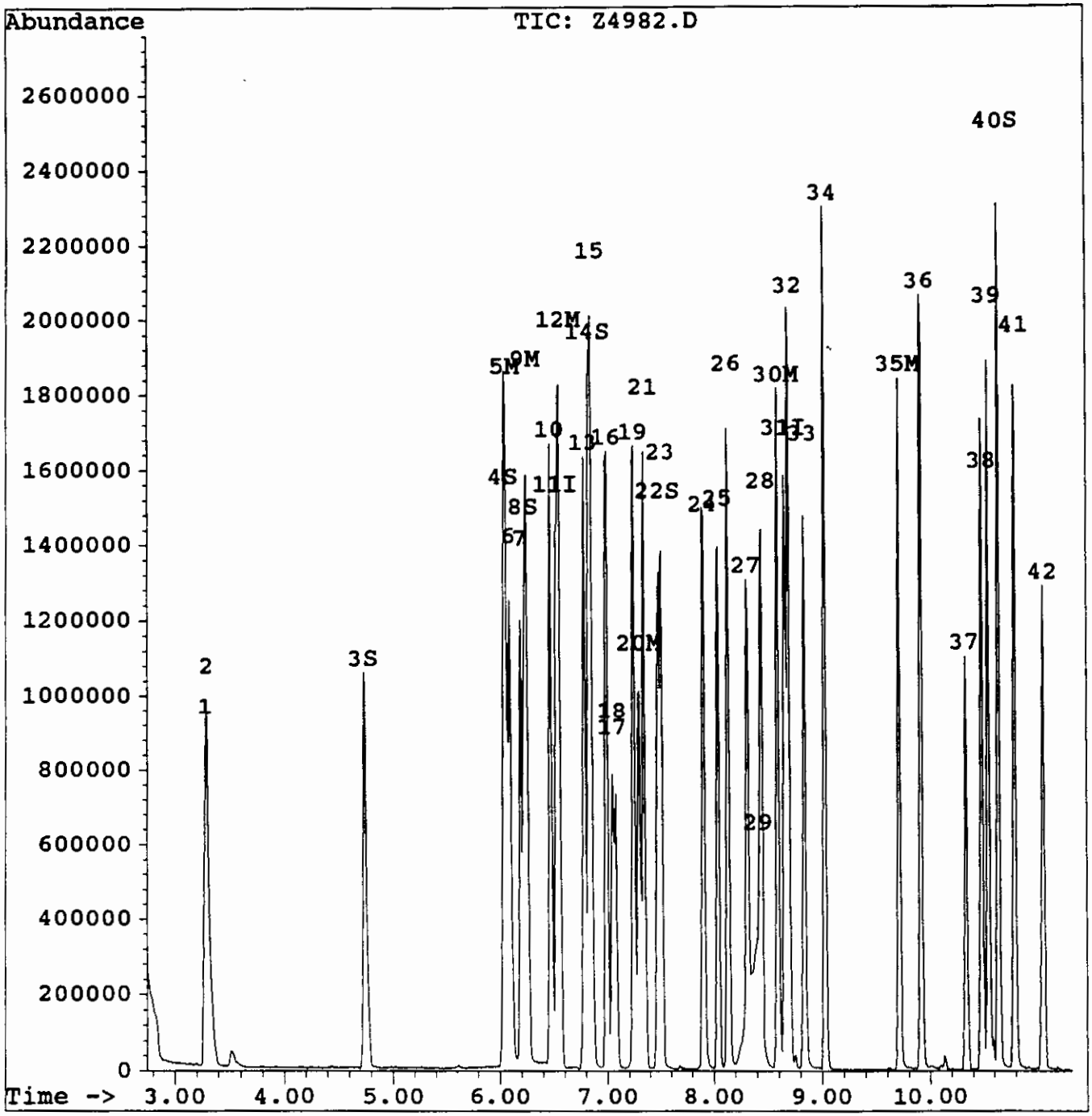
Compound	R.T.	Qion	Area	Conc Unit	Dev(Min)
34) C460 Hexachlorobutadiene	9.09	225	839910	81.03 ng/ul	002
35) C465 4-Chloro-3-methylphen	9.77	107	1245935	75.58 ng/ul	002
36) C470 2-Methylnaphthalene	9.98	142	1609302	74.32 ng/ul	002
37) C510 Hexachlorocyclopentad	10.40	237	600021	93.47 ng/ul	003
38) C515 2,4,6-Trichlorophenol	10.54	196	745844	81.57 ng/ul	003
39) C520 2,4,5-Trichlorophenol	10.61	196	764030	78.81 ng/ul	003
41) C525 2-Chloronaphthalene	10.85	162	1549028	76.87 ng/ul	003
42) C530 2-Nitroaniline	11.12	65	658218	79.56 ng/ul	003
43) C535 Dimethylphthalate	11.55	163	2256006	79.78 ng/ul	003
44) C540 Acenaphthylene	11.62	152	2091955	76.60 ng/ul	003
45) C544 2,6-Dinitrotoluene	11.67	165	496590	78.35 ng/ul	003
46) C545 3-Nitroaniline	11.90	138	487924	75.79 ng/ul	003#
48) C550 Acenaphthene	11.96	153	1478813	76.66 ng/ul	003
49) C555 2,4-Dinitrophenol	12.08	184	486320	87.23 ng/ul	003#
50) C560 4-Nitrophenol	12.23	109	704754	86.37 ng/ul	003#
51) C565 Dibenzofuran	12.25	168	2342675	77.94 ng/ul	003#
52) C570 2,4-Dinitrotoluene	12.36	165	730404	80.48 ng/ul	003
53) C580 Diethylphthalate	12.86	149	2602660	79.89 ng/ul	003
54) C590 Fluorene	12.88	166	1868223	80.89 ng/ul	003#
55) C585 4-Chlorophenyl-phenyl	12.91	204	1046377	81.11 ng/ul	003
56) C595 4-Nitroaniline	13.07	138	508665	79.24 ng/ul	003#
57) C610 4,6-Dinitro-2-methylp	13.12	198	567475	79.43 ng/ul	004
58) C615 n-Nitrosodiphenylamin	13.16	169	1194453	74.78 ng/ul	004
59) C620 1,2-Diphenylhydrazine	13.20	77	2423749	81.38 ng/ul	003#
61) C625 4-Bromophenyl-phenyle	13.78	248	535237	78.29 ng/ul	004#
62) C630 Hexachlorobenzene	14.04	284	720817	81.92 ng/ul	004
63) C635 Pentachlorophenol	14.36	266	472321	81.36 ng/ul	004
65) C640 Phenanthrene	14.63	178	2631405	76.65 ng/ul	004#
66) C645 Anthracene	14.71	178	2405311	75.52 ng/ul	004
67) C647 Carbazole	15.03	167	2172392	74.59 ng/ul	004
68) C650 Di-n-butylphthalate	15.84	149	3667111	75.70 ng/ul	004
69) C655 Fluoranthene	16.81	202	2936398	76.47 ng/ul	004
71) C715 Pyrene	17.22	202	2875673	74.57 ng/ul	005
73) C720 Butylbenzylphthalate	18.57	149	1684322	75.89 ng/ul	005
74) C730 Benzo[a]anthracene	19.43	228	2490740	80.18 ng/ul	005
75) C725 3,3'-Dichlorobenzidin	19.44	252	739921	89.09 ng/ul	005
77) C740 Chrysene	19.51	228	2025215	79.63 ng/ul	005
78) C741 bis(2-Ethylhexyl)phth	19.69	149	2087970	77.98 ng/ul	005
79) C760 Di-n-octylphthalate	20.84	149	3755918	72.06 ng/ul	006
80) C765 Benzo[b]fluoranthene	21.51	252	2460565	83.02 ng/ul	006
81) C770 Benzo[k]fluoranthene	21.58	252	1703177	69.51 ng/ul	006
82) C775 Benzo[a]pyrene	22.26	252	1990631	78.86 ng/ul	006
84) C780 Indeno[1,2,3-cd]pyren	25.60	276	1748524	82.87 ng/ul	006m
85) C785 Dibenz[a,h]anthracene	25.75	278	1695866	82.23 ng/ul	006
86) C790 Benzo[g,h,i]perylene	26.60	276	1724190	81.31 ng/ul	006

(#) = qualifier out of range

m = manually appended

QUANT REPORT

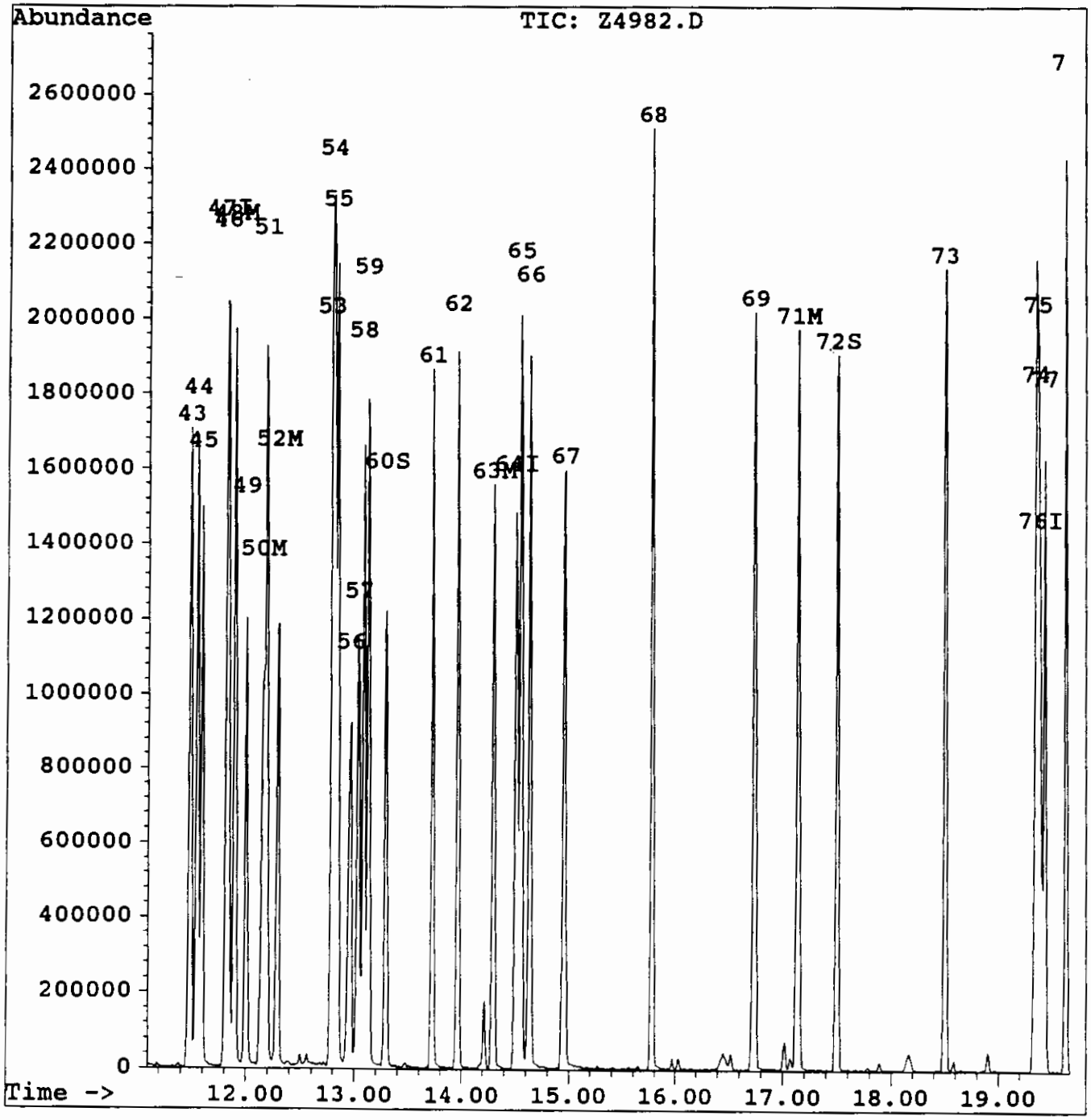
Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 9:38 am
Data File: C:\CHEMPC\DATA\Z111293\Z4982.D
Name: V#32978,STAND,SSTD-050,B,25NG/UL,2UL
Misc: CC-050 CALIBRATION CHECK STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 14:14:56 1993
Quantitated using Multiple Level Calibration



100147

QUANT REPORT

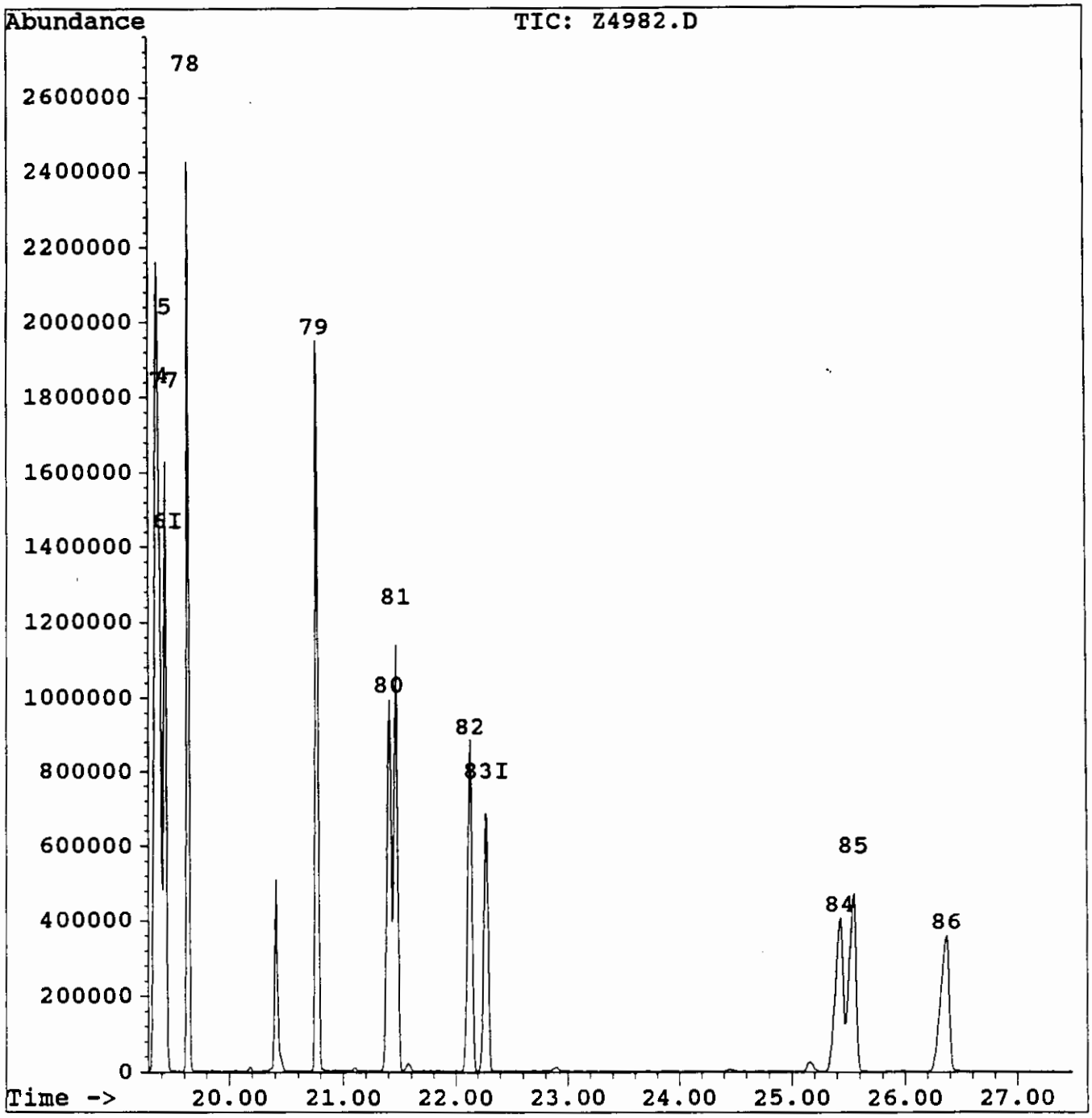
Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 9:38 am
Data File: C:\CHEMPC\DATA\Z111293\Z4982.D
Name: V#32978,STAND,SSTD-050,B,25NG/UL,2UL
Misc: CC-050 CALIBRATION CHECK STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 14:14:56 1993
Quantitated using Multiple Level Calibration



100148

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 9:38 am
Data File: C:\CHEMPC\DATA\Z111293\Z4982.D
Name: V#32978,STAND,SSTD-050,B,25NG/UL,2UL
Misc: CC-050 CALIBRATION CHECK STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 14:14:56 1993
Quantitated using Multiple Level Calibration



100149

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 9:38 am
Data File: C:\CHEMPC\DATA\Z111293\Z4982.D
Name: V#32978,STAND,SSTD-050,B,25NG/UL,2UL
Misc: CC-050 CALIBRATION CHECK STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 14:14:56 1993
Quantitated using Multiple Level Calibration

Internal Standards

Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
11) CI30 1,4-Dichlorobenzene-d	6.53	152	326957	20.00	ng/ul	-0.05
31) CI40 Naphthalene-d8	8.66	136	1122804	20.00	ng/ul	-0.06
47) CI50 Acenaphthene-d10	11.84	164	529800	20.00	ng/ul	-0.05
64) CI60 Phenanthrene-d10	14.51	188	934500	20.00	ng/ul	-0.06
76) CI70 Chrysene-d12	19.39	240	660140	20.00	ng/ul	-0.05
83) CI75 Perylene-d12	22.29	264	632224	20.00	ng/ul	-0.07

System Monitoring Compounds

						%Recovery
3) CS50 2-Fluorophenol	4.74	112	688433	27.50	ng/ul	36.67%
4) CS45 Phenol-d5	6.04	99	772701	29.11	ng/ul	38.82%
8) CS70 2-Chlorophenol d4	6.23	132	488713	28.75	ng/ul	38.34%
14) CS75 1,2-Dichlorobenzene-d	6.83	152	368691	25.35	ng/ul	50.71%
22) CS20 Nitrobenzene-d5	7.48	82	767472	25.05	ng/ul	50.11%
40) CS25 2-Fluorobiphenyl	10.64	172	1063430	26.44	ng/ul	52.87%
60) CS55 2,4,6-Tribromophenol	13.30	330	212751	26.13	ng/ul	34.84%
72) CS30 Terphenyl-d14	17.51	244	982139	26.27	ng/ul	52.53%

Target Compounds

						ISTD#
1) C032 Pyridine	3.28	79	606464	29.23	ng/ul	001#
2) C310 n-Nitrosodimethylamin	3.29	42	351683	26.20	ng/ul	001#
5) C315 Phenol	6.06	94	845613	29.22	ng/ul	001
6) C320 Aniline	6.10	93	932260	25.86	ng/ul	002
7) C325 bis(2-Chloroethyl)eth	6.20	93	640125	28.59	ng/ul	001
9) C330 2-Chlorophenol	6.25	128	609213	27.84	ng/ul	001
10) C335 1,3-Dichlorobenzene	6.47	146	596128	26.81	ng/ul	001
12) C340 1,4-Dichlorobenzene	6.56	146	607866	26.90	ng/ul	001
13) C345 Benzyl Alcohol	6.79	108	428904	29.05	ng/ul	001
15) C350 1,2-Dichlorobenzene	6.85	146	547422	26.28	ng/ul	001
16) C355 2-Methylphenol	7.00	108	584451	28.42	ng/ul	001
17) C357 2,2'-Oxybis(1chloropr	7.05	45	609860	32.47	ng/ul	001#
18) C360 bis(2-chloroisopropyl	7.05	45	609860	32.47	ng/ul	001#
19) C365 4-Methylphenol	7.25	108	623507	28.30	ng/ul	001
20) C370 n-Nitroso-di-n-propyl	7.30	70	450195	28.90	ng/ul	001
21) C375 Hexachloroethane	7.35	117	352017	26.36	ng/ul	001
23) C410 Nitrobenzene	7.51	77	657281	25.12	ng/ul	002
24) C415 Isophorone	7.91	82	1219211	24.50	ng/ul	002
25) C420 2-Nitrophenol	8.05	139	372463	25.10	ng/ul	002
26) C425 2,4-Dimethylphenol	8.13	107	714569	23.67	ng/ul	002
27) C435 bis(2-Chloroethoxy)me	8.31	93	649780	24.96	ng/ul	002
28) C440 2,4-Dichlorophenol	8.45	162	440782	23.79	ng/ul	002
29) C430 Benzoic Acid	8.42	122	432723	26.43	ng/ul	002
30) C445 1,2,4-Trichlorobenzen	8.59	180	543954	23.84	ng/ul	002
32) C450 Naphthalene	8.70	128	1421747	24.94	ng/ul	002
33) C455 4-Chloroaniline	8.84	127	642690	25.82	ng/ul	002

(#) = qualifier out of range

QUANT REPORT

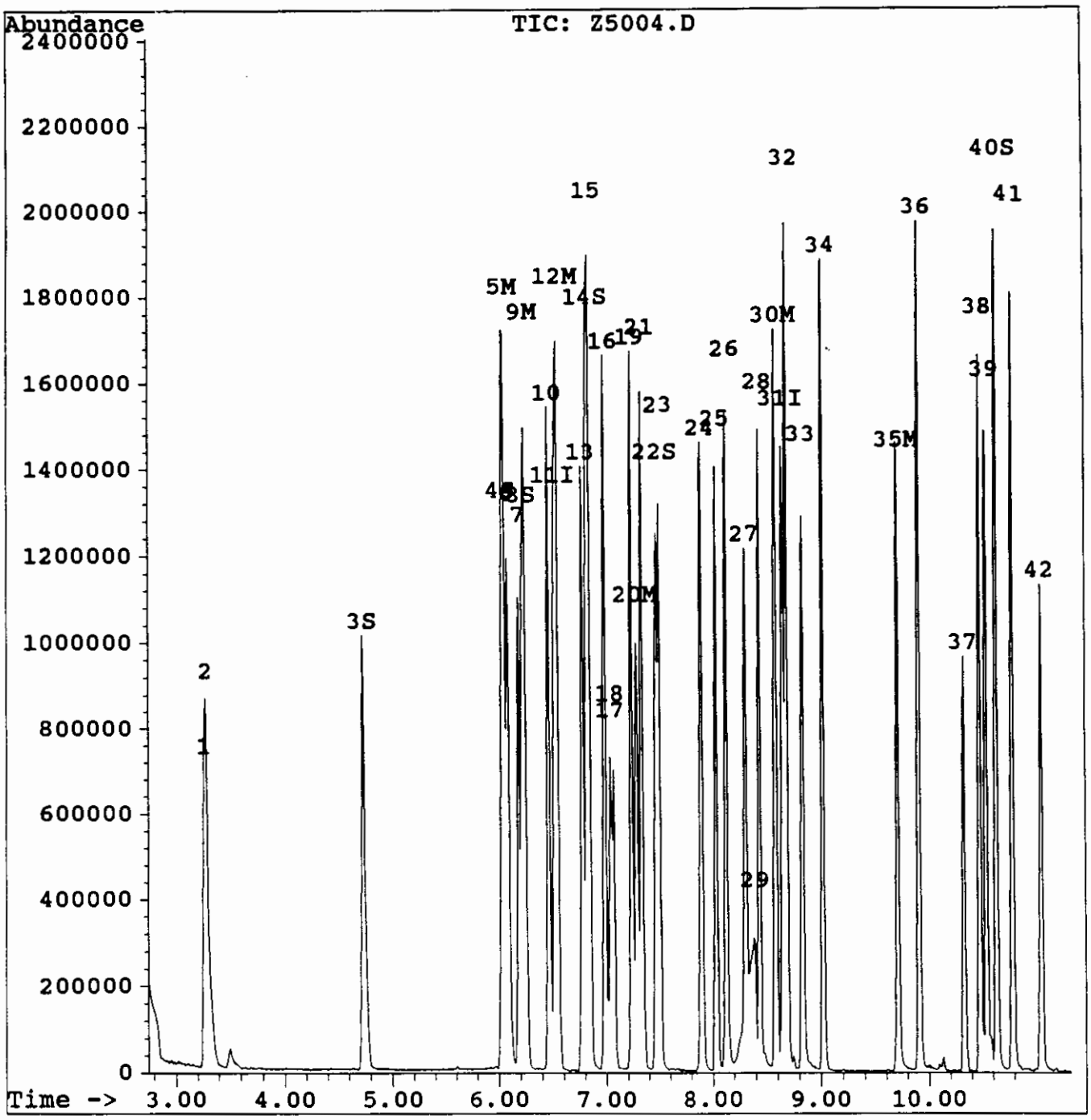
Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 9:38 am
Data File: C:\CHEMPC\DATA\Z111293\Z4982.D
Name: V#32978,STAND,SSTD-050,B,25NG/UL,2UL
Misc: CC-050 CALIBRATION CHECK STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Wed Nov 10 14:14:56 1993
Quantitated using Multiple Level Calibration

Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
34) C460 Hexachlorobutadiene	9.03	225	416163	24.20	ng/ul	002
35) C465 4-Chloro-3-methylphen	9.72	107	677665	24.78	ng/ul	002
36) C470 2-Methylnaphthalene	9.92	142	896354	24.95	ng/ul	002
37) C510 Hexachlorocyclopentad	10.33	237	252470	25.41	ng/ul	003
38) C515 2,4,6-Trichlorophenol	10.49	196	357333	25.25	ng/ul	003
39) C520 2,4,5-Trichlorophenol	10.54	196	389077	25.93	ng/ul	003
41) C525 2-Chloronaphthalene	10.80	162	842488	27.01	ng/ul	003
42) C530 2-Nitroaniline	11.06	65	362092	28.28	ng/ul	003
43) C535 Dimethylphthalate	11.49	163	1123553	25.67	ng/ul	003
44) C540 Acenaphthylene	11.55	152	1145988	27.11	ng/ul	003
45) C544 2,6-Dinitrotoluene	11.59	165	257022	26.20	ng/ul	003
46) C545 3-Nitroaniline	11.82	138	264545	26.55	ng/ul	003#
48) C550 Acenaphthene	11.90	153	754265	25.26	ng/ul	003
49) C555 2,4-Dinitrophenol	12.00	184	239803	27.79	ng/ul	003#
50) C560 4-Nitrophenol	12.15	109	342818	27.15	ng/ul	003#
51) C565 Dibenzofuran	12.19	168	1222324	26.28	ng/ul	003#
52) C570 2,4-Dinitrotoluene	12.30	165	373042	26.56	ng/ul	003
53) C580 Diethylphthalate	12.79	149	1253061	24.85	ng/ul	003
54) C590 Fluorene	12.81	166	876342	24.52	ng/ul	003#
55) C585 4-Chlorophenyl-phenyl	12.84	204	498543	24.97	ng/ul	003
56) C595 4-Nitroaniline	12.97	138	272674	27.45	ng/ul	003#
57) C610 4,6-Dinitro-2-methylp	13.04	198	276338	25.42	ng/ul	004
58) C615 n-Nitrosodiphenylamin	13.09	169	620318	25.52	ng/ul	004
59) C620 1,2-Diphenylhydrazine	13.13	77	1209410	26.24	ng/ul	003#
61) C625 4-Bromophenyl-phenyle	13.73	248	270781	26.03	ng/ul	004#
62) C630 Hexachlorobenzene	13.97	284	340093	25.40	ng/ul	004
63) C635 Pentachlorophenol	14.30	266	224399	25.40	ng/ul	004
65) C640 Phenanthrene	14.56	178	1280384	24.51	ng/ul	004#
66) C645 Anthracene	14.64	178	1213747	25.05	ng/ul	004
67) C647 Carbazole	14.97	167	1177130	26.56	ng/ul	004
68) C650 Di-n-butylphthalate	15.78	149	1836347	24.91	ng/ul	004
69) C655 Fluoranthene	16.74	202	1468102	25.13	ng/ul	004
71) C715 Pyrene	17.14	202	1437147	25.62	ng/ul	005
73) C720 Butylbenzylphthalate	18.51	149	817938	25.34	ng/ul	005
74) C730 Benzo[a]anthracene	19.35	228	1107712	24.51	ng/ul	005
75) C725 3,3'-Dichlorobenzidin	19.37	252	292653	24.23	ng/ul	005
77) C740 Chrysene	19.44	228	907602	24.54	ng/ul	005
78) C741 bis(2-Ethylhexyl)phth	19.64	149	962544	24.71	ng/ul	005
79) C760 Di-n-octylphthalate	20.77	149	1752388	24.44	ng/ul	006
80) C765 Benzo[b]fluoranthene	21.42	252	1068113	26.20	ng/ul	006
81) C770 Benzo[k]fluoranthene	21.48	252	803385	23.84	ng/ul	006
82) C775 Benzo[a]pyrene	22.14	252	883857	25.46	ng/ul	006
84) C780 Indeno[1,2,3-cd]pyren	25.43	276	725421	25.00	ng/ul	006
85) C785 Dibenz[a,h]anthracene	25.55	278	682494	24.06	ng/ul	006
86) C790 Benzo[g,h,i]perylene	26.38	276	735338	25.21	ng/ul	006

(#) = qualifier out of range

QUANT REPORT

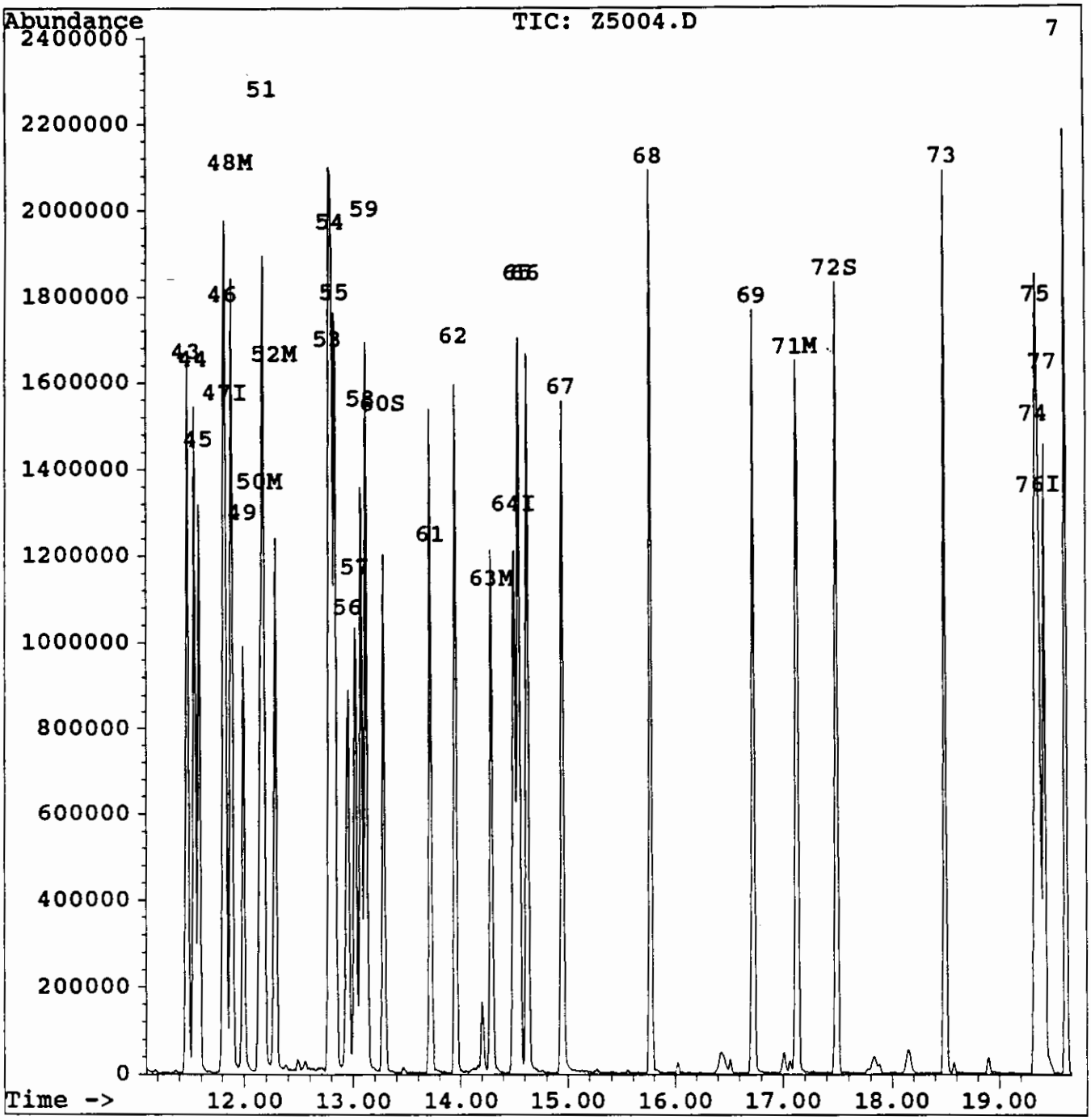
Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 10:21 am
Data File: C:\CHEMPC\DATA\Z111393\Z5004.D
Name: V#32978,STAND,SSTD-050,B,25NG/UL,2UL
Misc: CC-050 CALIBRATION CHECK STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Fri Nov 12 10:21:21 1993
Quantitated using Single Level Calibration Z4982.D



100152

QUANT REPORT

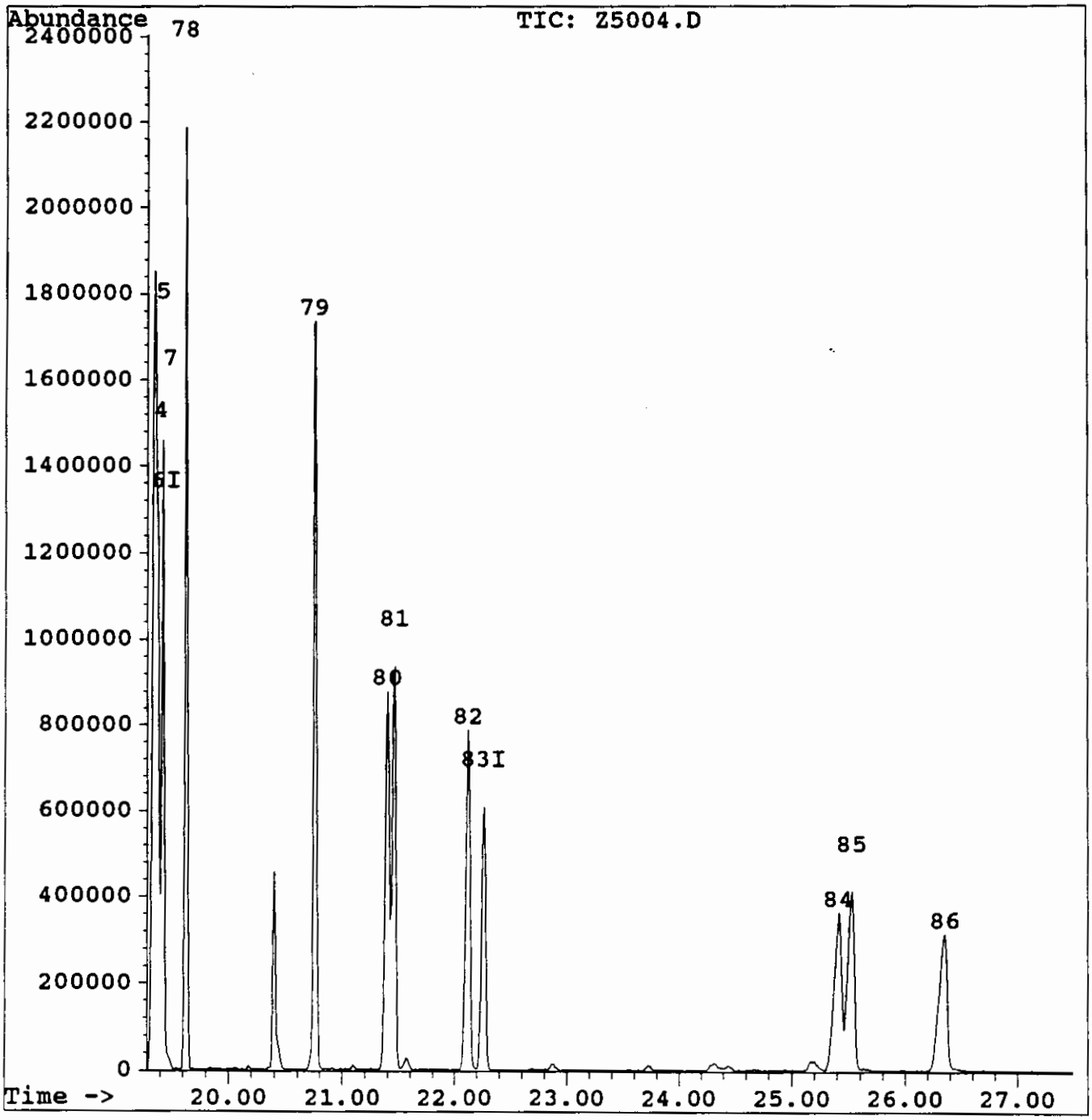
Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 10:21 am
Data File: C:\CHEMPC\DATA\Z111393\Z5004.D
Name: V#32978,STAND,SSTD-050,B,25NG/UL,2UL
Misc: CC-050 CALIBRATION CHECK STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Fri Nov 12 10:21:21 1993
Quantitated using Single Level Calibration Z4982.D



100153

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 10:21 am
Data File: C:\CHEMPC\DATA\Z111393\Z5004.D
Name: V#32978,STAND,SSTD-050,B,25NG/UL,2UL
Misc: CC-050 CALIBRATION CHECK STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Fri Nov 12 10:21:21 1993
Quantitated using Single Level Calibration Z4982.D



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QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 10:21 am
Data File: C:\CHEMPC\DATA\Z111393\Z5004.D
Name: V#32978,STAND,SSTD-050,B,25NG/UL,2UL
Misc: CC-050 CALIBRATION CHECK STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Fri Nov 12 10:21:21 1993
Quantitated using Single Level Calibration Z4982.D

Internal Standards

	Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
11)	CI30 1,4-Dichlorobenzene-d	6.52	152	304446	20.00	ng/ul	-0.06
31)	CI40 Naphthalene-d8	8.65	136	1052141	20.00	ng/ul	-0.07
47)	CI50 Acenaphthene-d10	11.83	164	490800	20.00	ng/ul	-0.06
64)	CI60 Phenanthrene-d10	14.51	188	796047	20.00	ng/ul	-0.06
76)	CI70 Chrysene-d12	19.38	240	563965	20.00	ng/ul	-0.06
83)	CI75 Perylene-d12	22.27	264	542263	20.00	ng/ul	-0.09

System Monitoring Compounds

							%Recovery
3)	CS50 2-Fluorophenol	4.73	112	650403	25.37	ng/ul	33.82%
4)	CS45 Phenol-d5	6.03	99	716621	24.90	ng/ul	33.20%
8)	CS70 2-Chlorophenol d4	6.22	132	461034	25.33	ng/ul	33.77%
14)	CS75 1,2-Dichlorobenzene-d	6.82	152	347961	25.34	ng/ul	50.68%
22)	CS20 Nitrobenzene-d5	7.47	82	701562	24.39	ng/ul	48.78%
40)	CS25 2-Fluorobiphenyl	10.64	172	969627	24.61	ng/ul	49.21%
60)	CS55 2,4,6-Tribromophenol	13.29	330	190064	26.22	ng/ul	34.96%
72)	CS30 Terphenyl-d14	17.50	244	847471	25.25	ng/ul	50.50%

Target Compounds

							ISTD#
1)	C032 Pyridine	3.26	79	552551	24.46	ng/ul	001#
2)	C310 n-Nitrosodimethylamin	3.28	42	326968	24.96	ng/ul	001
5)	C315 Phenol	6.05	94	786252	24.96	ng/ul	001
6)	C320 Aniline	6.09	93	874618	25.03	ng/ul	002#
7)	C325 bis(2-Chloroethyl)eth	6.19	93	591306	24.80	ng/ul	001
9)	C330 2-Chlorophenol	6.24	128	571150	25.17	ng/ul	001
10)	C335 1,3-Dichlorobenzene	6.46	146	572347	25.78	ng/ul	001
12)	C340 1,4-Dichlorobenzene	6.55	146	575077	25.40	ng/ul	001
13)	C345 Benzyl Alcohol	6.78	108	398854	24.97	ng/ul	001
15)	C350 1,2-Dichlorobenzene	6.84	146	524039	25.70	ng/ul	001
16)	C355 2-Methylphenol	6.99	108	543260	24.96	ng/ul	001
17)	C357 2,2'-Oxybis(1chloropr	7.04	45	562205	24.75	ng/ul	001#
18)	C360 bis(2-chloroisopropyl	7.04	45	562205	24.75	ng/ul	001#
19)	C365 4-Methylphenol	7.24	108	581382	25.03	ng/ul	001
20)	C370 n-Nitroso-di-n-propyl	7.28	70	414291	24.71	ng/ul	001
21)	C375 Hexachloroethane	7.34	117	331343	25.27	ng/ul	001
23)	C410 Nitrobenzene	7.50	77	606608	24.62	ng/ul	002
24)	C415 Isophorone	7.90	82	1131932	24.77	ng/ul	002
25)	C420 2-Nitrophenol	8.04	139	346510	24.82	ng/ul	002
26)	C425 2,4-Dimethylphenol	8.13	107	663356	24.77	ng/ul	002
27)	C435 bis(2-Chloroethoxy)me	8.31	93	605849	24.88	ng/ul	002
28)	C440 2,4-Dichlorophenol	8.44	162	416123	25.19	ng/ul	002
29)	C430 Benzoic Acid	8.39	122	331368	20.43	ng/ul	002
30)	C445 1,2,4-Trichlorobenzen	8.58	180	506049	24.82	ng/ul	002
32)	C450 Naphthalene	8.69	128	1334020	25.03	ng/ul	002
33)	C455 4-Chloroaniline	8.84	127	602900	25.03	ng/ul	002

(#) = qualifier out of range

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 10:21 am
Data File: C:\CHEMPC\DATA\Z111393\Z5004.D
Name: V#32978,STAND,SSTD-050,B,25NG/UL,2UL
Misc: CC-050 CALIBRATION CHECK STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Fri Nov 12 10:21:21 1993
Quantitated using Single Level Calibration Z4982.D

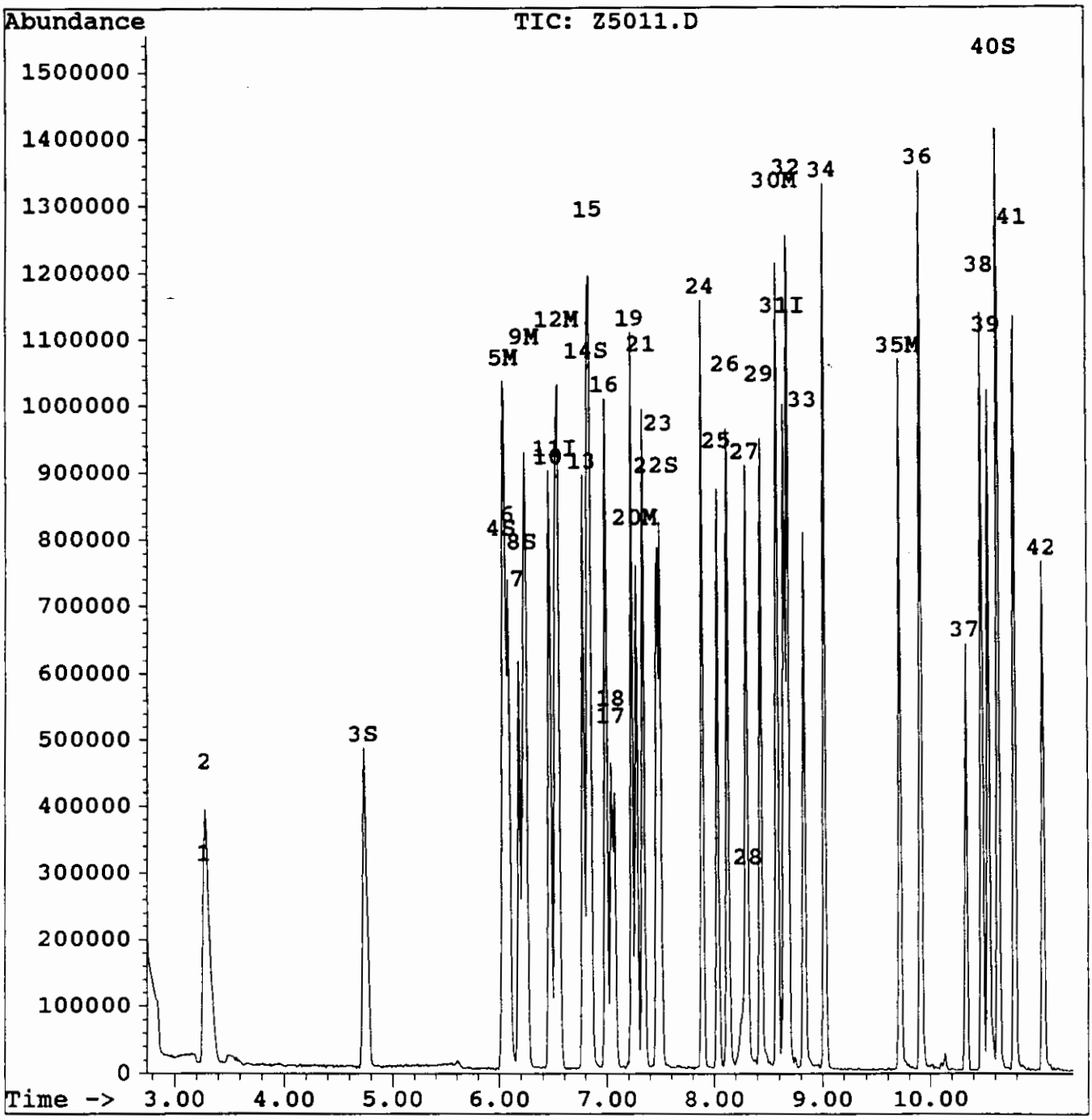
Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
34) C460 Hexachlorobutadiene	9.03	225	380634	24.40	ng/ul	002
35) C465 4-Chloro-3-methylphen	9.72	107	615663	24.24	ng/ul	002
36) C470 2-Methylnaphthalene	9.92	142	820722	24.43	ng/ul	002
37) C510 Hexachlorocyclopentad	10.33	237	230326	24.62	ng/ul	003
38) C515 2,4,6-Trichlorophenol	10.48	196	332058	25.08	ng/ul	003
39) C520 2,4,5-Trichlorophenol	10.54	196	360192	24.98	ng/ul	003
41) C525 2-Chloronaphthalene	10.79	162	770521	24.68	ng/ul	003
42) C530 2-Nitroaniline	11.05	65	330175	24.61	ng/ul	003
43) C535 Dimethylphthalate	11.48	163	1030369	24.75	ng/ul	003
44) C540 Acenaphthylene	11.54	152	1047422	24.67	ng/ul	003
45) C544 2,6-Dinitrotoluene	11.58	165	238166	25.01	ng/ul	003
46) C545 3-Nitroaniline	11.81	138	244960	24.99	ng/ul	003#
48) C550 Acenaphthene	11.89	153	701378	25.09	ng/ul	003
49) C555 2,4-Dinitrophenol	11.99	184	207098	23.31	ng/ul	003#
50) C560 4-Nitrophenol	12.15	109	304279	23.95	ng/ul	003#
51) C565 Dibenzofuran	12.18	168	1110113	24.51	ng/ul	003#
52) C570 2,4-Dinitrotoluene	12.29	165	329446	23.83	ng/ul	003
53) C580 Diethylphthalate	12.78	149	1143193	24.62	ng/ul	003
54) C590 Fluorene	12.81	166	793976	24.45	ng/ul	003#
55) C585 4-Chlorophenyl-phenyl	12.84	204	451943	24.46	ng/ul	003
56) C595 4-Nitroaniline	12.96	138	245883	24.34	ng/ul	003#
57) C610 4,6-Dinitro-2-methylp	13.03	198	238177	25.30	ng/ul	004
58) C615 n-Nitrosodiphenylamin	13.09	169	568113	26.88	ng/ul	004
59) C620 1,2-Diphenylhydrazine	13.13	77	1110340	24.78	ng/ul	003#
61) C625 4-Bromophenyl-phenyle	13.73	248	247518	26.83	ng/ul	004#
62) C630 Hexachlorobenzene	13.96	284	303094	26.16	ng/ul	004
63) C635 Pentachlorophenol	14.30	266	186245	24.36	ng/ul	004
65) C640 Phenanthrene	14.55	178	1122876	25.74	ng/ul	004#
66) C645 Anthracene	14.63	178	1056734	25.55	ng/ul	004
67) C647 Carbazole	14.95	167	1039367	25.91	ng/ul	004
68) C650 Di-n-butylphthalate	15.77	149	1696951	27.12	ng/ul	004
69) C655 Fluoranthene	16.73	202	1251258	25.01	ng/ul	004
71) C715 Pyrene	17.13	202	1254104	25.54	ng/ul	005
73) C720 Butylbenzylphthalate	18.50	149	709913	25.40	ng/ul	005
74) C730 Benzo[a]anthracene	19.34	228	969682	25.62	ng/ul	005
75) C725 3,3'-Dichlorobenzidin	19.36	252	246653	24.66	ng/ul	005
77) C740 Chrysene	19.43	228	767436	24.74	ng/ul	005
78) C741 bis(2-Ethylhexyl)phth	19.62	149	876168	26.64	ng/ul	005
79) C760 Di-n-octylphthalate	20.77	149	1583900	26.35	ng/ul	006
80) C765 Benzo[b]fluoranthene	21.41	252	835303	22.79	ng/ul	006
81) C770 Benzo[k]fluoranthene	21.47	252	749082	27.18	ng/ul	006
82) C775 Benzo[a]pyrene	22.13	252	745328	24.58	ng/ul	006
84) C780 Indeno[1,2,3-cd]pyren	25.41	276	595169	23.91	ng/ul	006
85) C785 Dibenz[a,h]anthracene	25.53	278	571142	24.39	ng/ul	006
86) C790 Benzo[g,h,i]perylene	26.36	276	613451	24.32	ng/ul	006

(#) = qualifier out of range

100156

QUANT REPORT

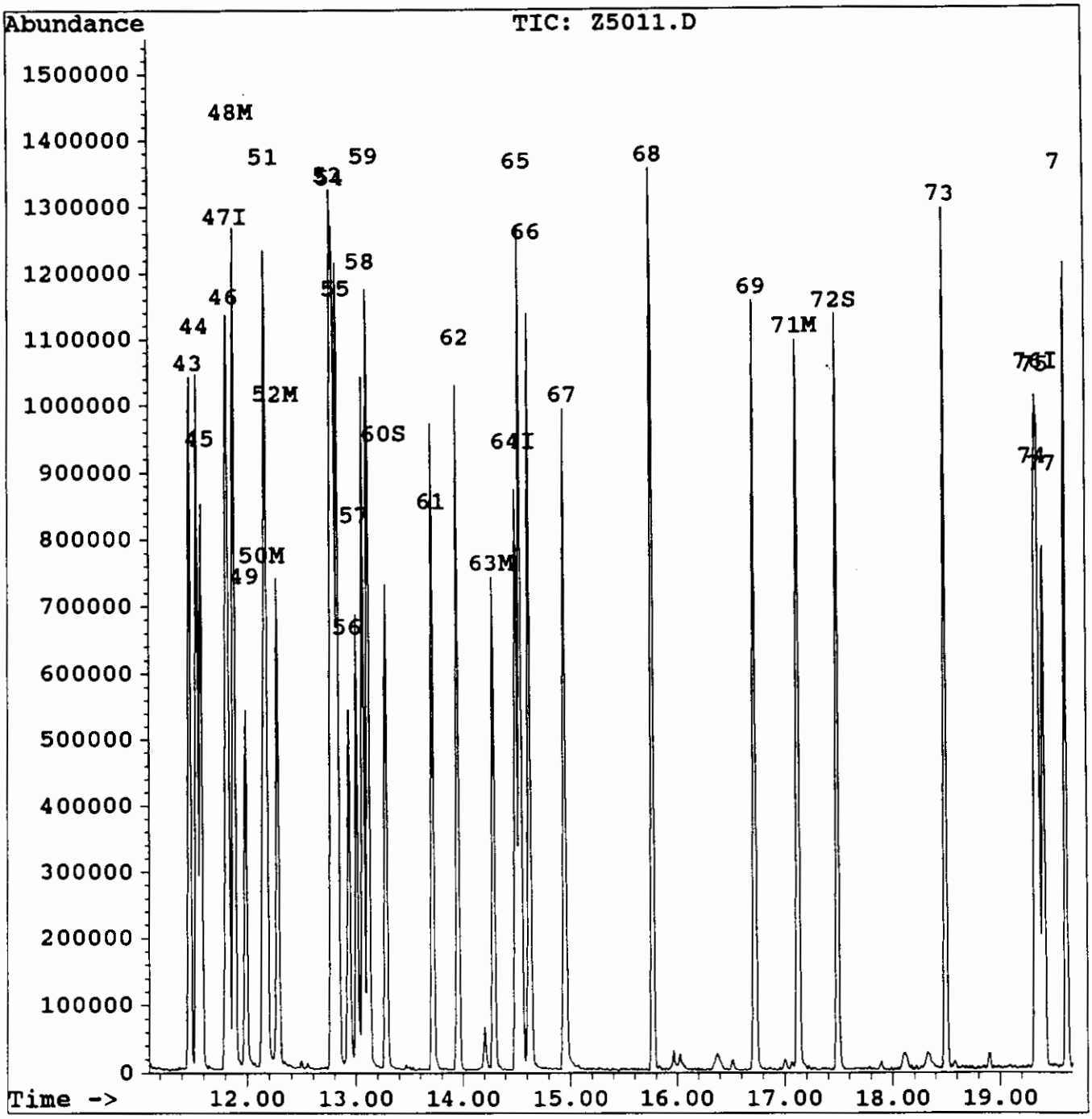
Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 2:56 pm
Data File: C:\CHEMPC\DATA\Z111393\Z5011.D
Name: V#32978,STAND,SSTD-050,B,25NG/UL,2UL
Misc: CC-050 CHECK STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Sat Nov 13 10:55:19 1993
Quantitated using Single Level Calibration Z5004.D



100157

QUANT REPORT

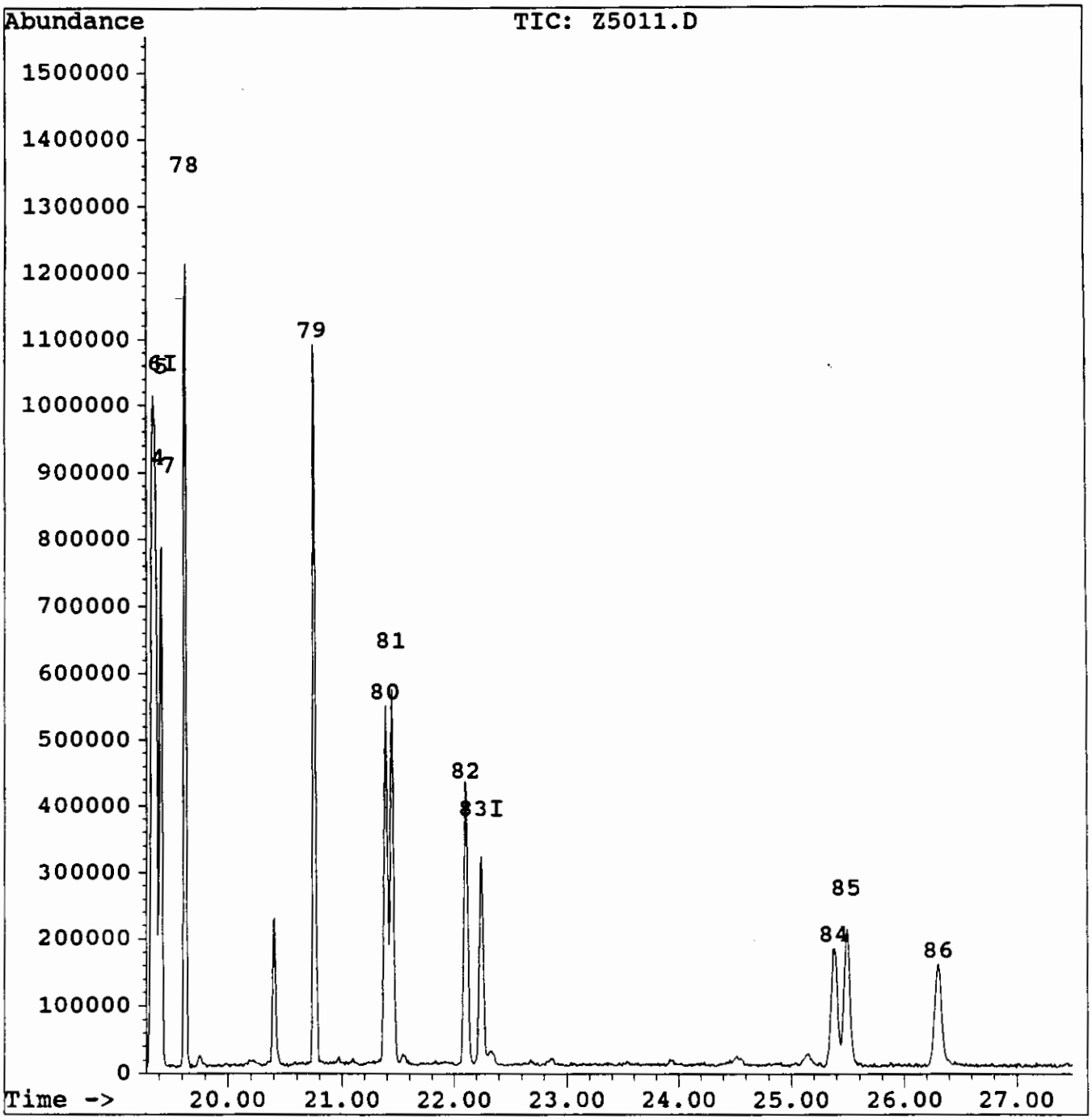
Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 2:56 pm
Data File: C:\CHEMPC\DATA\Z111393\Z5011.D
Name: V#32978,STAND,SSTD-050,B,25NG/UL,2UL
Misc: CC-050 CHECK STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Sat Nov 13 10:55:19 1993
Quantitated using Single Level Calibration Z5004.D



100158

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 2:56 pm
Data File: C:\CHEMPC\DATA\Z111393\Z5011.D
Name: V#32978,STAND,SSTD-050,B,25NG/UL,2UL
Misc: CC-050 CHECK STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Sat Nov 13 10:55:19 1993
Quantitated using Single Level Calibration Z5004.D



100159

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 2:56 pm
Data File: C:\CHEMPC\DATA\Z111393\Z5011.D
Name: V#32978,STAND,SSTD-050,B,25NG/UL,2UL
Misc: CC-050 CHECK STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Sat Nov 13 10:55:19 1993
Quantitated using Single Level Calibration Z5004.D

Internal Standards

	Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
11)	CI30 1,4-Dichlorobenzene-d	6.53	152	191590	20.00	ng/ul	0.01
31)	CI40 Naphthalene-d8	8.65	136	660701	20.00	ng/ul	0.00
47)	CI50 Acenaphthene-d10	11.82	164	331251	20.00	ng/ul	-0.01
64)	CI60 Phenanthrene-d10	14.50	188	512622	20.00	ng/ul	-0.01
76)	CI70 Chrysene-d12	19.37	240	322712	20.00	ng/ul	-0.01
83)	CI75 Perylene-d12	22.25	264	260163	20.00	ng/ul	-0.01

System Monitoring Compounds

							%Recovery
3)	CS50 2-Fluorophenol	4.74	112	380891	23.26	ng/ul	31.02%
4)	CS45 Phenol-d5	6.04	99	420031	23.28	ng/ul	31.05%
8)	CS70 2-Chlorophenol d4	6.22	132	278679	24.01	ng/ul	32.02%
14)	CS75 1,2-Dichlorobenzene-d	6.82	152	221843	25.33	ng/ul	50.65%
22)	CS20 Nitrobenzene-d5	7.47	82	429272	24.36	ng/ul	48.72%
40)	CS25 2-Fluorobiphenyl	10.63	172	645309	24.65	ng/ul	49.30%
60)	CS55 2,4,6-Tribromophenol	13.28	330	110124	22.49	ng/ul	29.99%
72)	CS30 Terphenyl-d14	17.49	244	492538	25.39	ng/ul	50.78%

Target Compounds

							ISTD#
1)	C032 Pyridine	3.26	79	313841	22.56	ng/ul	001#
2)	C310 n-Nitrosodimethylamin	3.27	42	192083	23.34	ng/ul	001
5)	C315 Phenol	6.06	94	469292	23.71	ng/ul	001#
6)	C320 Aniline	6.09	93	514484	23.42	ng/ul	002#
7)	C325 bis(2-Chloroethyl)eth	6.18	93	372662	25.04	ng/ul	001
9)	C330 2-Chlorophenol	6.25	128	349231	24.29	ng/ul	001
10)	C335 1,3-Dichlorobenzene	6.47	146	353612	24.54	ng/ul	001
12)	C340 1,4-Dichlorobenzene	6.55	146	360479	24.90	ng/ul	001
13)	C345 Benzyl Alcohol	6.78	108	236055	23.51	ng/ul	001
15)	C350 1,2-Dichlorobenzene	6.84	146	337617	25.59	ng/ul	001
16)	C355 2-Methylphenol	6.99	108	334519	24.46	ng/ul	001
17)	C357 2,2'-Oxybis(1chloropr	7.04	45	330444	23.35	ng/ul	001#
18)	C360 bis(2-chloroisopropyl	7.04	45	330444	23.35	ng/ul	001#
19)	C365 4-Methylphenol	7.23	108	346487	23.68	ng/ul	001
20)	C370 n-Nitroso-di-n-propyl	7.27	70	244626	23.46	ng/ul	001
21)	C375 Hexachloroethane	7.34	117	209866	25.16	ng/ul	001
23)	C410 Nitrobenzene	7.49	77	374188	24.56	ng/ul	002
24)	C415 Isophorone	7.89	82	718708	25.28	ng/ul	002
25)	C420 2-Nitrophenol	8.04	139	211505	24.30	ng/ul	002
26)	C425 2,4-Dimethylphenol	8.12	107	412093	24.73	ng/ul	002
27)	C435 bis(2-Chloroethoxy)me	8.30	93	380682	25.02	ng/ul	002
28)	C430 Benzoic Acid	8.32	122	116387	13.98	ng/ul	002#
29)	C440 2,4-Dichlorophenol	8.44	162	255414	24.44	ng/ul	002
30)	C445 1,2,4-Trichlorobenzen	8.59	180	327400	25.76	ng/ul	002
32)	C450 Naphthalene	8.69	128	883943	26.38	ng/ul	002
33)	C455 4-Chloroaniline	8.84	127	359938	23.77	ng/ul	002

(#) = qualifier out of range

100160

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 13 Nov 93 2:56 pm
Data File: C:\CHEMPC\DATA\Z111393\Z5011.D
Name: V#32978,STAND,SSTD-050,B,25NG/UL,2UL
Misc: CC-050 CHECK STANDARD
Method: STDBN2.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Sat Nov 13 10:55:19 1993
Quantitated using Single Level Calibration Z5004.D

Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
34) C460 Hexachlorobutadiene	9.03	225	246117	25.74	ng/ul	002
35) C465 4-Chloro-3-methylphen	9.72	107	384094	24.84	ng/ul	002
36) C470 2-Methylnaphthalene	9.92	142	540591	26.22	ng/ul	002
37) C510 Hexachlorocyclopentad	10.34	237	135207	21.74	ng/ul	003
38) C515 2,4,6-Trichlorophenol	10.48	196	208998	23.31	ng/ul	003
39) C520 2,4,5-Trichlorophenol	10.55	196	226675	23.31	ng/ul	003
41) C525 2-Chloronaphthalene	10.79	162	500268	24.05	ng/ul	003
42) C530 2-Nitroaniline	11.05	65	192755	21.62	ng/ul	003
43) C535 Dimethylphthalate	11.48	163	654928	23.54	ng/ul	003
44) C540 Acenaphthylene	11.54	152	678362	23.99	ng/ul	003
45) C544 2,6-Dinitrotoluene	11.58	165	141369	21.99	ng/ul	003
46) C545 3-Nitroaniline	11.81	138	147442	22.30	ng/ul	003#
48) C550 Acenaphthene	11.89	153	464792	24.55	ng/ul	003
49) C555 2,4-Dinitrophenol	11.99	184	103391	18.49	ng/ul	003#
50) C560 4-Nitrophenol	12.15	109	155344	18.91	ng/ul	003#
51) C565 Dibenzofuran	12.18	168	719755	24.02	ng/ul	003
52) C570 2,4-Dinitrotoluene	12.28	165	198756	22.35	ng/ul	003
53) C580 Diethylphthalate	12.78	149	753242	24.41	ng/ul	003
54) C590 Fluorene	12.80	166	549727	25.65	ng/ul	003#
55) C585 4-Chlorophenyl-phenyl	12.84	204	301577	24.72	ng/ul	003
56) C595 4-Nitroaniline	12.94	138	137992	20.79	ng/ul	003#
57) C610 4,6-Dinitro-2-methylp	13.01	198	137723	22.45	ng/ul	004
58) C615 n-Nitrosodiphenylamin	13.07	169	363973	24.87	ng/ul	004
59) C620 1,2-Diphenylhydrazine	13.12	77	721313	24.06	ng/ul	003#
61) C625 4-Bromophenyl-phenyle	13.73	248	153685	24.10	ng/ul	004#
62) C630 Hexachlorobenzene	13.96	284	184580	23.64	ng/ul	004
63) C635 Pentachlorophenol	14.29	266	101533	21.16	ng/ul	004
65) C640 Phenanthrene	14.54	178	738993	25.55	ng/ul	004#
66) C645 Anthracene	14.63	178	685309	25.18	ng/ul	004
67) C647 Carbazole	14.95	167	643989	24.05	ng/ul	004
68) C650 Di-n-butylphthalate	15.77	149	1065771	24.38	ng/ul	004
69) C655 Fluoranthene	16.73	202	751919	23.33	ng/ul	004
71) C715 Pyrene	17.13	202	762716	26.57	ng/ul	005
73) C720 Butylbenzylphthalate	18.50	149	419455	25.81	ng/ul	005
74) C730 Benzo[a]anthracene	19.34	228	540578	24.36	ng/ul	005
75) C725 3,3'-Dichlorobenzidin	19.36	252	112591	19.94	ng/ul	005
77) C740 Chrysene	19.42	228	458896	26.12	ng/ul	005
78) C741 bis(2-Ethylhexyl)phth	19.63	149	529127	26.38	ng/ul	005
79) C760 Di-n-octylphthalate	20.75	149	899766	29.60	ng/ul	006
80) C765 Benzo[b]fluoranthene	21.39	252	416439	25.98	ng/ul	006
81) C770 Benzo[k]fluoranthene	21.45	252	394256	27.43	ng/ul	006
82) C775 Benzo[a]pyrene	22.12	252	354468	24.78	ng/ul	006
84) C780 Indeno[1,2,3-cd]pyren	25.38	276	245451	21.49	ng/ul	006
85) C785 Dibenz[a,h]anthracene	25.49	278	241320	22.02	ng/ul	006
86) C790 Benzo[g,h,i]perylene	26.30	276	250365	21.27	ng/ul	006#

(#) = qualifier out of range

100101

TUNING DATA
(RAW QC)

6850 Versar Center • P. O. Box 1549 • Springfield, Virginia 22151 • Telephone (703) 750-[illegible]

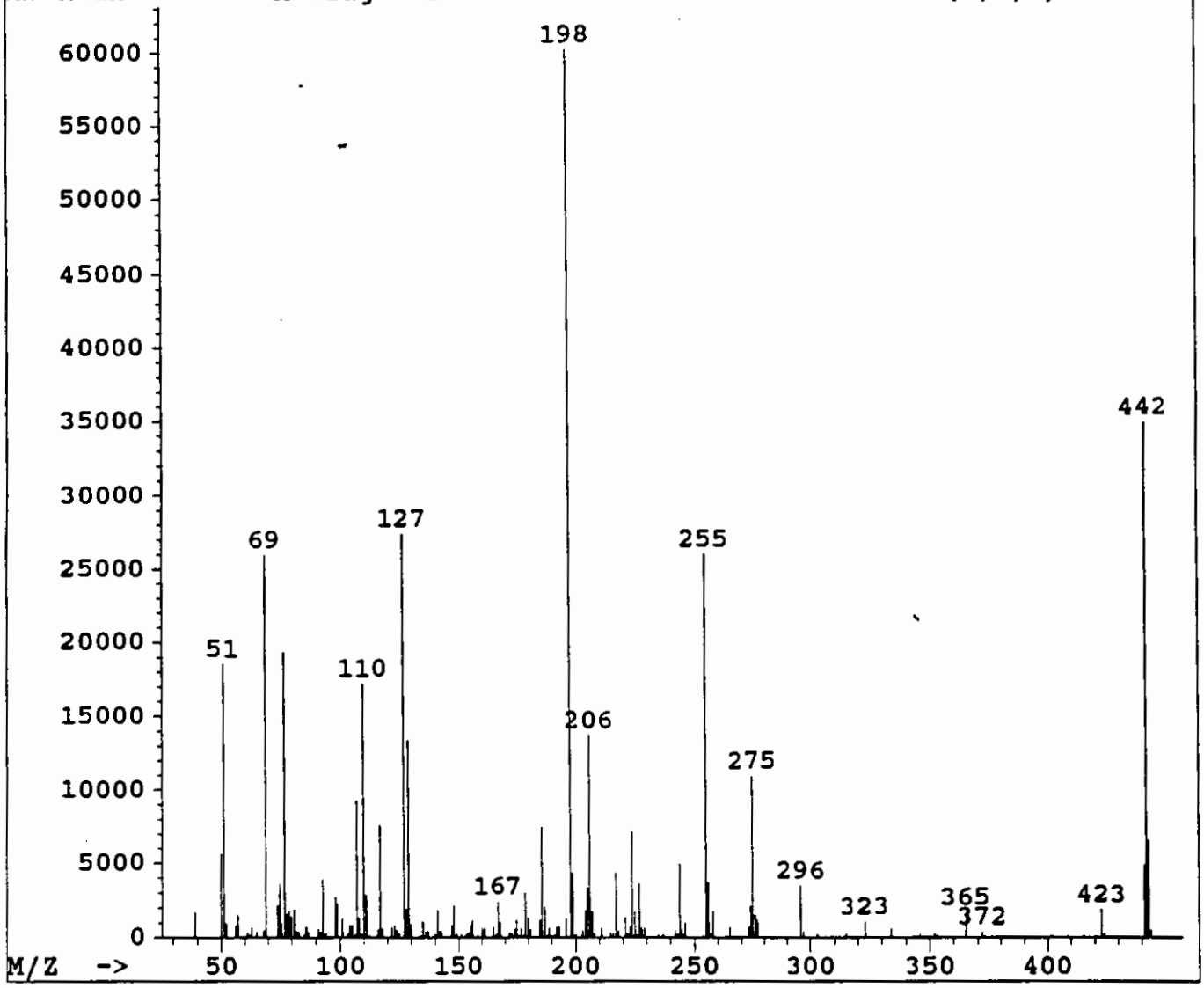
Initial Calibration

DFTPP 625 Results

Tuned @ 1:57 PM

C:\CHEMPC\DATA\Z110993\Z4937.D Tue Nov 09 14:07:43 1993

Abundance Average of 6.938 to 6.959 min.: Z4937.D (+,-,*)



Peak Apex is scan: 183

Average of 3 scans: 182,183,184 minus background scan 179

Target Mass	Comparison Mass	Lower Limit,%	Upper Limit,%	Relative Abundance,%	Result Pass/Fail
51	198	30	60	30.8	PASS
68	69	0	2	2.0	PASS
69	198	0	100	43.2	PASS
70	69	0	2	0.0	PASS
127	198	40	60	45.5	PASS
197	198	0	1	0.0	PASS
198	198	100	100	100.0	PASS
199	198	5	9	7.2	PASS
275	198	10	30	18.2	PASS
365	198	1	100	2.8	PASS
441	443	0	100	74.7	PASS
442	198	40	100	57.9	PASS
443	442	17	23	18.7	PASS

441 198 8.10

100163

Average of 6.938 to 6.959 min.: Z4937.D
DFTPP 50NG v#32984B 25NG/UL 2UL INJ
Modified:added subtracted scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
39.10	1688	69.00	25974	85.05	213	104.05	826
50.05	5634	74.10	2165	86.00	731	105.05	801
51.15	18548	75.05	3595	86.95	375	106.15	190
52.05	960	76.05	981	91.10	567	107.05	9271
56.05	770	77.15	19353	92.00	395	108.05	1284
57.05	1509	78.10	1594	93.05	3908	109.15	227
61.10	371	79.05	1788	94.05	298	110.05	17228
62.10	191	80.05	1441	98.10	2718	111.05	2856
63.05	715	81.05	1886	98.95	2262	112.00	138
65.05	404	82.05	441	101.05	1239	116.05	545
68.10	511	83.05	375	103.05	280	117.00	7614

Average of 6.938 to 6.959 min.: Z4937.D
DFTPP 50NG v#32984B 25NG/UL 2UL INJ
Modified:added subtracted scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
118.00	590	136.10	400	154.05	362	173.10	290
122.00	666	137.10	462	155.05	877	174.10	601
123.10	833	140.00	176	156.05	1134	175.10	1181
124.00	468	141.00	1847	158.05	123	176.10	141
125.05	277	142.00	425	160.05	610	177.00	619
127.05	27364	142.95	404	161.00	628	178.05	155
128.05	1921	147.00	807	165.00	723	178.95	2957
129.05	13361	148.05	2110	166.10	301	180.05	1345
130.00	886	149.00	235	167.05	2395	181.05	535
134.15	141	151.25	211	168.00	1020	185.00	1191
135.05	1056	153.05	183	172.05	342	186.05	7435

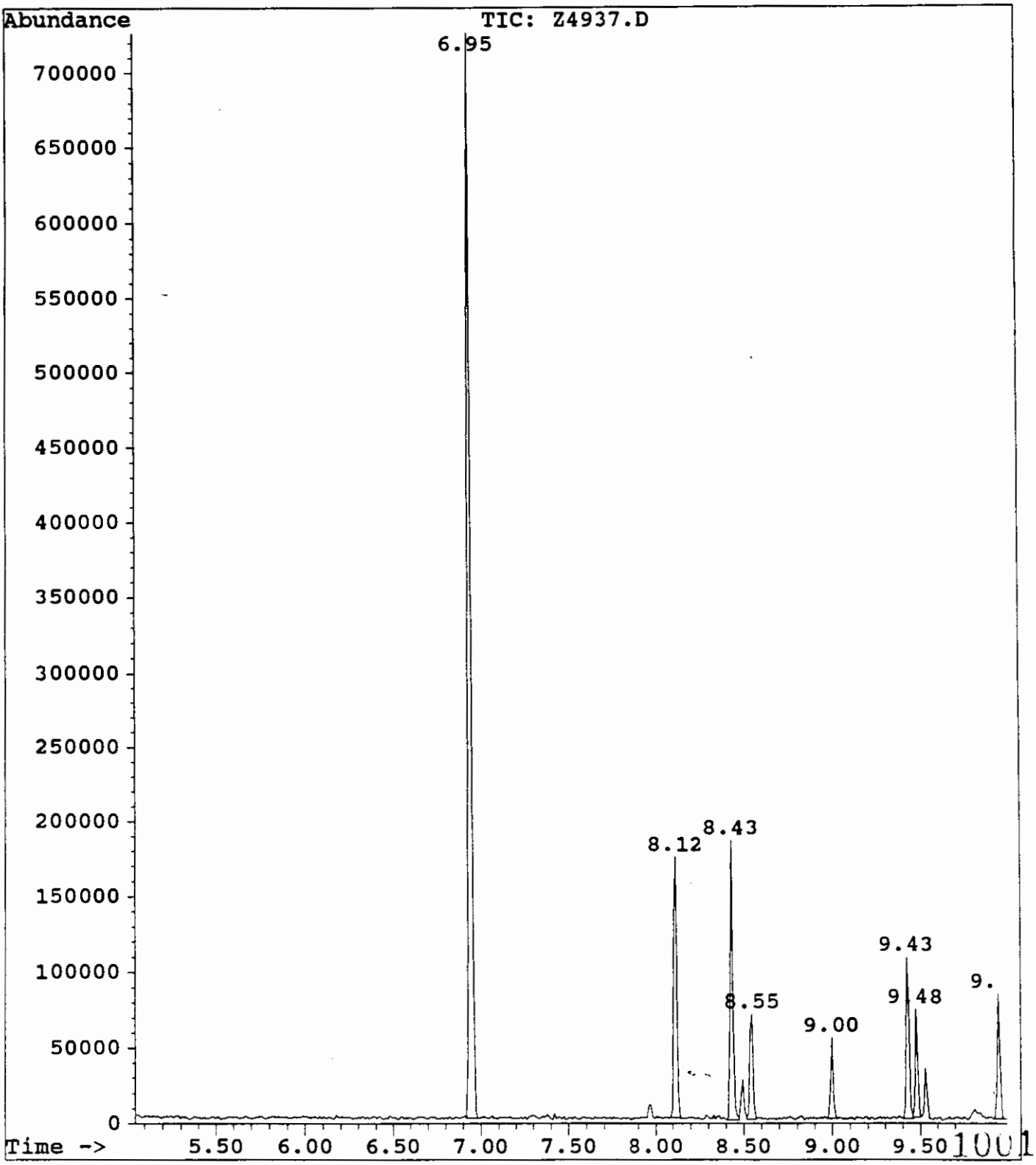
erage of 6.938 to 6.959 min.: Z4937.D
DFTPP 50NG v#32984B 25NG/UL 2UL INJ
Modified:added subtracted scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
187.05	2035	203.05	475	221.05	1381	237.05	187
188.25	150	204.05	1823	221.70	221	242.00	466
189.05	640	205.05	3313	222.00	292	243.10	255
190.10	120	206.05	13713	223.05	768	244.05	4901
191.00	188	207.05	1734	224.10	7193	245.10	606
192.00	661	207.95	254	225.10	1698	246.00	986
193.05	756	211.05	629	226.00	166	255.10	25987
196.05	1255	214.95	320	227.00	3568	256.00	3668
198.00	60191	216.05	315	228.00	615	257.05	267
199.00	4344	217.00	4376	229.00	624	258.05	1764
200.10	185	218.00	425	235.05	165	265.05	657

Average of 6.938 to 6.959 min.: Z4937.D
DFTPP 50NG v#32984B 25NG/UL 2UL INJ
Modified:added subtracted scaled

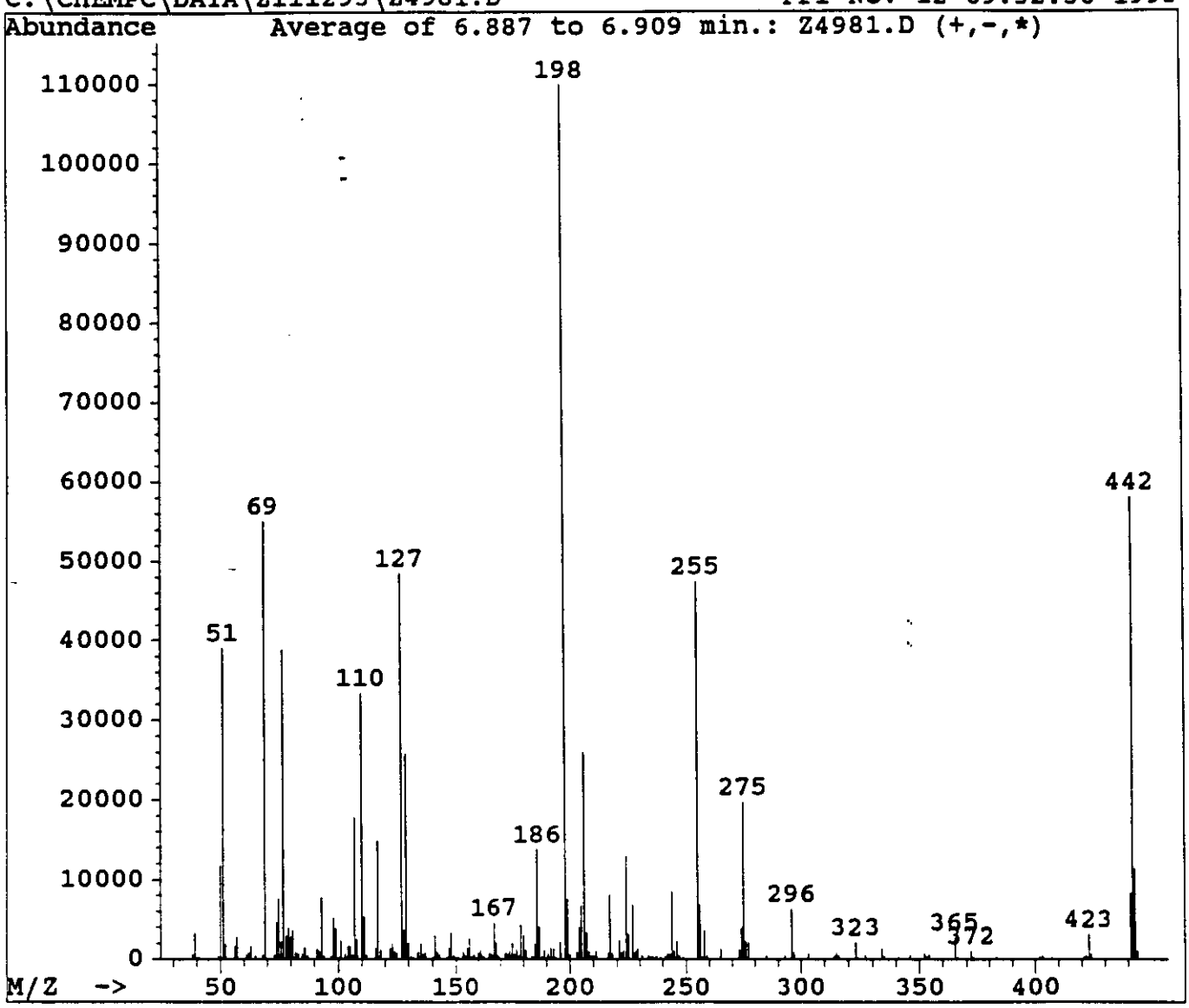
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
273.00	734	346.15	210	443.05	6531		
274.00	2064	352.00	278	444.10	508		
275.05	10942	353.20	131				
276.05	1509	365.05	1676				
277.00	1195	372.05	372				
296.00	3457	401.90	175				
297.00	386	420.95	138				
303.10	200	423.15	1870				
315.05	257	424.05	330				
323.05	1035	441.10	4876				
334.10	577	442.05	34854				

File: C:\CHEMPC\DATA\Z110993\Z4937.D
Operator: INSTRUMENT Z
Date Acquired: 9 Nov 93 1:57 pm
Method File: DFTBN2.M
Sample Name: DFTPP 50NG v#32984B 25NG/UL 2UL INJ
Misc Info:
ALS vial: 1



DFTPP 625 Results Tuned @ 9:22 am

C:\CHEMPC\DATA\Z111293\Z4981.D Fri Nov 12 09:32:30 1993



Peak Apex is scan: 178
Average of 3 scans: 177,178,179 minus background scan 174

Target Mass	Comparison Mass	Lower Limit,%	Upper Limit,%	Relative Abundance,%	Result Pass/Fail
51	198	30	60	35.6	PASS
68	69	0	2	0.9	PASS
69	198	0	100	50.1	PASS
70	69	0	2	0.0	PASS
127	198	40	60	44.1	PASS
197	198	0	1	0.0	PASS
198	198	100	100	100.0	PASS
199	198	5	9	6.8	PASS
275	198	10	30	17.9	PASS
365	198	1	100	2.5	PASS
441	443	0	100	73.9	PASS
442	198	40	100	52.7	PASS
443	442	17	23	19.6	PASS

441 198 763

I00166

Average of 6.887 to 6.909 min.: Z4981.D
DFTPP 50NG v#32984B 25NG/UL 2UL INJ
Modified:added subtracted scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
38.10	662	57.05	2800	77.05	38728	91.00	1273
39.10	3311	61.05	548	78.05	2973	92.05	1004
40.00	219	61.95	875	79.05	3892	93.00	7807
41.00	212	63.05	1686	80.05	2788	94.00	405
45.10	121	65.10	470	81.05	3543	97.05	321
49.05	323	68.15	505	82.05	810	98.05	5204
50.05	11832	69.00	55053	83.05	636	99.00	3834
51.05	39112	73.05	490	85.05	591	99.95	237
52.05	1977	74.05	4608	86.00	1459	101.00	2307
55.15	11	75.05	7522	87.05	460	103.00	701
56.05	1621	76.05	2200	89.10	116	103.95	1663

Average of 6.887 to 6.909 min.: Z4981.D
DFTPP 50NG v#32984B 25NG/UL 2UL INJ
Modified:added subtracted scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
105.05	1676	123.10	1970	136.05	669	151.05	247
106.10	512	124.05	1004	137.05	788	153.00	998
107.05	17776	124.95	828	140.00	195	153.90	583
108.05	2466	127.05	48453	141.00	3037	155.05	1441
110.05	33378	128.05	3729	142.00	899	156.05	2536
111.05	5320	129.05	25768	143.10	515	157.00	385
112.00	501	130.00	2097	146.00	250	158.00	561
116.05	1390	131.05	386	147.05	1468	159.05	175
117.00	14861	131.95	151	148.00	3391	160.05	782
118.00	1129	134.00	929	149.00	510	161.05	1188
122.00	1352	135.05	1920	150.00	153	162.00	409

Average of 6.887 to 6.909 min.: Z4981.D
DFTPP 50NG v#32984B 25NG/UL 2UL INJ
Modified:added subtracted scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
164.95	825	178.05	430	190.10	157	205.05	6717
165.90	574	178.95	4340	190.85	608	206.05	26001
167.00	4592	180.05	3044	191.95	1365	207.05	3344
168.00	2099	181.05	1132	193.00	1405	207.95	1011
169.00	372	181.85	117	194.00	200	208.95	449
172.05	725	183.80	389	196.00	2124	210.10	434
173.00	640	185.05	1941	198.00	109859	211.05	1020
174.00	1088	186.05	13760	199.00	7525	216.15	728
175.10	2016	187.05	4013	200.00	590	216.95	8065
176.10	561	188.05	407	203.10	927	218.00	754
177.00	1266	189.05	1133	204.05	3987	221.05	2364

Average of 6.887 to 6.909 min.: Z4981.D
DFTPP 50NG v#32984B 25NG/UL 2UL INJ
Modified:added subtracted scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
221.95	951	237.05	383	255.00	47383	277.00	2092
223.10	1332	238.95	163	256.00	6868	285.00	442
224.10	12961	241.00	352	257.05	314	293.05	453
225.05	3171	242.10	757	257.95	3589	296.00	6327
227.00	6863	243.10	738	259.00	451	297.00	847
228.00	1009	244.00	8478	264.95	1260	303.05	636
229.00	1323	245.05	1143	272.00	111	314.05	434
231.05	418	246.00	2207	273.00	1211	315.00	815
233.90	478	247.00	418	274.00	3958	316.05	478
234.95	395	248.90	133	275.00	19653	323.00	2099
235.95	193	253.00	114	276.05	2244	324.10	255

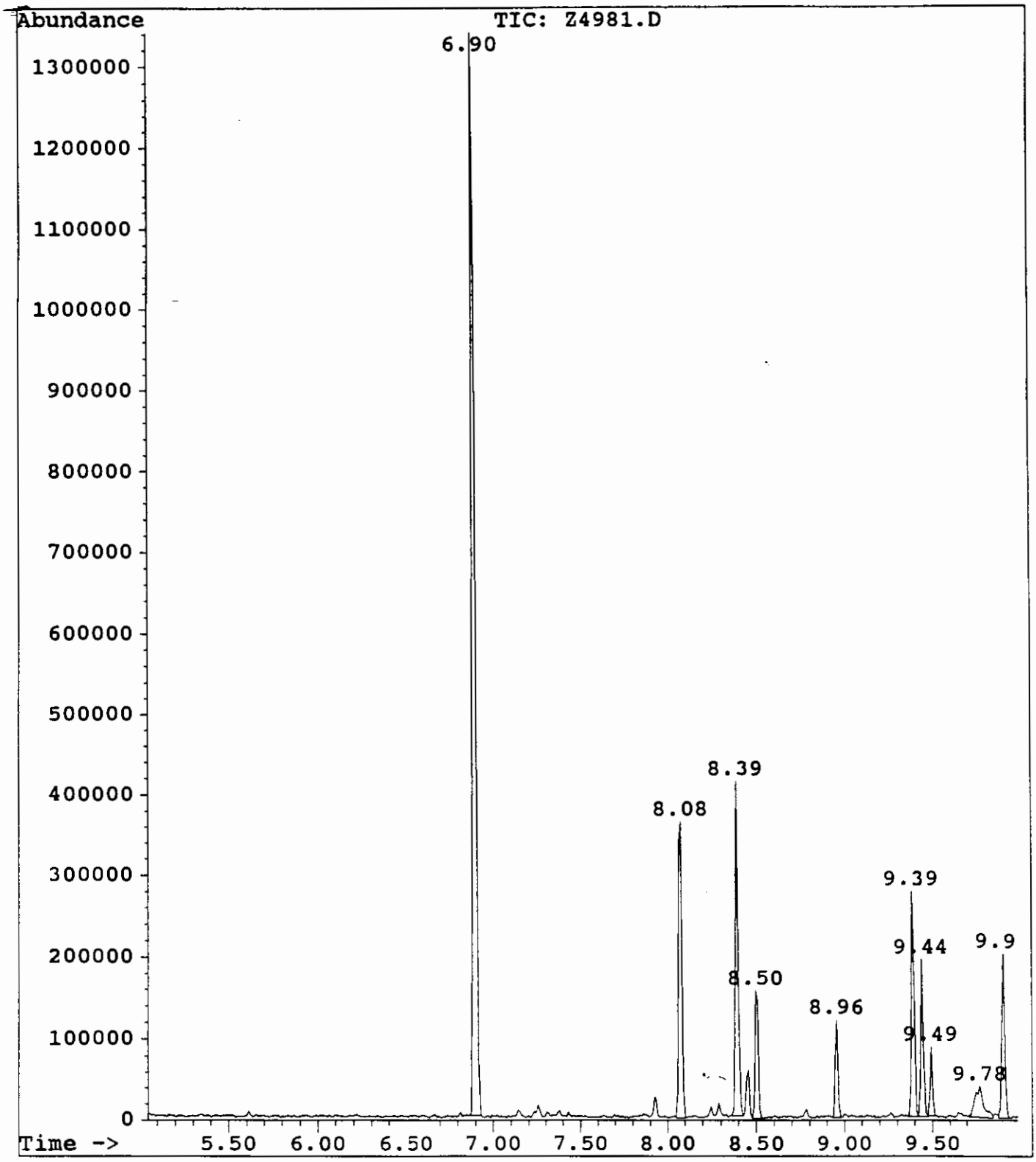
Average of 6.887 to 6.909 min.: Z4981.D

DFTPP 50NG v#32984B 25NG/UL 2UL INJ

Modified:added subtracted scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
327.00	439	373.05	221	443.95	1077		
334.10	1341	383.00	248				
334.95	399	401.90	300				
341.05	221	403.00	465				
345.95	452	421.05	321				
352.00	738	422.05	477				
353.00	300	423.05	3122				
354.10	579	424.10	603				
364.95	2728	441.10	8377				
366.05	249	442.05	57893				
372.10	1045	443.05	11337				

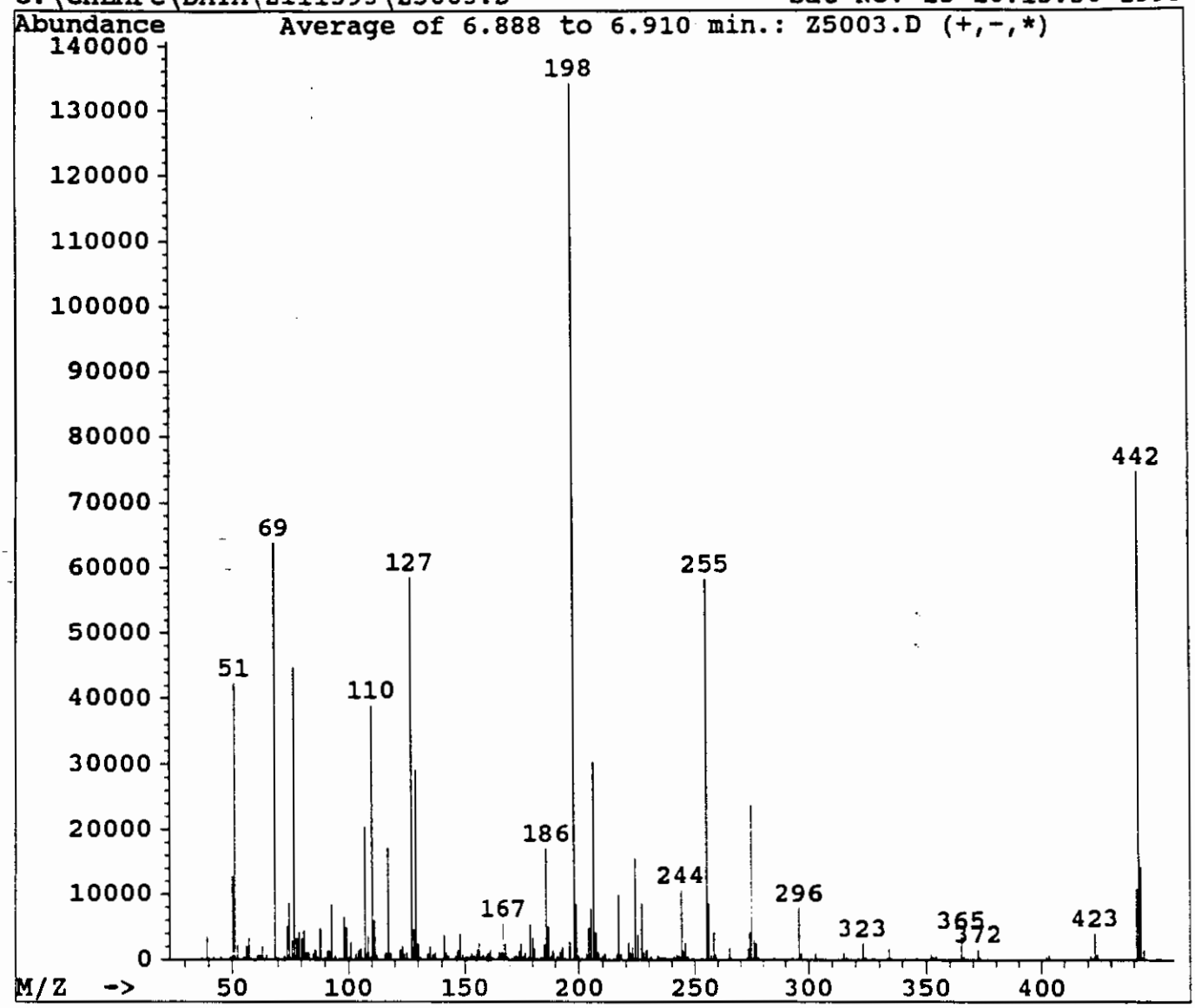
File: C:\CHEMPC\DATA\Z111293\Z4981.D
Operator: INSTRUMENT Z
Date Acquired: 12 Nov 93 9:22 am
Method File: DFTBN2.M
Sample Name: DFTPP 50NG v#32984B 25NG/UL 2UL INJ
Misc Info:
ALS vial: 1



DFTPP 625 Results

Tuned @ 10:05

C:\CHEMPC\DATA\Z111393\Z5003.D Sat Nov 13 10:15:30 1993



Peak Apex is scan: 178
Average of 3 scans: 177,178,179 minus background scan 174

Target Mass	Comparison Mass	Lower Limit,%	Upper Limit,%	Relative Abundance,%	Result Pass/Fail
51	198	30	60	31.6	PASS
68	69	0	2	0.2	PASS
69	198	0	100	47.6	PASS
70	69	0	2	0.5	PASS
127	198	40	60	43.6	PASS
197	198	0	1	0.0	PASS
198	198	100	100	100.0	PASS
199	198	5	9	6.4	PASS
275	198	10	30	17.8	PASS
365	198	1	100	2.7	PASS
441	443	0	100	75.9	PASS
442	198	40	100	55.6	PASS
443	442	17	23	19.2	PASS

Average of 6.888 to 6.910 min.: Z5003.D
DFTPP 50NG v#32984B 25NG/UL 2UL INJ
Modified:added subtracted scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
37.05	400	55.00	484	70.05	347	82.05	1179
38.05	153	56.05	2114	72.00	171	83.05	1118
39.10	3543	57.05	3409	73.00	634	85.05	943
40.10	402	58.10	309	74.05	5169	86.00	1504
42.05	482	61.05	729	75.05	8691	86.90	456
45.05	468	62.05	718	76.05	2978	88.05	4853
47.85	169	63.05	2046	77.05	44771	89.00	201
49.05	601	64.00	160	78.05	3306	90.10	403
50.05	12858	65.10	770	79.05	4206	91.05	1305
51.05	42371	68.20	155	80.05	3242	92.00	1319
52.10	2387	69.00	63909	81.05	4436	93.00	8437

Average of 6.888 to 6.910 min.: Z5003.D
DFTPP 50NG v#32984B 25NG/UL 2UL INJ
Modified:added subtracted scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
94.05	514	107.05	20437	124.00	944	137.10	1049
96.10	176	108.05	3681	125.05	1033	139.00	157
97.00	151	109.10	488	127.05	58572	140.10	213
98.10	6546	110.05	38957	128.05	4698	141.00	3766
99.00	4938	111.05	6068	129.05	29135	142.00	1109
100.00	460	112.00	707	130.05	2465	143.00	695
101.00	2675	116.00	1174	130.95	444	146.00	556
103.05	938	117.00	17221	132.95	103	147.00	1473
104.05	1507	117.95	962	134.05	877	148.00	4037
105.05	1747	122.05	1650	135.05	2014	149.10	799
106.15	281	123.10	2114	136.05	905	150.05	345

rage of 6.888 to 6.910 min.: Z5003.D
DFTPP 50NG v#32984B 25NG/UL 2UL INJ
Modified:added subtracted scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
151.00	494	162.05	258	175.00	2596	186.05	17108
151.85	379	164.10	126	176.00	574	187.05	5114
152.95	1026	164.95	1134	177.00	1088	188.05	632
154.00	736	166.00	1060	178.05	510	189.00	1434
155.05	1561	167.00	5527	178.95	5378	190.05	161
156.05	2577	168.05	2494	180.05	3418	191.00	564
157.05	348	169.00	394	181.00	1697	192.00	1255
158.00	746	170.90	233	182.05	273	193.00	1954
159.05	490	172.05	545	182.95	126	194.10	238
160.00	1173	173.00	612	184.00	461	196.00	2786
161.05	1652	174.05	1298	185.05	2490	198.00	134208

Average of 6.888 to 6.910 min.: Z5003.D
DFTPP 50NG v#32984B 25NG/UL 2UL INJ
Modified:added subtracted scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
199.00	8565	210.00	534	227.00	8660	241.00	533
200.00	616	211.00	946	228.00	1179	242.05	794
201.40	270	215.05	273	229.00	1620	242.95	746
201.80	111	216.05	957	230.05	236	244.05	10634
203.05	972	217.00	9973	230.95	448	245.00	1464
204.05	4871	218.00	937	234.00	582	246.00	2652
205.05	7859	221.05	2670	235.05	329	246.95	461
206.05	30374	222.00	1169	235.95	334	249.00	310
207.05	4186	223.00	2025	237.05	375	253.00	203
208.05	1279	224.05	15645	238.95	235	255.05	58264
209.05	289	225.10	3937	240.05	179	256.00	8640

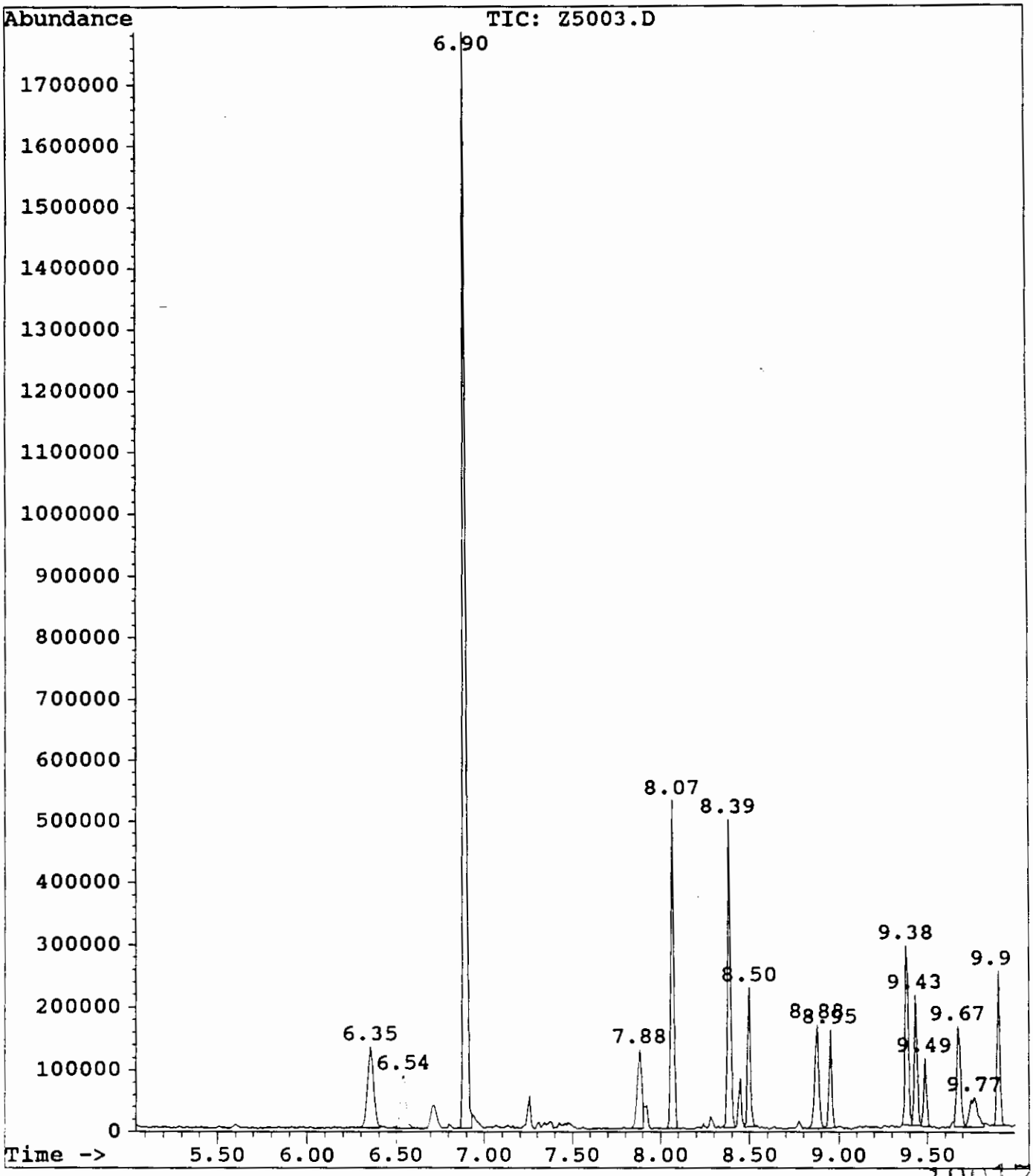
Average of 6.888 to 6.910 min.: Z5003.D
DFTPP 50NG v#32984B 25NG/UL 2UL INJ
Modified:added subtracted scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
257.00	708	285.05	274	326.90	308	364.95	3672
258.05	4321	293.05	397	328.00	172	365.90	457
258.95	761	296.00	7887	332.20	145	372.05	1608
265.05	1778	296.90	1076	333.10	226	372.95	401
265.95	174	303.05	900	334.10	1714	383.00	173
273.05	1753	314.05	226	335.05	313	401.95	552
274.00	4221	314.95	1053	341.05	240	403.05	751
275.00	23860	316.05	362	346.00	435	421.05	637
276.00	3115	321.05	191	352.00	876	422.15	306
277.00	2500	323.00	2544	353.00	468	423.05	4095
278.00	337	324.00	369	354.10	566	424.05	823

Average of 6.888 to 6.910 min.: Z5003.D
DFTPP 50NG v#32984B 25NG/UL 2UL INJ
Modified:added subtracted scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
441.05	10848						
442.05	74597						
443.05	14296						
444.05	1522						

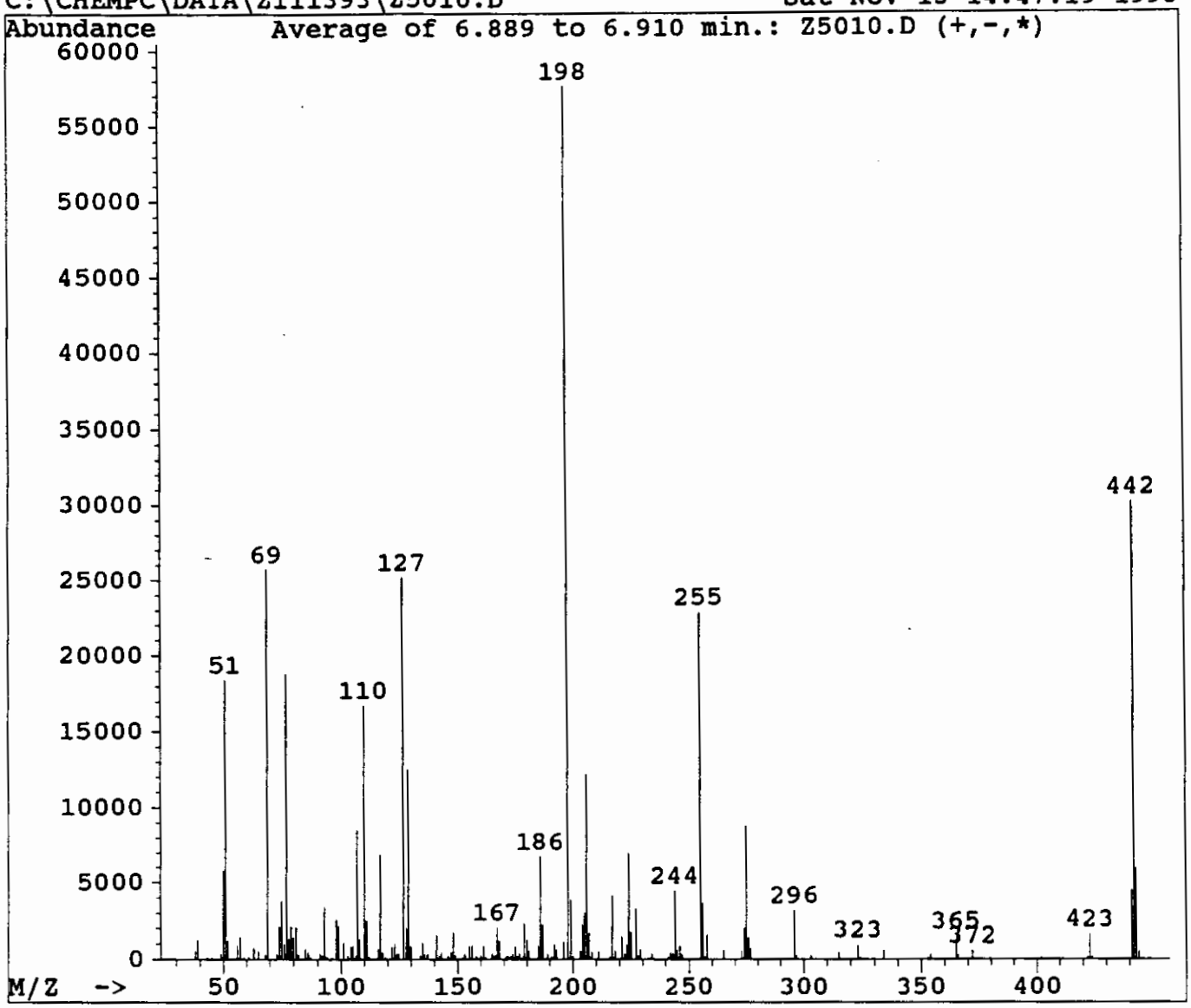
File: C:\CHEMPC\DATA\Z111393\Z5003.D
Operator: INSTRUMENT Z
Date Acquired: 13 Nov 93 10:05 am
Method File: DFTBN2.M
Sample Name: DFTPP 50NG v#32984B 25NG/UL 2UL INJ
Misc Info:
ALS vial: 1



100173

DFTPP 625 Results

C:\CHEMPC\DATA\Z111393\Z5010.D Sat Nov 13 14:47:19 1993



Peak Apex is scan: 178
Average of 3 scans: 177,178,179 minus background scan 174

Target Mass	Comparison Mass	Lower Limit,%	Upper Limit,%	Relative Abundance,%	Result Pass/Fail
51	198	30	60	31.9	PASS
68	69	0	2	1.2	PASS
69	198	0	100	44.7	PASS
70	69	0	2	0.0	PASS
127	198	40	60	43.7	PASS
197	198	0	1	0.0	PASS
198	198	100	100	100.0	PASS
199	198	5	9	6.6	PASS
275	198	10	30	15.2	PASS
365	198	1	100	2.6	PASS
441	443	0	100	75.4	PASS
442	198	40	100	52.3	PASS
443	442	17	23	19.7	PASS

Average of 6.889 to 6.910 min.: Z5010.D
DFTPP 50NG V#32984B 25NG/UL 2UL INJ.
Modified:added subtracted scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.95	57	58.85	137	78.05	1332	93.00	3405
38.00	531	61.10	146	79.05	2096	94.10	173
39.05	1227	63.10	728	80.05	1432	96.10	133
43.20	136	65.10	520	81.05	2065	98.05	2593
45.10	113	68.10	309	82.05	291	98.95	2177
49.00	323	69.00	25738	82.95	46	100.95	1048
50.05	5800	73.05	337	84.95	648	102.95	231
51.05	18385	74.05	2128	86.00	457	104.05	782
52.10	1202	75.05	3778	87.00	157	105.05	852
56.05	927	76.05	1039	91.00	332	106.15	237
57.05	1435	77.05	18808	92.10	264	107.05	8502

Average of 6.889 to 6.910 min.: Z5010.D
DFTPP 50NG V#32984B 25NG/UL 2UL INJ.
Modified:added subtracted scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
108.05	1297	124.90	395	143.05	447	161.05	827
110.05	16751	127.05	25202	146.10	226	162.05	156
111.05	2518	128.05	2000	147.00	449	165.00	364
112.00	192	129.05	12494	148.00	1712	166.10	263
115.95	630	130.00	826	149.00	284	167.00	2020
117.00	6868	134.05	210	152.15	130	168.05	1214
117.95	467	135.05	1070	152.95	335	171.00	192
119.10	138	136.05	300	155.05	819	171.90	236
122.00	814	137.05	350	156.05	859	173.00	188
123.05	1010	141.00	1546	158.05	206	174.00	335
124.00	321	142.00	249	159.95	229	175.05	816

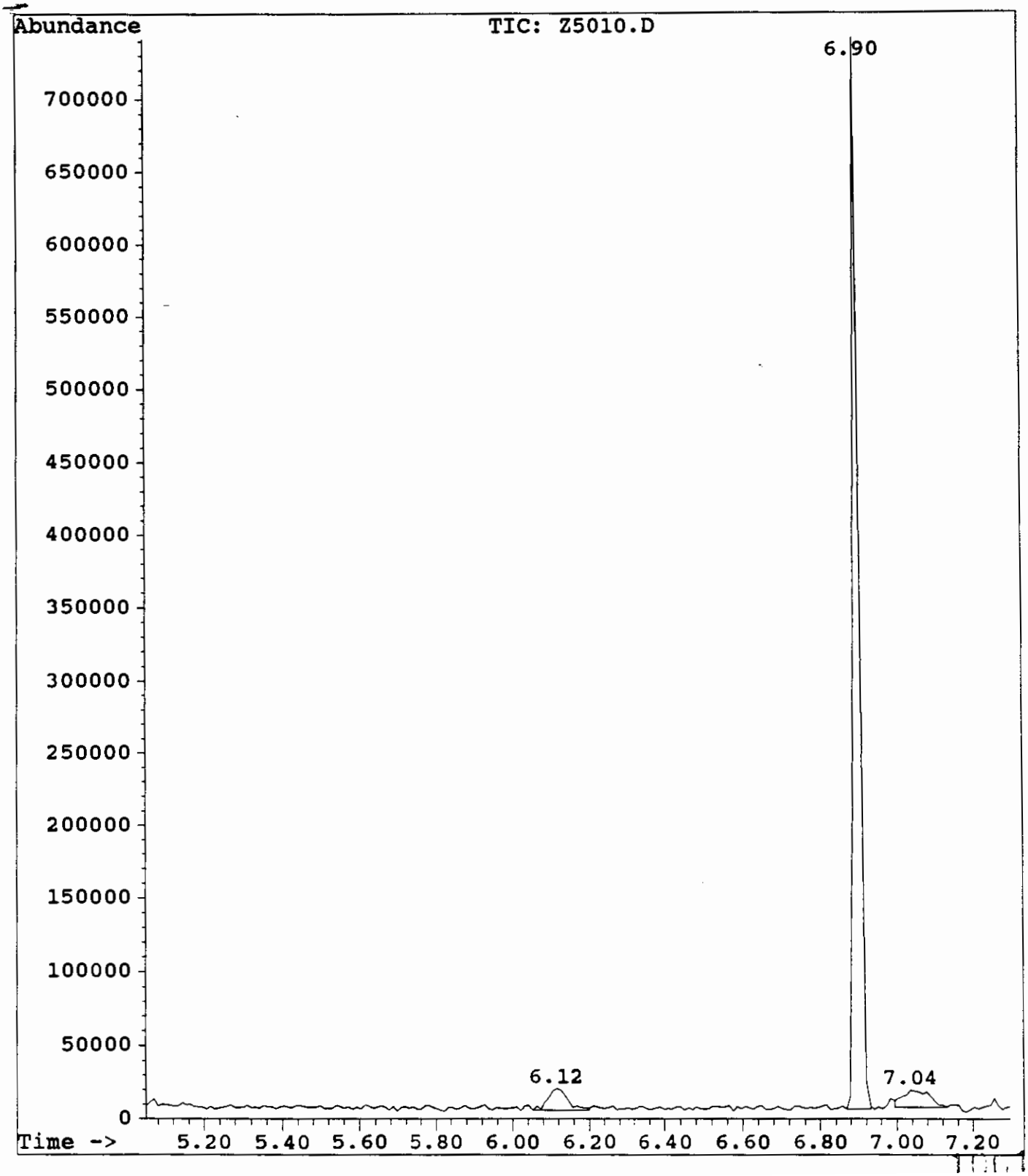
rage of 6.889 to 6.910 min.: Z5010.D
DFTPP 50NG V#32984B 25NG/UL 2UL INJ.
Modified:added subtracted scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
175.80	184	191.20	141	207.05	1735	227.05	3272
176.90	373	192.00	943	208.05	449	228.00	228
178.05	125	192.95	627	211.05	481	229.00	626
178.95	2329	196.00	1137	216.05	150	234.05	340
179.95	1267	198.00	57640	216.90	4114	241.05	171
180.95	574	199.00	3828	218.00	532	242.05	431
185.05	854	200.00	207	221.05	1483	243.05	386
186.05	6720	203.10	524	222.00	323	244.00	4449
187.05	2264	204.05	2259	223.00	936	245.05	605
189.05	367	205.05	3043	224.10	6953	246.10	868
190.90	168	206.05	12154	225.05	1772	247.00	293

Average of 6.889 to 6.910 min.: Z5010.D
DFTPP 50NG V#32984B 25NG/UL 2UL INJ.
Modified:added subtracted scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
255.05	22859	297.00	262	401.80	130		
256.05	3645	303.00	244	421.95	148		
256.95	203	315.05	466	423.05	1627		
257.95	1575	323.00	919	424.05	156		
265.05	600	324.20	141	441.10	4481		
272.95	580	334.05	601	442.05	30154		
274.00	2015	353.10	122	443.05	5940		
275.00	8775	353.95	298	444.05	510		
276.05	1401	364.95	1481				
277.00	716	365.90	259				
296.00	3159	371.95	546				

File: C:\CHEMPC\DATA\Z111393\Z5010.D
Operator: INSTRUMENT Z
Date Acquired: 13 Nov 93 2:39 pm
Method File: DFTBN2.M
Sample Name: DFTPP 50NG V#32984B 25NG/UL 2UL INJ.
Misc Info:
ALS vial: 1



METHOD BLANK DATA

6850 Versar Center • P. O. Box 1549 • Springfield, Virginia 22151 • Tel

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK49

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: SBLK49

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Z4998

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

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	3- and 4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK49

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: SBLK49

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Z4998

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

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-ethylhexyl)phthalate	10	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLK49

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: SBLK49

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Z4998

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

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 4

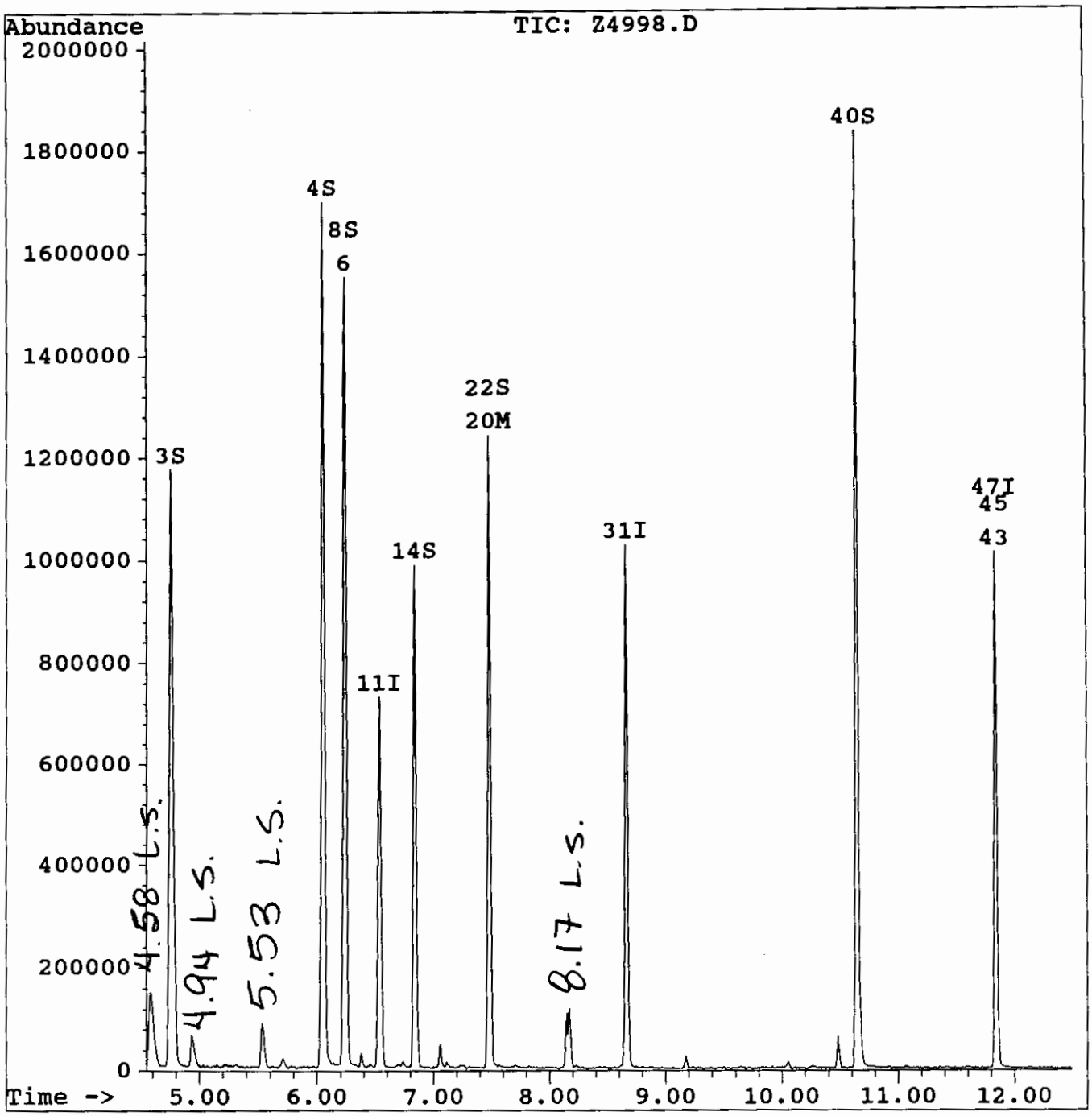
CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.58	6	JN
2.	UNKNOWN	4.94	2	JN
3.	UNKNOWN	5.53	3	JN
4.	UNKNOWN	8.17	4	JN

100180

QUANT REPORT

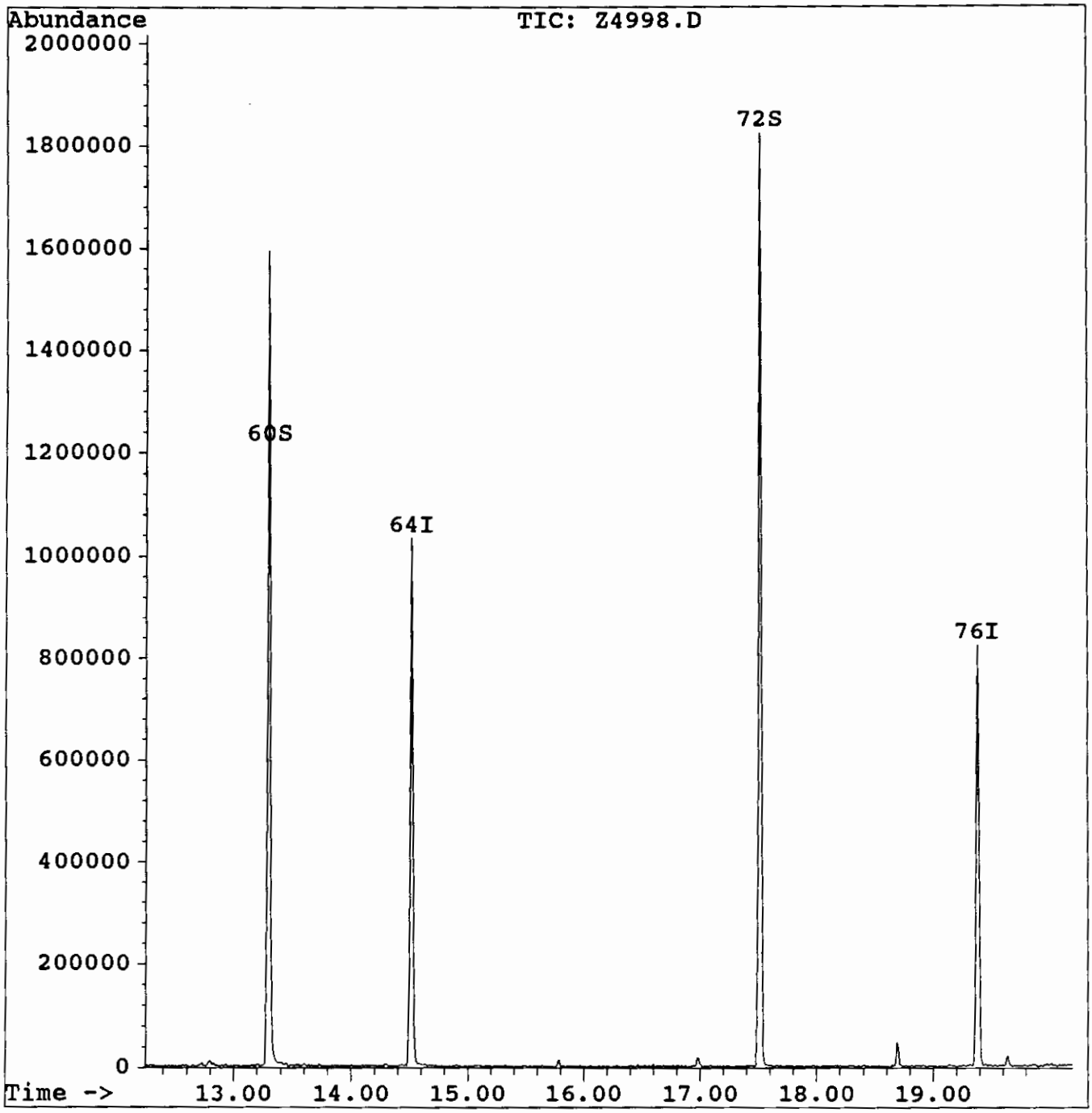
Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 8:06 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4998.D
Name: RB6149,L,W,RB6149,B,2UL
Misc: VEOBRIEN,8632/50,4/5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Fri Nov 12 17:02:46 1993
Quantitated using Single Level Calibration Z4982.D



100181

QUANT REPORT

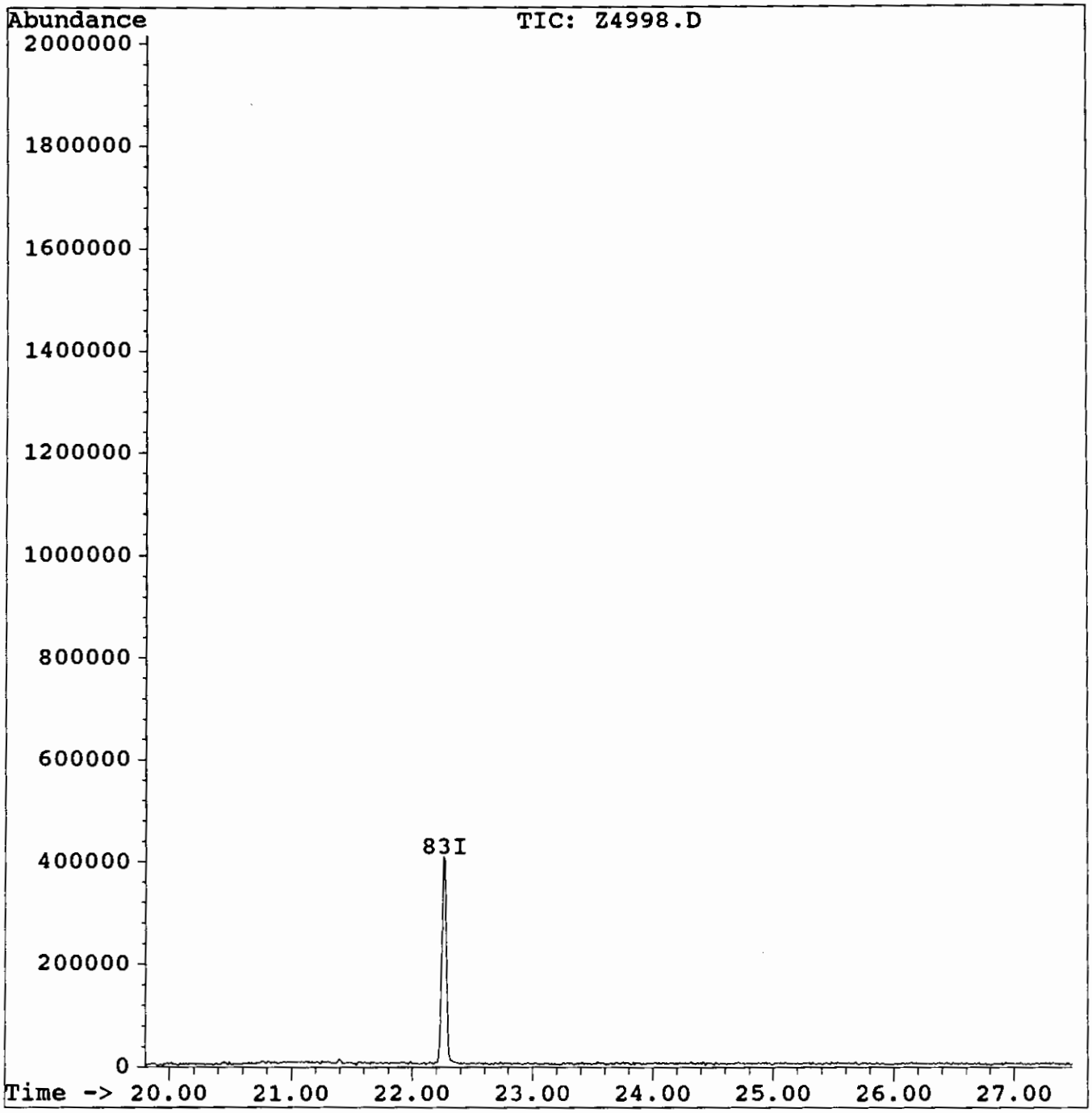
Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 8:06 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4998.D
Name: RB6149,L,W,RB6149,B,2UL
Misc: VEOBRIEN,8632/50,4/5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Fri Nov 12 17:02:46 1993
Quantitated using Single Level Calibration Z4982.D



100182

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 8:06 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4998.D
Name: RB6149,L,W,RB6149,B,2UL
Misc: VEOBRIEN,8632/50,4/5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Fri Nov 12 17:02:46 1993
Quantitated using Single Level Calibration Z4982.D



100183

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 8:06 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4998.D
Name: RB6149,L,W,RB6149,B,2UL
Misc: VEOBRIEN,8632/50,4/5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Fri Nov 12 17:00:29 1993
Quantitated using Single Level Calibration Z4982.D

Internal Standards

Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
11) CI30 1,4-Dichlorobenzene-d	6.54	152	177641	20.00	ng/ul	0.01
31) CI40 Naphthalene-d8	8.66	136	653160	20.00	ng/ul	0.00
47) CI50 Acenaphthene-d10	11.84	164	333769	20.00	ng/ul	0.01
64) CI60 Phenanthrene-d10	14.52	188	544655	20.00	ng/ul	0.01
76) CI70 Chrysene-d12	19.38	240	418381	20.00	ng/ul	-0.01
83) CI75 Perylene-d12	22.27	264	363093	20.00	ng/ul	-0.02

System Monitoring Compounds

						%Recovery
3) CS50 2-Fluorophenol	4.76	112	689461	46.08	ng/ul	61.44%
4) CS45 Phenol-d5	6.05	99	962526	57.32	ng/ul	76.42%
8) CS70 2-Chlorophenol d4	6.24	132	703153	66.20	ng/ul	88.27%
14) CS75 1,2-Dichlorobenzene-d	6.84	152	223051	27.84	ng/ul	55.67%
22) CS20 Nitrobenzene-d5	7.48	82	646678	36.21	ng/ul	72.42%
40) CS25 2-Fluorobiphenyl	10.65	172	801170	29.90	ng/ul	59.79%
60) CS55 2,4,6-Tribromophenol	13.30	330	275704	55.59	ng/ul	74.12%
72) CS30 Terphenyl-d14	17.52	244	881024	35.39	ng/ul	70.77%

Target Compounds

						ISTD#
6) C320 Aniline	6.24	66	219200	~~41.61 ng/ul~~	NC	002#
20) C370 n-Nitroso-di-n-propyl	7.48	70	94024	~~9.61 ng/ul~~	NC	001#
43) C535 Dimethylphthalate	11.84	163	76278	~~2.69 ng/ul~~	NC	003#
45) C544 2,6-Dinitrotoluene	11.84	165	41695	~~6.44 ng/ul~~	NC	003#

Ready for forms SJ 11/13/93.

Compliant Run SJ 11/13/93.

(#) = qualifier out of range

100184

QACHK report

ata file C:\CHEMPC\DATA\Z111293\Z4998.D

Standard File: C:\CHEMPC\DATA\Z111293\Z4982.D 12 Nov 93 9:38 am

ISTD Compound	Std Area	Samp Area	% rec
CI30 1,4-Dichlorobenzene-d4	326957	177641	54.3
CI40 Naphthalene-d8	1122804	653160	58.2
CI50 Acenaphthene-d10	529800	333769	63.0
CI60 Phenanthrene-d10	934500	544655	58.3
CI70 Chrysene-d12	660140	418381	63.4
CI75 Perylene-d12	632224	363093	57.4

Surrogate Compound	Surr Conc	Surr Amt	%rec	Water limits
CS50 2-Fluorophenol	46.08	75.00	61.4	21-100
CS45 Phenol-d5	57.32	75.00	76.4	10- 94
CS70 2-Chlorophenol d4	66.20	75.00	88.3	33-110
CS75 1,2-Dichlorobenzene-d4	27.84	50.00	55.7	16-110
CS20 Nitrobenzene-d5	36.21	50.00	72.4	35-114
CS25 2-Fluorobiphenyl	29.90	50.00	59.8	43-116
CS55 2,4,6-Tribromophenol	55.59	75.00	74.1	10-123
CS30 Terphenyl-d14	35.39	50.00	70.8	33-141

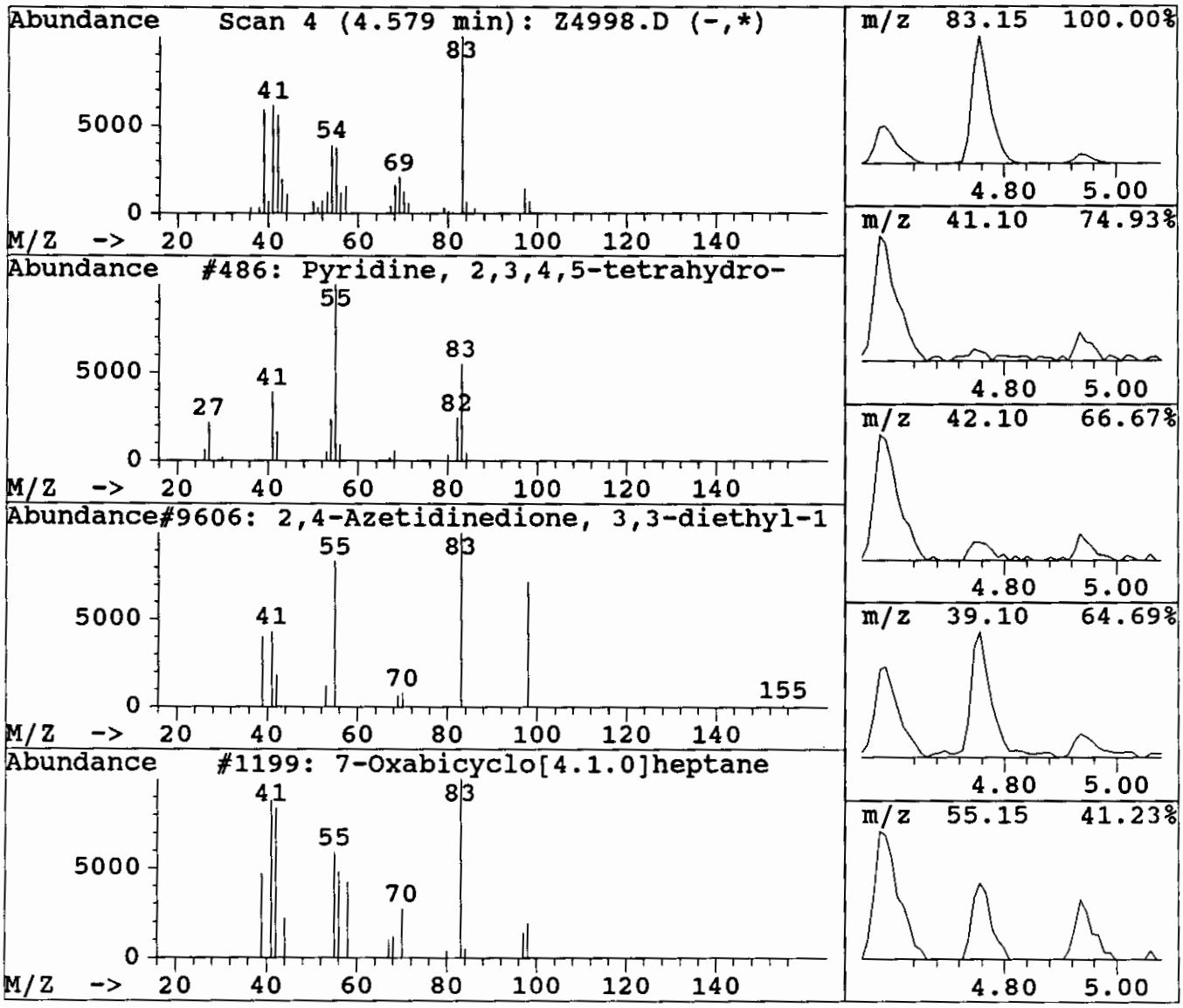
Tentatively Identified Compound (LSC)

Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 8:06 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4998.D
Name: RB6149,L,W,RB6149,B,2UL
Misc: VEOBRIEN,8632/50,4/5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
4.58	5.63 ng/ul	356190	CI30 1,4-Dichlorobenzene-	6.54

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	Pyridine, 2,3,4,5-tetrahydro-	486	000505-18-0	38
2	2,4-Azetidinedione, 3,3-diethyl-1-m	9606	069315-91-9	25
3	7-Oxabicyclo[4.1.0]heptane	1199	000286-20-4	12
4	1,3-Benzodioxol-2-one, hexahydro-,	6797	019456-20-3	12
5	5-Hexenal	1176	000764-59-0	12



100186

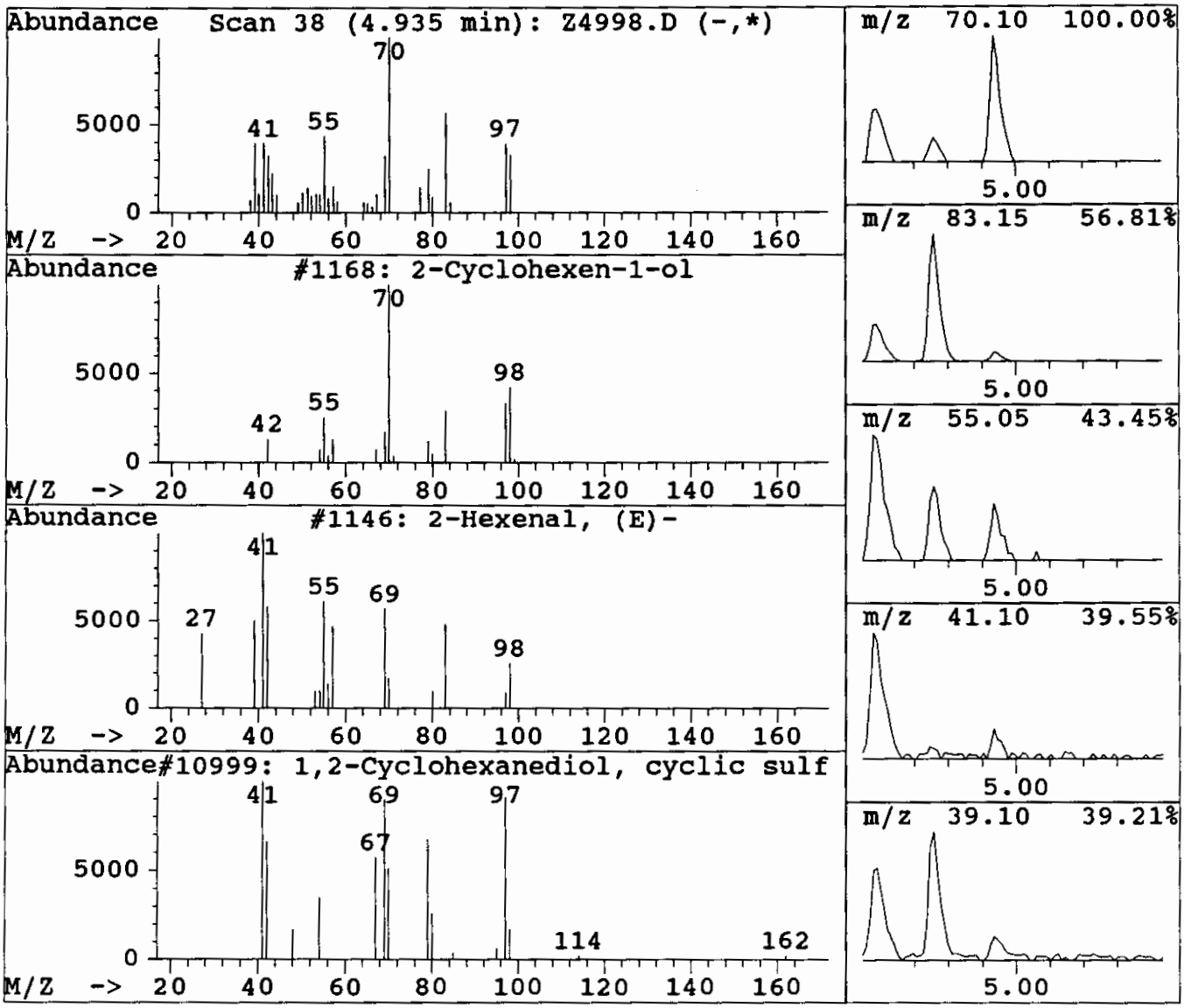
Tentatively Identified Compound (LSC)

Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 8:06 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4998.D
Name: RB6149,L,W,RB6149,B,2UL
Misc: VEOBRIEN,8632/50,4/5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
4.94	2.25 ng/ul	142517	CI30 1,4-Dichlorobenzene-	6.54

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	2-Cyclohexen-1-ol	1168	000822-67-3	53
2	2-Hexenal, (E)-	1146	006728-26-3	16
3	1,2-Cyclohexanediol, cyclic sulfite	10999	019456-18-9	16
4	1-Butene, 2-ethyl-3-methyl-	1243	007357-93-9	12
5	Cyclobutanone, 3-ethyl-	1156	056335-73-0	12



100187

Tentatively Identified Compound (LSC)

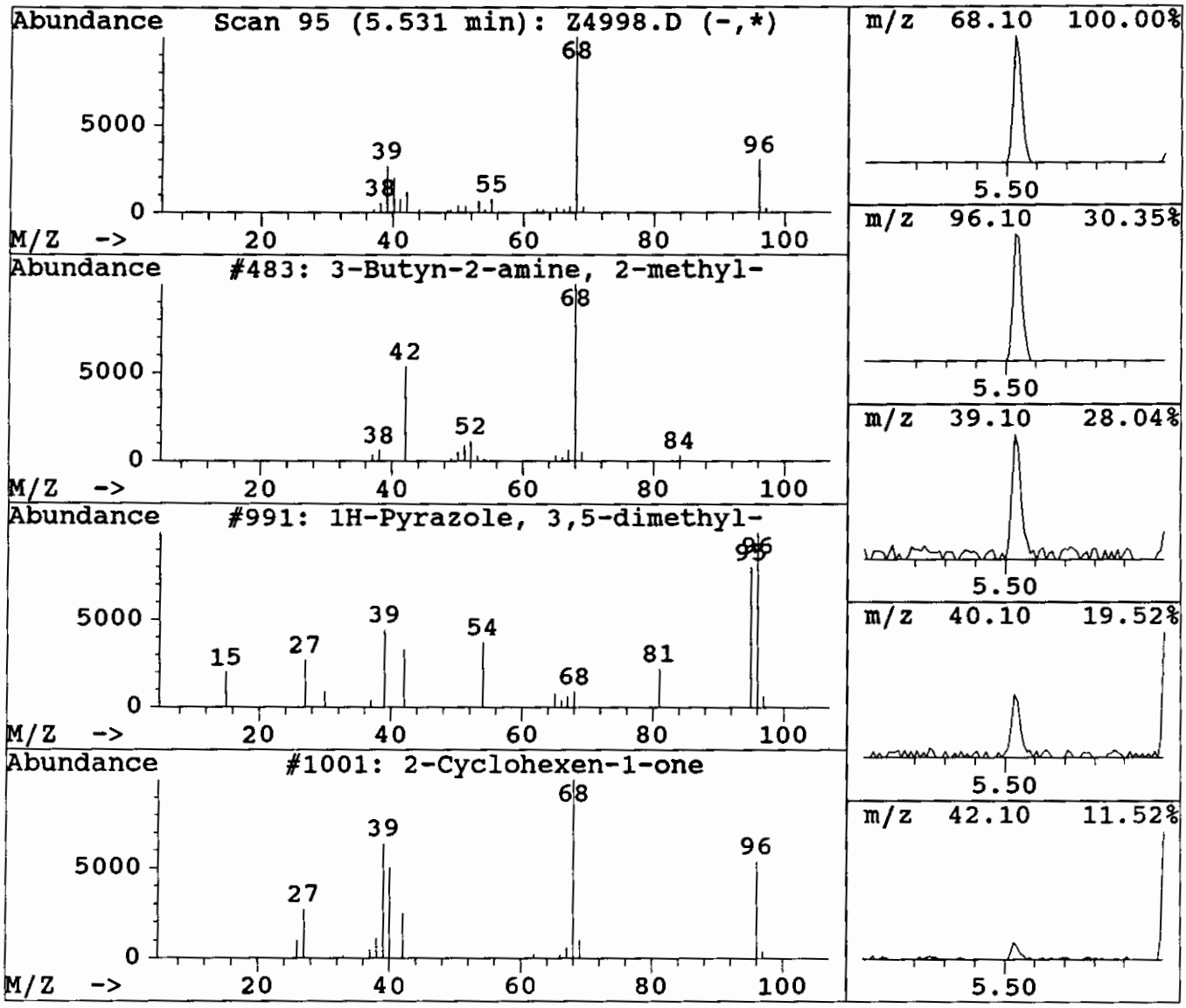
Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 8:06 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4998.D
Name: RB6149,L,W,RB6149,B,2UL
Misc: VEOBRIEN,8632/50,4/5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

link

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
5.53	2.62 ng/ul	165507	CI30 1,4-Dichlorobenzene-	6.54

Hit# of 4	Tentative ID	Ref#	CAS#	Qual
1	3-Butyn-2-amine, 2-methyl-	483	002978-58-7	33
2	1H-Pyrazole, 3,5-dimethyl-	991	000067-51-6	14
3	2-Cyclohexen-1-one	1001	000930-68-7	12
4	2-Cyclopenten-1-one, 3-methyl-	998	002758-18-1	7



100188

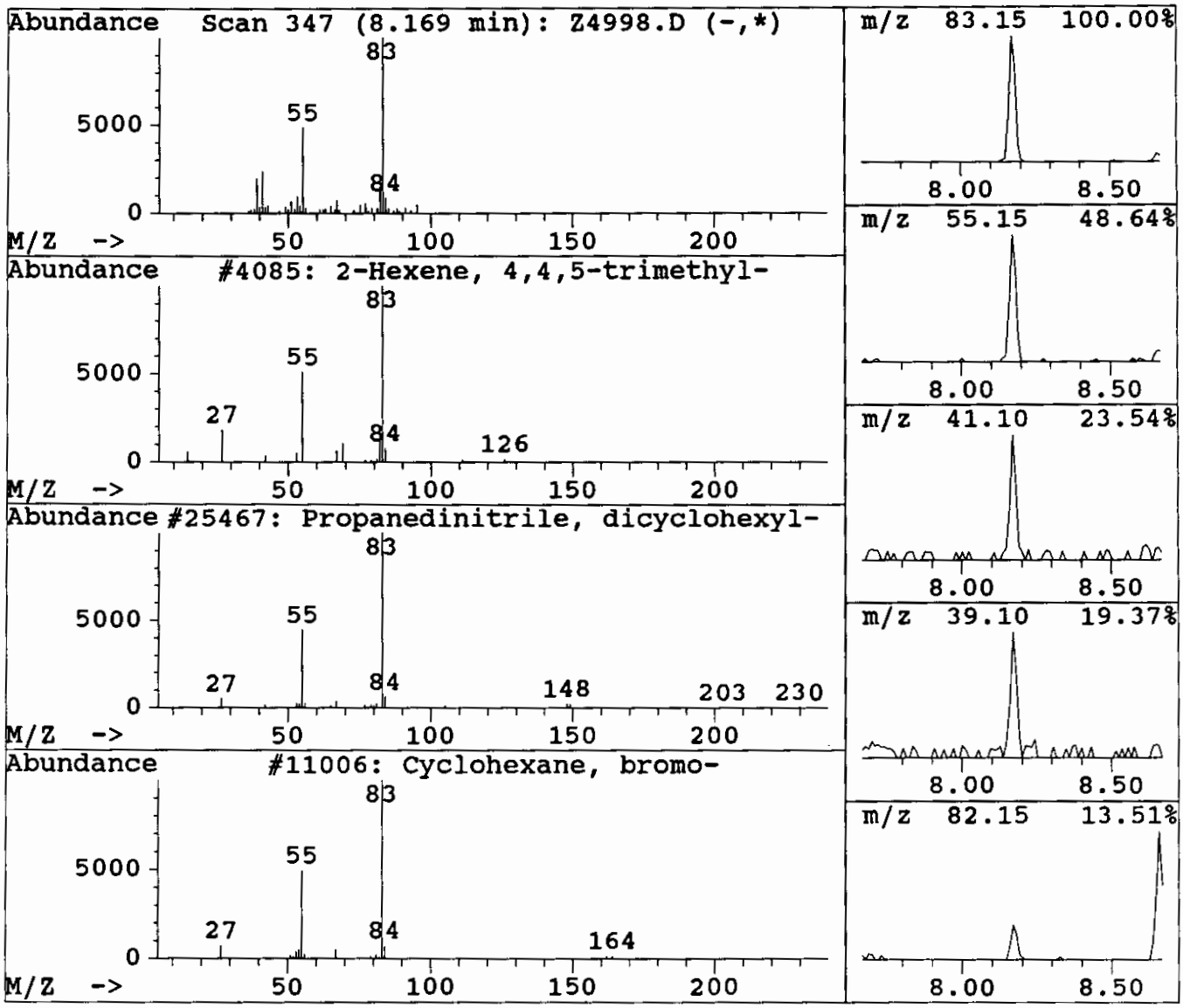
Tentatively Identified Compound (LSC)

Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 8:06 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4998.D
Name: RB6149,L,W,RB6149,B,2UL
Misc: VEOBRIEN,8632/50,4/5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.

Library Searched: nbs54k.l

R.T.	Conc	Area	Relative to ISTD	R.T.
8.17	4.08 ng/ul	316031	CI40 Naphthalene-d8	8.66

Hit# of 7	Tentative ID	Ref#	CAS#	Qual
1	2-Hexene, 4,4,5-trimethyl-	4085	055702-61-9	56
2	Propanedinitrile, dicyclohexyl-	25467	074764-28-6	53
3	Cyclohexane, bromo-	11006	000108-85-0	42
4	2-Heptene, 5-ethyl-2,4-dimethyl-	9513	074421-06-0	39
5	Cyclohexane, azido-	3822	019573-22-9	39



100189

Tentatively Identified Compound (LSC) summary

Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 8:06 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4998.D
Name: RB6149,L,W,RB6149,B,2UL
Misc: VEOBRIEN,8632/50,4/5,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Library Searched: nbs54k.l

TIC name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc
Pyridine, 2,3,4,5-te	4.58	5.6	ng/ul	356190	ISTD01	6.54	1264513	20.0
2-Cyclohexen-1-ol	4.94	2.3	ng/ul	142517	ISTD01	6.54	1264513	20.0
3-Butyn-2-amine, 2-m	5.53	2.6	ng/ul	165507	ISTD01	6.54	1264513	20.0
2-Hexene, 4,4,5-trim	8.17	4.1	ng/ul	316031	ISTD02	8.66	1548471	20.0

TIC: Z4998.D

RB6149,L,W,RB6149,B,2UL

Peak#	Ret Time	Type	Width	Area	Start Time	End Time
1	4.579	RTE!	0.136	356190	4.568	4.704
2	4.757	RTE!	0.189	2573768	4.704	4.893
3	4.935	RTE!	0.115	142517	4.893	5.008
4	5.531	RTE!	0.105	165507	5.490	5.594
5	5.709	RTE!	0.105	38746	5.646	5.751
6	6.055	RTE!	0.168	2856271	5.992	6.159
7	6.243	RTE!	0.189	2910993	6.170	6.359
8	6.380	RTE!	0.063	38519	6.359	6.421
9	6.537	RTE!	0.136	1264513	6.495	6.631
10	6.840	RTE!	0.147	1647431	6.777	6.924
11	7.060	RTE!	0.084	79052	7.008	7.092
12	7.479	RTE!	0.147	2006098	7.406	7.552
13	8.170	RTE!	0.126	316031	8.086	8.211
14	8.661	RTE!	0.157	1548471	8.577	8.735
15	9.174	RTE!	0.073	29206	9.142	9.216
16	10.481	RTE!	0.084	82793	10.439	10.522
17	10.648	RTE!	0.189	2756131	10.554	10.743
18	11.841	RTE!	0.220	1570956	11.757	11.977
19	12.803	RTE!	0.126	30511	12.761	12.886
20	13.294	RTE!	0.158	2604319	13.221	13.379
21	14.518	RTE!	0.168	1595979	14.455	14.623
22	16.975	RTE!	0.136	35807	16.892	17.027
23	17.519	RTE!	0.158	2898921	17.466	17.624
24	18.690	RTE!	0.105	73925	18.638	18.743
25	19.381	RTE!	0.137	1364735	19.328	19.465
26	19.643	RTE!	0.094	31223	19.590	19.685
27	22.259	RTE!	0.221	1059822	22.175	22.396

MATRIX SPIKE DATA

6850 Versar Center • P. O. Box 1549 • Springfield, Virginia 22151 • Telephone: (703) 750-3000 • 1-800-283-7727

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W-5(S)MS

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12145MS

Sample wt/vol: 520 (g/mL) ML Lab File ID: Z4991

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	90	
111-44-4	bis(2-Chloroethyl)ether	19	U
95-57-8	2-Chlorophenol	100	
541-73-1	1,3-Dichlorobenzene	19	U
106-46-7	1,4-Dichlorobenzene	66	
95-50-1	1,2-Dichlorobenzene	19	U
95-48-7	2-Methylphenol	19	U
108-60-1	2,2'-oxybis(1-Chloropropane)	19	U
106-44-5	3- and 4-Methylphenol	19	U
621-64-7	N-Nitroso-di-n-propylamine	72	
67-72-1	Hexachloroethane	19	U
98-95-3	Nitrobenzene	19	U
78-59-1	Isophorone	19	U
88-75-5	2-Nitrophenol	19	U
105-67-9	2,4-Dimethylphenol	19	U
111-91-1	bis(2-Chloroethoxy)methane	19	U
120-83-2	2,4-Dichlorophenol	19	U
120-82-1	1,2,4-Trichlorobenzene	69	
91-20-3	Naphthalene	19	U
106-47-8	4-Chloroaniline	19	U
87-68-3	Hexachlorobutadiene	19	U
59-50-7	4-Chloro-3-methylphenol	110	
91-57-6	2-Methylnaphthalene	19	U
77-47-4	Hexachlorocyclopentadiene	19	U
88-06-2	2,4,6-Trichlorophenol	19	U
95-95-4	2,4,5-Trichlorophenol	19	U
91-58-7	2-Chloronaphthalene	19	U
88-74-4	2-Nitroaniline	48	U
131-11-3	Dimethylphthalate	19	U
208-96-8	Acenaphthylene	19	U
606-20-2	2,6-Dinitrotoluene	19	U
99-09-2	3-Nitroaniline	48	U
83-32-9	Acenaphthene	69	

100193

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W-5(S)MS

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12145MS

Sample wt/vol: 520 (g/mL) ML Lab File ID: Z4991

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

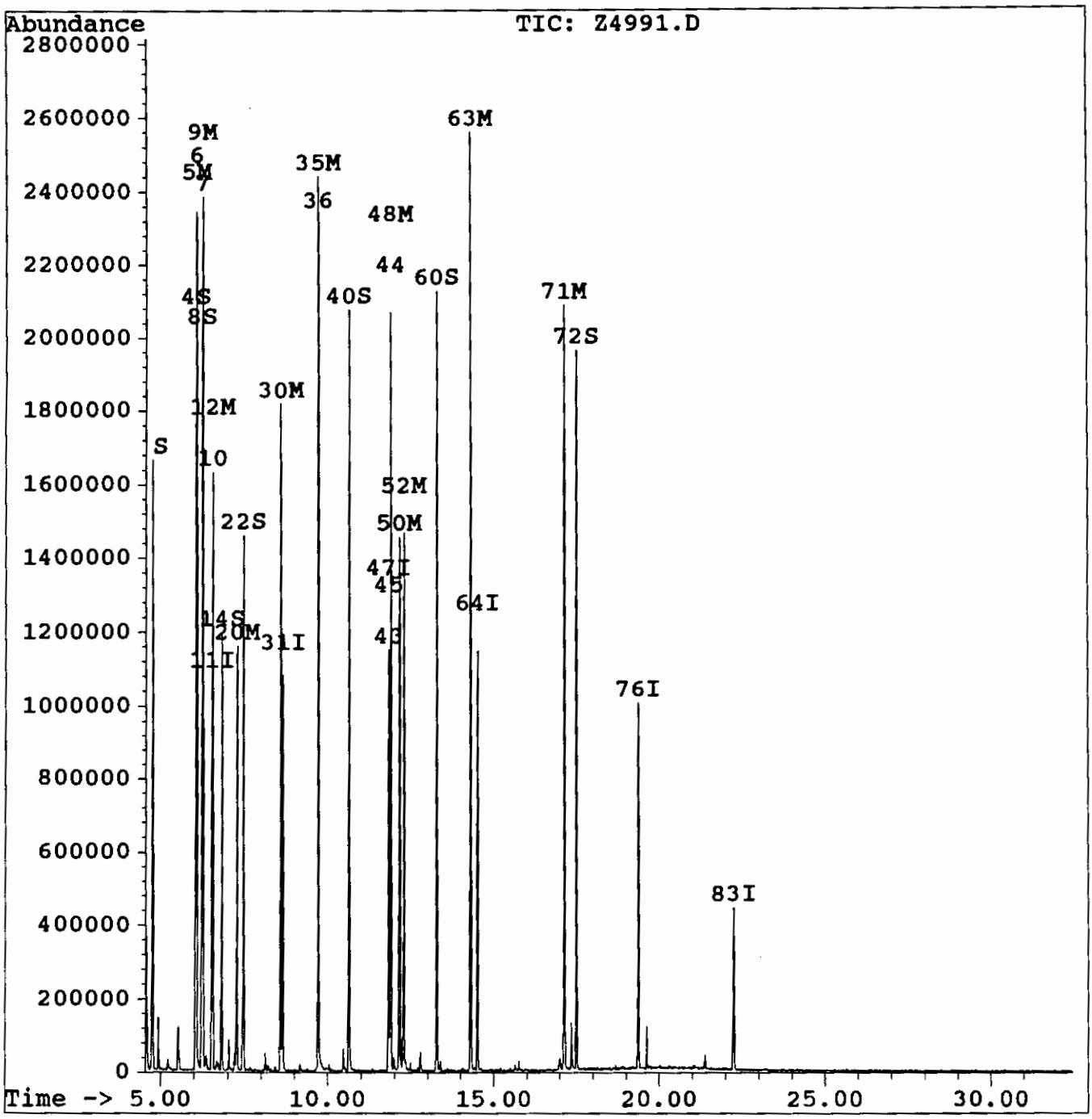
GPC Cleanup: (Y/N) N pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	48	U
100-02-7	4-Nitrophenol	99	
132-64-9	Dibenzofuran	19	U
121-14-2	2,4-Dinitrotoluene	70	
84-66-2	Diethylphthalate	19	U
7005-72-3	4-Chlorophenyl-phenylether	19	U
86-73-7	Fluorene	19	U
100-01-6	4-Nitroaniline	48	U
534-52-1	4,6-Dinitro-2-methylphenol	48	U
86-30-6	N-nitrosodiphenylamine (1)	19	U
101-55-3	4-Bromophenyl-phenylether	19	U
118-74-1	Hexachlorobenzene	19	U
87-86-5	Pentachlorophenol	120	
85-01-8	Phenanthrene	19	U
120-12-7	Anthracene	19	U
86-74-8	Carbazole	19	U
84-74-2	Di-n-butylphthalate	19	U
206-44-0	Fluoranthene	19	U
129-00-0	Pyrene	70	
85-68-7	Butylbenzylphthalate	19	U
91-94-1	3,3'-Dichlorobenzidine	19	U
56-55-3	Benzo(a)anthracene	19	U
218-01-9	Chrysene	19	U
117-81-7	bis(2-ethylhexyl)phthalate	19	U
117-84-0	Di-n-octyl phthalate	19	U
205-99-2	Benzo(b)fluoranthene	19	U
207-08-9	Benzo(k)fluoranthene	19	U
50-32-8	Benzo(a)pyrene	19	U
193-39-5	Indeno(1,2,3-cd)pyrene	19	U
53-70-3	Dibenz(a,h)anthracene	19	U
191-24-2	Benzo(g,h,i)perylene	19	U

100194

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 3:59 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4991.D
Name: W-5(S)MS,L,W,12145MS,B,2UL
Misc: VEOBRIEN,8632,4,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Fri Nov 12 17:00:29 1993
Quantitated using Single Level Calibration Z4982.D



100195

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 3:59 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4991.D
Name: W-5(S)MS,L,W,12145MS,B,2UL
Misc: VEOBRIEN,8632,4,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Fri Nov 12 17:00:29 1993
Quantitated using Single Level Calibration Z4982.D

Internal Standards

Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
11) CI30 1,4-Dichlorobenzene-d	6.53	152	200960	20.00	ng/ul	0.00
31) CI40 Naphthalene-d8	8.65	136	738251	20.00	ng/ul	-0.00
47) CI50 Acenaphthene-d10	11.82	164	392215	20.00	ng/ul	-0.01
64) CI60 Phenanthrene-d10	14.51	188	635657	20.00	ng/ul	-0.01
76) CI70 Chrysene-d12	19.37	240	492543	20.00	ng/ul	-0.02
83) CI75 Perylene-d12	22.25	264	382158	20.00	ng/ul	-0.03

System Monitoring Compounds

						%Recovery
3) CS50 2-Fluorophenol	4.76	112	752592	44.47	ng/ul	59.29%
4) CS45 Phenol-d5	6.05	99	1008275	53.07	ng/ul	70.77%
8) CS70 2-Chlorophenol d4	6.23	132	750629	62.47	ng/ul	83.30%
14) CS75 1,2-Dichlorobenzene-d	6.82	152	261883	28.89	ng/ul	57.78%
22) CS20 Nitrobenzene-d5	7.47	82	717365	35.54	ng/ul	71.08%
40) CS25 2-Fluorobiphenyl	10.63	172	877144	27.85	ng/ul	55.71%
60) CS55 2,4,6-Tribromophenol	13.28	330	337917	58.38	ng/ul	77.83%
72) CS30 Terphenyl-d14	17.50	244	946533	32.29	ng/ul	64.58%

Target Compounds

							ISTD#
5) C315 Phenol	6.08	94	973359	46.82	ng/ul	MS	001
6) C320 Aniline	6.08	66	636313	~~106.87~~	ng/ul	NC	002#
7) C325 bis(2-Chloroethyl)eth	6.25	93	25161	~~1.60~~	ng/ul	NC	001#
9) C330 2-Chlorophenol	6.25	128	775391	51.77	ng/ul	MS	001
10) C335 1,3-Dichlorobenzene	6.55	146	515726	~~35.19~~	ng/ul	NC	001
12) C340 1,4-Dichlorobenzene	6.55	146	515726	34.51	ng/ul	MS	001
20) C370 n-Nitroso-di-n-propyl	7.28	70	415798	37.57	ng/ul	MS	001
30) C445 1,2,4-Trichlorobenzen	8.58	180	514037	35.93	ng/ul	MS	002
35) C465 4-Chloro-3-methylphen	9.71	107	1024467	57.48	ng/ul	MS	002
36) C470 2-Methylnaphthalene	9.72	142	552592	~~23.44~~	ng/ul	NC	002#
43) C535 Dimethylphthalate	11.82	163	88718	~~2.67~~	ng/ul	NC	003#
44) C540 Acenaphthylene	11.89	152	375316	~~11.06~~	ng/ul	NC	003#
45) C544 2,6-Dinitrotoluene	11.82	165	52165	~~6.85~~	ng/ul	NC	003#
48) C550 Acenaphthene	11.89	153	799760	35.81	ng/ul	MS	003
50) C560 4-Nitrophenol	12.15	109	524858	51.70	ng/ul	MS	003#
52) C570 2,4-Dinitrotoluene	12.29	165	400073	36.22	ng/ul	MS	003
63) C635 Pentachlorophenol	14.30	266	383152	62.75	ng/ul	MS	004
71) C715 Pyrene	17.14	202	1556986	36.30	ng/ul	MS	005

Ready

Compliant Run
SF 11/12/93

(#) = qualifier out of range

100186

QACHK report

Data file C:\CHEMPC\DATA\Z111293\Z4991.D

Standard File: C:\CHEMPC\DATA\Z111293\Z4982.D 12 Nov 93 9:38 am

ISTD Compound	Std Area	Samp Area	% rec
CI30 1,4-Dichlorobenzene-d4	326957	200960	61.5
CI40 Naphthalene-d8	1122804	738251	65.8
CI50 Acenaphthene-d10	529800	392215	74.0
CI60 Phenanthrene-d10	934500	635657	68.0
CI70 Chrysene-d12	660140	492543	74.6
CI75 Perylene-d12	632224	382158	60.4

Surrogate Compound	Surr Conc	Surr Amt	%rec	Water limits
CS50 2-Fluorophenol	44.47	75.00	59.3	21-100
CS45 Phenol-d5	53.07	75.00	70.8	10- 94
CS70 2-Chlorophenol d4	62.47	75.00	83.3	33-110
CS75 1,2-Dichlorobenzene-d4	28.89	50.00	57.8	16-110
CS20 Nitrobenzene-d5	35.54	50.00	71.1	35-114
CS25 2-Fluorobiphenyl	27.85	50.00	55.7	43-116
CS55 2,4,6-Tribromophenol	58.38	75.00	77.8	10-123
CS30 Terphenyl-d14	32.29	50.00	64.6	33-141

MATRIX SPIKE DUPLICATE DATA

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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W-5(S)MSD

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12145MSD

Sample wt/vol: 520 (g/mL) ML Lab File ID: Z4992

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	91	
111-44-4	bis(2-Chloroethyl)ether	19	U
95-57-8	2-Chlorophenol	97	
541-73-1	1,3-Dichlorobenzene	19	U
106-46-7	1,4-Dichlorobenzene	67	
95-50-1	1,2-Dichlorobenzene	19	U
95-48-7	2-Methylphenol	19	U
108-60-1	2,2'-oxybis(1-Chloropropane)	19	U
106-44-5	3- and 4-Methylphenol	19	U
621-64-7	N-Nitroso-di-n-propylamine	71	
67-72-1	Hexachloroethane	19	U
98-95-3	Nitrobenzene	19	U
78-59-1	Isophorone	19	U
88-75-5	2-Nitrophenol	19	U
105-67-9	2,4-Dimethylphenol	19	U
111-91-1	bis(2-Chloroethoxy)methane	19	U
120-83-2	2,4-Dichlorophenol	19	U
120-82-1	1,2,4-Trichlorobenzene	70	
91-20-3	Naphthalene	19	U
106-47-8	4-Chloroaniline	19	U
87-68-3	Hexachlorobutadiene	19	U
59-50-7	4-Chloro-3-methylphenol	110	
91-57-6	2-Methylnaphthalene	19	U
77-47-4	Hexachlorocyclopentadiene	19	U
88-06-2	2,4,6-Trichlorophenol	19	U
95-95-4	2,4,5-Trichlorophenol	19	U
91-58-7	2-Chloronaphthalene	19	U
88-74-4	2-Nitroaniline	48	U
131-11-3	Dimethylphthalate	19	U
208-96-8	Acenaphthylene	19	U
606-20-2	2,6-Dinitrotoluene	19	U
99-09-2	3-Nitroaniline	48	U
83-32-9	Acenaphthene	70	

100199

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W-5(S)MSD

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12145MSD

Sample wt/vol: 520 (g/mL) ML Lab File ID: Z4992

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 11/08/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

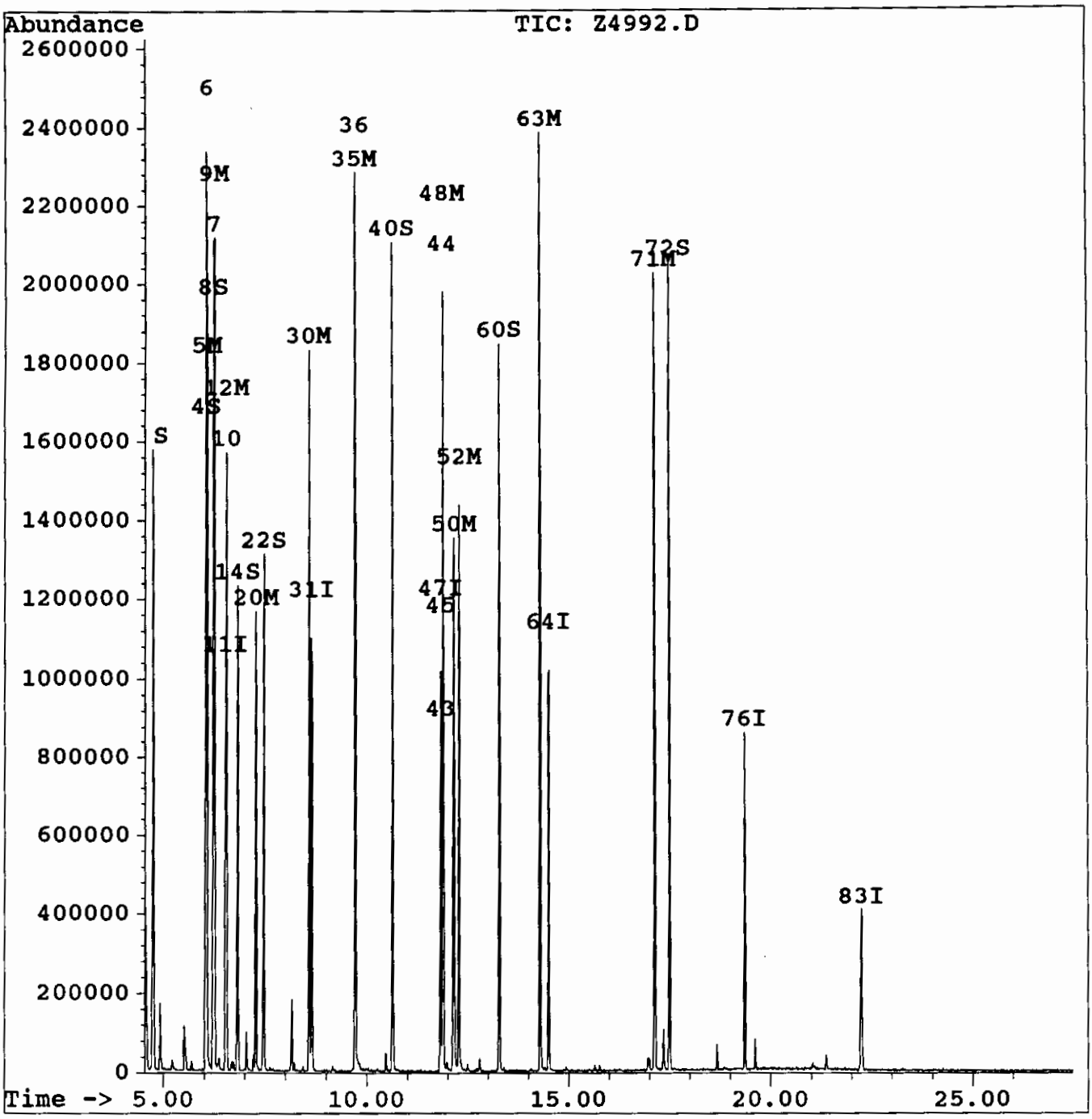
GPC Cleanup: (Y/N) N pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	48	U
100-02-7	4-Nitrophenol	100	
132-64-9	Dibenzofuran	19	U
121-14-2	2,4-Dinitrotoluene	71	
84-66-2	Diethylphthalate	19	U
7005-72-3	4-Chlorophenyl-phenylether	19	U
86-73-7	Fluorene	19	U
100-01-6	4-Nitroaniline	48	U
534-52-1	4,6-Dinitro-2-methylphenol	48	U
86-30-6	N-nitrosodiphenylamine (1)	19	U
101-55-3	4-Bromophenyl-phenylether	19	U
118-74-1	Hexachlorobenzene	19	U
87-86-5	Pentachlorophenol	120	
85-01-8	Phenanthrene	19	U
120-12-7	Anthracene	19	U
86-74-8	Carbazole	19	U
84-74-2	Di-n-butylphthalate	19	U
206-44-0	Fluoranthene	19	U
129-00-0	Pyrene	75	
85-68-7	Butylbenzylphthalate	19	U
91-94-1	3,3'-Dichlorobenzidine	19	U
56-55-3	Benzo(a)anthracene	19	U
218-01-9	Chrysene	19	U
117-81-7	bis(2-ethylhexyl)phthalate	19	U
117-84-0	Di-n-octyl phthalate	19	U
205-99-2	Benzo(b)fluoranthene	19	U
207-08-9	Benzo(k)fluoranthene	19	U
50-32-8	Benzo(a)pyrene	19	U
193-39-5	Indeno(1,2,3-cd)pyrene	19	U
53-70-3	Dibenz(a,h)anthracene	19	U
191-24-2	Benzo(g,h,i)perylene	19	U

100200

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 4:39 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4992.D
Name: W-5(S)MSD,L,W,12145MSD,B,2UL
Misc: VEOBRIEN,8632,4,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Fri Nov 12 17:00:29 1993
Quantitated using Single Level Calibration Z4982.D



100201

QUANT REPORT

Operator ID: INSTRUMENT Z Date Acquired: 12 Nov 93 4:39 pm
Data File: C:\CHEMPC\DATA\Z111293\Z4992.D
Name: W-5(S)MSD,L,W,12145MSD,B,2UL
Misc: VEOBRIEN,8632,4,WATER (3BNA)
Method: BN2MS.M
Title: VERSAR LABORATORIES INC.
Last Calibration: Fri Nov 12 17:00:29 1993
Quantitated using Single Level Calibration Z4982.D

Internal Standards

	Compound	R.T.	Qion	Area	Conc	Unit	Dev(Min)
11)	CI30 1,4-Dichlorobenzene-d	6.53	152	191597	20.00	ng/ul	-0.00
31)	CI40 Naphthalene-d8	8.64	136	708642	20.00	ng/ul	-0.02
47)	CI50 Acenaphthene-d10	11.82	164	368682	20.00	ng/ul	-0.02
64)	CI60 Phenanthrene-d10	14.51	188	599900	20.00	ng/ul	-0.01
76)	CI70 Chrysene-d12	19.36	240	456995	20.00	ng/ul	-0.03
83)	CI75 Perylene-d12	22.25	264	359749	20.00	ng/ul	-0.04

System Monitoring Compounds

							%Recovery
3)	CS50 2-Fluorophenol	4.75	112	727823	45.10	ng/ul	60.14%
4)	CS45 Phenol-d5	6.04	99	967848	53.44	ng/ul	71.25%
8)	CS70 2-Chlorophenol d4	6.23	132	692327	60.44	ng/ul	80.58%
14)	CS75 1,2-Dichlorobenzene-d	6.82	152	262564	30.38	ng/ul	60.76%
22)	CS20 Nitrobenzene-d5	7.47	82	662230	34.18	ng/ul	68.36%
40)	CS25 2-Fluorobiphenyl	10.63	172	930679	31.44	ng/ul	62.88%
60)	CS55 2,4,6-Tribromophenol	13.28	330	322280	58.99	ng/ul	78.66%
72)	CS30 Terphenyl-d14	17.50	244	918578	33.78	ng/ul	67.55%

Target Compounds

								ISTD#
5)	C315 Phenol	6.08	94	935522	47.20	ng/ul	MS	001
6)	C320 Aniline	6.07	66	590100	~~103.25 ng/ul~~		NC	002#
7)	C325 bis(2-Chloroethyl)eth	6.25	93	23394	~~1.56 ng/ul~~		NC	001#
9)	C330 2-Chlorophenol	6.25	128	723591	50.67	ng/ul	MS	001
10)	C335 1,3-Dichlorobenzene	6.55	146	496953	~~35.56 ng/ul~~		NC	001
12)	C340 1,4-Dichlorobenzene	6.55	146	496953	34.88	ng/ul	MS	001
20)	C370 n-Nitroso-di-n-propyl	7.27	70	389782	36.94	ng/ul	MS	001
30)	C445 1,2,4-Trichlorobenzen	8.58	180	498837	36.33	ng/ul	MS	002
35)	C465 4-Chloro-3-methylphen	9.72	107	988352	57.77	ng/ul	MS	002
36)	C470 2-Methylnaphthalene	9.72	142	532093	~~23.51 ng/ul~~		NC	002#
43)	C535 Dimethylphthalate	11.83	163	85003	~~3.72 ng/ul~~		NC	003#
44)	C540 Acenaphthylene	11.88	152	359204	~~11.26 ng/ul~~		NC	003#
45)	C544 2,6-Dinitrotoluene	11.82	165	46888	~~6.55 ng/ul~~		NC	003#
48)	C550 Acenaphthene	11.88	153	759831	36.19	ng/ul	MS	003
50)	C560 4-Nitrophenol	12.16	109	513040	53.76	ng/ul	MS	003#
52)	C570 2,4-Dinitrotoluene	12.28	165	385410	37.12	ng/ul	MS	003
63)	C635 Pentachlorophenol	14.30	266	372378	64.63	ng/ul	MS	004
71)	C715 Pyrene	17.13	202	1551121	38.98	ng/ul	MS	005

Ready.

Compliant Run
SJF 11/13/93.

(#) = qualifier out of range

100202

QACHK report

ata file C:\CHEMPC\DATA\Z111293\Z4992.D

Standard File: C:\CHEMPC\DATA\Z111293\Z4982.D 12 Nov 93 9:38 am

ISTD Compound	Std Area	Samp Area	% rec
CI30 1,4-Dichlorobenzene-d4	326957	191597	58.6
CI40 Naphthalene-d8	1122804	708642	63.1
CI50 Acenaphthene-d10	529800	368682	69.6
CI60 Phenanthrene-d10	934500	599900	64.2
CI70 Chrysene-d12	660140	456995	69.2
CI75 Perylene-d12	632224	359749	56.9

Surrogate Compound	Surr Conc	Surr Amt	%rec	Water limits
CS50 2-Fluorophenol	45.10	75.00	60.1	21-100
CS45 Phenol-d5	53.44	75.00	71.2	10- 94
CS70 2-Chlorophenol d4	60.44	75.00	80.6	33-110
CS75 1,2-Dichlorobenzene-d4	30.38	50.00	60.8	16-110
CS20 Nitrobenzene-d5	34.18	50.00	68.4	35-114
CS25 2-Fluorobiphenyl	31.44	50.00	62.9	43-116
CS55 2,4,6-Tribromophenol	58.99	75.00	78.7	10-123
CS30 Terphenyl-d14	33.78	50.00	67.6	33-141

SAMPLE PREPARATION

Some items may not be present in data package:
Parameter Request Sheet
Chain of Custody
Additional Client Provided Information
Reextraction Notice
TCLP Preparation Sheets
Organic Extraction Lab notes on Samples
GC Screening Data
Organic Extraction Lab Chain of Custody (in-house)
Extracts Ready for Analysis Sheet
Extraction logsheet
Total Solids analysis results
GC/MS batch analysis logsheet
GC/MS Injection logbook pages

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X3SV - 1110

VERSAR LIMS 11/04/93

VERSAR LABORATORIES INC.
PARAMETER REQUEST SHEET

Deliver To: 46

Control: 8632
Code: VEOBRIEN
Batch: 4
Job Number: 420.1.0

Case: R09042
SDG:
Quote: 9401136 - 94
Charge:

Manager: JAUFMANN
Company: VERSAR DIV 61

Site: O'BRIEN

Received: 03-NOV-93
Due: 23-NOV-93
Ext Due: 13-NOV-93

Sampled: 01-NOV-93
Report: 23-NOV-93
Disposal: 04-JAN-94

QC Level: CLP 390
Diskette: CUSTOM

Rep Type: S
Reports: 1 Type 4

Comments: 21 DAY TA FROM RECEIPT OF LAST SAMPLE--Samples shipping from 11/1 to 11/8. Do QC on designated sample if sufficient volume. Number of samples expected:10 for 3VOA&3BNA and 25 for 3CLP.

Test	Samp#	X	Comment	Field Number	Matrix	Location	Other Tests
3CLP - 43							
	12146	A	QC	W-5(S)	HOH	A-59	
X3SV - 46							
	12145	B	QC	W-5(S)	HOH	A-59	3BNA
3BNA - 48							
	12145	B	QC	W-5(S)	HOH	A-59	X3SV
3VOA - 48							
	12144	C	QC	W-5(S)	HOH	VOA-1	

QC = Quality Control; FDUP = Field Duplicate; FLT = Filtered; BKN = Broken; EMP = Empty; TB = Trip Blank; FB = Field Blank; SEE = See Batch Comments.

100205

VERSAR LABORATORIES INC.
PARAMETER REQUEST SHEET

Deliver To: 46

Control: 8650
Code: VEOBRIEN
Batch: 5
Job Number: 420.1.0

Case: R09042
SDG:
Quote: 9401136 - 94
Charge:

Manager: JAUFMANN
Company: VERSAR DIV 61

Site: O'BRIEN

Received: 05-NOV-93
Due: 24-NOV-93
Ext Due: 14-NOV-93

Sampled: 03-NOV-93
Report: 24-NOV-93
Disposal: 07-JAN-94

QC Level: CLP 390
Diskette: CUSTOM

Rep Type: S
Reports: 1 Type 4

Comments: 21 DAY TA FROM RECEIPT OF LAST SAMPLE--Samples shipping from 11/1 to 11/8. Do QC on designated sample if sufficient volumn. Prep, analyze and report with VEOBRIEN-4 (8632). Additional samples expected.

Test	Samp#	X	Comment	Field Number	Matrix	Location	Other Tests
3CLP - 43							
	12313	A		MW-12(S)	HOH	A-54	
	12314	A		MW-13(S)	HOH	A-54	
	12315	A		MW-14(S)	HOH	A-54	
	12316	A		MW-14(S)F	HOH	A-54	
	12317	A		MW-15(S)	HOH	A-54	
	12318	A		MW-15(S)F	HOH	A-54	
	12319	A		MW-11(S)	HOH	A-54	
	12325	A		MW-11(S)F	HOH	A-54	
X3SV - 46							
	12305	B		MW-12(S)	HOH	A-54	3BNA
	12307	B		MW-14(S)	HOH	A-54	3BNA
	12309	B		MW-15(S)	HOH	A-54	3BNA
	12311	B		MW-11(S)	HOH	A-54	3BNA
3BNA - 48							
	12305	B		MW-12(S)	HOH	A-54	X3SV
	12307	B		MW-14(S)	HOH	A-54	X3SV
	12309	B		MW-15(S)	HOH	A-54	X3SV
	12311	B		MW-11(S)	HOH	A-54	X3SV
3VOA - 48							
	12300	C		MW-12(S)	HOH	VOA-4	
	12301	C		MW-14(S)	HOH	VOA-4	
	12302	C		MW-15(S)	HOH	VOA-4	
	12303	C		MW-11(S)	HOH	VOA-4	
	12304	A		W-100	HOH	VOA-4	

QC = Quality Control; FDUP = Field Duplicate; FLT = Filtered; BKN = Broken; EM = Empty; TB = Trip Blank; FB = Field Blank; SEE = See Batch Comments.

100206

VERSAR LABORATORIES INC
ORGANIC EXTRACTION LAB
WATER SAMPLE PREPARATION
COMMENT SHEET

08-NOV-93

Worklist Id: 17118
Analysis Code: X3SV

Contl#	Code	Batch	Job Number	Matrix	Level	Location
8632	VEOBRIEN	4	420.1.0	HOH	L	A-59
8650	VEOBRIEN	5	420.1.0	HOH	L	A-54

Sample # 12145 Field # W-5(S) pH 7

Turbidity	Color	Solids	Added		New pH
✓ Clear	✓ None	✓ None	6N NaOH	5mL	2
Cloudy	Other	Suspended	6N H2SO4		
Opaque		Floating	Other		

Did sample precipitate upon addition of:

	Yes	No
base		
acid		
buffer		

NOTES:

Sample # 12305 Field # MW-12(S) pH 7

Turbidity	Color	Solids	Added		New pH
✓ Clear	✓ None	✓ None	6N NaOH	5mL	2
Cloudy	Other	Suspended	6N H2SO4		
Opaque		Floating	Other		

Did sample precipitate upon addition of:

	Yes	No
base		
acid		
buffer		

NOTES:

100207

VERSAR LABORATORIES INC
ORGANIC EXTRACTION LAB
WATER SAMPLE PREPARATION
COMMENT SHEET

08-NOV-93

Sample # 12307 Field # MW-14(S) pH 7

Turbidity	Color	Solids	Added		New pH
✓ Clear	✓ None	✓ None	6N NaOH	5mL	2
__ Cloudy	__ Other	__ Suspended	6N H2SO4		
__ Opaque		__ Floating	Other		

Did sample precipitate upon addition of:

	Yes	No
base		✓
acid		
buffer		

NOTES:

Sample # 12309 Field # MW-15(S) pH 7

Turbidity	Color	Solids	Added		New pH
✓ Clear	✓ None	✓ None	6N NaOH	5mL	2
__ Cloudy	__ Other	__ Suspended	6N H2SO4		
__ Opaque		__ Floating	Other		

Did sample precipitate upon addition of:

	Yes	No
base		✓
acid		
buffer		

NOTES:

Sample # 12311 Field # MW-11(S) pH 7

Turbidity	Color	Solids	Added		New pH
✓ Clear	✓ None SL 11/8/93	✓ None	6N NaOH	5mL	2
__ Cloudy	__ Other	__ Suspended	6N H2SO4		
__ Opaque	Brown	__ Floating	Other		

Did sample precipitate upon addition of:

	Yes	No
base		✓
acid		
buffer		

NOTES:

100208

VERSAR LABORATORIES 08-NOV-93
Internal Chain of Custody
Organic Extraction Lab

Worklist ID: 17118 Analysis Code: X3SV /

Contl#	Code	Batch	Job Number	Matrix	Level	Location	#Samps	#Extrs
8632	VEOBRIEN	4	420.1.0	HOH	L	A-59	1	7
8650	VEOBRIEN	5	420.1.0	HOH	L	A-54	4	4
						Totals:	5	11

Versar Sample Numbers:
12145 12311
12305
12307
12309

Sample Extraction: Location: A59, A54 Received by: [signature]
Sample Rec. Returned by: [signature]

EVENT	STARTED	DATE	COMPLETED	DATE	LOCATION
Extraction	[signature]	11-8-93	[signature]	11-9-93	—
Secondary Extraction					
Initial Concentration	Hazel + [signature]	11-9-93	~~Hazel 93~~ [signature]	11-9-93	—
GPC Preparation					
GPC Clean-Up					
GPC Concentration					
BNA/PEST Split					
Acid Clean-Up					
Column Clean-Up					
Final Concentration	M. Yeo	11/10/93	M. Yeo	11/10/93	—

Vial Up: If split procedure was performed, include parameter.

X3SV (Parameter)	M. Yeo	11/10/93	M. Yeo	11/10/93	F-1
(Parameter)					

Analysis: Extracts Relinquished By: Extracts Received By:

100209

Complete all applicable information before and after working on samples or extracts. All names should be signed: first initial, last name.

EXTRACTS READY FOR ANALYSIS

3 [illegible] Due Nov 14

DATE 11/10/93

CODE VEOBRIEN BATCH 4,5 CONTROL # 8632/8650

DATE RECEIVED 11/3,5/93 DATE EXTRACTED 11/5/93

OF EXTRACT 11 # OF SAMPLES 5

MATRIX HCH PARAMETER X35V LOCATION F-1

IS THIS A RE-EXTRACTION? NO

COMMENTS

TECHNICIAN SIGNATURE Mayer P Yes 11/10/93

SUPERVISOR USE ONLY

PROVIDE AN EXPLANATION IF ANSWER IS NO

Was the extraction holding time met?	☑ YES	☐ NO
Was proper QC performed with the extraction?	☑ YES	☐ NO
Are all columns complete, initialed, and dated?	☑ YES	☐ NO
Is column information accurate?	☑ YES	☐ NO
Is header information complete and accurate?	☑ YES	☐ NO
Were the correct standards used in the extraction?	☑ YES	☐ NO
Are final volumes correct?	☑ YES	☐ NO
Are sample comments included, initialed and dated?	☑ YES	☐ NO
Are dry weights included with the data package?	☑ YES	☐ NO
Are dry weights correct?	☐ YES	☐ NO

What clean-up procedure was used? N/A

SUPERVISOR [signature] SECTION CHIEF

100210

3 BNA

08-NOV-93

VERSAR LABORATORIES
BNA WATERS
EXTRACTION/CONCENTRATION WORKLIST

Contl#	Code	Batch	Job Number	Matrix	Level	Location
8632	VEOBRIEN	4	420.1.0	HOH	L	A-59
8650	VEOBRIEN	5	420.1.0	HOH	L	A-54

Analysis Code: X3SV
Worklist ID: 17118

Extract Date: 11-8-93
Date Recovered:
BN H2O —
Technician —
ACID H2O 11-9-93
Technician [signature]

CH2Cl2 Lot#: BF512
Date Concentrated:
BN H2O —
Technician —
ACID H2O 11-9-93
Technician H.B + SN

Prep Method:
Continuous ✓
Shakeout
Other

Spiking Solutions:
MS BNA 32742
SSS BNA 33168
MS PEST —
SSS PEST —

Comment: SPLIT THE QC SAMPLE.

	Sample/QC Number	Field Number	Sample Weight/ Volume	Spike Vol MS	Spike Vol SSS	Initial Extract Final Volume BN	Initial Extract Final Volume ACID	Sample Comments
	RB6148	W-5(S)	1000 ml	—	0.5	1/10/93	1 ml	
	RB6149	W-5(S)		—				
	MT2791	W-5(S)		0.5				
	MT2792	W-5(S)						
B#4 8632	12145	W-5(S)	1040 ml	—				
	12145 MS	W-5(S)	570 ml	0.5				
	12145 MSD	W-5(S)	560 ml					
B650 B#5	12305	MW-12(S)	1030 ml	—				
	12307	MW-14(S)	1030 ml	—				
	12309	MW-15(S)	1040 ml	—				
	12311	MW-11(S)	970 ml	—	✓			

Reviewed By 100211

VERSAR LABORATORIES
BNA WATERS
VIAL WORKLIST

08-NOV-93

Contl#	Code	Batch	Job Number	Matrix	Level	Location
8632	VEOBRIEN	4	420.1.0	HOH	L	A-59
8650	VEOBRIEN	5	420.1.0	HOH	L	A-54

Analysis Code: X3SV
Worklist ID: 17118

Remaining Extract
Location: Tray# - Loc -
Project Completion Date: 11/10/93

Comment: SPLIT THE QC SAMPLE.

Sample/QC	Contl Numbr	BN Final Vol	Acid Final Vol	Sample Comments
RB6148	8632	1/10/93	1 ml	
RB6149	8632			
MT2791	8632			
MT2792	8632			
12145	8632			
12145 MS	8632			
12145 MSD	8632			
12305	8650			
12307	8650			
12309	8650			
12311	8650			

100212

Reviewed By _____

VERSAR LABORATORIES INC.
GC/MS SECTION
Analysis Log

Control #: 8632
Code: VEOBRIEN - 4
Test: 3BNA
Matrix: HOH
Hold Time: 29-NOV-93
Due Date : 23-NOV-93

09-NOV-93

Batch Comments

21 DAY TA FROM RECEIPT OF LAST SAMPLE--Samples shipping from 11/1 to 11/8. Do QC on designated sample if sufficient volume.
Number of samples expected:10 for 3VOA&3BNA and 25 for 3CLP.

Sample	CMT	Field Number	PH	File #	Run Date	Valid	HT Met	Comments	Rerun File	Valid	Rerun File	Valid
MT2791				Z4999	11-12	Low IS			Z5015	Y	~~Z5016~~	
MT2792				Z5000	↓	↓			Z5016	Y		
✓ RB6149				Z4988	11-12	Y	Y					
RB6148				Z4989	11-12			Low IS	Z4997	Low IS		
✓ 12145 MS				Z4991	11-12	Y	Y					
✓ 12145 MSD				Z4992	11-12	Y	Y					
✓ 12145	QC	W-5(S)		Z4990	11-12	Y	Y					

Analytical Difficulties:

Analysis Start Date _____ Completion Date _____

Data Completion Date _____ Report Date _____

VERSAR LABORATORIES INC.
GC/MS SECTION
Analysis Log

Control #: 8650
Code: VEOBRIEN - 5
Test: 3BNA
Matrix: HOH
Hold Time: 01-DEC-93
Due Date : 24-NOV-93

09-NOV-93

Batch Comments

21 DAY TA FROM RECEIPT OF LAST SAMPLE--Samples shipping from 11/1 to 11/8. Do QC on designated sample if sufficient volumn. Prep, analyze and report with VEOBRIEN-4 (8632). Additional samples expected.

Sample	CMT	Field Number	PH	File #	Run Date	Valid	HT Met	Comments	Rerun File	Valid	Rerun File	Valid
12305		MW-12(S)		Z4993	11-12	Low IS			Z5005	Y		
12307		MW-14(S)		Z4994	↓	↓			Z5006	Y		
12309		MW-15(S)		Z4995	↓	↓			Z5005	Low IS	Z5012	Y
12311		MW-11(S)		Z4996	↓	↓			Z5013	Y	Z5014	not needed

Analytical Difficulties:

Analysis Start Date _____ Completion Date _____

Data Completion Date _____ Report Date _____

100214

RSAR LABORATORIES INC. BNA INJECTION LOG GC/MS INSTRUMENT ID Z DATE 11/9/93 ASCII FILE [illegible] STREAMER NO. _____

000009

FILE NAME	METHOD	CONTROL NUMBER	BATCH	FIELD NUMBER	LEVEL	MATRX	VERSAR NUMBER	TYPE	CODE	EXT. VOL.	COMB. VOL.	FINAL VOL.	DIL.	IS VOL.	IS NUMBER	VAL IN.
Z4937				DFTPP 50ng			32984B	T	Tuned	@	1:5	1 pos				
Z4938				SSTD-160			33158	C								
Z4939				SSTD-120			33159	C								
Z4940				SSTD-80			32981	C								
Z4941				SSTD-20			32982	C								
Z4942				SSTD-50			33160	C								
Z4943				SSTD-50			32645	C	App IX	Std.						
Z4944	3/90	8584	10	S2GW01SL	L	W	11444 Rein	V	Ver Saba	1ml	.3ml	300µl		3µl	32965	
Z4945	↓	↓	↓	S2GW01SL	L	W	11444	IV	↓	↓	.1ml	500µl	1/5	5µl		
Z4946	TCBN	8628	1	RB6136	L	Leach	RB6136	Q	Zapata	1ml	.4ml	.4ml		4µl		
Z4947	App IX	8562, 8563	8,9	RB6052	L	W	RB6052	Q	OBG LAB	1ml+1ml	.3ml+.3ml	.6ml		6µl		
Z4948	TCBN	8628	1	XBLK	L	Leach	XBLK	Q	Zapata	1ml	.4ml	.4ml		4µl		
Z4949	↓	↓	↓	1	↓	↓	12133	V	↓	↓	.3ml	.6ml	1/2	6µl		
Z4950	App IX	8562	8	S8753	L	W	~~RB6052~~ 11099	IV	OBG LAB	1ml+1ml	.3ml+.3ml	.6ml		6µl		
Z4951	↓	↓	↓	S8754			11100	IV	↓	↓	↓	↓		↓	↓	↓
Z4952	↓	↓	↓	S8755			11101	IV	↓	↓	↓	↓		↓	↓	

ANALYST SIGNATURE S Flint DATE 11/10/93

002

'ERSAR LABORATORIES INC. BNA INJECTION LOG GC/MS INSTRUMENT ID_____ DATE_____ ASCII FILE_____ STREAMER NO._____

000010

FILE NAME	METHOD	CONTROL NUMBER	BATCH	FIELD NUMBER	LEVEL	MATRX	VERSAR NUMBER	TYPE	CODE	EXT. VOL.	COMB. VOL.	FINAL VOL.	DIL.	IS VOL.	IS NUMBER
Z4954	SBMS	8537	24	1093314	L	S	10914	IV	Dewberry	1ml	.4ml	.4ml		4µl	32965
Z4955	TCBN	8628	1	RB6137	L	Leach	RB6137	Q	Zapata	1ml	.4ml	.4ml		4µl	
Z4956	APP IX	8562, 8563	8,9	RB6053	L	W	RB6053 MT2687	Q	OBG LAB	1ml+ 1ml	.3ml+ .3ml	.6ml		6µl	
Z4957	TCBN	8628	1	MT2777	L	Leach	MT2777	Q	Zapata	1ml	.4ml	.4ml		4µl	
Z4958	TCBN	↓	↓	MT2778	↓	↓	MT2778	Q	↓	↓	↓	↓		↓	
Z4959	APP IX	8562, 8563	8,9	MT2686	L	W	MT2686	Q	OBG LAB	1ml+ 1ml	.3ml .3ml	.6ml		6µl	
Z4960	↓	↓	↓	MT2687	↓	↓	MT2687	Q	↓	↓	↓	↓		↓	
11/9/93															
Z4953	APP IX	8563	9	S8774	L	W	11121	IV	OBG LAB	1ml+ 1ml	.3ml+ .3ml	.3ml+ .3ml		6µl	32965
Z4961				acetone screen			1/10								
Z4962				acetone screen			St.								

100216

ANALYST SIGNATURE S. Flint DATE 11/10/93

:SAR LABORATORIES INC. BNA INJECTION LOG GC/MS INSTRUMENT ID Z DATE 11/12/93 ASCII FILE _____ STREAMER NO. _____

000015

ILE AME	METHOD	CONTROL NUMBER	BATCH	FIELD NUMBER	LEVEL	MATRX	VERSAR NUMBER	TYPE	CODE	EXT. VOL.	COMB. VOL.	FINAL VOL.	DIL.	IS VOL.	IS NUMBER	VALI INJ.
Z41981				DFTPP 50ng			32984B	T	Tuned @ 9:22 am							
Z41982				SSTD-50			32978	C								
Z41983				SSTD-50			32645	C	App. IX							
Z41984	8270	8562	8	S8753	L	W	11099	V	OBG LAB	1ml + 1ml	.3ml + .3ml	.6ml		6µl	32964	Y
Z41985	↓	↓	↓	S8754	↓	↓	11100	V	↓	↓	↓	↓		↓	↓	Y
Z41986	↓	↓	↓	S8755	↓	↓	11101	V	↓	↓	↓	↓		↓	↓	Y
Z41987	↓	8563	9	S8774	↓	↓	11121	V	↓	↓	↓	↓		↓	↓	Y
Z41988	SBNA	8537	24	1093314	L	S	10914 Re ext V		Dewberry	1ml	.3ml	.3ml		3µl	↓	Y
Z41989	3BNA	8632 8650	4,5	RB6148	L	W	RB6148	Q	VeOBRIEN	1ml	.4ml	.4ml		4µl	↓	low IS
Z41990	↓	8632	4	W-5 (S)	↓	↓	12145		↓	↓	↓	↓		↓	↓	Y
Z41991	↓	↓	↓	W-5(S) MS	↓	↓	12145 MS	Q	↓	↓	↓	↓		↓	↓	Y
Z41992	↓	↓	↓	W-5(S) MSD	↓	↓	12145 MSD	Q	↓	↓	↓	↓		↓	↓	Y
Z41993	↓	8650	5	MW-12 (S)	↓	↓	12305		↓	↓	↓	↓		↓	↓	Low I
Z41994	↓	↓	↓	MW-14 (S)	↓	↓	12307		↓	↓	↓	↓		↓	↓	Low I
Z41995	↓	↓	↓	MW-15 (S)	↓	↓	12309		↓	↓	↓	↓		↓	↓	↓
Z41996	↓	↓	↓	MW-11 (S)	↓	↓	12311		↓	↓	↓	↓		↓	↓	↓

ANALYST SIGNATURE S. Flint DATE 11/13/93.

AR LABORATORIES INC. BNA INJECTION LOG GC/MS INSTRUMENT ID Z DATE 11/~~13~~ 12/93 ASCII FILE _____ STREAMER NO. _____

000014

E E	METHOD	CONTROL NUMBER	BATCH	FIELD NUMBER	LEVEL	MATRX	VERSAR NUMBER	TYPE	CODE	EXT. VOL.	COMB. VOL.	FINAL VOL.	DIL.	IS VOL.	IS NUMBER	VALI INJ.
4997	3BNA	8632/50	4/5	RB6148	L	W	RB6148		VEOBRIAN	1ml	0.3ml	0.3ml		3µl	32965	Low IS
4998	↓	↓	↓	RB6149	↓	↓	RB6149		↓	↓	0.4ml	0.4ml		4µl	↓	Y
4999	↓	↓	↓	MT2791	↓	↓	MT2791		↓	↓	↓	↓		↓	↓	Low IS
5000	↓	↓	↓	MT2792	↓	↓	MT2792		↓	↓	↓	↓		↓	↓	↓
5001	8270	8562/63	8/9	MT2686	↓	↓	MT2686		OBG LAB	1ml + 1ml	.3ml + .3ml	.6 ml		6µl	↓	↓
5002	↓	↓	↓	MT2687	↓	↓	MT2687		↓	↓	↓	↓		↓	↓	↓

100218

YST SIGNATURE S. Flint DATE 11/13/93

ERSAR LABORATORIES INC. BNA INJECTION LOG GC/MS INSTRUMENT ID Z DATE 11/13/93 ASCII FILE _____ STREAMER NO. _____

C:48,340 Kbytes

000015

FILE NAME	METHOD	CONTROL NUMBER	BATCH	FIELD NUMBER	LEVEL	MATRX	VERSAR NUMBER	TYPE	CODE	EXT. VOL.	COMB. VOL.	FINAL VOL.	DIL.	IS VOL.	IS NUMBER
Z5003				DFTPP 50ng			32984B		(TOTAL EM 2444)		Tuned @ 10:05				
Z5004				SSTD-50			32978								
Z5005	3BNA	8650	5	MW-12 (S)	L	W	12305		VEOBRIEN	1ml	0.4ml	0.4ml		4µl	32965
Z5006	↓	↓	↓	MW-14 (S)	↓	↓	12307		↓	↓	↓	↓		↓	↓
Z5007	↓	↓	↓	MW-15 (S)	↓	↓	12309		↓	↓	↓	↓		↓	↓
Z5008	↓	↓	↓	MW-15 (S)	↓	↓	12309 Rein		↓	↓	↓	↓		↓	↓
Z5009				DFTPP 50ng			32984B								
Z5010				DFTPP 50ng			32984B		EM@2588	Tuned @ 2:39 P.M.					
Z5011				SSTD-50			32978								
Z5012	3BNA	8650	5	MW-15 (S)			12309 Rein		VEOBRIEN	1ml	0.4ml	0.4ml		4µl	32965
Z5013	↓	↓	↓	MW-11 (S)			12311		↓	↓	↓	↓		↓	↓
Z5014	↓	↓	↓	MW-11 (S) Rein			12311 Rein		↓	↓	↓	↓		↓	↓
Z5015	↓	8632/50	45	MT2791			MT2791		↓	↓	↓	↓		↓	↓
Z5016	↓	↓	↓	MT2792			MT2792		↓	↓	↓	↓		↓	↓

ANALYST SIGNATURE S. Flint DATE 11/13/93.

DLV

Versar Laboratories INC.

GC/MS VOLATILE ANALYSIS
ANALYTICAL DATA PACKAGE

CLIENT: VERSAR DIVISION 61
CASE: R09042 SDG: 4
SITE: O'BRIEN
PROJECT: 420.1.0 BATCHES 4 AND 5
CONTROL: 8632/8650
DATE: 11/24/93

6850 Versar Center • P. O. Box 1549 • Springfield, Virginia 22151 • Telephone: (703) 750-3000 • 1-800-283-7727

November 24, 1993

NARRATIVE
Case - R09042 SDG - 4
VLI Project 420.1.0 - Batches 4 and 5
VLI Control 8632/8650

Client Information
Versar Division 61 - O'Brien

Analytical Method
EPA CLP Protocol (Rev OLM01.8)
Volatile Analysis by GC/MS

Sample Management
Six (6) water samples were received by VLI in two batch shipments on November 3 and 5, 1993. Sample results are presented in alpha-numeric order.

SAMPLE LIST

11/03/93	W-5(S)	
11/05/93	MW-11	MW-15
	MW-12	W-100
	MW-14	

Instrument Tuning and Calibration
The instrument used in the analysis of these samples was tuned to criteria specified in the method using bromofluorobenzene (BFB). One calibration curve and one continuing calibration standard were required to complete the analyses. Both calibration standards met all %RSD and %D criteria specified in the method.

Volatile System Monitoring Compound and Internal Standard Recovery
Volatile system monitoring compound recovery values, internal standard area abundance values and associated relative retention times were within method specified QC limits for all analyses.

Quality Control
Sample analyses were completed prior to expiration of the holding time. All samples were analyzed within twelve hours of instrument calibration. The samples were analyzed without dilution. One set of matrix spike/matrix spike duplicate samples were analyzed with these batch shipments of samples. All matrix spike percent recovery values and percent RPD values met QC limits. Volatile non-target compounds have been tentatively identified using the NIST/EPA/MSDC/Spectral Library.

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Narrative - Page 2
Versar Div 61
VLI Control 8632/ 8650

For Additional Information
For all questions, please refer to the VLI Control number at the top of this narrative.

For questions concerning sample scheduling, billing, or other program management issues, please contact Janet Jaufmann, VLI Client Services Manager.

For questions concerning technical integrity of the data, please contact Linda Bock, Quality Assurance Officer.

Release Authority
Release of this data package is approved by the Laboratory Director or his designee as indicated by the following signature:

Mary Anne Templeton
Mary Anne Templeton
GC/MS Data Quality Manager

P. O. Box 1549 • Springfield, Virginia 22151 • Telephone: (703) 750-3000 • 1-800-283-7727

Versar Laboratories INC.

Data Qualifier Flags

J — For Target Compounds: This flag is used when mass spectral data indicates the presence of a compound but the result is less than the specified detection limit but still greater than zero.

JN — For Non Target Compounds: This flag indicates that the concentration is an estimated value, assuming a 1 to 1 response with the internal standard. For CLP 3/90 both the J and N flags are specified.

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

u — This flag states that the compound was analyzed for but was not detected. The number is the minimum attainable detection limit for the sample.

X — This flag states that the mass spectrum does not meet EPA CLP criteria for confirmation, but compound presence is strongly suspected.

E — This flag is used to indicate that the quantitation of the analyte is outside the linear calibration of the curve and that dilution was required in order to properly quantitate.

D — This flag is used to indicate the value for the target analyte was calculated from a dilution (see "E" flag above).

Y — This flag is used when a matrix spike compound is also confirmed present in the unspiked sample.

****** Above flags excerpted from and established by the US EPA Contract Lab Program (CLP) protocol.

BRL — This flag is used on the quantitation reports to eliminate compounds below a reasonable confidence limit. All compounds flagged "BRL" are less than the CRQL.

Versar Laboratories INC.

TABLE OF CONTENTS - VOLATILE ORGANIC ANALYSIS (VOA)

1. NARRATIVE

2. QC SUMMARY
   A. System Monitoring Compound (Surrogate) Recovery Form (FORM 2)
   B. Matrix Spike/Matrix Spike Duplicate Recovery Form (FORM 3)
   C. Method Blank Summary Form (FORM 4)
   D. GC/MS Instrument Performance Check (FORM 5)
   E. Internal Standard Area and RT Summary (FORM 8)

3. SAMPLE DATA
   Samples in alphanumeric order unless a different order is specified in the case narrative (FORM I-VOA, FORM I-TIC, data)

4. STANDARDS DATA
   A. Initial Calibration Data (FORM 6) in order by instrument/date, followed by data
   B. Continuing Calibration Check (FORM 7) in order by instrument/date, followed by data

5. RAW QC DATA
   A. Tuning Data
      Bar graph spectrum, mass listing, chromatogram
   B. Method Blank Data
      In chronological order (FORM I-VOA, FORM I-TIC, data)

6. MATRIX SPIKE DATA
   FORM I-VOA, data

7. MATRIX SPIKE DUPLICATE DATA
   FORM I-VOA, data

8. SAMPLE PREPARATION
   This section contains supporting data for analysis of these samples. The following items are present in this section as required (not all items will be required for any batch of samples):
      a. Parameter Request Sheet
      b. Chain of Custody
      c. Additional client-provided information (compound lists, detection limits, etc.)
      d. TCLP preparation sheets
      e. GC Screening data
      f. Total Solids analysis results
      g. GC/MS batch analysis logsheet
      h. GC/MS injection logbook pages

NARRATIVE

QC SUMMARY

6850 Versar Center • P. O. Box 1549 • Springfield, Virginia 22151 • Telephone: (703) 750-3000 • 1-800-368-7707

2A
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

	EPA SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
01	MW-11(S)	92	103	108	0	0
02	MW-12(S)	97	99	99	0	0
03	MW-14(S)	99	98	103	0	0
04	MW-15(S)	99	102	104	0	0
05	W-100	95	104	106	0	0
06	W-5(S)	99	100	98	0	0
07	W-5(S)MS	98	102	101	0	0
08	W-5(S)MSD	97	101	98	0	0
09	VBLK41	98	102	99	0	0
10	VBLK48	96	98	106	0	0

		QC LIMITS
SMC1 (TOL)	= Toluene-d8	(88-110)
SMC2 (BFB)	= Bromofluorobenzene	(86-115)
SMC3 (DCE)	= 1,2-Dichloroethane-d4	(76-114)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

100006

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix Spike - EPA Sample No.: W-5(S)

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50.00	0	51.10	102	61-145
Trichloroethene	50.00	0	49.10	98	71-120
Benzene	50.00	0	52.60	105	76-127
Toluene	50.00	0	53.60	107	76-125
Chlorobenzene	50.00	0	51.40	103	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50.00	49.70	99	3	14	61-145
Trichloroethene	50.00	50.00	100	2	14	71-120
Benzene	50.00	52.70	105	0	11	76-127
Toluene	50.00	53.20	106	1	13	76-125
Chlorobenzene	50.00	51.80	104	1	13	75-130

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:

100007

4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK41

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Lab File ID: S1441 Lab Sample ID: VBLK41

Date Analyzed: 11/08/93 Time Analyzed: 1707

GC Column: CAP ID: 0.320(mm) Heated Purge: (Y/N) N

Instrument ID: S

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	MW-12(S)	12300	S1445	1920
02	W-5(S)	12144	S1442	1741
03	W-5(S)MS	12144MS	S1443	1814
04	W-5(S)MSD	12144MSD	S1444	1847

COMMENTS:

4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK48

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Lab File ID: S1450 Lab Sample ID: VBLK48

Date Analyzed: 11/09/93 Time Analyzed: 1114

GC Column: CAP ID: 0.320(mm) Heated Purge: (Y/N) N

Instrument ID: S

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	MW-11(S)	12303	S1453	1327
02	MW-14(S)	12301	S1451	1219
03	MW-15(S)	12302	S1452	1252
04	W-100	12304	S1455	1434

COMMENTS:

100009

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

L Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Lab File ID: S1434 BFB Injection Date: 11/08/93

Instrument ID: S BFB Injection Time: 1227

GC Column: CAP ID: 0.320(mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	14.4
75	30.0 - 66.0% of mass 95	46.0
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.4
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	76.3
175	4.0 - 9.0% of mass 174	5.7 (7.5)1
176	93.0 - 101.0% of mass 174	72.8 (95.4)1
177	5.0 - 9.0% of mass 176	5.2 (7.2)2

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

T ; CHECK 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	33215	S1436	11/08/93	1405
02	VSTD200	33216	S1437	11/08/93	1522
03	VSTD100	33217	S1438	11/08/93	1547
04	VSTD020	33218	S1439	11/08/93	1613
05	VSTD010	33219	S1440	11/08/93	1639
06	VBLK41	VBLK41	S1441	11/08/93	1707
07	W-5(S)	12144	S1442	11/08/93	1741
08	W-5(S)MS	12144MS	S1443	11/08/93	1814
09	W-5(S)MSD	12144MSD	S1444	11/08/93	1847
10	MW-12(S)	12300	S1445	11/08/93	1920

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Lab File ID: S1446 BFB Injection Date: 11/09/93

Instrument ID: S BFB Injection Time: 0811

GC Column: CAP ID: 0.320(mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	16.7
75	30.0 - 66.0% of mass 95	46.1
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	71.6
175	4.0 - 9.0% of mass 174	3.6 (5.0)1
176	93.0 - 101.0% of mass 174	67.2 (93.9)1
177	5.0 - 9.0% of mass 176	4.6 (6.9)2

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

T S CHECK 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	33222	S1449	11/09/93	1030
02	VBLK48	VBLK48	S1450	11/09/93	1114
03	MW-14(S)	12301	S1451	11/09/93	1219
04	MW-15(S)	12302	S1452	11/09/93	1252
05	MW-11(S)	12303	S1453	11/09/93	1327
06	W-100	12304	S1455	11/09/93	1434

100011

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: VERSAR INC. Contract: _____

L Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Lab File ID (Standard): S1436 Date Analyzed: 11/08/93

Instrument ID: S Time Analyzed: 1405

GC Column: CAP ID: 0.320(mm) Heated Purge: (Y/N) N

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	67600	12.53	366329	13.74	373834	18.04
	UPPER LIMIT	135200	13.03	732658	14.24	747668	18.54
	LOWER LIMIT	33800	12.03	183164	13.24	186917	17.54
	EPA SAMPLE NO.						
01	MW-12(S)	63778	12.53	333349	13.75	352756	18.04
02	W-5(S)	62989	12.53	328335	13.75	343041	18.04
03	W-5(S)MS	60095	12.53	319514	13.74	332406	18.04
04	W-5(S)MSD	57964	12.53	305007	13.75	320009	18.04
05	VBLK41	59852	12.53	310416	13.74	323829	18.04

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

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: VERSAR INC. Contract: _____

Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Lab File ID (Standard): S1449 Date Analyzed: 11/09/93

Instrument ID: S Time Analyzed: 1030

GC Column: CAP ID: 0.320(mm) Heated Purge: (Y/N) N

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	60114	12.54	306772	13.75	332583	18.04
	UPPER LIMIT	120228	13.04	613544	14.25	665166	18.54
	LOWER LIMIT	30057	12.04	153386	13.25	166292	17.54
	EPA SAMPLE NO.						
01	MW-11(S)	46200	12.53	229000	13.75	257000	18.04
02	MW-14(S)	49549	12.54	254817	13.75	285508	18.04
03	MW-15(S)	47786	12.53	232374	13.75	266835	18.04
04	W-100	41593	12.53	179623	13.74	213631	18.05
05	VBLK48	49027	12.54	242796	13.75	276572	18.05

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

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

100013

SAMPLE DATA

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-11(S)

L Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12303

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: S1453

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.320 (mm) Dilution Factor: 1.0

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

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

100015

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-11(S)

Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12303

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: S1453

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.320 (mm) Dilution Factor: 1.0

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

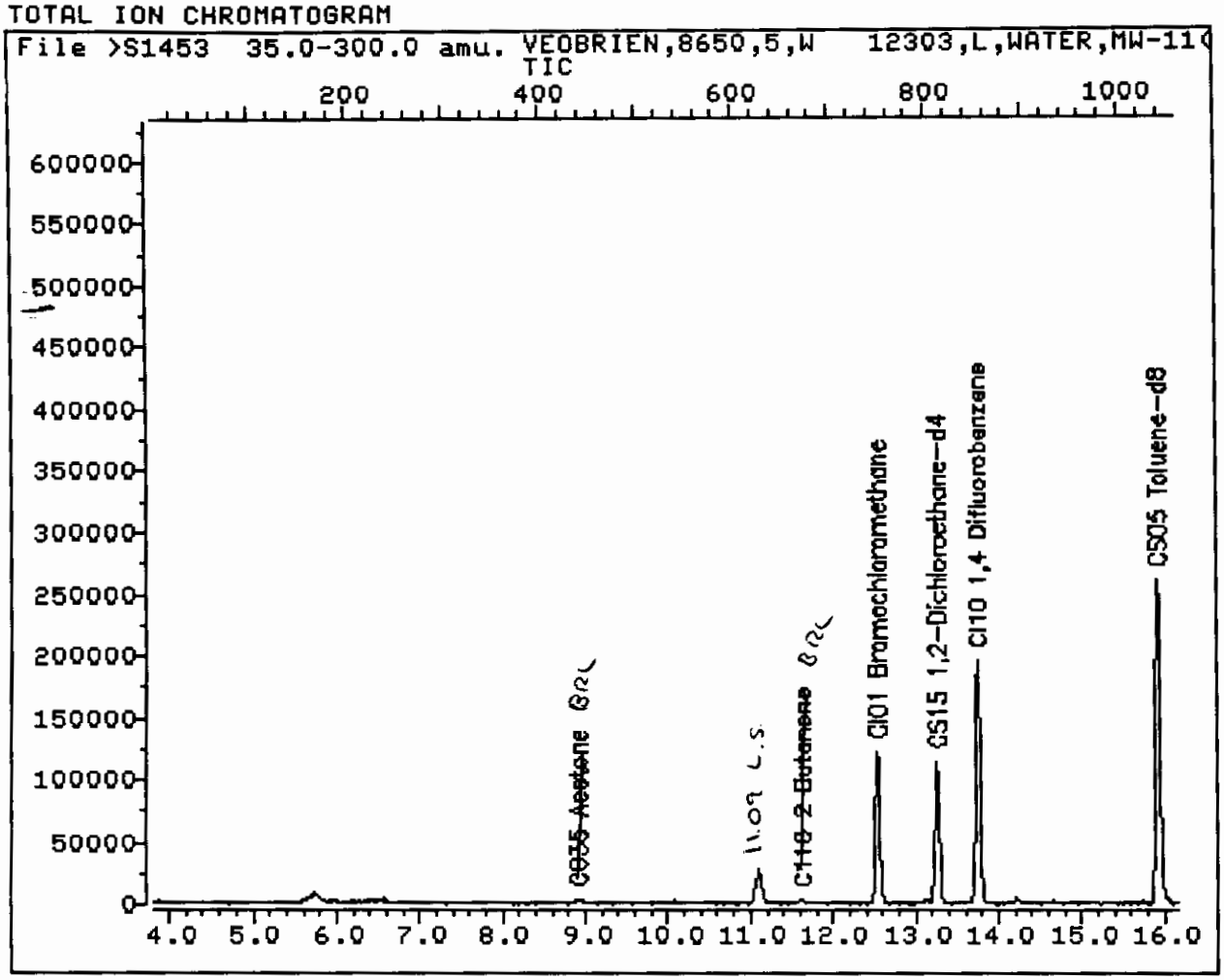
Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.09	16	J
2.	UNKNOWN CYCLIC HYDROCARBON	22.03	10	J

100016

TOTAL ION CHROMATOGRAM



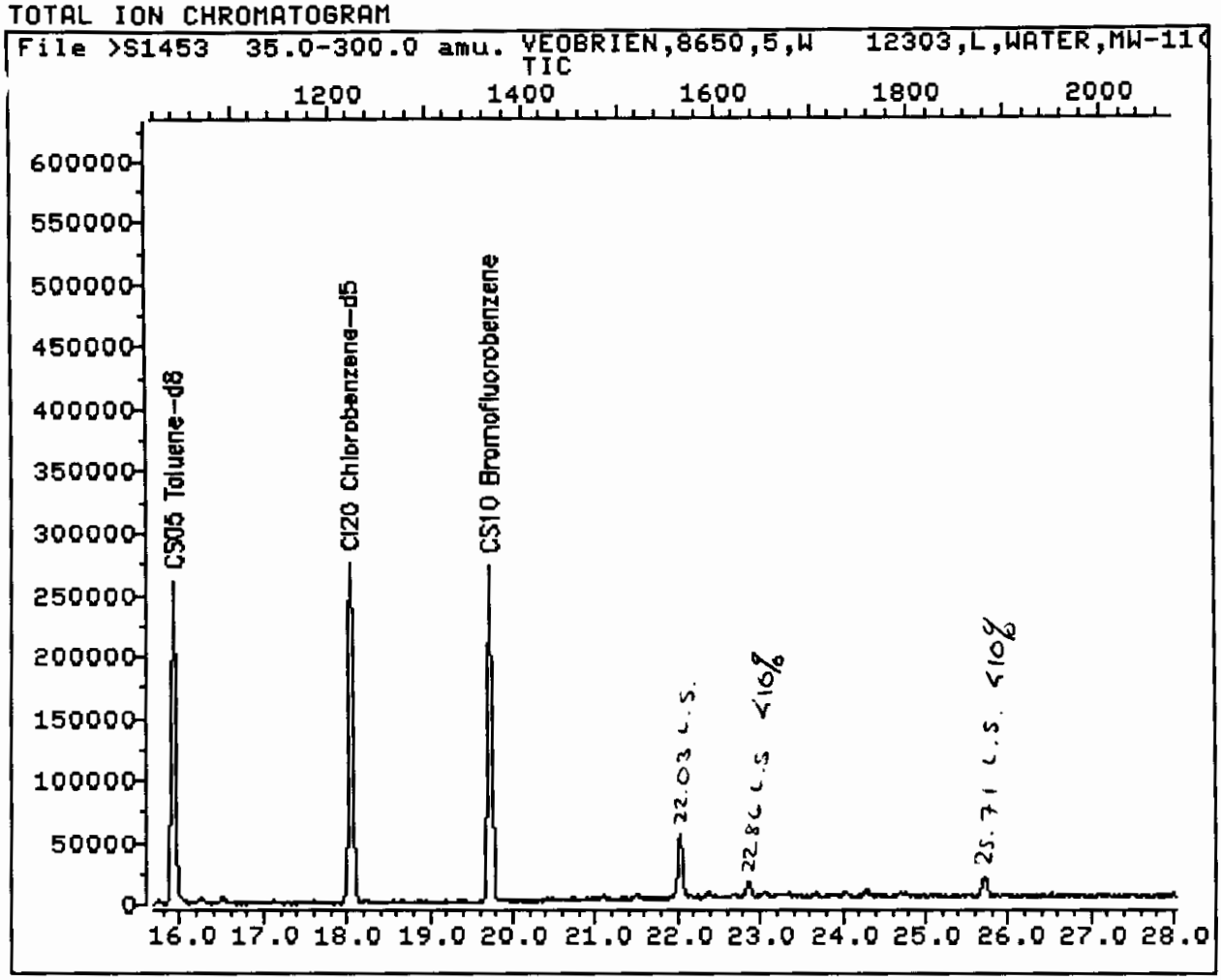
Data File: >S1453::A0 Quant Output File: ^S1453::D1
Name: VEOBRIEN,8650,5,W Instrument ID: S
Misc: 12303,L,WATER,MW-11(S),V,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931109 10:30

Operator ID: MIKE
Quant Time : 931109 13:55
Injected at: 931109 13:27

Page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >S1453::A0 Quant Output File: ^S1453::D1
Name: VEOBRIEN,8650,5,W Instrument ID: S
Misc: 12303,L,WATER,MW-11(S),V,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931109 10:30

Operator ID: MIKE
Quant Time : 931109 13:55
Injected at: 931109 13:27

QUANT REPORT

Operator ID: MIKE
Quant Rev: 7
Quant Time: 931109 13:55
Input File: ^S1453::D1
Injected at: 931109 13:27
Data File: >S1453::A0
Dilution Factor: 1.00000
Name: VEOBRIEN,8650,5,W
Instrument ID: S
Misc: 12303,L,WATER,MW-11(S),V,5ML

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07
Last Qcal Time: 931109 10:30

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01 Bromochloromethane	12.54	128.0	46229	50.00	UG/L	96
9)	C035 Acetone	8.91	43.0	8134	~~2.36 UG/~~L BRC		99
16)	CS15 1,2-Dichloroethane-d4	13.26	65.0	157193	53.37	UG/L	99
18)	C110 2 Butanone	11.63	43.0	2740	~~1.67 UG/L~~ BRC		43
22)	*CI10 1,4 Difluorobenzene	13.75	114.0	229219	50.00	UG/L	93
36)	*CI20 Chlorobenzene-d5	18.05	117.0	257265	50.00	UG/L	98
42)	CS05 Toluene-d8	15.92	98.0	311072	50.56	UG/L	99
48)	CS10 Bromofluorobenzene	19.73	95.0	208698	50.56	UG/L	94

* Compound is ISTD

Compliant run

CMA 11/9/93

QA/QC Check Report

Data File: >S1453 Analysis Time: 11/09/93 13:27
[illegible]e: VEOBRIEN,8650,5,W
[illegible]sc: 12303,L,WATER,MW-11(S),V,5ML

==========

Internal Standard Comparison
Std Data File: >S1449
Analysis Time: 11/09/93 10:30

Internal Standard	Sample Area	Std Area	%
CI01 Bromochloromethane	46229	60114	76.9
CI10 1,4 Difluorobenzene	229219	306772	74.7
CI20 Chlorobenzene-d5	257265	332583	77.4

% = (Sample Area/Std Area)*100
* Area outside limits

==========

Surrogate Recovery Summary

Surrogate Compound	Added	(Corr.) Found	%Rec	QC Limits Lower	Upper
CS15 1,2-Dichloroethane-d4	50	53	106	76	114
CS05 Toluene-d8	50	51	102	88	110
[illegible]10 Bromofluorobenzene	50	51	102	86	115

* Recovery value outside limits

Compliant run

[illegible] 11/9/93

MS data file header from : >S1453::A0

ıple: VEOBRIEN,8650,5,W Operator: MIKE REG. GRP. 11/09/93 13:27
ısc : 12303,L,WATER,MW-11(S),V,5ML
Sys. #: 1 MS model: 70 SW/HW rev.: LF ALS # : 0 Equip ID: S
Method file: MET826 Tuning file: BFBHP2 No. of extra records: 2
Source temp.: N/A Analyzer temp.: N/A Transfer line temp. : 0

Chromatographic temperatures :	10.	240.	240.	0.	0.
Chromatographic times, min. :	2.0	0.0	12.0	0.0	0.0
Chromatographic rate, deg/min:	12.0	12.0	0.0	.2	0.0

>S1453 VEOBRIEN,8650,5,W 12303,L,WATER,MW-11(S),V,5ML
35.0| 300.0 CLP TIC
Upslope: .2000 Area Reject: 44000. Max Peaks: 4 Bunch: -1 Valley >100 %
Dnslope: 0.0000 Results File IS1453 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	11.09	614	625	640	26590	171132	143674	71.53	30.331
2	22.03	1554	1562	1569	51242	263519	200868	100.00	42.406
3	22.86	1625	1633	1640	12709	125836	58412	29.08	12.331
4	25.71	1870	1877	1884	15499	140462	70729	35.21	14.932

Sum of corrected areas: 473683.

Summary of Unknowns PBM Library Search and Quantitation

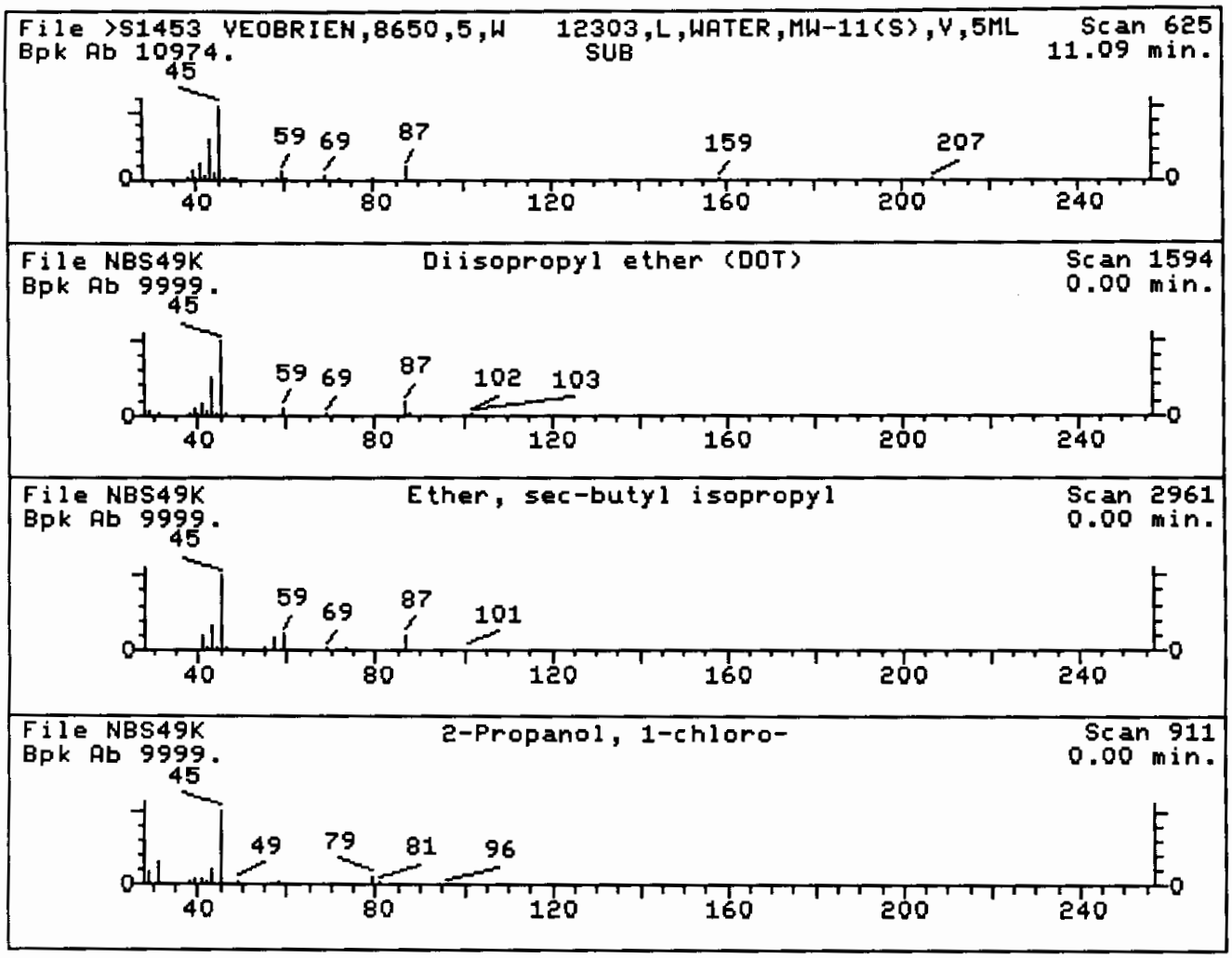
Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	440000.	12.54	3.81 - 13.15
2	50.0	704483.	13.75	13.15 - 15.90
3	50.0	1012110.	18.05	15.90 - 28.03

Dilution Factor = 1.00 This sample was 5.00000 g or mL

Correction Factor = 1.00

$$\text{Unknown Concentration} = \left| \frac{\text{Conc Int Std} * \text{Area Unknown}}{\text{Area Int Std}} \right| * \text{Correction Factor}$$

2:08 PM TUE., 9 NOV., 1993



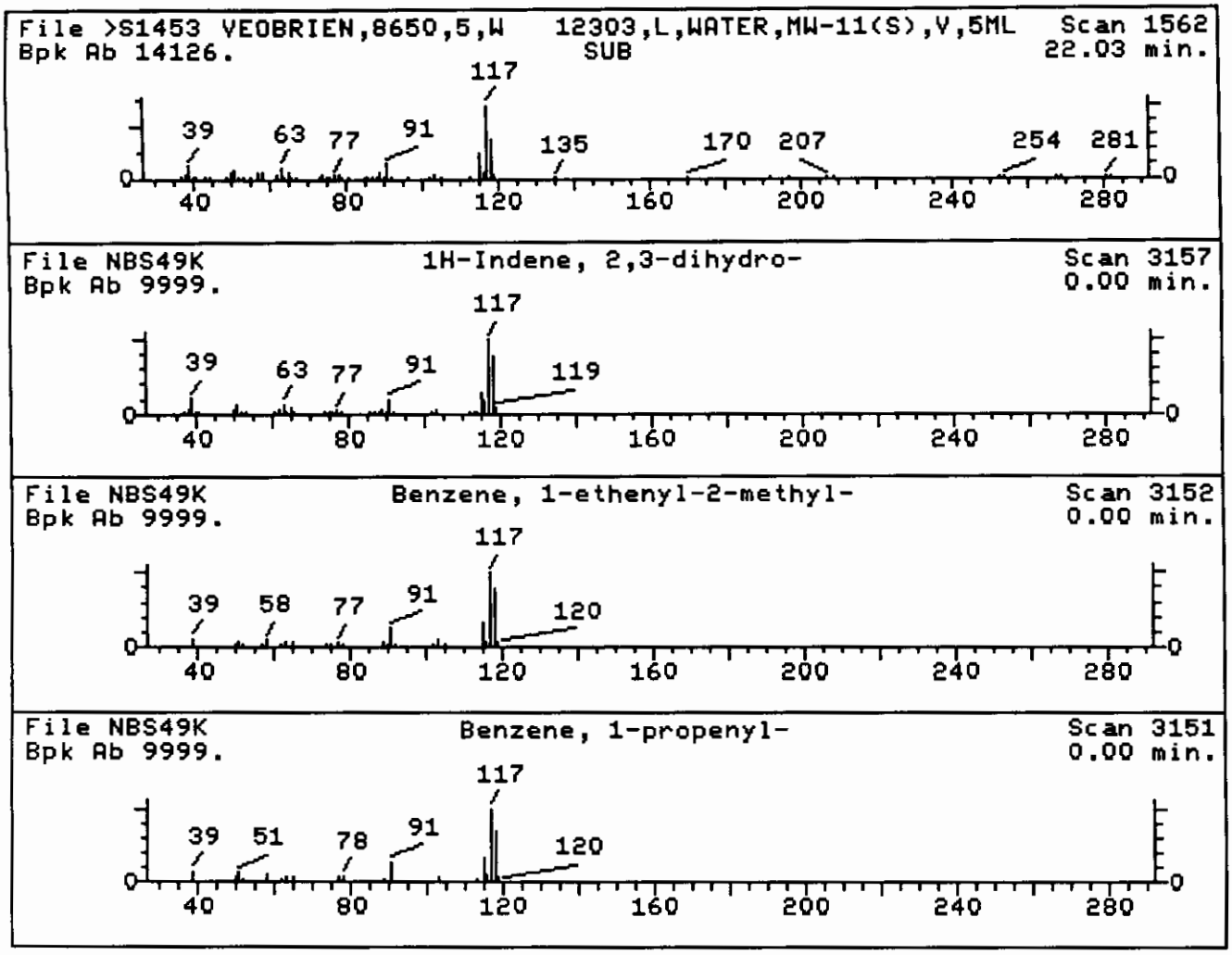
Instrument ID: S Analyzed on: 11/09/93 13:27
Result 1 in PBM results file: LS1453
Retention Time: 11.09 Area: 143674 Tentative Conc: 16.00
The unknown area is 32.65% of the nearest internal standard

1.	Diisopropyl ether (DOT)	102	C6H14O
2.	Ether, sec-butyl isopropyl	116	C7H16O
3.	2-Propanol, 1-chloro-	94	C3H7ClO
4.	Propane, 2-methyl-1-propoxy-	116	C7H16O
5.	Methane, chloromethoxy-	80	C2H5ClO

Unknown

Sample file: >S1453 Spectrum #: 625
Search speed: 1 Tilting option: N No. of ion ranges searched: 33

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	60	108203	7236	NBS49K	44	38	1	0	99	12	30	15
2.	52	18641811	7261	NBS49K	36	46	2	0	91	20	20	12
3.	52*	127004	347	NBS49K	28	61	2	0	100	20	20	14
4.	43*	15268492	7260	NBS49K	26	60	2	0	74	22	17	14
5.	43*	107302	445	NBS49K	24	69	2	0	100	22	17	14



Instrument ID: S Analyzed on: 11/09/93 13:27
Result 2 in PBM results file: LS1453
Retention Time: 22.03 Area: 200868 Tentative Conc: 10.00
The unknown area is 19.85% of the nearest internal standard

1. 1H-Indene, 2,3-dihydro- 118 C9H10
2. Benzene, 1-ethenyl-2-methyl- 118 C9H10
3. Benzene, 1-propenyl- 118 C9H10
4. Benzene, 2-propenyl- 118 C9H10
5. Benzene, ethenylmethyl- 118 C9H10

Unknown cyclic-C ~~substituted~~ ~~Benzene~~

Sample file: >S1453 Spectrum #: 1562
Search speed: 1 Tilting option: N No. of ion ranges searched: 41

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	67*	496117	13350	NBS49K	53	47	2	0	69	15	34	28
2.	66*	611154	13346	NBS49K	61	32	2	0	70	18	31	46
3.	58*	637503	13345	NBS49K	53	45	2	0	73	18	25	28
4.	32*	300572	13344	NBS49K	48	49	2	0	57	43	12	23
5.	31*	25013154	13348	NBS49K	46	51	2	0	54	43	12	22

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-12(S)

L Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12300

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: S1445

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/08/93

GC Column: CAP ID: 0.320 (mm) Dilution Factor: 1.0

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

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

100024

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-12(S)

I-' Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12300

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: S1445

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/08/93

GC Column: CAP ID: 0.320 (mm) Dilution Factor: 1.0

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

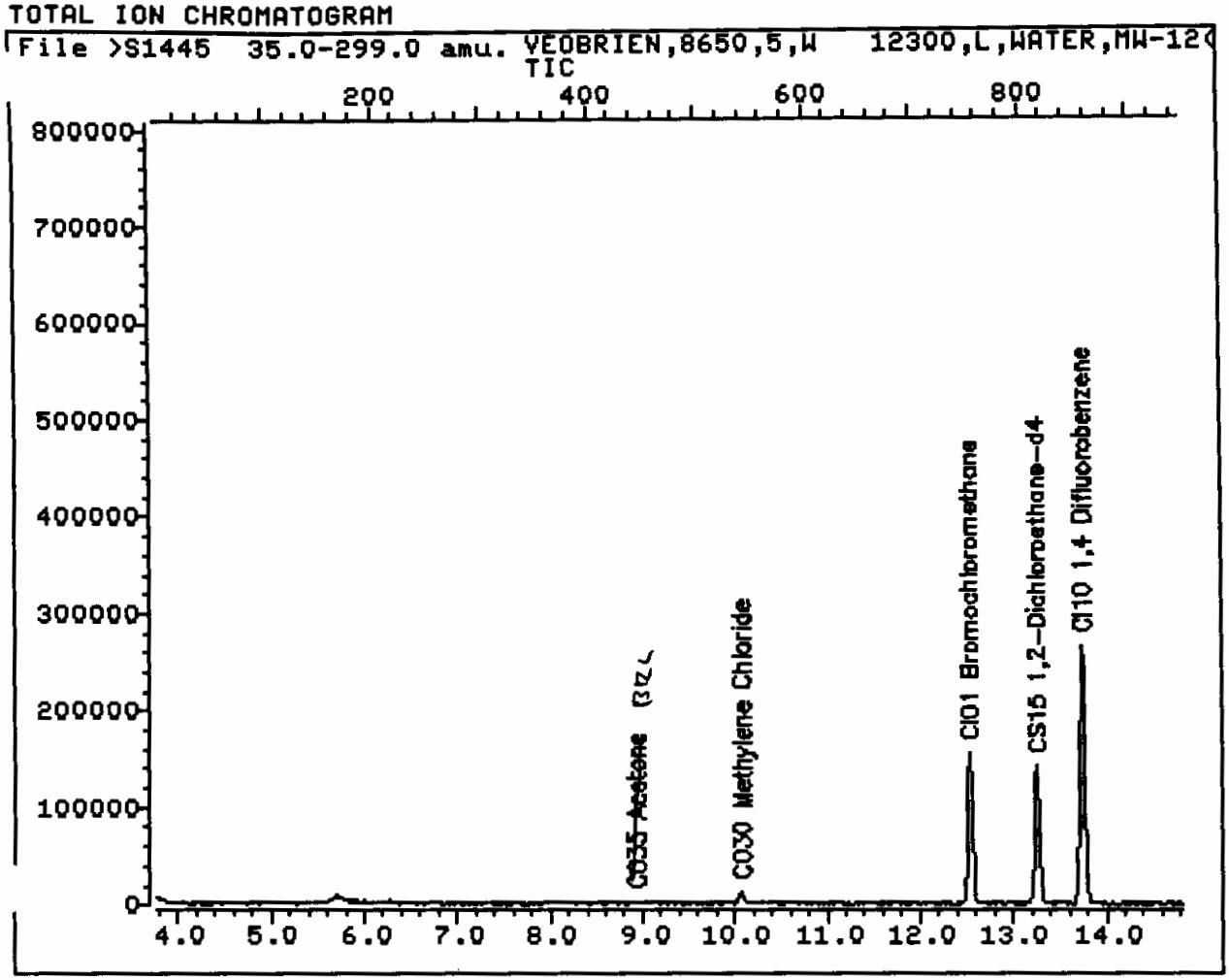
Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

100025

TOTAL ION CHROMATOGRAM



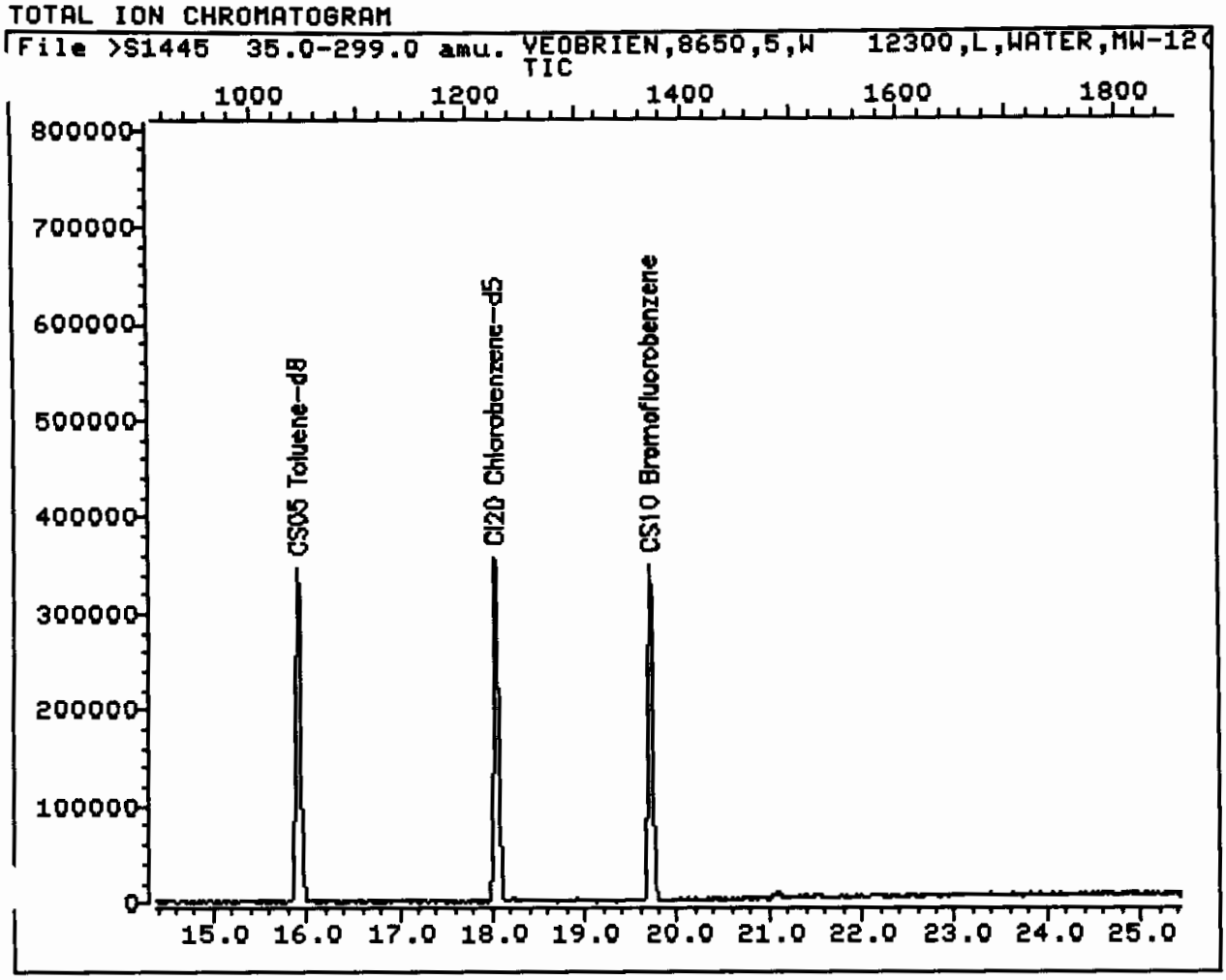
Data File: >S1445::A0 Quant Output File: ^S1445::D1
Name: VEOBRIEN,8650,5,W Instrument ID: S
Misc: 12300,L,WATER,MW-12(S),V,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

Operator ID: MIKE
Quant Time : 931109 07:53
Injected at: 931108 19:20

Page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >S1445::A0 Quant Output File: ^S1445::D1
Name: VEOBRIEN,8650,5,W Instrument ID: S
Misc: 12300,L,WATER,MW-12(S),V,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

Operator ID: MIKE
Quant Time : 931109 07:53
Injected at: 931108 19:20

QUANT REPORT

Operator ID: MIKE
Quant Rev: 7
Quant Time: 931109 07:53
Input File: ^S1445::D1
Injected at: 931108 19:20
Data File: >S1445::A0
Dilution Factor: 1.00000
Name: VEOBRIEN,8650,5,W
Instrument ID: S
Misc: 12300,L,WATER,MW-12(S),V,5ML

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07
Last Qcal Time: 931108 14:05

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*CI01 Bromochloromethane	12.53	752	63778	50.00	UG/L	89
8)	C030 Methylene Chloride	10.07	541	9374	~~3.22 UG/L~~ BRL		88
9)	C035 Acetone	8.93	443	5944	~~1.41 UG/L~~ BRL		98
16)	CS15 1,2-Dichloroethane-d4	13.26	814	200976	49.63	UG/L	97
22)	*CI10 1,4 Difluorobenzene	13.75	856	333349	50.00	UG/L	99
36)	*CI20 Chlorobenzene-d5	18.04	1224	352756	50.00	UG/L	99
42)	CS05 Toluene-d8	15.92	1042	422613	48.37	UG/L	96
48)	CS10 Bromofluorobenzene	19.72	1368	269818	49.50	UG/L	90

* Compound is ISTD

Compliant run
[illegible] 11/9/93

QA/QC Check Report

a File: >S1445 Analysis Time: 11/08/93 19:20
Name: VEOBRIEN,8650,5,W
Misc: 12300,L,WATER,MW-12(S),V,5ML

==========

Internal Standard Comparison
Std Data File: >S1436
Analysis Time: 11/08/93 14:05

Internal Standard	Sample Area	Std Area	%
CI01 Bromochloromethane	63778	67600	94.3
CI10 1,4 Difluorobenzene	333349	366329	91.0
CI20 Chlorobenzene-d5	352756	373834	94.4

% = (Sample Area/Std Area)*100
* Area outside limits

==========

Surrogate Recovery Summary

Surrogate Compound	Added	(Corr.) Found	%Rec	QC Limits Lower	Upper
CS15 1,2-Dichloroethane-d4	50	50	100	76	114
5 Toluene-d8	50	48	96	88	110
CS10 Bromofluorobenzene	50	50	100	86	115

* Recovery value outside limits

Compliant run

11/9/93

MS data file header from : >S1445::A0

ple: VEOBRIEN,8650,5,W Operator: MIKE REG. GRP. 11/08/93 19:20
Misc : 12300,L,WATER,MW-12(S),V,5ML
Sys. #: 1 MS model: 70 SW/HW rev.: LF ALS # : 0 Equip ID: S
Method file: MET826 Tuning file: BFBHP2 No. of extra records: 2
Source temp.: N/A Analyzer temp.: N/A Transfer line temp. : 0

Chromatographic temperatures :	0.	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.0	0.0

No peaks found.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	562910.	12.53	3.77 - 13.14
2	50.0	961913.	13.75	13.14 - 15.89
3	50.0	1317899.	18.04	15.89 - 25.43

Dilution Factor = 1.00 This sample was 5.00000 g or mL

Correction Factor = 1.00

$$\text{Unknown Concentration} = \left| \frac{\text{Conc Int Std} * \text{Area Unknown}}{\text{Area Int Std}} \right| * \text{Correction Factor}$$

9:11 AM TUE., 9 NOV., 1993

None Detected

CMA 11/9/93

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-14(S)

J Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12301

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: S1451

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.320 (mm) Dilution Factor: 1.0

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

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

100031

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-14(S)

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12301

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: S1451

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.320 (mm) Dilution Factor: 1.0

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

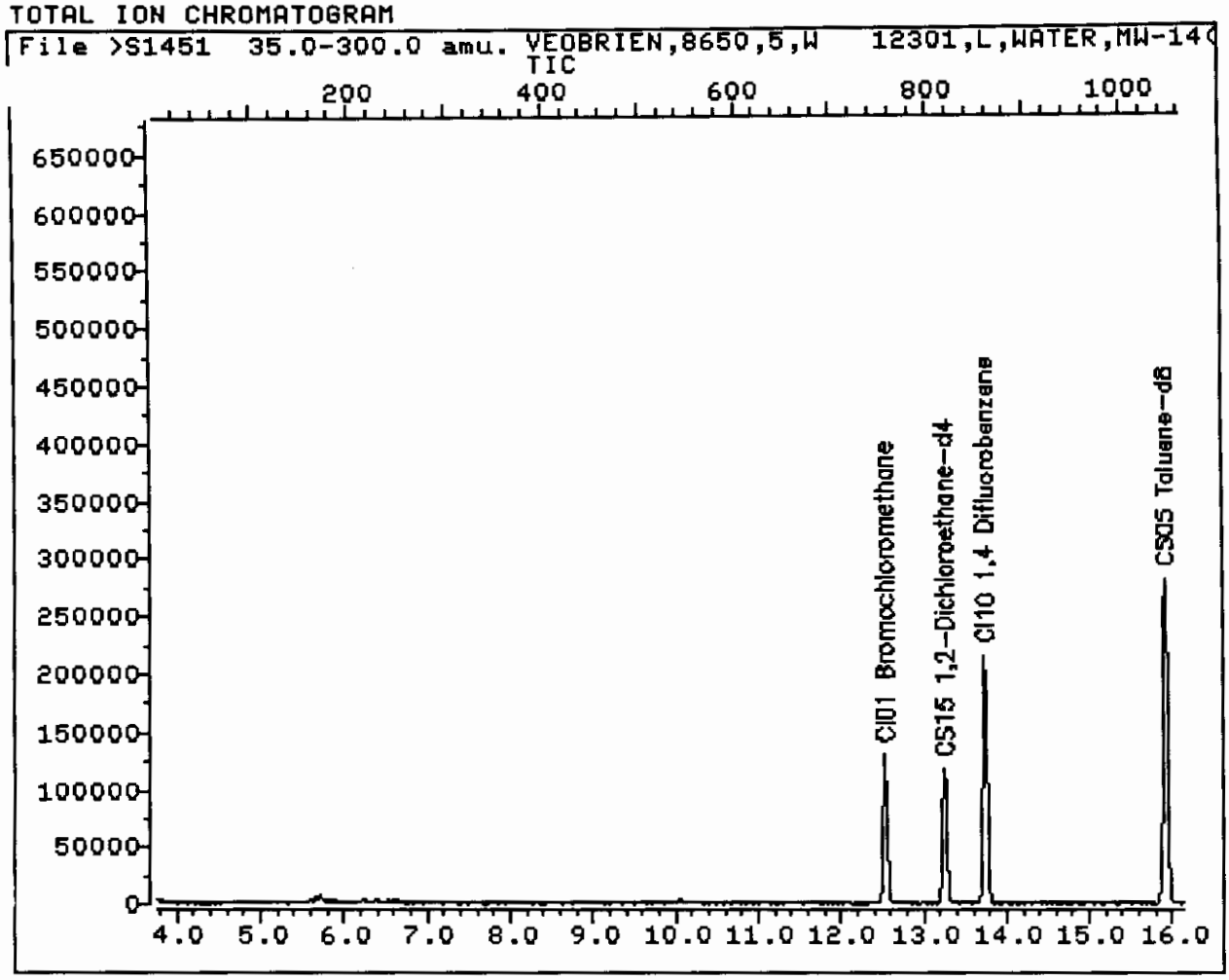
Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

100032

TOTAL ION CHROMATOGRAM



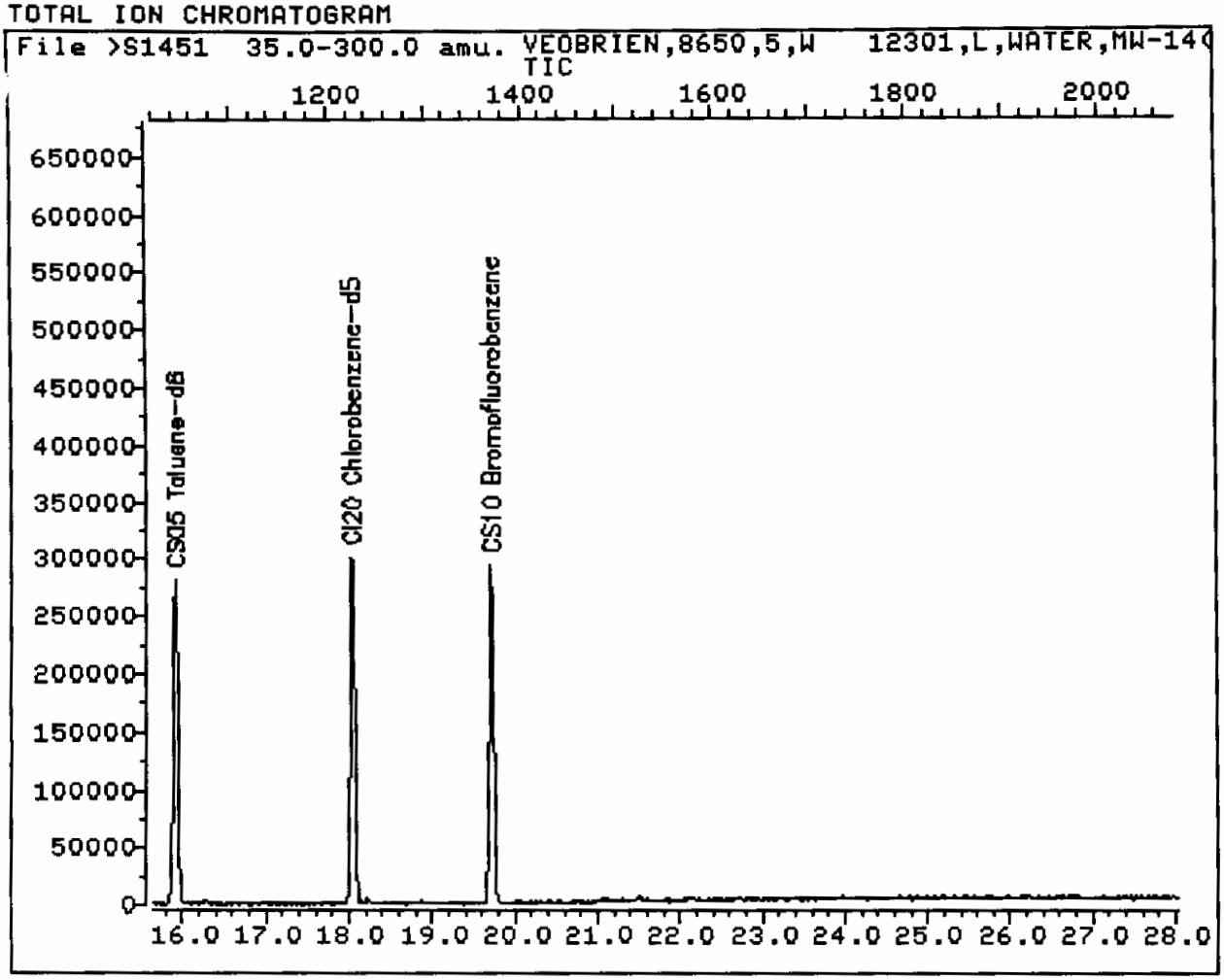
Data File: >S1451::A0 Quant Output File: ^S1451::D1
Name: VEOBRIEN,8650,5,W Instrument ID: S
Misc: 12301,L,WATER,MW-14(S),V,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931109 10:30

Operator ID: MIKE
Quant Time : 931109 12:48
Injected at: 931109 12:19

Page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >S1451::A0 Quant Output File: ^S1451::D1
Name: VEOBRIEN,8650,5,W Instrument ID: S
Misc: 12301,L,WATER,MW-14(S),V,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931109 10:30

Operator ID: MIKE
Quant Time : 931109 12:48
Injected at: 931109 12:19

QUANT REPORT

Operator ID: MIKE
Quant Rev: 7
Quant Time: 931109 12:48
Input File: ^S1451::D1
Injected at: 931109 12:19
Data File: >S1451::A0
Dilution Factor: 1.00000
Name: VEOBRIEN,8650,5,W
Instrument ID: S
Misc: 12301,L,WATER,MW-14(S),V,5ML

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07
Last Qcal Time: 931109 10:30

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01 Bromochloromethane	12.54	128.0	49549	50.00	UG/L	98
16)	CS15 1,2-Dichloroethane-d4	13.26	65.0	161970	51.31	UG/L	98
22)	*CI10 1,4 Difluorobenzene	13.75	114.0	254817	50.00	UG/L	96
36)	*CI20 Chlorobenzene-d5	18.04	117.0	285508	50.00	UG/L	98
42)	CS05 Toluene-d8	15.92	98.0	338728	49.61	UG/L	97
48)	CS10 Bromofluorobenzene	19.72	95.0	224884	49.09	UG/L	96

* Compound is ISTD

Continual run

CWS 11/9/93

QA/QC Check Report

Data File: >S1451 Analysis Time: 11/09/93 12:19
[illegible]e: VEOBRIEN,8650,5,W
[illegible]c: 12301,L,WATER,MW-14(8),V,5ML

==========

Internal Standard Comparison
Std Data File: >S1449
Analysis Time: 11/09/93 10:30

Internal Standard	Sample Area	Std Area	%
CI01 Bromochloromethane	49549	60114	82.4
CI10 1,4 Difluorobenzene	254817	306772	83.1
CI20 Chlorobenzene-d5	285508	332583	85.8

% = (Sample Area/Std Area)*100
* Area outside limits

==========

Surrogate Recovery Summary

Surrogate Compound	Added	(Corr.) Found	%Rec	QC Limits Lower	Upper
CS15 1,2-Dichloroethane-d4	50	51	102	76	114
CS05 Toluene-d8	50	50	100	88	110
C[illegible]10 Bromofluorobenzene	50	49	98	86	115

* Recovery value outside limits

Compliant run

CMA 11/9/93

MS data file header from : >S1451::A0

ıple: VEOBRIEN,8650,5,W Operator: MIKE REG. GRP. 11/09/93 12:19
ıisc : 12301,L,WATER,MW-14(S),V,5ML
Sys. #: 1 MS model: 70 SW/HW rev.: LF ALS # : 0 Equip ID: S
Method file: MET826 Tuning file: BFBHP2 No. of extra records: 2
Source temp.: N/A Analyzer temp.: N/A Transfer line temp. : 0

Chromatographic temperatures :	10.	240.	240.	0.	0.
Chromatographic times, min. :	2.0	0.0	12.0	0.0	0.0
Chromatographic rate, deg/min:	12.0	12.0	0.0	.2	0.0

No peaks found.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	456246.	12.54	3.76 - 13.14
2	50.0	774929.	13.75	13.14 - 15.90
3	50.0	1099768.	18.04	15.90 - 28.03

Dilution Factor = 1.00 This sample was 5.00000 g or mL

ɔrrection Factor = 1.00

$$\text{Unknown Concentration} = \left| \frac{\text{Conc Int Std} * \text{Area Unknown}}{\text{Area Int Std}} \right| * \text{Correction Factor}$$

1:31 PM TUE., 9 NOV., 1993

None Detected

CMA 11/9/93

100037

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-15(S)

Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12302

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: S1452

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.320 (mm) Dilution Factor: 1.0

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-15(S)

I··· Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12302

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: S1452

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.320 (mm) Dilution Factor: 1.0

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

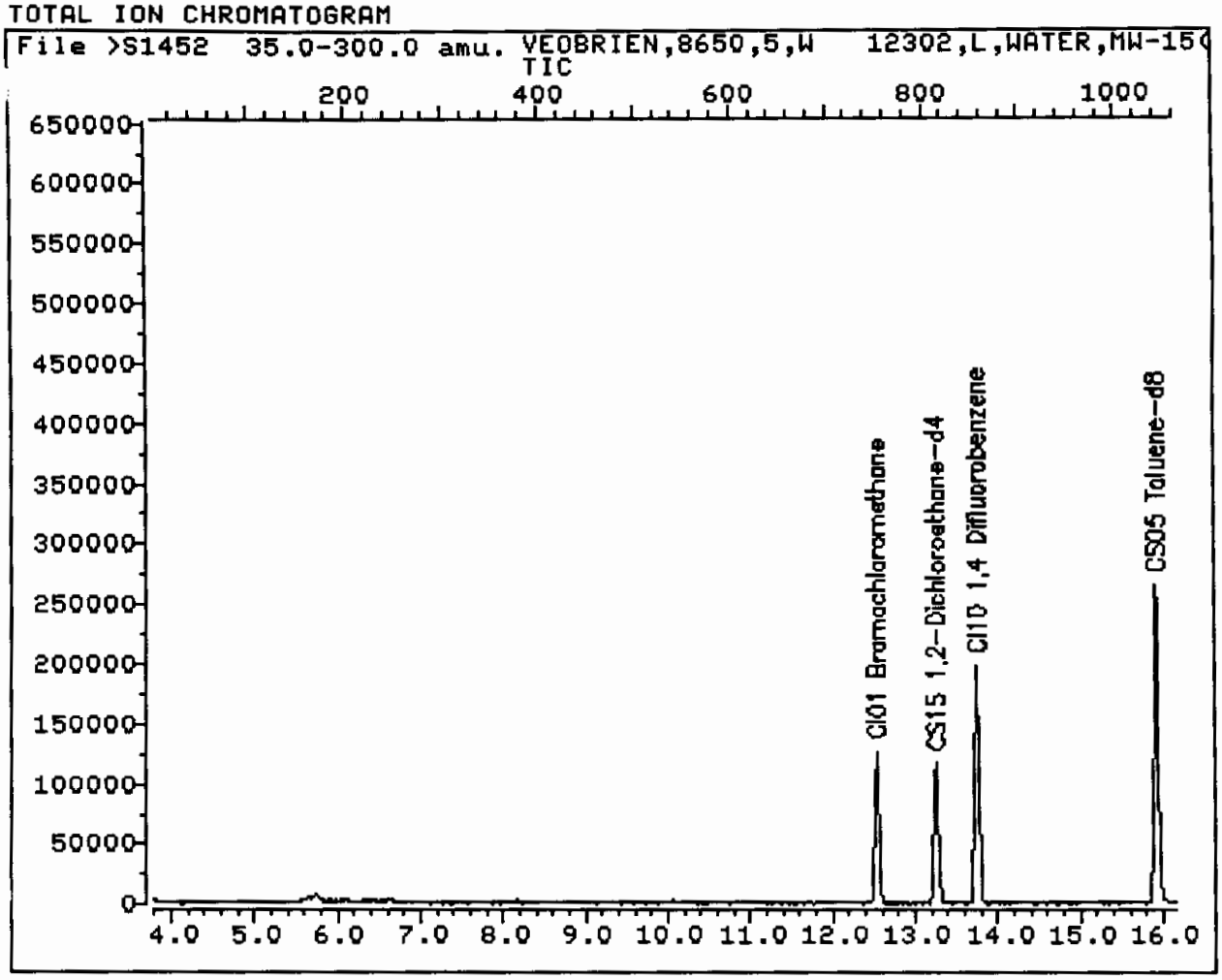
Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

100039

TOTAL ION CHROMATOGRAM



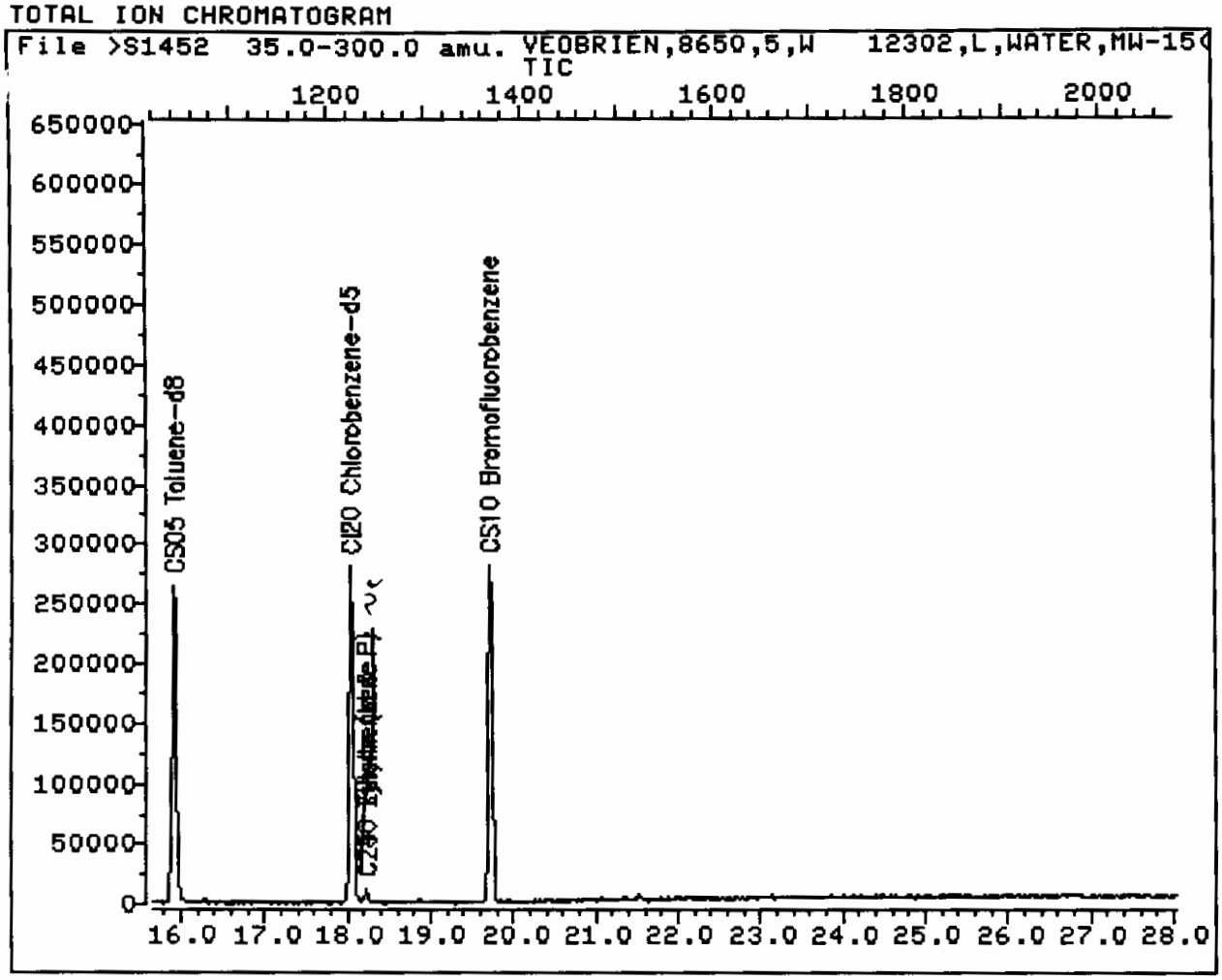
Data File: >S1452::A0 Quant Output File: ^S1452::D1
Name: VEOBRIEN,8650,5,W Instrument ID: S
Misc: 12302,L,WATER,MW-15(S),V,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931109 10:30

Operator ID: MIKE
Quant Time : 931109 13:22
Injected at: 931109 12:52

Page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >S1452::A0 Quant Output File: ^S1452::D1
Name: VEOBRIEN,8650,5,W Instrument ID: S
Misc: 12302,L,WATER,MW-15(S),V,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931109 10:30

Operator ID: MIKE
Quant Time : 931109 13:22
Injected at: 931109 12:52

Page 2 of 2

QUANT REPORT

Operator ID: MIKE
Input File: ^S1452::D1
Data File: >S1452::A0
Name: VEOBRIEN,8650,5,W
Misc: 12302,L,WATER,MW-15(S),V,5ML

Quant Rev: 7
Quant Time: 931109 13:22
Injected at: 931109 12:52
Dilution Factor: 1.00000
Instrument ID: S

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07
Last Qcal Time: 931109 10:30

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01 Bromochloromethane	12.53	128.0	47786	50.00	UG/L	98
16)	CS15 1,2-Dichloroethane-d4	13.26	65.0	158462	52.05	UG/L	99
22)	*CI10 1,4 Difluorobenzene	13.75	114.0	232374	50.00	UG/L	96
36)	*CI20 Chlorobenzene-d5	18.04	117.0	266835	50.00	UG/L	96
42)	CS05 Toluene-d8	15.92	98.0	315051	49.37	UG/L	97
44)	C240 Ethylbenzene	18.21	106.0	4684	~~1.80~~	~~UG/L~~ NC	81
46)	C250 Xylene (M & P)	18.21	106.0	4684	~~1.43~~	~~UG/L~~ BRL	90
48)	CS10 Bromofluorobenzene	19.72	95.0	217372	50.77	UG/L	95

* Compound is ISTD

Compliant run

CMS 11/9/93

QA/QC Check Report

Data File: >S1452 Analysis Time: 11/09/93 12:52
e: VEOBRIEN,8650,5,W
c: 12302,L,WATER,MW-15(S),V,5ML

==========

Internal Standard Comparison
Std Data File: >S1449
Analysis Time: 11/09/93 10:30

Internal Standard	Sample Area	Std Area	%
CI01 Bromochloromethane	47786	60114	79.5
CI10 1,4 Difluorobenzene	232374	306772	75.7
CI20 Chlorobenzene-d5	266835	332583	80.2

% = (Sample Area/Std Area)*100
* Area outside limits

==========

Surrogate Recovery Summary

Surrogate Compound	Added	(Corr.) Found	%Rec	QC Limits Lower	Upper
CS15 1,2-Dichloroethane-d4	50	52	104	76	114
CS05 Toluene-d8	50	49	98	88	110
CS10 Bromofluorobenzene	50	51	102	86	115

* Recovery value outside limits

Compliant run

11/9/93

MS data file header from : >S1452::A0

ıple: VEOBRIEN,8650,5,W Operator: MIKE REG. GRP. 11/09/93 12:52
Misc : 12302,L,WATER,MW-15(S),V,5ML
Sys. #: 1 MS model: 70 SW/HW rev.: LF ALS # : 0 Equip ID: S
Method file: MET826 Tuning file: BFBHP2 No. of extra records: 2
Source temp.: N/A Analyzer temp.: N/A Transfer line temp. : 0

Chromatographic temperatures :	10.	240.	240.	0.	0.
Chromatographic times, min. :	2.0	0.0	12.0	0.0	0.0
Chromatographic rate, deg/min:	12.0	12.0	0.0	.2	0.0

No peaks found.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	446246.	12.53	3.78 - 13.14
2	50.0	710774.	13.75	13.14 - 15.89
3	50.0	1040403.	18.04	15.89 - 28.03

Dilution Factor = 1.00 This sample was 5.00000 g or mL

ɔrrection Factor = 1.00

$$\text{Unknown Concentration} = \left| \frac{\text{Conc Int Std} * \text{Area Unknown}}{\text{Area Int Std}} \right| * \text{Correction Factor}$$

1:39 PM TUE., 9 NOV., 1993

None Detected

CMA 11/9/93

100044

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W-5(S)

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12144

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: S1442

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/08/93

GC Column: CAP ID: 0.320 (mm) Dilution Factor: 1.0

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

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

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

100045

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

W-5(S)

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12144

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: S1442

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/08/93

GC Column: CAP ID: 0.320 (mm) Dilution Factor: 1.0

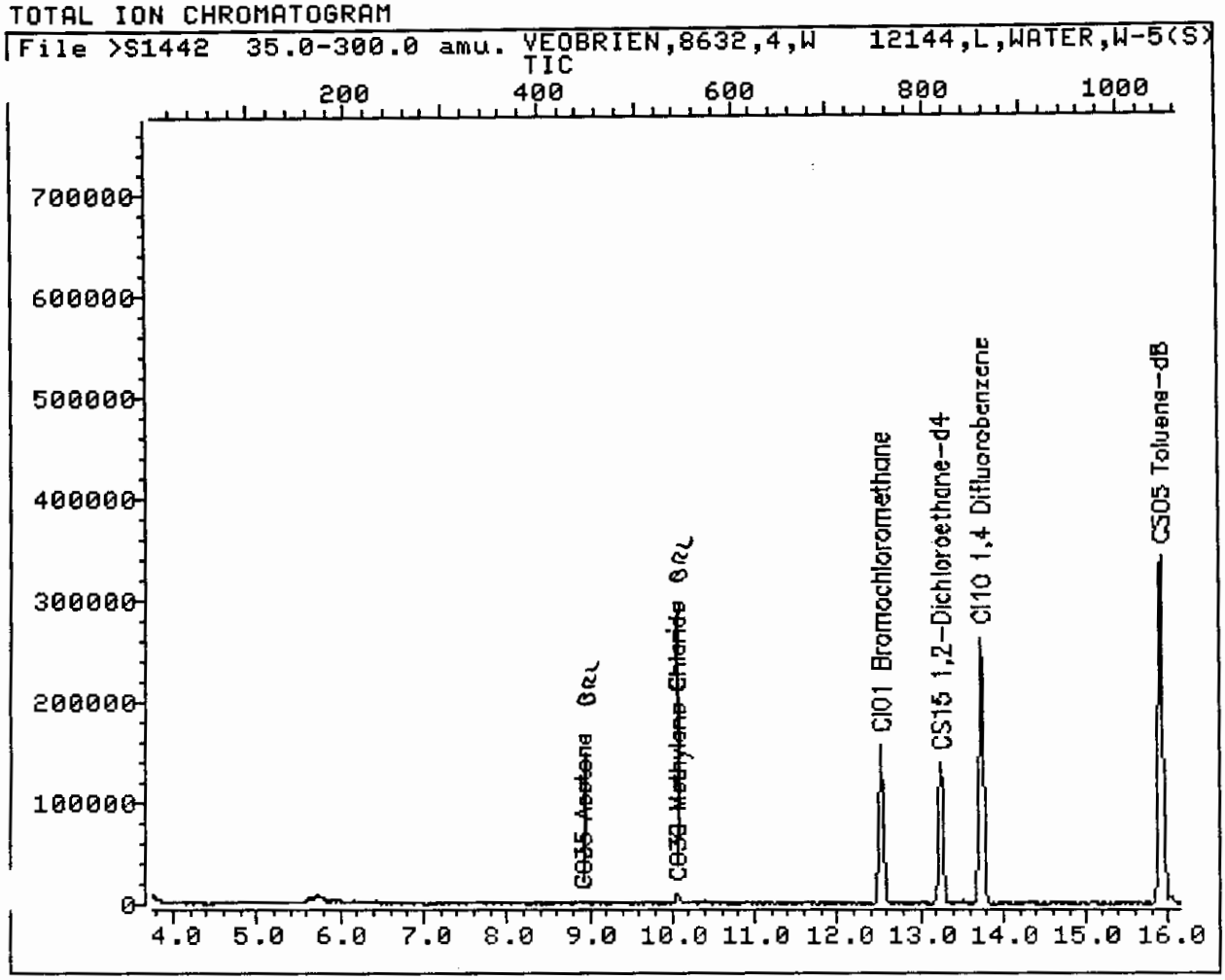
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

TOTAL ION CHROMATOGRAM

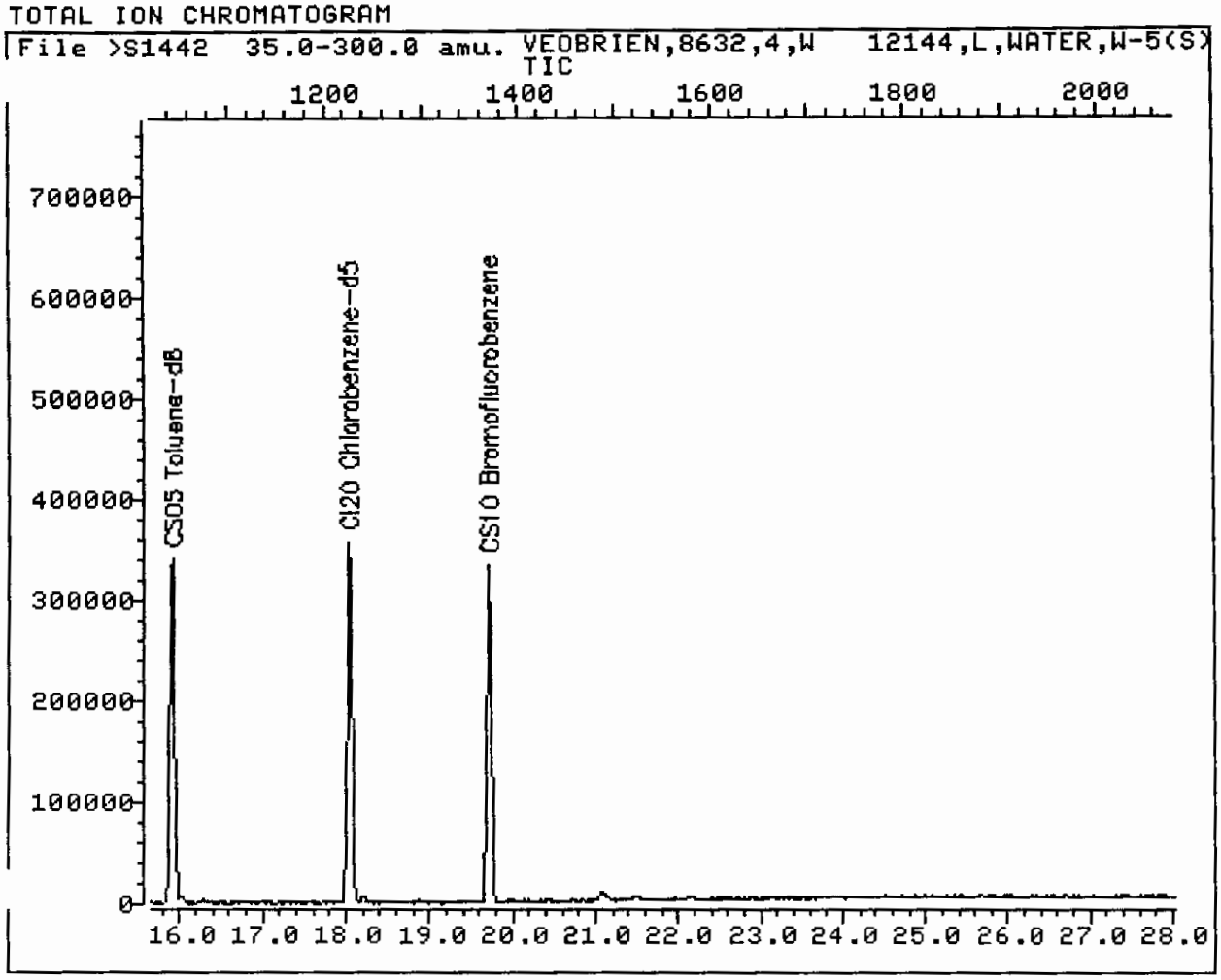


Data File: >S1442::A0 Quant Output File: ^S1442::D1
Name: VEOBRIEN,8632,4,W Instrument ID: S
Misc: 12144,L,WATER,W-5(S),V,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

Operator ID: MIKE
Quant Time : 931108 18:09
Injected at: 931108 17:41

TOTAL ION CHROMATOGRAM



Data File: >S1442::A0 Quant Output File: ^S1442::D1
Name: VEOBRIEN,8632,4,W Instrument ID: S
Misc: 12144,L,WATER,W-5(S),V,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

Operator ID: MIKE
Quant Time : 931108 18:09
Injected at: 931108 17:41

QUANT REPORT

Operator ID: MIKE
Quant Rev: 7
Quant Time: 931108 18:09
Input File: ^S1442::D1
Injected at: 931108 17:41
Data File: >S1442::A0
Dilution Factor: 1.00000
Name: VEOBRIEN,8632,4,W
Instrument ID: S
Misc: 12144,L,WATER,W-5(S),V,5ML

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07
Last Qcal Time: 931108 14:05

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01 Bromochloromethane	12.53	128.0	62989	50.00	UG/L	90
8)	C030 Methylene Chloride	10.06	84.0	7435	~~2.50 UG/L~~ BRL		84
9)	C035 Acetone	8.91	43.0	4651	~~1.11 UG/L~~ BRL		90
16)	CS15 1,2-Dichloroethane-d4	13.26	65.0	196877	49.23	UG/L	99
22)	*CI10 1,4 Difluorobenzene	13.75	114.0	328335	50.00	UG/L	98
36)	*CI20 Chlorobenzene-d5	18.04	117.0	343041	50.00	UG/L	99
42)	CS05 Toluene-d8	15.92	98.0	420644	49.51	UG/L	95
48)	CS10 Bromofluorobenzene	19.72	95.0	265344	50.06	UG/L	92

* Compound is ISTD

Compliant run

[illegible] 11/9/93

QA/QC Check Report

Data File: >S1442 Analysis Time: 11/08/93 17:41
Name: VEOBRIEN,8632,4,W
Misc: 12144,L,WATER,W-5(S),V,5ML

==========

Internal Standard Comparison
Std Data File: >S1436
Analysis Time: 11/08/93 14:05

Internal Standard	Sample Area	Std Area	%
CI01 Bromochloromethane	62989	67600	93.2
CI10 1,4 Difluorobenzene	328335	366329	89.6
CI20 Chlorobenzene-d5	343041	373834	91.8

% = (Sample Area/Std Area)*100
* Area outside limits

==========

Surrogate Recovery Summary

Surrogate Compound	Added	(Corr.) Found	%Rec	QC Limits Lower	Upper
CS15 1,2-Dichloroethane-d4	50	49	98	76	114
CS05 Toluene-d8	50	50	100	88	110
CS20 Bromofluorobenzene	50	50	100	86	115

* Recovery value outside limits

Compliant run

11/9/93

100050

MS data file header from : >S1442::A0

ple: VEOBRIEN,8632,4,W Operator: MIKE REG. GRP. 11/08/93 17:41
c : 12144,L,WATER,W-5(S),V,5ML
Sys. #: 1 MS model: 70 SW/HW rev.: LF ALS # : 0 Equip ID: S
Method file: MET826 Tuning file: BFBHP2 No. of extra records: 2
Source temp.: N/A Analyzer temp.: N/A Transfer line temp. : 0

Chromatographic temperatures :	10.	240.	240.	0.	0.
Chromatographic times, min. :	2.0	0.0	12.0	0.0	0.0
Chromatographic rate, deg/min:	12.0	12.0	0.0	.2	0.0

No peaks found.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	553960.	12.53	3.75 - 13.14
2	50.0	972205.	13.75	13.14 - 15.89
3	50.0	1291080.	18.04	15.89 - 28.03

Dilution Factor = 1.00 This sample was 5.00000 g or mL

Correction Factor = 1.00

$$\text{Unknown Concentration} = \left| \frac{\text{Conc Int Std} * \text{Area Unknown}}{\text{Area Int Std}} \right| * \text{Correction Factor}$$

6:19 PM MON., 8 NOV., 1993

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W-100

Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12304

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: S1455

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.320 (mm) Dilution Factor: 1.0

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

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

100052

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

W-100

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12304

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: S1455

Level: (low/med) LOW Date Received: 11/05/93

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.320 (mm) Dilution Factor: 1.0

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

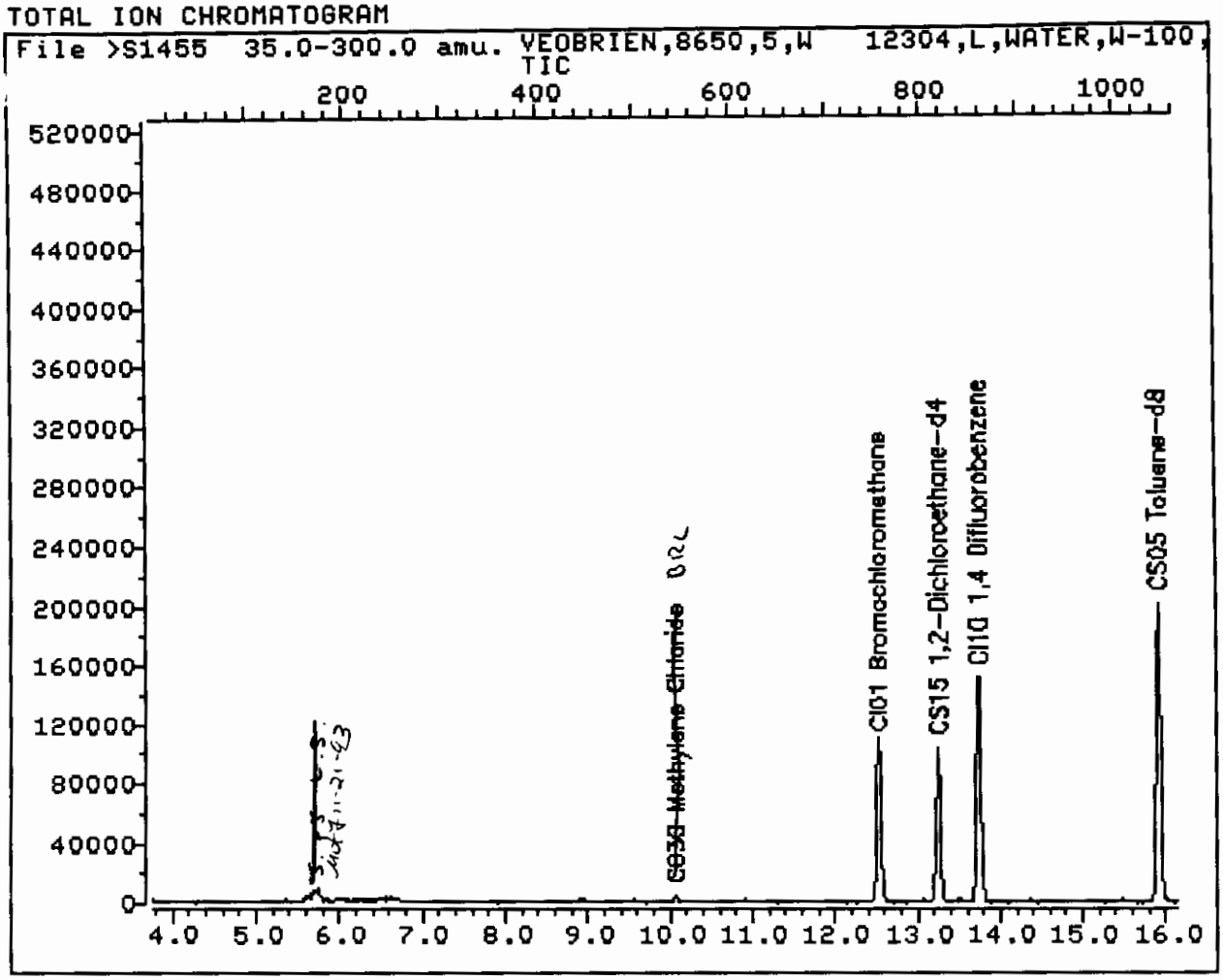
Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

100053

TOTAL ION CHROMATOGRAM



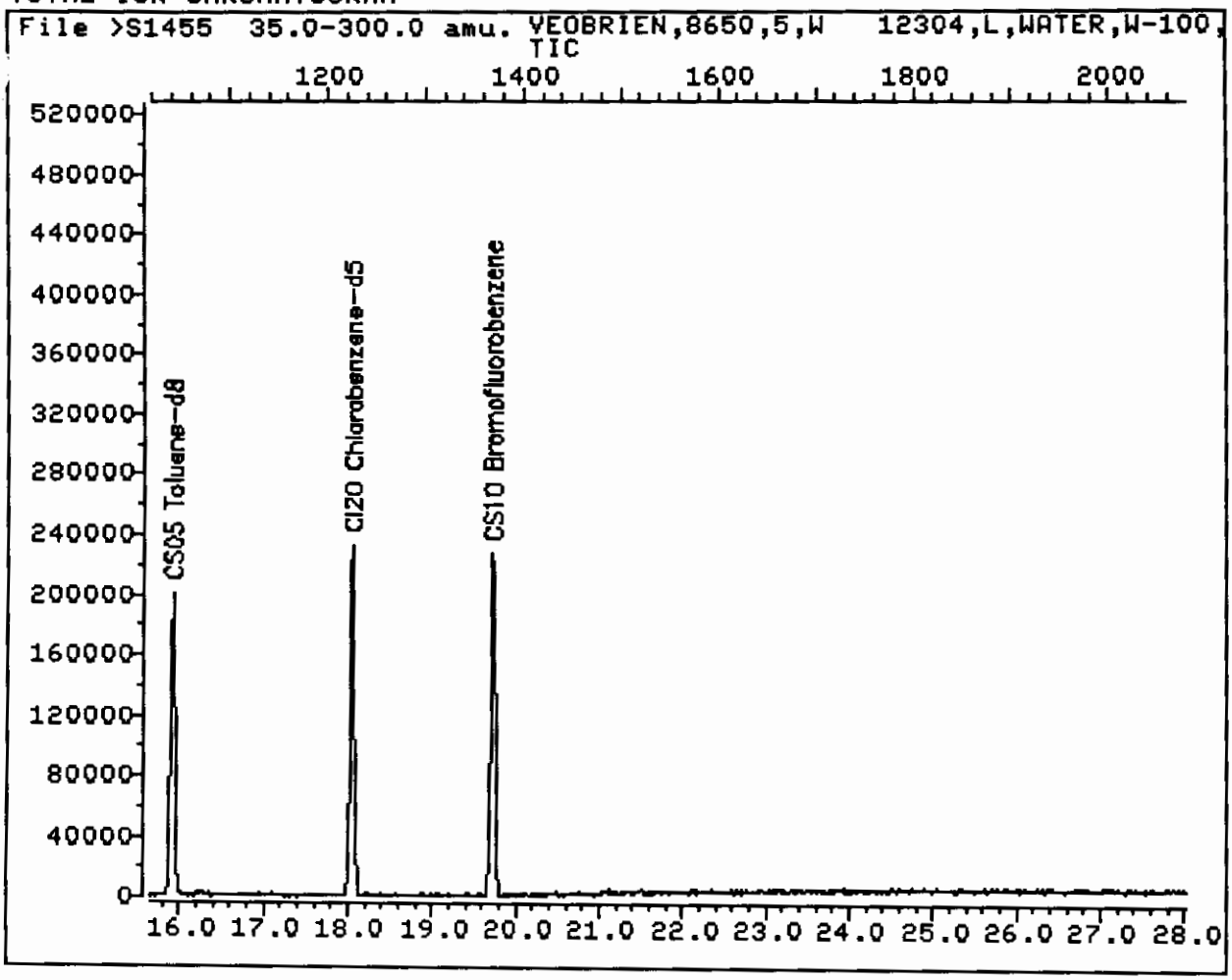
Data File: >S1455::A0 Quant Output File: ^S1455::D1
Name: VEOBRIEN,8650,5,W Instrument ID: S
Misc: 12304,L,WATER,W-100,V,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931109 10:30

Operator ID: MIKE
Quant Time : 931109 15:03
Injected at: 931109 14:34

Page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >S1455::A0
Name: VEOBRIEN,8650,5,W
Misc: 12304,L,WATER,W-100,V,5ML

Quant Output File: ^S1455::D1
Instrument ID: S

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07

Last Qcal Time: 931109 10:30

Operator ID: MIKE
Quant Time : 931109 15:03
Injected at: 931109 14:34

QUANT REPORT

Operator ID: MIKE
Input File: ^S1455::D1
Data File: >S1455::A0
Name: VEOBRIEN,8650,5,W
Misc: 12304,L,WATER,W-100,V,5ML

Quant Rev: 7
Quant Time: 931109 15:03
Injected at: 931109 14:34
Dilution Factor: 1.00000
Instrument ID: S

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07
Last Qcal Time: 931109 10:30

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01 Bromochloromethane	12.53	128.0	41593	50.00	UG/L	94
8)	C030 Methylene Chloride	10.07	84.0	2657	~~1.40~~	~~UG/L~~ BRL	88
16)	CS15 1,2-Dichloroethane-d4	13.25	65.0	139995	52.83	UG/L	99
22)	*CI10 1,4 Difluorobenzene	13.74	114.0	179623	50.00	UG/L	97
36)	*CI20 Chlorobenzene-d5	18.05	117.0	213631	50.00	UG/L	97
42)	CS05 Toluene-d8	15.91	98.0	242653	47.50	UG/L	97
48)	CS10 Bromofluorobenzene	19.72	95.0	178975	52.21	UG/L	92

* Compound is ISTD

Compliant run

CW 11/9/93

QA/QC Check Report

Data File: >S1455 Analysis Time: 11/09/93 14:34
Name: VEOBRIEN,8650,5,W
Misc: 12304,L,WATER,W-100,V,5ML

==========

Internal Standard Comparison
Std Data File: >S1449
Analysis Time: 11/09/93 10:30

Internal Standard	Sample Area	Std Area	%
CI01 Bromochloromethane	41593	60114	69.2
CI10 1,4 Difluorobenzene	179623	306772	58.6 ✓
CI20 Chlorobenzene-d5	213631	332583	64.2

% = (Sample Area/Std Area)*100
* Area outside limits

==========

Surrogate Recovery Summary

Surrogate Compound	Added	(Corr.) Found	%Rec	QC Limits Lower	Upper
15 1,2-Dichloroethane-d4	50	53	106	76	114
CS05 Toluene-d8	50	47	94	88	110 ✓
CS10 Bromofluorobenzene	50	52	104	86	115

* Recovery value outside limits

Compliant run

[illegible] 11/9/93

MS data file header from : >S1455::A0

ıple: VEOBRIEN,8650,5,W Operator: MIKE REG. GRP. 11/09/93 14:34
ısc : 12304,L,WATER,W-100,V,5ML
Sys. #: 1 MS model: 70 SW/HW rev.: LF ALS # : 0 Equip ID: S
Method file: MET826 Tuning file: BFBHP2 No. of extra records: 2
Source temp.: N/A Analyzer temp.: N/A Transfer line temp. : 0

Chromatographic temperatures :	10.	240.	240.	0.	0.
Chromatographic times, min. :	2.0	0.0	12.0	0.0	0.0
Chromatographic rate, deg/min:	12.0	12.0	0.0	.2	0.0

>S1455 VEOBRIEN,8650,5,W 12304,L,WATER,W-100,V,5ML
35.0| 300.0 CLP TIC
Upslope: .2000 Area Reject: 39540. Max Peaks: 1 Bunch: -1 Valley >100 %
Dnslope: 0.0000 Results File IS1455 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	5.75	150	171	177	8314	101510	67771	100.00	100.000

Sum of corrected areas: 67771.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	395402.	12.53	3.76 - 13.14
2	50.0	560725.	13.74	13.14 - 15.89
3	50.0	838843.	18.05	15.89 - 28.02

Dilution Factor = 1.00 This sample was 5.00000 g or mL

Correction Factor = 1.00

$$\text{Unknown Concentration} = \left| \frac{\text{Conc Int Std} * \text{Area Unknown}}{\text{Area Int Std}} \right| * \text{Correction Factor}$$

3:12 PM TUE., 9 NOV., 1993

STANDARDS DATA

100059

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6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Instrument ID: S Calibration Date(s): 11/08/93 11/08/93

Heated Purge: (Y/N): N Calibration Times: 1405 1639

GC Column: CAP ID: 0.320(mm)

LAB FILE ID: RRF10 = S1440 RRF20 = S1439
RRF50= S1436 RRF100= S1438 RRF200= S1437

COMPOUND		RRF10	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Chloromethane		1.313	1.281	1.365	1.554	1.363	1.375	7.7
Bromomethane	*	1.095	1.057	1.240	1.331	1.200	1.185	9.3*
Vinyl chloride	*	0.913	0.853	0.895	0.856	0.735	0.850	8.2*
Chloroethane		0.774	0.778	0.920	0.952	0.859	0.857	9.4
Methylene chloride		2.087	1.714	2.285	1.990	1.744	1.964	12.2
Acetone		4.087	2.999	3.317	3.409	2.652	3.293	16.2
Carbon disulfide		3.935	3.581	6.398	5.067	4.014	4.599	25.0
1,1-Dichloroethene	*	1.132	0.993	1.584	1.298	1.157	1.233	18.2*
1,1-Dichloroethane	*	3.684	3.271	4.492	4.172	3.624	3.849	12.5*
Trans-1,2-dichloroethene		1.468	1.325	1.875	1.650	1.468	1.557	13.6
Cis-1,2-dichloroethene		1.879	1.751	2.316	2.135	1.849	1.986	11.7
Chloroform	*	3.875	3.544	4.729	4.467	3.669	4.057	12.7*
1,2-Dichloroethane	*	4.042	3.617	4.586	4.215	3.316	3.955	12.6*
2-Butanone		1.844	1.386	1.500	1.660	1.233	1.525	15.6
1,1,1-Trichloroethane	*	0.584	0.527	0.679	0.691	0.595	0.615	11.2*
Carbon tetrachloride	*	0.509	0.455	0.592	0.584	0.486	0.525	11.5*
Vinyl acetate		1.318	1.146	1.389	1.384	0.836	1.215	19.2
Bromodichloromethane	*	0.648	0.591	0.739	0.757	0.630	0.673	10.7*
1,2-Dichloropropane		0.493	0.439	0.541	0.555	0.475	0.501	9.5
cis-1,3-Dichloropropene	*	0.722	0.664	0.825	0.860	0.651	0.744	12.7*
Trichloroethene	*	0.379	0.332	0.426	0.418	0.346	0.380	11.0*
Dibromochloromethane	*	0.531	0.487	0.596	0.625	0.519	0.552	10.3*
1,1,2-Trichloroethane	*	0.408	0.350	0.411	0.420	0.345	0.387	9.4*
Benzene	*	1.377	1.221	1.550	1.457	0.886	1.298	20.0*
Trans-1,3-dichloropropene	*	0.745	0.688	0.818	0.837	0.621	0.742	12.1*
Bromoform	*	0.447	0.388	0.460	0.475	0.368	0.428	11.0*
4-Methyl-2-pentanone		0.831	0.643	0.621	0.815	0.687	0.719	13.6
2-Hexanone		0.642	0.495	0.462	0.632	0.483	0.543	16.0
Tetrachloroethene	*	0.380	0.334	0.371	0.406	0.341	0.366	8.0*
1,1,2,2-Tetrachloroethane	*	0.725	0.597	0.588	0.717	0.564	0.638	12.0*
Toluene	*	1.695	1.512	1.607	1.614	0.979	1.481	19.5*
Chlorobenzene	*	1.129	0.976	1.050	1.111	0.799	1.013	13.2*
Ethylbenzene	*	0.572	0.480	0.510	0.567	0.425	0.511	12.1*
Styrene	*	1.204	1.049	1.119	1.196	0.832	1.080	14.1*
M/P xylenes	*	0.677	0.596	0.615	0.658	0.443	0.598	15.4*
O xylene	*	0.685	0.588	0.587	0.645	0.497	0.600	11.8*

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Instrument ID: S Calibration Date(s): 11/08/93 11/08/93

Heated Purge: (Y/N): N Calibration Times: 1405 1639

GC Column: CAP ID: 0.320(mm)

LAB FILE ID: RRF10 = S1440 RRF20 = S1439
RRF50= S1436 RRF100= S1438 RRF200= S1437

COMPOUND	RRF10	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Toluene-d8	1.480	1.297	1.238	1.527	0.962	1.301	17.3
Bromofluorobenzene	0.897	0.786	0.773	0.953	0.749	0.832	10.6
1,2-Dichloroethane-d4	3.274	3.065	3.174	3.641	3.073	3.245	7.3

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

100060A

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Instrument ID: S Calibration date: 11/09/93 Time: 1030

Lab File ID: S1449 Init. Calib. Date(s): 11/08/93 11/08/93

Heated Purge: (Y/N) N Init. Calib. Times: 1405 1639

GC Column: CAP ID: 0.320(mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Chloromethane	1.375	1.294		5.9	
Bromomethane	1.185	1.159	0.100	2.2	25.0
Vinyl chloride	0.850	0.761	0.100	10.5	25.0
Chloroethane	0.857	0.888		-3.6	
Methylene chloride	1.964	2.275		-15.8	
Acetone	3.293	3.721		-13.0	
Carbon disulfide	4.599	5.785		-25.8	
1,1-Dichloroethene	1.233	1.387	0.100	-12.5	25.0
1,1-Dichloroethane	3.849	4.446	0.200	-15.5	25.0
Trans-1,2-dichloroethene	1.557	1.712		-10.0	
Cis-1,2-dichloroethene	1.986	2.265		-14.0	
Chloroform	4.057	4.603	0.200	-13.5	25.0
1,2-Dichloroethane	3.955	4.788	0.100	-21.1	25.0
2-Butanone	1.525	1.777		-16.5	
1,1,1-Trichloroethane	0.615	0.639	0.100	-3.9	25.0
Carbon tetrachloride	0.525	0.552	0.100	-5.1	25.0
Vinyl acetate	1.215	1.622		-33.5	
Bromodichloromethane	0.673	0.805	0.200	-19.6	25.0
1,2-Dichloropropane	0.501	0.611		-22.0	
cis-1,3-Dichloropropene	0.744	0.923	0.200	-24.1	25.0
Trichloroethene	0.380	0.418	0.300	-10.0	25.0
Dibromochloromethane	0.552	0.660	0.100	-19.6	25.0
1,1,2-Trichloroethane	0.387	0.478	0.100	-23.5	25.0
Benzene	1.298	1.611	0.500	-24.1	25.0
Trans-1,3-dichloropropene	0.742	0.937	0.100	-26.3	25.0
Bromoform	0.428	0.495	0.100	-15.6	25.0
4-Methyl-2-pentanone	0.719	0.763		-6.1	
2-Hexanone	0.543	0.546		-0.6	
Tetrachloroethene	0.366	0.341	0.200	6.8	25.0
1,1,2,2-Tetrachloroethane	0.638	0.696	0.500	-9.1	25.0
Toluene	1.481	1.593	0.400	-7.6	25.0
Chlorobenzene	1.013	1.071	0.500	-5.7	25.0
Ethylbenzene	0.511	0.488	0.100	4.5	25.0
Styrene	1.080	1.171	0.300	-8.4	25.0
M/P xylenes	0.598	0.615	0.300	-2.8	25.0
O xylene	0.600	0.597	0.300	0.5	25.0

All other compounds must meet a minimum RRF of 0.010.

100061

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Instrument ID: S Calibration date: 11/09/93 Time: 1030

Lab File ID: S1449 Init. Calib. Date(s): 11/08/93 11/08/93

Heated Purge: (Y/N) N Init. Calib. Times: 1405 1639

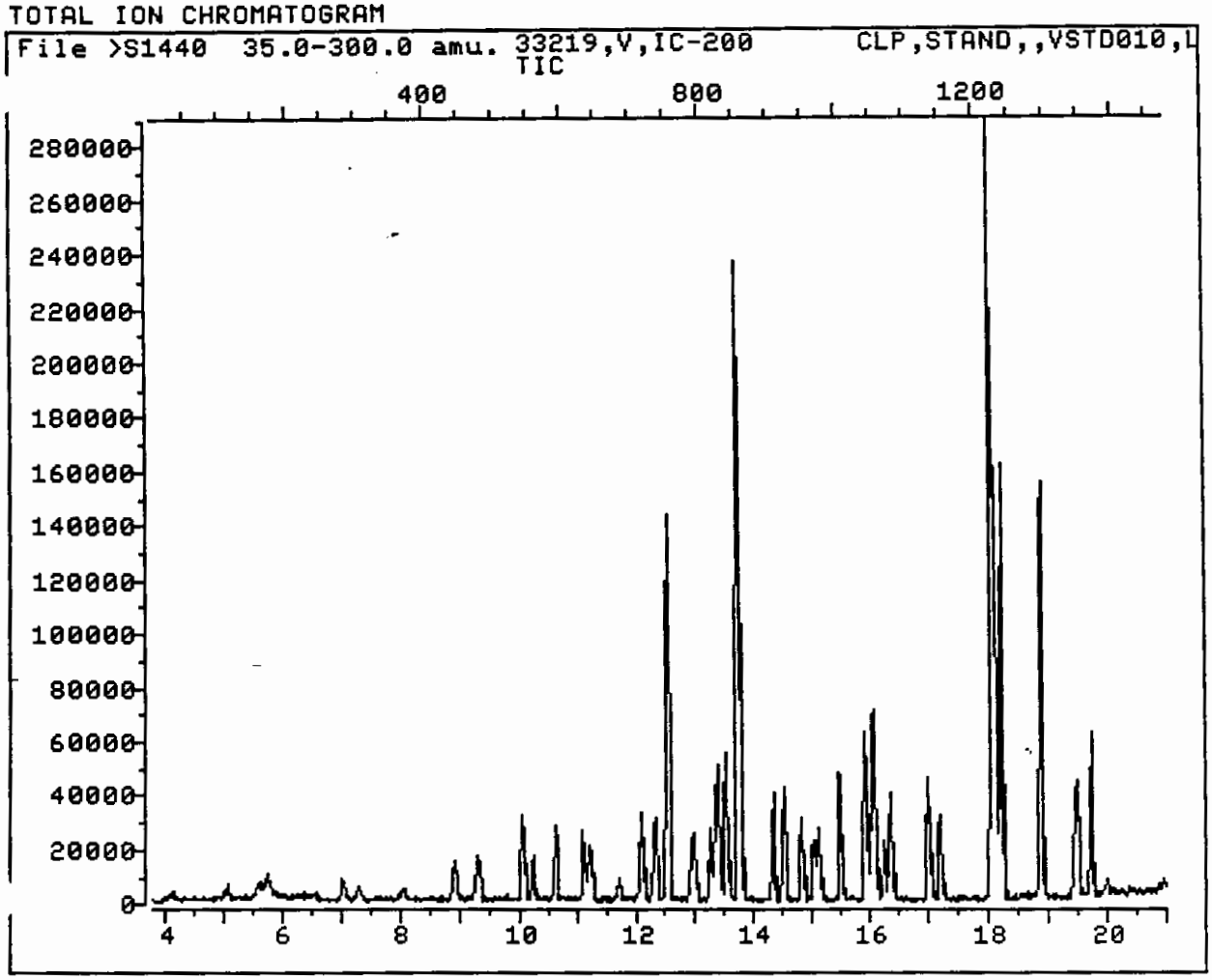
GC Column: CAP ID: 0.320(mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Toluene-d8	1.301	1.196		8.1	
Bromofluorobenzene	0.832	0.802	0.200	3.6	25.0
1,2-Dichloroethane-d4	3.245	3.185		1.8	

All other compounds must meet a minimum RRF of 0.010.

100061A

TOTAL ION CHROMATOGRAM



Data File: >S1440::A0 Quant Output File: ^S1440::D1
Name: 33219,V,IC-200 10 Instrument ID: S
Misc: CLP,STAND,,VSTD010,L,W,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

Operator ID: MIKE
Quant Time : 931108 17:38
Injected at: 931108 16:39

Operator ID: MIKE Quant Rev: 7 Quant Time: 931108 17:38
C tput File: ^S1440::D1 Injected at: 931108 16:39
a File: >S1440::A0 Dilution Factor: 1.00000
Name: 33219,V,IC-200 Instrument ID: S
Misc: CLP,STAND,,VSTD010,L,W,5ML

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*CI01 Bromochloromethane	12.53	751	56682	50.00	UG/L	87
3)	C043 Trichlorofluoromethane	8.03	365	8371	7.59	UG/L	93
4)	C010 Chloromethane	5.05	110	14885	9.62	UG/L	97
5)	C015 Bromomethane	7.04	280	12414	8.83	UG/L	82
6)	C020 Vinyl Chloride	5.60	157	10350	10.20	UG/L	98
7)	C025 Chloroethane	7.31	303	8775	8.42	UG/L	87
8)	C030 Methylene Chloride	10.06	539	23654	9.13	UG/L	87
9)	C035 Acetone	8.90	440	46333	12.32	UG/L	93
10)	C040 Carbon Disulfide	10.22	553	44606	6.15	UG/L	100
11)	C045 1,1-Dichloroethene	9.30	474	12837	7.15	UG/L	89
12)	C050 1,1-Dichloroethane	11.23	639	41765	8.20	UG/L	86
13)	C054 Trans 1-2 Dichloroethene	10.62	587	16645	7.83	UG/L	96
14)	C055 Cis 1-2 Dichloroethene	12.09	713	21306	8.12	UG/L	93
15)	C060 Chloroform	12.32	733	43929	8.19	UG/L	93
16)	CS15 1,2-Dichloroethane-d4	13.26	813	37120	10.31	UG/L	95
)	C065 1,2-Dichloroethane	13.37	823	45825	8.81	UG/L	94
18)	C110 2 Butanone	11.72	681	20908	12.29	UG/L	94
22)	*CI10 1,4 Difluorobenzene	13.75	855	283974	50.00	UG/L	98
23)	C175 2-CHLOROETHYLVINYLETHER	15.02	964	15975	9.11	UG/L	99
24)	C115 1,1,1-Trichloroethane	12.94	786	33185	8.60	UG/L	91
25)	C120 Carbon Tetrachloride	13.36	822	28888	8.59	UG/L	93
26)	C125 Vinyl Acetate	11.12	630	74846	9.48	UG/L	97
27)	C130 Bromodichloromethane	14.81	946	36792	8.76	UG/L	87
28)	C140 1,2-Dichloropropane	14.51	920	28007	9.12	UG/L	94
29)	C145 cis-1,3-Dichloropropene	15.46	1002	41019	8.76	UG/L	99
30)	C150 Trichloroethene	14.32	904	21527	8.90	UG/L	85
31)	C155 Dibromochloromethane	17.19	1150	30140	8.90	UG/L	99
32)	C160 1,1,2-Trichloroethane	16.35	1078	23194	9.93	UG/L	93
33)	C165 Benzene	13.53	836	78211	8.89	UG/L	100
34)	C170 trans-1,3-Dichloropropene	16.07	1054	42312	9.11	UG/L	90
35)	C180 Bromoform	19.44	1343	25398	9.73	UG/L	97
36)	*CI20 Chlorobenzene-d5	18.04	1223	262483	50.00	UG/L	98
37)	C205 4-Methyl-2-Pentanone	15.09	970	43604	13.37	UG/L	97
38)	C210 2-Hexanone	16.23	1068	33684	13.88	UG/L	98
39)	C220 Tetrachloroethene	16.99	1133	19950	10.25	UG/L	99
40)	C225 1,1,2,2-Tetrachloroethane	19.49	1347	38075	12.33	UG/L	95
41)	C230 Toluene	16.02	1050	88978	10.55	UG/L	94
42)	CS05 Toluene-d8	15.92	1041	77669	11.95	UG/L	96
43)	C235 Chlorobenzene	18.10	1228	59256	10.75	UG/L	95
44)	C240 Ethylbenzene	18.11	1229	30045	11.22	UG/L	94
45)	C245 Styrene	18.87	1294	63178	10.76	UG/L	93
46)	C250 Xylene (M & P)	18.22	1238	71072	22.02	UG/L	93
)	C251 Xylene (O)	18.86	1293	35975	11.67	UG/L	99

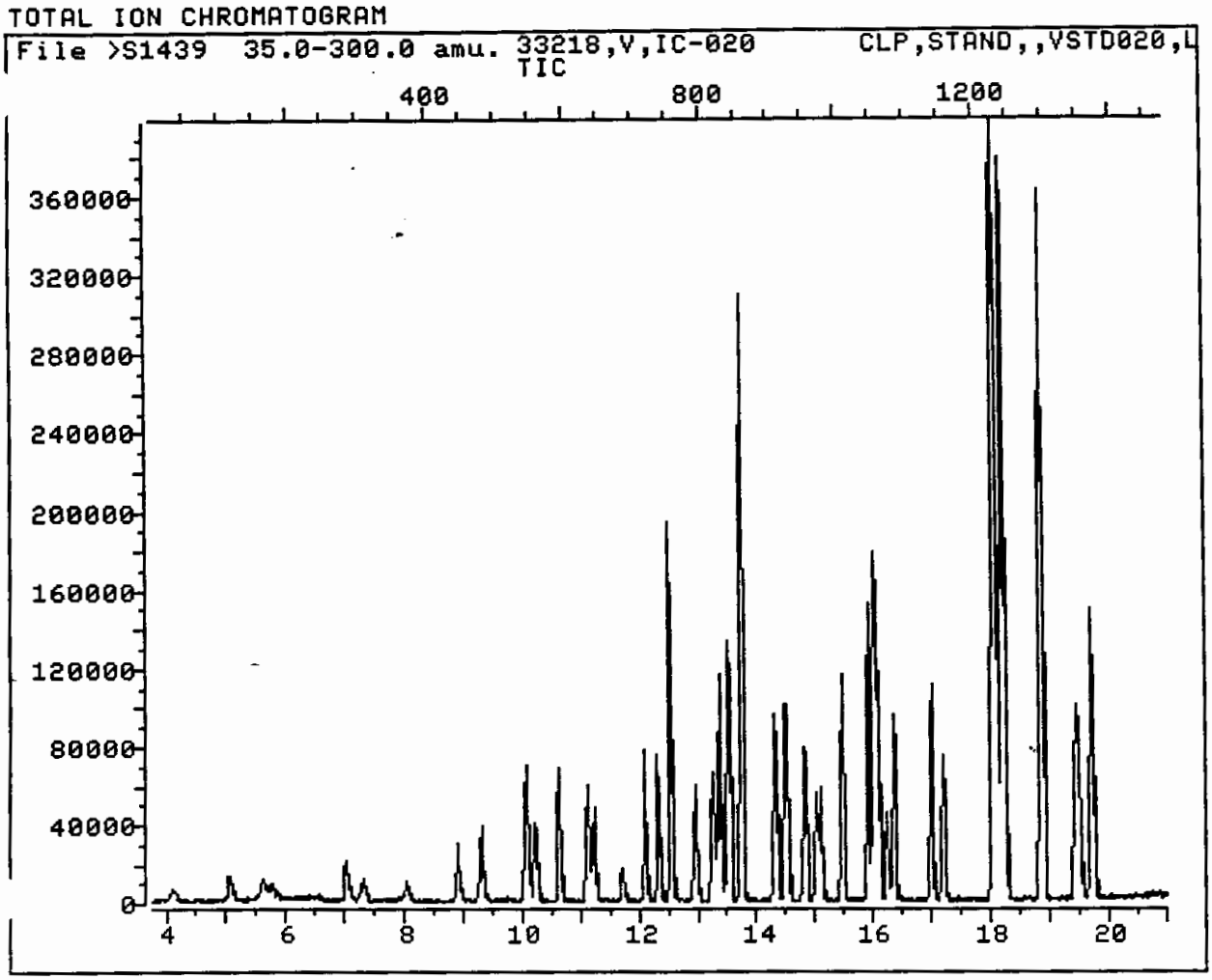
Operator ID: MIKE Quant Rev: 7 Quant Time: 931108 17:38
Input File: ^S1440::D1 Injected at: 931108 16:39
Data File: >S1440::A0 Dilution Factor: 1.00000
Name: 33219,V,IC-200 Instrument ID: S
Misc: CLP,STAND,,VSTD010,L,W,5ML

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

	Compound	R.T.	Scan#	Area	Conc	Units	q
48)	CS10 Bromofluorobenzene	19.71	1366	47110	11.62	UG/L	90

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >S1439::A0 Quant Output File: ^S1439::D1
Name: 33218,V,IC-020 Instrument ID: S
Misc: CLP,STAND,,VSTD020,L,W,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

Operator ID: MIKE
Quant Time : 931108 17:36
Injected at: 931108 16:13

QUANT REPORT

Operator ID: MIKE
Input File: ^S1439::D1
Data File: >S1439::A0
Name: 33218,V,IC-020
Misc: CLP,STAND,,VSTD020,L,W,5ML

Quant Rev: 7
Quant Time: 931108 17:36
Injected at: 931108 16:13
Dilution Factor: 1.00000
Instrument ID: S

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07
Last Qcal Time: 931108 14:05

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*CI01 Bromochloromethane	12.54	753	75697	50.00	UG/L	94
3)	C043 Trichlorofluoromethane	8.05	368	24356	16.54	UG/L	94
4)	C010 Chloromethane	5.04	111	38788	18.78	UG/L	96
5)	C015 Bromomethane	7.03	281	32006	17.05	UG/L	97
6)	C020 Vinyl Chloride	5.59	158	25824	19.06	UG/L	87
7)	C025 Chloroethane	7.29	303	23554	16.92	UG/L	91
8)	C030 Methylene Chloride	10.06	541	51902	15.00	UG/L	84
9)	C035 Acetone	8.90	441	90799	18.08	UG/L	90
10)	C040 Carbon Disulfide	10.23	555	108434	11.19	UG/L	100
11)	C045 1,1-Dichloroethene	9.29	475	30059	12.53	UG/L	86
12)	C050 1,1-Dichloroethane	11.22	640	99046	14.56	UG/L	91
13)	C054 Trans 1-2 Dichloroethene	10.62	589	40109	14.13	UG/L	97
14)	C055 Cis 1-2 Dichloroethene	12.09	715	53011	15.12	UG/L	96
15)	C060 Chloroform	12.32	734	107323	14.99	UG/L	94
[illegible])	CS15 1,2-Dichloroethane-d4	13.25	814	92816	19.31	UG/L	97
17)	C065 1,2-Dichloroethane	13.38	825	109513	15.77	UG/L	95
18)	C110 2 Butanone	11.71	682	41983	18.48	UG/L	99
22)	*CI10 1,4 Difluorobenzene	13.74	856	391251	50.00	UG/L	99
23)	C175 2-CHLOROETHYLVINYLETHER	15.02	966	41412	17.14	UG/L	98
24)	C115 1,1,1-Trichloroethane	12.95	788	82512	15.52	UG/L	95
25)	C120 Carbon Tetrachloride	13.35	823	71226	15.37	UG/L	95
26)	C125 Vinyl Acetate	11.11	631	179275	16.49	UG/L	98
27)	C130 Bromodichloromethane	14.81	948	92528	15.99	UG/L	91
28)	C140 1,2-Dichloropropane	14.51	922	68689	16.24	UG/L	96
29)	C145 cis-1,3-Dichloropropene	15.47	1004	103856	16.09	UG/L	97
30)	C150 Trichloroethene	14.32	906	51939	15.59	UG/L	84
31)	C155 Dibromochloromethane	17.18	1151	76141	16.31	UG/L	98
32)	C160 1,1,2-Trichloroethane	16.36	1080	54844	17.05	UG/L	98
33)	C165 Benzene	13.52	837	191135	15.76	UG/L	100
34)	C170 trans-1,3-Dichloropropene	16.08	1056	107624	16.81	UG/L	92
35)	C180 Bromoform	19.44	1344	60746	16.89	UG/L	96
36)	*CI20 Chlorobenzene-d5	18.04	1224	359221	50.00	UG/L	99
37)	C205 4-Methyl-2-Pentanone	15.09	972	92325	20.68	UG/L	91
38)	C210 2-Hexanone	16.24	1070	71119	21.41	UG/L	97
39)	C220 Tetrachloroethene	17.00	1135	48018	18.03	UG/L	98
40)	C225 1,1,2,2-Tetrachloroethane	19.49	1348	85711	20.29	UG/L	93
41)	C230 Toluene	16.03	1052	217316	18.83	UG/L	90
42)	CS05 Toluene-d8	15.91	1042	186418	20.95	UG/L	99
43)	C235 Chlorobenzene	18.11	1230	140300	18.60	UG/L	96
44)	C240 Ethylbenzene	18.11	1230	68946	18.82	UG/L	99
45)	C245 Styrene	18.87	1295	150774	18.76	UG/L	93
[illegible])	C250 Xylene (M & P)	18.21	1239	171317	38.78	UG/L	90
[illegible])	C251 Xylene (O)	18.87	1295	84533	20.04	UG/L	99

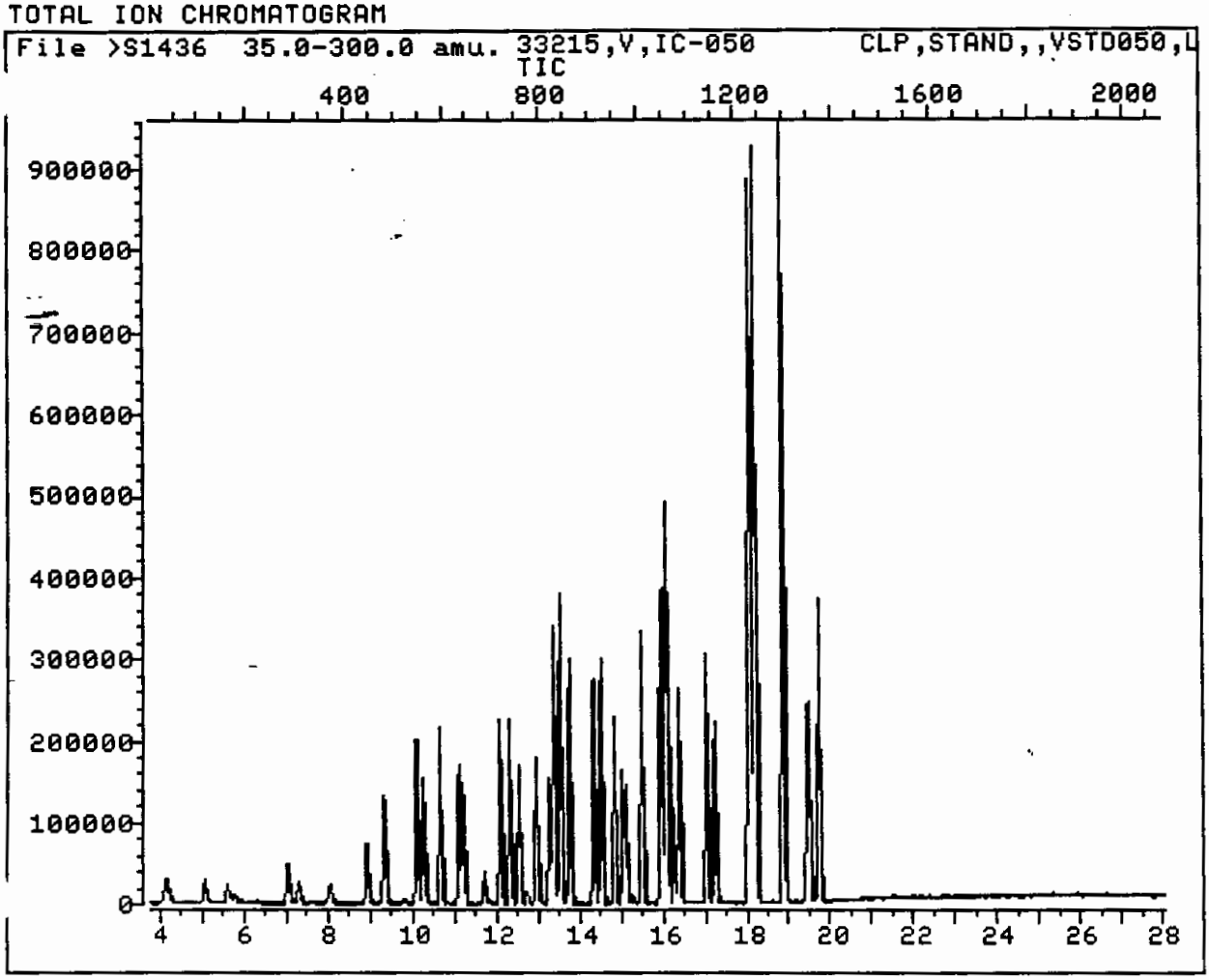
Operator ID: MIKE Quant Rev: 7 Quant Time: 931108 17:36
Input File: ^S1439::D1 Injected at: 931108 16:13
Data File: >S1439::A0 Dilution Factor: 1.00000
Name: 33218,V,IC-020 Instrument ID: S
Misc: CLP,STAND,,VSTD020,L,W,5ML

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

	Compound	R.T.	Scan#	Area	Conc	Units	q
48)	CS10 Bromofluorobenzene	19.72	1368	112974	20.35	UG/L	95

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >S1436::A0 Quant Output File: ^S1436::D1
Name: 33215,V,IC-050 Instrument ID: S
Misc: CLP,STAND,,VSTD050,L,W,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

Operator ID: MIKE
Quant Time : 931108 17:22
Injected at: 931108 14:05

QUANT REPORT

Operator ID: MIKE
Input File: ^S1436::D1
Data File: >S1436::A0
Name: 33215,V,IC-050
Misc: CLP,STAND,,VSTD050,L,W,5ML

Quant Rev: 7
Quant Time: 931108 17:22
Injected at: 931108 14:05
Dilution Factor: 1.00000
Instrument ID: S

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07
Last Qcal Time: 931108 14:05

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*CI01 Bromochloromethane	12.53	752	67600	50.00	UG/L	92
3)	C043 Trichlorofluoromethane	8.02	366	65736	50.00	UG/L	96
4)	C010 Chloromethane	5.04	111	92246	50.00	UG/L	94
5)	C015 Bromomethane	7.02	280	83840	50.00	UG/L	97
6)	C020 Vinyl Chloride	5.59	158	60504	50.00	UG/L	93
7)	C025 Chloroethane	7.30	304	62170	50.00	UG/L	91
8)	C030 Methylene Chloride	10.05	540	154486	50.00	UG/L	86
9)	C035 Acetone	8.89	440	224201	50.00	UG/L	91
10)	C040 Carbon Disulfide	10.22	554	432503	50.00	UG/L	100
11)	C045 1,1-Dichloroethene	9.29	475	107099	50.00	UG/L	87
12)	C050 1,1-Dichloroethane	11.22	640	303686	50.00	UG/L	94
13)	C054 Trans 1-2 Dichloroethene	10.63	589	126757	50.00	UG/L	97
14)	C055 Cis 1-2 Dichloroethene	12.08	714	156550	50.00	UG/L	93
15)	C060 Chloroform	12.32	734	319689	50.00	UG/L	93
)	CS15 1,2-Dichloroethane-d4	13.25	814	214593	50.00	UG/L	96
17)	C065 1,2-Dichloroethane	13.37	824	310022	50.00	UG/L	94
18)	C110 2 Butanone	11.71	682	101427	50.00	UG/L	97
22)	*CI10 1,4 Difluorobenzene	13.74	856	366329	50.00	UG/L	98
23)	C175 2-CHLOROETHYLVINYLETHER	15.02	965	113104	50.00	UG/L	97
24)	C115 1,1,1-Trichloroethane	12.95	788	248877	50.00	UG/L	96
25)	C120 Carbon Tetrachloride	13.36	823	216926	50.00	UG/L	98
26)	C125 Vinyl Acetate	11.12	631	508985	50.00	UG/L	99
27)	C130 Bromodichloromethane	14.82	948	270872	50.00	UG/L	91
28)	C140 1,2-Dichloropropane	14.50	921	198038	50.00	UG/L	97
29)	C145 cis-1,3-Dichloropropene	15.46	1003	302149	50.00	UG/L	94
30)	C150 Trichloroethene	14.33	906	155992	50.00	UG/L	86
31)	C155 Dibromochloromethane	17.19	1151	218505	50.00	UG/L	97
32)	C160 1,1,2-Trichloroethane	16.35	1079	150586	50.00	UG/L	98
33)	C165 Benzene	13.52	837	567616	50.00	UG/L	100
34)	C170 trans-1,3-Dichloropropene	16.08	1056	299716	50.00	UG/L	93
35)	C180 Bromoform	19.43	1343	168365	50.00	UG/L	97
36)	*CI20 Chlorobenzene-d5	18.04	1224	373834	50.00	UG/L	99
37)	C205 4-Methyl-2-Pentanone	15.10	972	232320	50.00	UG/L	99
38)	C210 2-Hexanone	16.23	1069	172856	50.00	UG/L	97
39)	C220 Tetrachloroethene	16.99	1134	138591	50.00	UG/L	96
40)	C225 1,1,2,2-Tetrachloroethane	19.49	1348	219846	50.00	UG/L	96
41)	C230 Toluene	16.02	1051	600617	50.00	UG/L	93
42)	CS05 Toluene-d8	15.91	1042	462977	50.00	UG/L	99
43)	C235 Chlorobenzene	18.10	1229	392499	50.00	UG/L	99
44)	C240 Ethylbenzene	18.11	1230	190653	50.00	UG/L	92
45)	C245 Styrene	18.87	1295	418251	50.00	UG/L	96
)	C250 Xylene (M & P)	18.22	1239	459730	100.00	UG/L	91
)	C251 Xylene (O)	18.86	1294	219440	50.00	UG/L	96

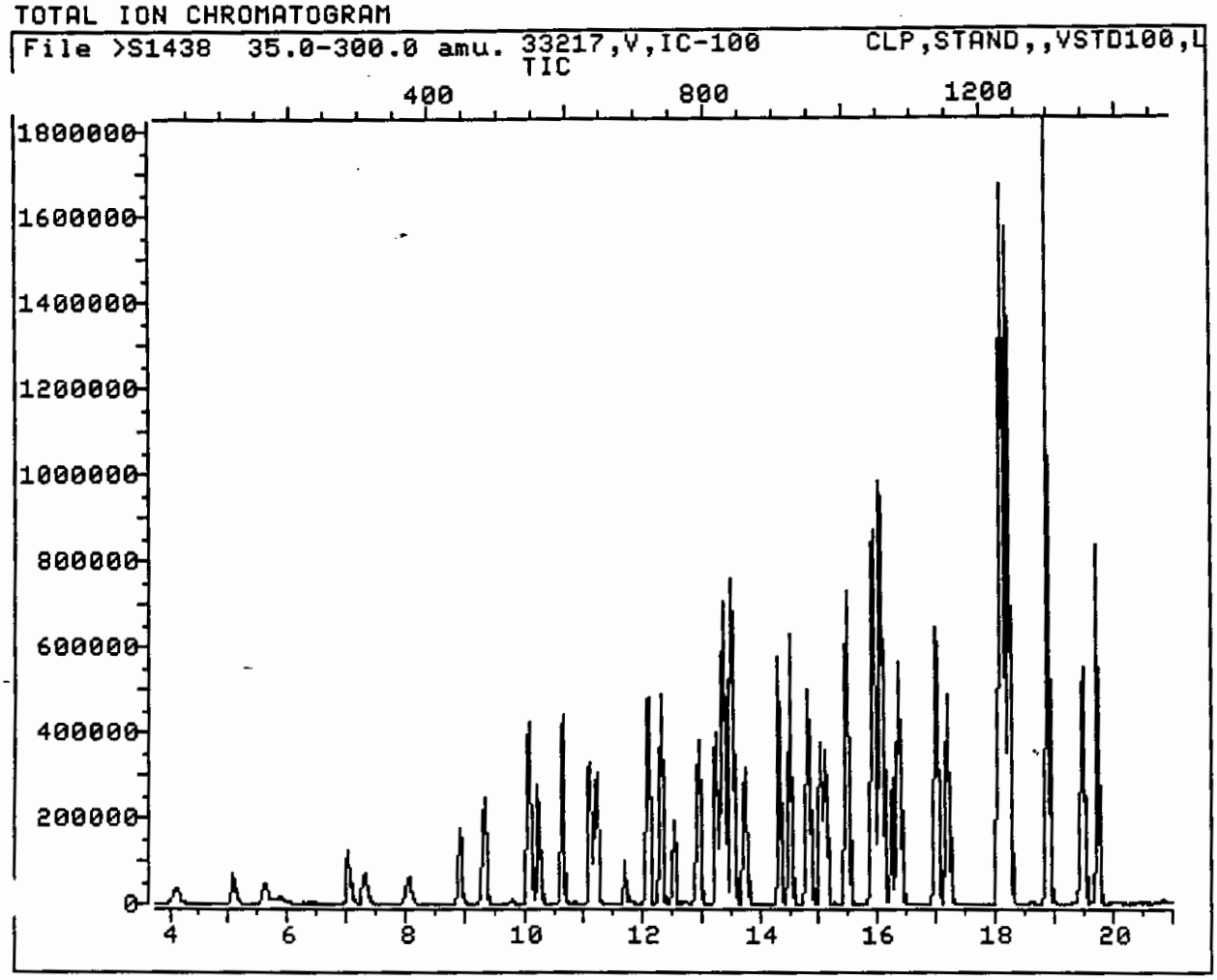
C rator ID: MIKE Quant Rev: 7 Quant Time: 931108 17:22
put File: ^S1436::D1 Injected at: 931108 14:05
Data File: >S1436::A0 Dilution Factor: 1.00000
Name: 33215,V,IC-050 Instrument ID: S
Misc: CLP,STAND,,VSTD050,L,W,5ML

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

	Compound	R.T.	Scan#	Area	Conc	Units	q
48)	CS10 Bromofluorobenzene	19.71	1367	288817	50.00	UG/L	91

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >S1438::A0 Quant Output File: ^S1438::D1
Name: 33217,V,IC-100 Instrument ID: S
Misc: CLP,STAND,,VSTD100,L,W,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

Operator ID: MIKE
Quant Time : 931108 17:30
Injected at: 931108 15:47

C rator ID: MIKE Quant Rev: 7 Quant Time: 931108 17:30
(put File: ^S1438::D1 Injected at: 931108 15:47
Data File: >S1438::A0 Dilution Factor: 1.00000
Name: 33217,V,IC-100 Instrument ID: S
Misc: CLP,STAND,,VSTD100,L,W,5ML

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

		Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	12.53	752	78183	50.00	UG/L	92
3)	C043	Trichlorofluoromethane	8.04	367	174376	114.68	UG/L	98
4)	C010	Chloromethane	5.07	113	243066	113.92	UG/L	98
5)	C015	Bromomethane	7.03	281	208060	107.29	UG/L	98
6)	C020	Vinyl Chloride	5.59	158	133890	95.67	UG/L	92
7)	C025	Chloroethane	7.30	304	148928	103.56	UG/L	95
8)	C030	Methylene Chloride	10.07	541	311176	87.08	UG/L	82
9)	C035	Acetone	8.90	441	533042	102.78	UG/L	89
10)	C040	Carbon Disulfide	10.23	555	792286	79.19	UG/L	100
11)	C045	1,1-Dichloroethene	9.30	475	203049	81.96	UG/L	85
12)	C050	1,1-Dichloroethane	11.22	640	652370	92.87	UG/L	92
13)	C054	Trans 1-2 Dichloroethene	10.63	589	257938	87.97	UG/L	94
14)	C055	Cis 1-2 Dichloroethene	12.09	714	333886	92.20	UG/L	95
15)	C060	Chloroform	12.32	734	698525	94.46	UG/L	90
)	CS15	1,2-Dichloroethane-d4	13.26	814	569340	114.70	UG/L	98
17)	C065	1,2-Dichloroethane	13.38	825	659120	91.91	UG/L	95
18)	C110	2 Butanone	11.71	682	259563	110.64	UG/L	99
22)	*CI10	1,4 Difluorobenzene	13.75	856	397096	50.00	UG/L	98
23)	C175	2-CHLOROETHYLVINYLETHER	15.02	965	261869	106.80	UG/L	96
24)	C115	1,1,1-Trichloroethane	12.95	788	548781	101.71	UG/L	94
25)	C120	Carbon Tetrachloride	13.36	823	463625	98.58	UG/L	99
26)	C125	Vinyl Acetate	11.12	631	1098967	99.59	UG/L	97
27)	C130	Bromodichloromethane	14.82	948	601514	102.43	UG/L	94
28)	C140	1,2-Dichloropropane	14.51	921	441128	102.75	UG/L	98
29)	C145	cis-1,3-Dichloropropene	15.46	1003	683040	104.27	UG/L	90
30)	C150	Trichloroethene	14.32	905	332008	98.17	UG/L	85
31)	C155	Dibromochloromethane	17.19	1151	496740	104.86	UG/L	98
32)	C160	1,1,2-Trichloroethane	16.35	1079	333886	102.27	UG/L	97
33)	C165	Benzene	13.52	837	1156844	94.01	UG/L	100
34)	C170	trans-1,3-Dichloropropene	16.08	1056	664745	102.30	UG/L	92
35)	C180	Bromoform	19.44	1343	376916	103.26	UG/L	95
36)	*CI20	Chlorobenzene-d5	18.05	1224	357202	50.00	UG/L	99
37)	C205	4-Methyl-2-Pentanone	15.10	972	582269	131.15	UG/L	98
38)	C210	2-Hexanone	16.23	1069	451662	136.73	UG/L	97
39)	C220	Tetrachloroethene	16.99	1134	289928	109.47	UG/L	96
40)	C225	1,1,2,2-Tetrachloroethane	19.50	1348	511961	121.86	UG/L	92
41)	C230	Toluene	16.04	1052	1153270	100.48	UG/L	81
42)	CS05	Toluene-d8	15.92	1042	1090724	123.28	UG/L	85
43)	C235	Chlorobenzene	18.09	1228	793548	105.80	UG/L	97
44)	C240	Ethylbenzene	18.12	1230	405006	111.16	UG/L	78
45)	C245	Styrene	18.88	1295	854094	106.86	UG/L	94
)	C250	Xylene (M & P)	18.21	1238	940473	214.10	UG/L	24
7)	C251	Xylene (O)	18.86	1294	460529	109.82	UG/L	86

Operator ID: MIKE
Input File: ^S1438::D1
Data File: >S1438::A0
Name: 33217,V,IC-100
Misc: CLP,STAND,,VSTD100,L,W,5ML

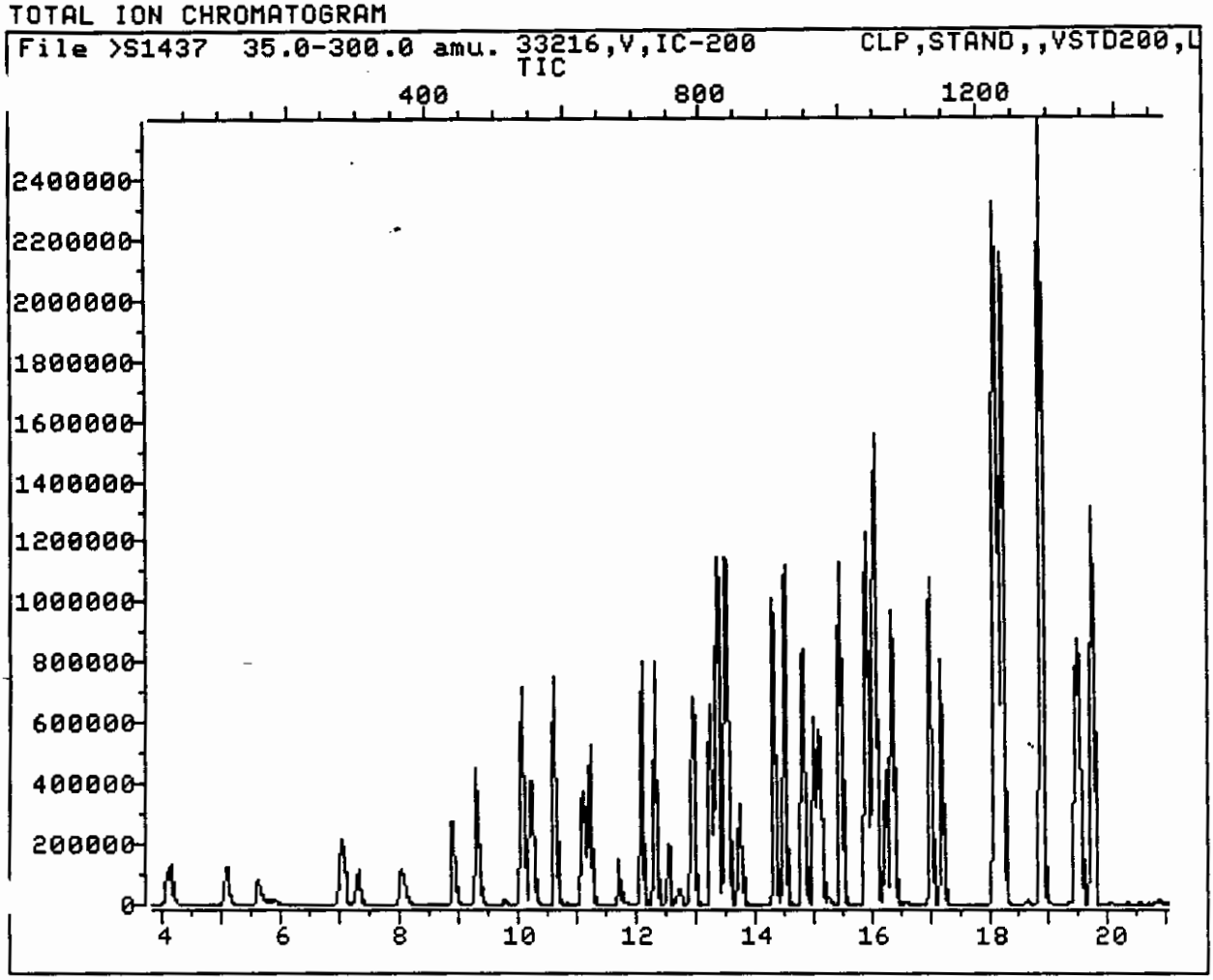
Quant Rev: 7
Quant Time: 931108 17:30
Injected at: 931108 15:47
Dilution Factor: 1.00000
Instrument ID: S

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07
Last Qcal Time: 931108 14:05

	Compound	R.T.	Scan#	Area	Conc	Units	q
48)	CS10 Bromofluorobenzene	19.72	1367	681039	123.39	UG/L	94

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >S1437::A0 Quant Output File: ^S1437::D1
Name: 33216,V,IC-200 Instrument ID: S
Misc: CLP,STAND,,VSTD200,L,W,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

Operator ID: MIKE
Quant Time : 931108 17:26
Injected at: 931108 15:22

QUANT REPORT

Operator ID: MIKE
Input File: ^S1437::D1
Data File: >S1437::A0
Name: 33216,V,IC-200
Misc: CLP,STAND,,VSTD200,L,W,5ML

Quant Rev: 7
Quant Time: 931108 17:26
Injected at: 931108 15:22
Dilution Factor: 1.00000
Instrument ID: S

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07
Last Qcal Time: 931108 14:05

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*CI01 Bromochloromethane	12.54	747	79939	50.00	UG/L	94
3)	C043 Trichlorofluoromethane	8.04	362	339910	218.63	UG/L	97
4)	C010 Chloromethane	5.07	108	435747	199.73	UG/L	95
5)	C015 Bromomethane	7.03	275	383629	193.47	UG/L	98
6)	C020 Vinyl Chloride	5.61	154	235053	164.26	UG/L	96
7)	C025 Chloroethane	7.31	299	274556	186.73	UG/L	93
8)	C030 Methylene Chloride	10.07	536	557602	152.61	UG/L	86
9)	C035 Acetone	8.91	436	847908	159.91	UG/L	88
10)	C040 Carbon Disulfide	10.23	549	1283473	125.47	UG/L	100
11)	C045 1,1-Dichloroethene	9.30	470	369968	146.06	UG/L	84
12)	C050 1,1-Dichloroethane	11.23	635	1158726	161.33	UG/L	95
13)	C054 Trans 1-2 Dichloroethene	10.63	584	469431	156.59	UG/L	98
14)	C055 Cis 1-2 Dichloroethene	12.09	709	591110	159.65	UG/L	84
15)	C060 Chloroform	12.33	729	1173060	155.15	UG/L	90
;)	CS15 1,2-Dichloroethane-d4	13.26	809	982530	193.59	UG/L	97
17)	C065 1,2-Dichloroethane	13.39	820	1060147	144.59	UG/L	96
18)	C110 2 Butanone	11.71	676	394349	164.39	UG/L	96
22)	*CI10 1,4 Difluorobenzene	13.75	851	417366	50.00	UG/L	98
23)	C175 2-CHLOROETHYLVINYLETHER	15.03	960	447935	173.80	UG/L	97
24)	C115 1,1,1-Trichloroethane	12.96	783	993073	175.11	UG/L	94
25)	C120 Carbon Tetrachloride	13.36	817	810870	164.05	UG/L	97
26)	C125 Vinyl Acetate	11.11	625	1395466	120.32	UG/L	88
27)	C130 Bromodichloromethane	14.83	943	1052570	170.53	UG/L	98
28)	C140 1,2-Dichloropropane	14.50	915	793054	175.74	UG/L	96
29)	C145 cis-1,3-Dichloropropene	15.47	998	1086600	157.82	UG/L	90
30)	C150 Trichloroethene	14.33	900	576974	162.32	UG/L	81
31)	C155 Dibromochloromethane	17.19	1145	865708	173.87	UG/L	98
32)	C160 1,1,2-Trichloroethane	16.36	1074	576300	167.95	UG/L	99
33)	C165 Benzene	13.51	830	1479721	114.41	UG/L	100
34)	C170 trans-1,3-Dichloropropene	16.08	1050	1037438	151.91	UG/L	91
35)	C180 Bromoform	19.45	1338	614314	160.13	UG/L	96
36)	*CI20 Chlorobenzene-d5	18.04	1218	364170	50.00	UG/L	99
37)	C205 4-Methyl-2-Pentanone	15.10	966	1000440	221.03	UG/L	97
38)	C210 2-Hexanone	16.24	1064	703455	208.88	UG/L	98
39)	C220 Tetrachloroethene	17.00	1129	496358	183.83	UG/L	95
40)	C225 1,1,2,2-Tetrachloroethane	19.49	1342	821933	191.89	UG/L	95
41)	C230 Toluene	16.02	1045	1426304	121.89	UG/L	49
42)	CS05 Toluene-d8	15.90	1035	1401078	155.33	UG/L	55
43)	C235 Chlorobenzene	18.10	1223	1163387	152.14	UG/L	94
44)	C240 Ethylbenzene	18.13	1225	619088	166.67	UG/L	43
45)	C245 Styrene	18.89	1290	1212141	148.75	UG/L	74
)	C250 Xylene (M & P)	18.21	1232	1291192M	288.31	UG/L	78
.7)	C251 Xylene (O)	18.86	1288	724143	169.38	UG/L	52

Operator ID: MIKE Quant Rev: 7 Quant Time: 931108 17:26
Input File: ^S1437::D1 Injected at: 931108 15:22
Data File: >S1437::A0 Dilution Factor: 1.00000
Name: 33216,V,IC-200 Instrument ID: S
Misc: CLP,STAND,,VSTD200,L,W,5ML

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

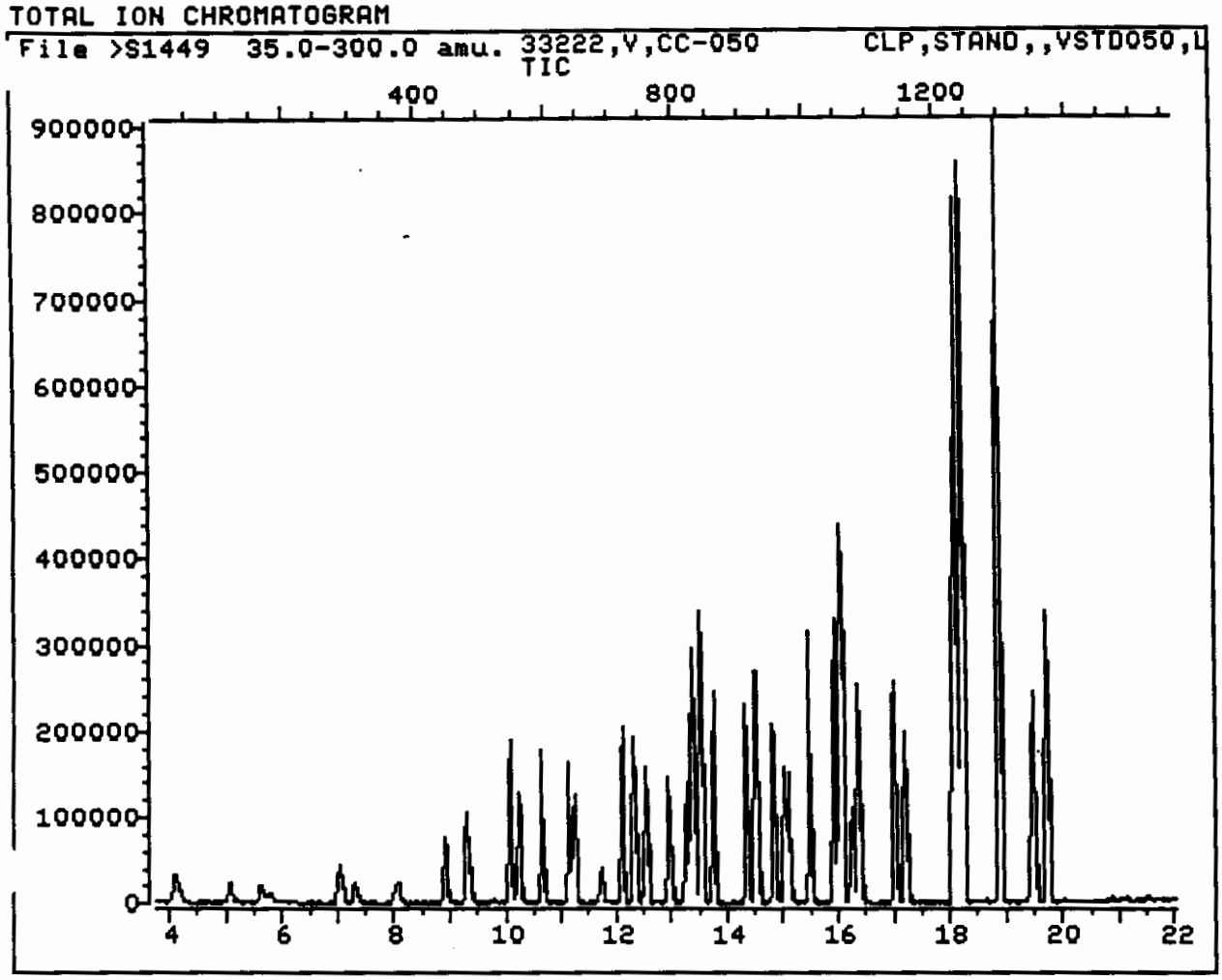
	Compound	R.T.	Scan#	Area	Conc	Units	q
48)	CS10 Bromofluorobenzene	19.73	1362	1091311	193.94	UG/L	85

* Compound is ISTD

*m: manual integration

11/9/93

TOTAL ION CHROMATOGRAM



Data File: >S1449::A0 Quant Output File: ^S1449::D1
Name: 33222,V,CC-050 Instrument ID: S
Misc: CLP,STAND,,VSTD050,L,W,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

Operator ID: MIKE
Quant Time : 931109 10:53
Injected at: 931109 10:30

QUANT REPORT

Operator ID: MIKE
Output File: ^S1449::D1
Data File: >S1449::A0
Name: 33222,V,CC-050
Misc: CLP,STAND,,VSTD050,L,W,5ML

Quant Rev: 7
Quant Time: 931109 10:53
Injected at: 931109 10:30
Dilution Factor: 1.00000
Instrument ID: S

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07
Last Qcal Date: 931108 14:05

		Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	12.54	753	60114	50.00	UG/L	97
3)	C043	Trichlorofluoromethane	8.05	368	66172	56.60	UG/L	96
4)	C010	Chloromethane	5.06	112	77784	47.41	UG/L	97
5)	C015	Bromomethane	7.03	281	69685	46.73	UG/L	98
6)	C020	Vinyl Chloride	5.61	159	45754	42.52	UG/L	92
7)	C025	Chloroethane	7.30	304	53369	48.27	UG/L	96
8)	C030	Methylene Chloride	10.07	541	136785	49.78	UG/L	82
9)	C035	Acetone	8.90	441	223692	56.10	UG/L	92
10)	C040	Carbon Disulfide	10.23	555	347786	45.21	UG/L	100
11)	C045	1,1-Dichloroethene	9.30	475	83389	43.78	UG/L	86
12)	C050	1,1-Dichloroethane	11.23	641	267293	49.49	UG/L	89
13)	C054	Trans 1-2 Dichloroethene	10.63	589	102948	45.67	UG/L	95
	C055	Cis 1-2 Dichloroethene	12.10	715	136147	48.90	UG/L	99
[illegible])	C060	Chloroform	12.33	735	276708	48.67	UG/L	92
16)	CS15	1,2-Dichloroethane-d4	13.25	814	191485	50.17	UG/L	94
17)	C065	1,2-Dichloroethane	13.38	825	287837	52.20	UG/L	93
18)	C110	2 Butanone	11.71	682	106796	59.20	UG/L	95
22)	*CI10	1,4 Difluorobenzene	13.75	856	306772	50.00	UG/L	98
23)	C175	2-CHLOROETHYLVINYLETHER	15.02	965	112576	59.43	UG/L	97
24)	C115	1,1,1-Trichloroethane	12.95	788	195923	47.00	UG/L	97
25)	C120	Carbon Tetrachloride	13.36	823	169483	46.65	UG/L	98
26)	C125	Vinyl Acetate	11.12	631	497475	58.36	UG/L	99
27)	C130	Bromodichloromethane	14.82	948	246915	54.43	UG/L	92
28)	C140	1,2-Dichloropropane	14.50	921	187557	56.55	UG/L	98
29)	C145	cis-1,3-Dichloropropene	15.47	1004	283018	55.93	UG/L	95
30)	C150	Trichloroethene	14.33	906	128153	49.05	UG/L	85
31)	C155	Dibromochloromethane	17.19	1151	202492	55.33	UG/L	98
32)	C160	1,1,2-Trichloroethane	16.36	1080	146489	58.08	UG/L	97
33)	C165	Benzene	13.52	837	494114	51.98	UG/L	100
34)	C170	trans-1,3-Dichloropropene	16.08	1056	287514	57.28	UG/L	91
35)	C180	Bromoform	19.44	1344	151806	53.83	UG/L	97
36)	*CI20	Chlorobenzene-d5	18.04	1224	332583	50.00	UG/L	98
37)	C205	4-Methyl-2-Pentanone	15.10	972	253639	61.36	UG/L	97
38)	C210	2-Hexanone	16.24	1070	181435	58.99	UG/L	98
39)	C220	Tetrachloroethene	17.00	1135	113425	46.00	UG/L	96
40)	C225	1,1,2,2-Tetrachloroethane	19.49	1348	231579	59.20	UG/L	90
41)	C230	Toluene	16.03	1052	529722	49.57	UG/L	91
42)	CS05	Toluene-d8	15.92	1042	397655	48.27	UG/L	97
43)	C235	Chlorobenzene	18.10	1229	356098	50.99	UG/L	97
[illegible])	C240	Ethylbenzene	18.12	1231	162297	47.84	UG/L	95
[illegible])	C245	Styrene	18.87	1295	389379	52.32	UG/L	98
46)	C250	Xylene (M & P)	18.22	1239	409059	100.01	UG/L	99
47)	C251	Xylene (O)	18.87	1295	198580	50.86	UG/L	97

Operator ID: MIKE Quant Rev: 7 Quant Time: 931109 10:53
Output File: ^S1449::D1 Injected at: 931109 10:30
Data File: >S1449::A0 Dilution Factor: 1.00000
Name: 33222,V,CC-050 Instrument ID: S
Misc: CLP,STAND,,VSTD050,L,W,5ML

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Date: 931108 14:05

	Compound	R.T.	Scan#	Area	Conc	Units	q
48)	CS10 Bromofluorobenzene	19.73	1368	266830	51.92	UG/L	96

* Compound is ISTD

TUNING DATA
(RAW QC)

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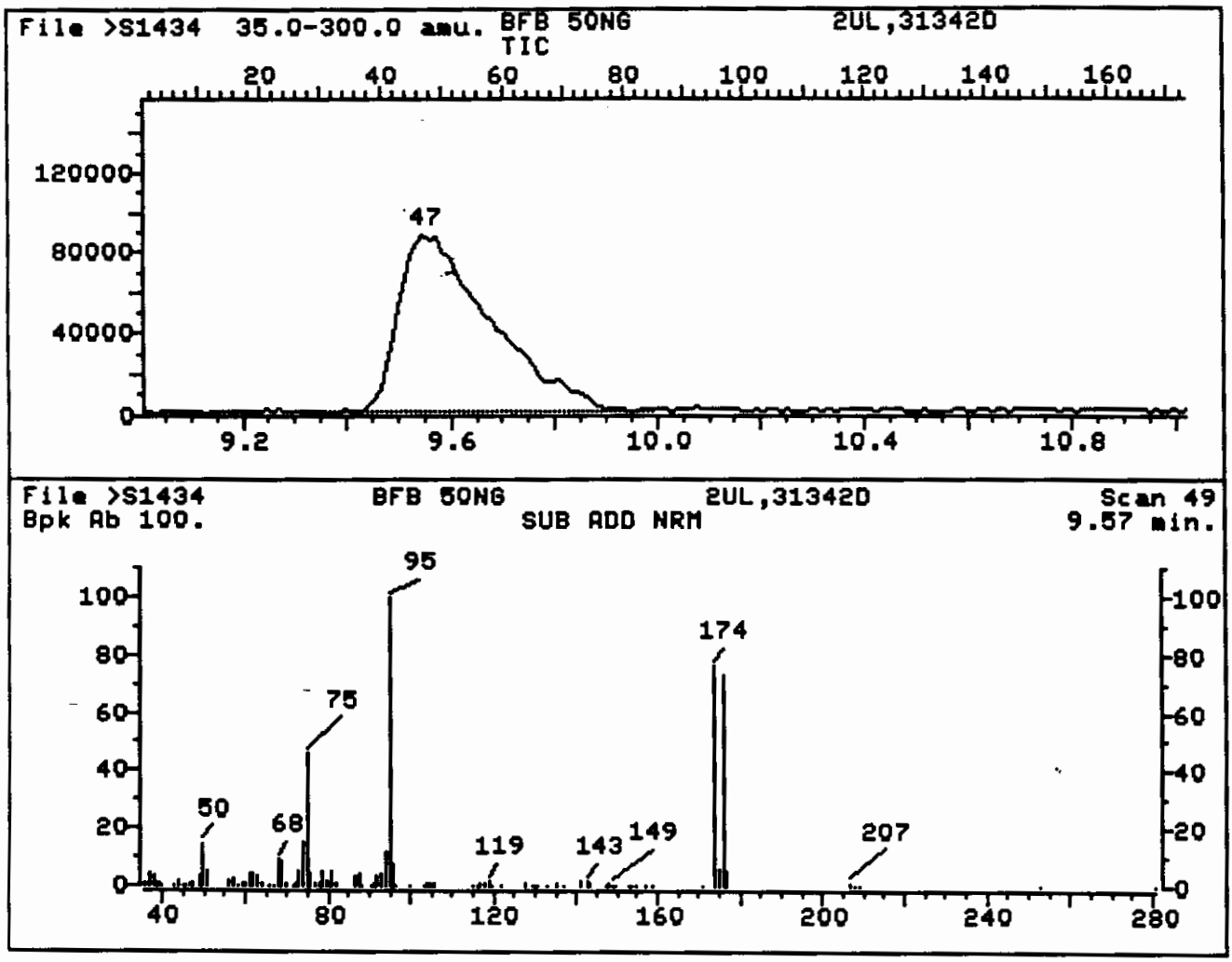


Data File Name : >S1434::A0
Instrument : S
Name : BFB 50NG
Misc. : 2UL,31342D

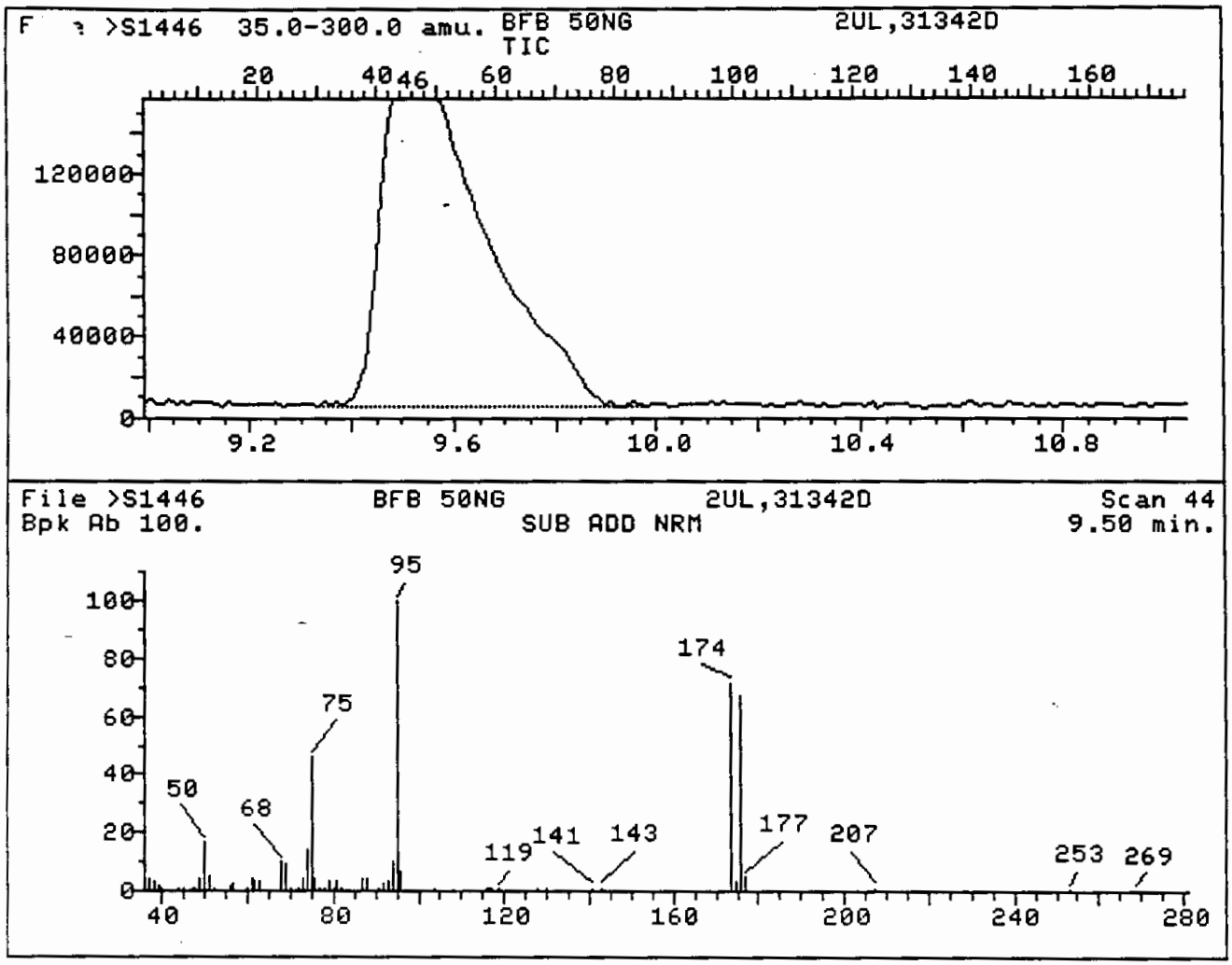
Injected : 11/08/93 12:27

>S1434 BFB 50NG 2UL,31342D
49 SUB ADD NRM

e: >S1434 Scan #: 49 Retn. time: 9.57

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
35.95	.496	59.70	.835	78.80	5.101	104.70	.435	142.95	.448
36.95	3.757	60.10	.879	79.90	1.457	105.10	.233	147.45	.178
37.95	3.361	61.00	4.325	80.00	.406	105.30	.231	148.05	.352
38.85	.725	62.00	4.101	80.50	-.202	105.70	.510	149.25	.308
39.35	.692	63.00	2.931	80.90	5.180	115.00	.220	149.65	.162
39.85	-.314	64.00	.490	81.90	.896	115.80	.266	153.15	.162
40.05	-.318	65.60	-.178	86.90	3.563	116.00	.264	153.85	.138
42.65	.149	67.00	.290	88.00	3.730	116.80	.808	154.65	.114
42.95	.176	67.90	8.987	88.50	-.171	117.80	.501	157.15	.114
43.90	1.358	68.90	8.546	90.40	-.123	118.80	1.197	158.55	.116
44.90	.316	69.70	.437	90.70	-.149	119.60	.123	170.85	.127
45.70	-.154	71.50	.307	91.00	1.087	122.00	.165	173.85	76.316
46.80	1.024	72.10	.404	91.90	3.045	127.90	.650	174.85	5.738
47.30	.422	72.20	.158	93.00	4.046	129.60	.151	175.85	72.766
47.60	.367	72.90	4.881	94.00	11.557	129.90	.134	176.85	5.233
48.90	3.322	73.90	14.837	95.00	100.000	130.65	.195	206.95	.747
49.90	14.442	73.90	-.193	95.90	7.427	132.85	.140	207.95	.165
50.90	4.901	75.00	45.949	96.30	-.138	135.05	.329	208.85	.154
55.90	1.665	75.90	3.853	99.90	.125	137.05	.184	252.90	-.123
57.00	2.634	76.90	.545	103.20	.206	140.75	1.290	280.80	-.117
58.60	.207	78.10	.360	103.90	.707	142.85	1.441		

Data File Name : >S1434::A0
Instrument : S
Injected : 11/08/93 12:27
Name : BFB 50NG
Misc. : 2UL,31342D



Data File Name : >S1446::A0
Instrument : S
Name : BFB 50NG
Misc. : 2UL,31342D

Injected : 11/09/93 8:11

>S1446 BFB 50NG 2UL,31342D
44 SUB ADD NRM

File: >S1446 Scan #: 44 Retn. time: 9.50

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
36.05	.951	59.00	.084	86.00	.087	116.80	.426	156.85	.170
36.95	4.154	59.80	.936	86.90	4.452	117.80	.277	159.05	.053
38.05	3.386	60.90	4.419	87.90	4.210	118.10	.129	162.95	.139
38.35	-.076	61.90	3.724	89.10	-.065	118.90	.759	165.15	.116
39.05	1.457	63.00	3.089	90.90	.740	123.60	.187	165.75	.146
39.95	.914	63.90	.400	91.90	2.527	127.70	.478	171.15	.067
40.65	.103	64.20	.061	93.00	3.584	128.80	.078	173.85	71.599
41.05	-.116	66.10	.077	93.90	10.000	129.90	.431	174.95	3.615
41.75	.079	66.80	.082	95.00	100.000	130.85	.183	175.85	67.248
42.75	-.060	67.90	9.867	95.90	6.542	132.75	.088	176.85	4.647
43.15	.096	68.90	9.407	96.70	.099	134.95	.208	177.85	.073
43.90	1.173	70.00	.690	97.00	.181	135.85	.067	178.75	-.083
44.90	1.139	70.10	.140	102.70	.144	136.45	.184	186.85	-.077
45.60	.058	72.00	.712	103.00	.131	136.65	.096	190.95	.114
46.00	.067	73.00	4.258	103.90	.580	140.85	.871	194.85	.020
47.00	1.217	74.00	13.997	104.70	.179	142.75	.934	196.45	-.053
47.80	.787	74.70	-.072	105.00	-.134	146.55	.055	206.95	.934
48.90	4.044	75.00	46.104	105.30	.073	146.85	-.012	207.85	.259
49.90	16.685	75.90	4.345	105.80	.147	147.55	.057	208.25	-.067
50.90	5.007	76.70	-.214	106.90	.105	147.95	.136	208.95	.231
51.90	.427	77.00	1.250	111.20	.050	148.95	.231	253.00	.803
[illegible]4.90	.264	77.90	1.221	112.30	-.050	153.35	.086	253.90	.225
[illegible].00	1.426	78.80	3.109	114.70	.069	154.05	.128	254.90	.085
56.90	2.656	79.90	1.067	115.20	.077	154.85	.233	269.00	.077
57.70	.072	80.90	3.213	115.70	.535	156.15	.309	281.10	.061
58.20	.071	81.80	1.045	116.60	.455				

Data File Name : >S1446::A0
Instrument : S
Name : BFB 50NG
Misc. : 2UL,31342D

Injected : 11/09/93 8:11

METHOD BLANK DATA

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK41

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: VBLK41

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: S1441

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

% Moisture: not dec. ____ Date Analyzed: 11/08/93

GC Column: CAP ID: 0.320 (mm) Dilution Factor: 1.0

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

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

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK41

Lab Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: VBLK41

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: S1441

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

% Moisture: not dec. ____ Date Analyzed: 11/08/93

GC Column: CAP ID: 0.320 (mm) Dilution Factor: 1.0

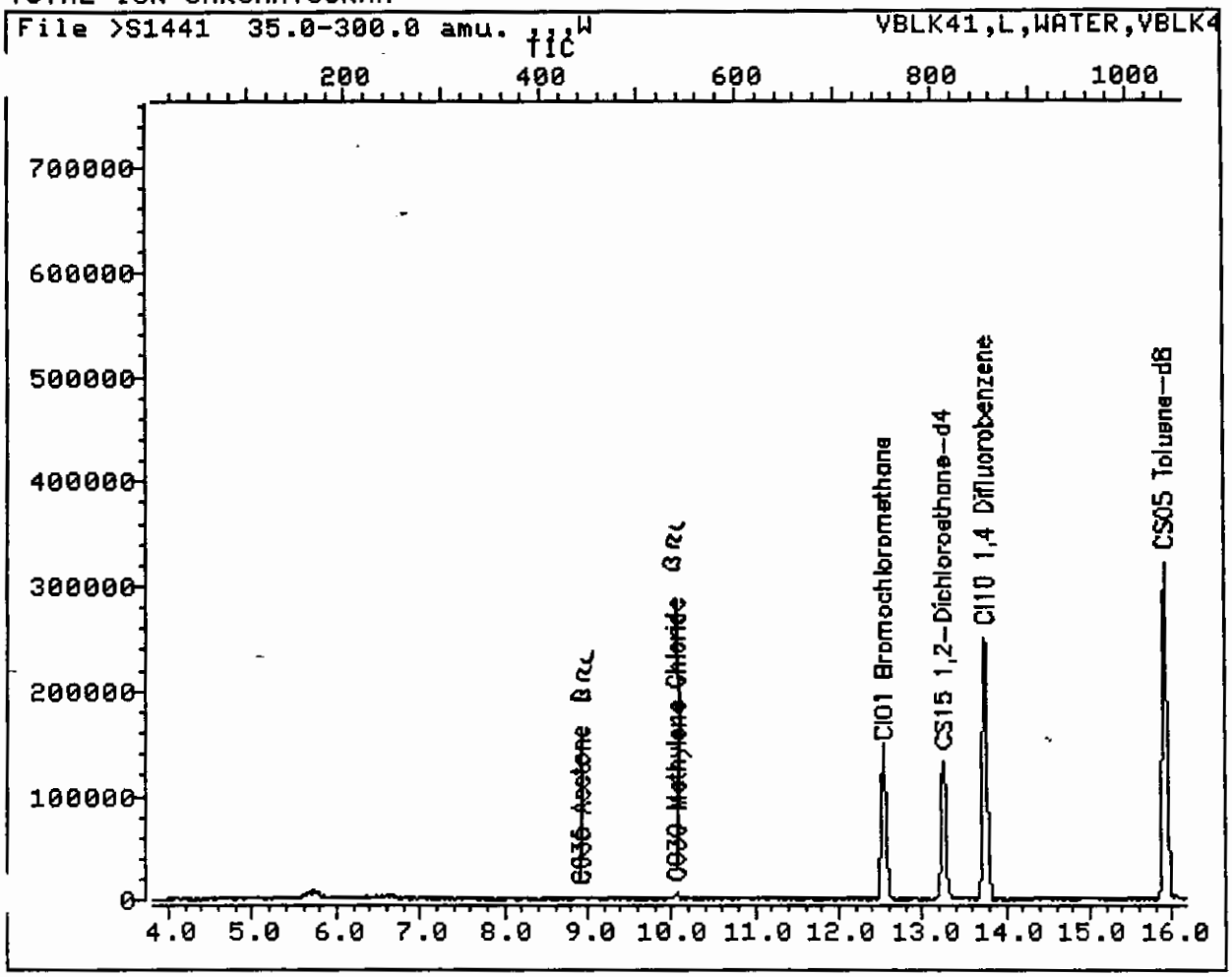
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

TOTAL ION CHROMATOGRAM



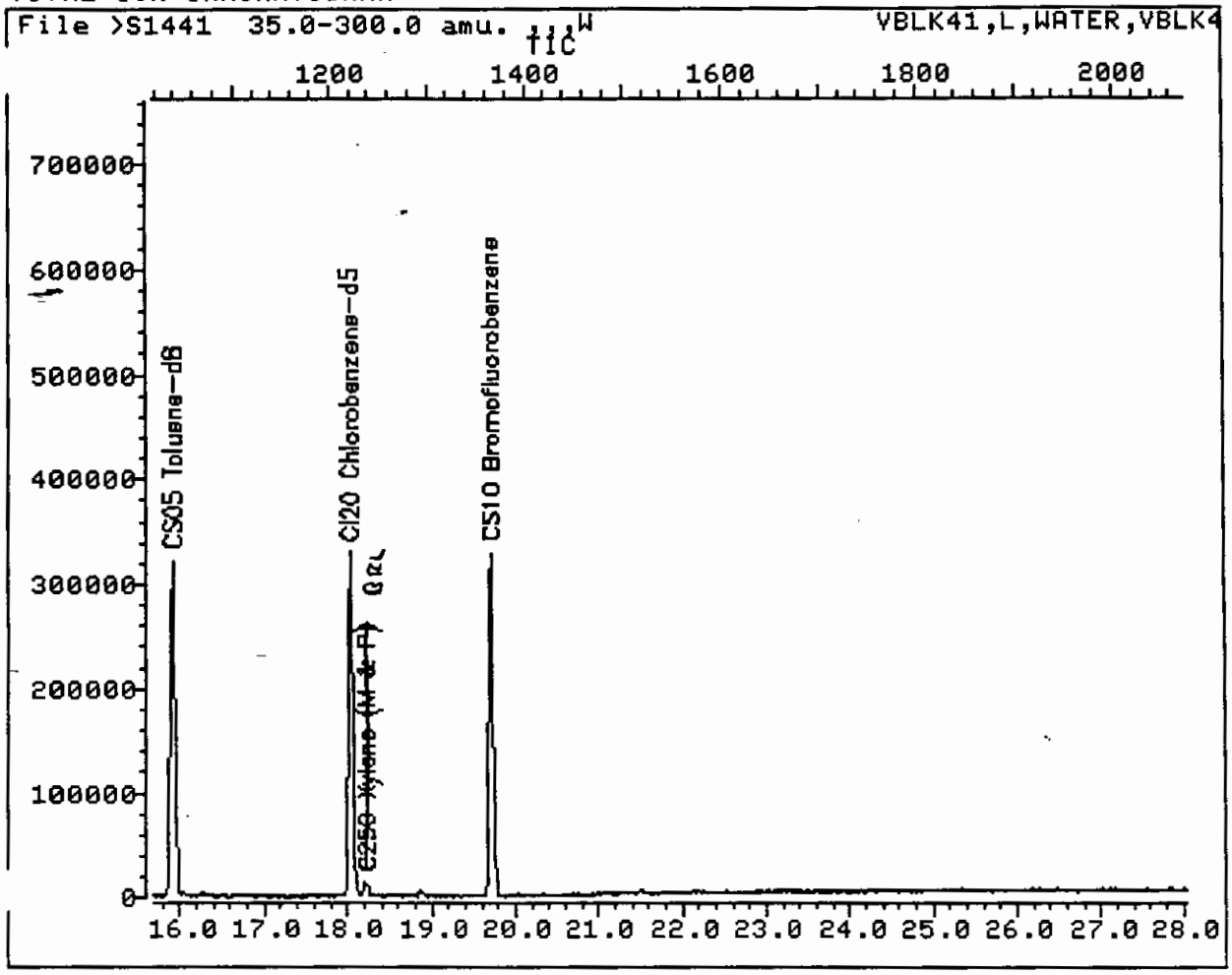
Data File: >S1441::A0 Quant Output File: ^S1441::D1
Name: ,,,W Instrument ID: S
Misc: VBLK41,L,WATER,VBLK41,V,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

Operator ID: MIKE
Quant Time : 931108 17:40
Injected at: 931108 17:07

Page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >S1441::A0 **Quant Output File: ^S1441::D1**
Name: ,,,W **Instrument ID: S**
Misc: VBLK41,L,WATER,VBLK41,V,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 **Last Qcal Time: 931108 14:05**

Operator ID: MIKE
Quant Time : 931108 17:40
Injected at: 931108 17:07

QUANT REPORT

Operator ID: MIKE
Output File: ^S1441::D1
Data File: >S1441::A0
Name: ,,,W
Misc: VBLK41,L,WATER,VBLK41,V,5ML

Quant Rev: 7
Quant Time: 931108 17:40
Injected at: 931108 17:07
Dilution Factor: 1.00000
Instrument ID: S

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07
Last Qcal Time: 931108 14:05

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01 Bromochloromethane	12.53	128.0	59852	50.00	UG/L	90
8)	C030 Methylene Chloride	10.05	84.0	3999	~~1.46 UG/L~~	BRL	89
9)	C035 Acetone	8.91	43.0	4123	~~1.04 UG/L~~	BRL	99
16)	CS15 1,2-Dichloroethane-d4	13.25	65.0	188325	49.56	UG/L	99
22)	*CI10 1,4 Difluorobenzene	13.74	114.0	310416	50.00	UG/L	99
36)	*CI20 Chlorobenzene-d5	18.04	117.0	323829	50.00	UG/L	99
42)	CS05 Toluene-d8	15.91	98.0	394227	49.15	UG/L	99
46)	C250 Xylene (M & P)	18.23	106.0	5463	~~1.37 UG/L~~	BRL	82
48)	CS10 Bromofluorobenzene	19.72	95.0	256303	51.22	UG/L	91

* Compound is ISTD

Compliant run

[illegible] 11/9/93

QA/QC Check Report

Data File: >S1441 Analysis Time: 11/08/93 17:07
Type: ,,,W
Misc: VBLK41,L,WATER,VBLK41,V,5ML

==========

Internal Standard Comparison
Std Data File: >S1436
Analysis Time: 11/08/93 14:05

Internal Standard	Sample Area	Std Area	%
CI01 Bromochloromethane	59852	67600	88.5
CI10 1,4 Difluorobenzene	310416	366329	84.7
CI20 Chlorobenzene-d5	323829	373834	86.6

% = (Sample Area/Std Area)*100
* Area outside limits

==========

Surrogate Recovery Summary

Surrogate Compound	Added	(Corr.) Found	%Rec	QC Limits Lower	Upper
CS15 1,2-Dichloroethane-d4	50	50	100	76	114
CS05 Toluene-d8	50	49	98	88	110
0 Bromofluorobenzene	50	51	102	86	115

* Recovery value outside limits

Compliant run

CLA 11/9/93

MS data file header from : >S1441::A0

Sample: ,,,W Operator: MIKE REG. GRP. 11/08/93 17:07
c : VBLK41,L,WATER,VBLK41,V,5ML
Sys. #: 1 MS model: 70 SW/HW rev.: LF ALS # : 0 Equip ID: S
Method file: MET826 Tuning file: BFBHP2 No. of extra records: 2
Source temp.: N/A Analyzer temp.: N/A Transfer line temp. : 0

Chromatographic temperatures :	10.	240.	240.	0.	0.
Chromatographic times, min. :	2.0	0.0	12.0	0.0	0.0
Chromatographic rate, deg/min:	12.0	12.0	0.0	.2	0.0

No peaks found.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	529963.	12.53	3.81 - 13.14
2	50.0	904770.	13.74	13.14 - 15.89
3	50.0	1247687.	18.04	15.89 - 28.04

Dilution Factor = 1.00 This sample was 5.00000 g or mL

Correction Factor = 1.00

$$\text{Unknown Concentration} = \left| \frac{\text{Conc Int Std} * \text{Area Unknown}}{\text{Area Int Std}} \right| * \text{Correction Factor}$$

5:48 PM MON., 8 NOV., 1993

None Detected

CMA 11/9/93

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK48

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: VBLK48

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: S1450

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

% Moisture: not dec. _____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.320 (mm) Dilution Factor: 1.0

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

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

100093

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK48

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: VBLK48

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: S1450

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

% Moisture: not dec. ____ Date Analyzed: 11/09/93

GC Column: CAP ID: 0.320 (mm) Dilution Factor: 1.0

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

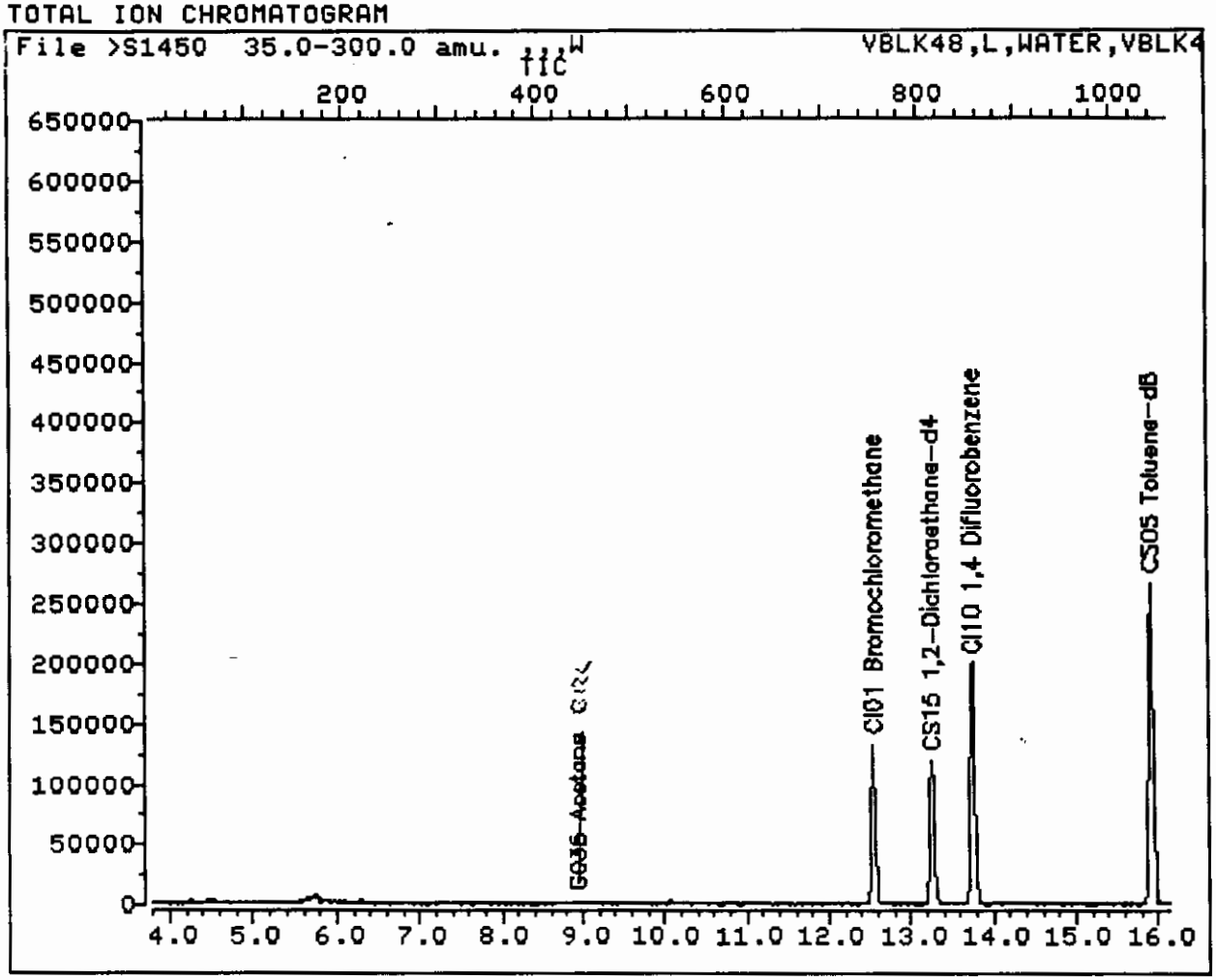
Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

100084

TOTAL ION CHROMATOGRAM



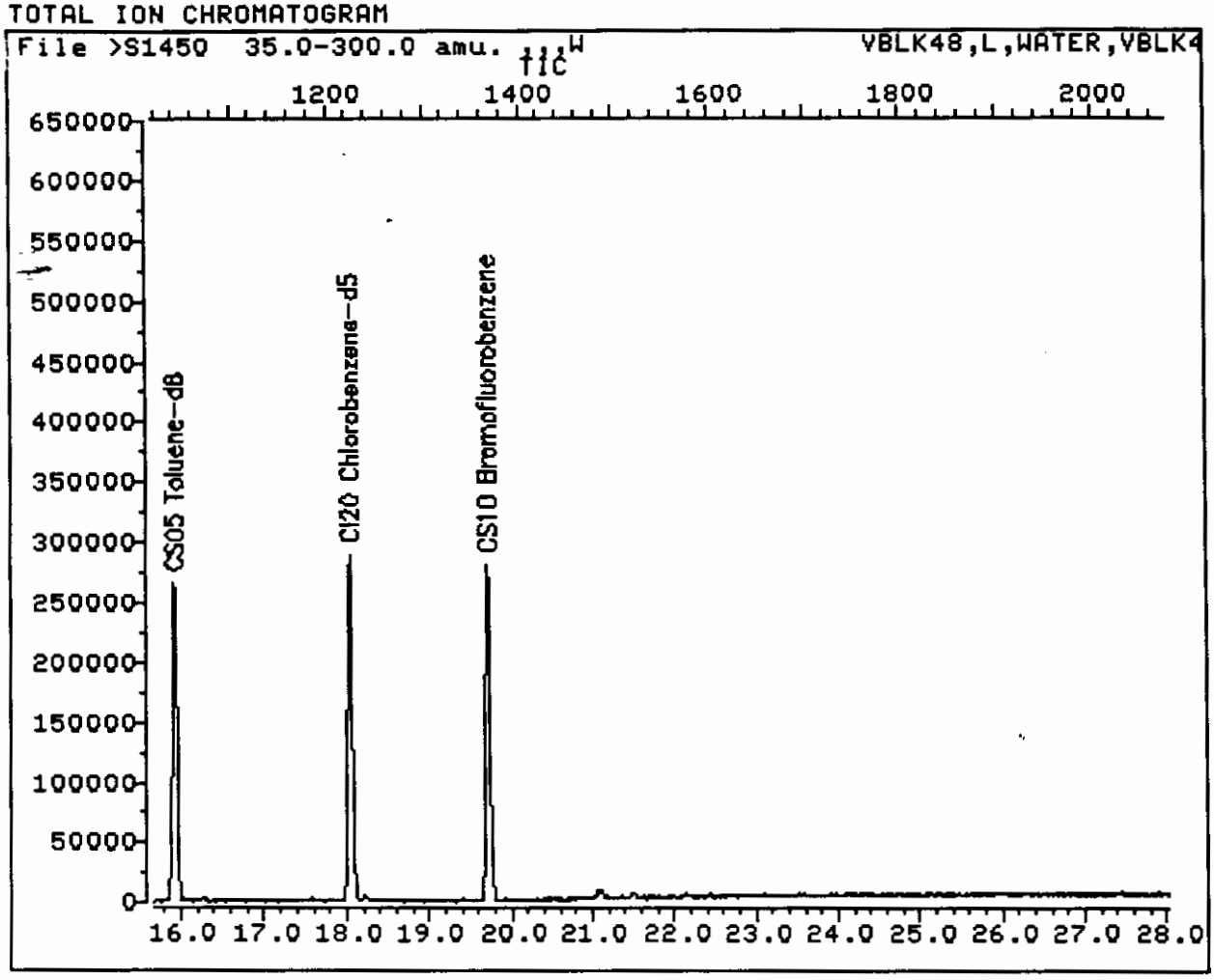
Data File: >S1450::A0 Quant Output File: ^S1450::D1
Name: ,,,W Instrument ID: S
Misc: VBLK48,L,WATER,VBLK48,V,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931109 10:30

Operator ID: MIKE
Quant Time : 931109 11:43
Injected at: 931109 11:14

Page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >S1450::A0 Quant Output File: ^S1450::D1
Name: ,,,W Instrument ID: S
Misc: VBLK48,L,WATER,VBLK48,V,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931109 10:30

Operator ID: MIKE
Quant Time : 931109 11:43
Injected at: 931109 11:14

QUANT REPORT

Operator ID: MIKE
Output File: ^S1450::D1
Data File: >S1450::A0
Name: ,,,W
Misc: VBLK48,L,WATER,VBLK48,V,5ML

Quant Rev: 7
Quant Time: 931109 11:43
Injected at: 931109 11:14
Dilution Factor: 1.00000
Instrument ID: S

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07
Last Qcal Time: 931109 10:30

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01 Bromochloromethane	12.54	128.0	49027	50.00	UG/L	99
9)	C035 Acetone	8.93	43.0	4154	~~1.14 UG/L~~ BDL		78
16)	CS15 1,2-Dichloroethane-d4	13.25	65.0	165095	52.86	UG/L	98
22)	*CI10 1,4 Difluorobenzene	13.75	114.0	242796	50.00	UG/L	97
36)	*CI20 Chlorobenzene-d5	18.05	117.0	276572	50.00	UG/L	99
42)	CS05 Toluene-d8	15.92	98.0	318770	48.20	UG/L	99
48)	CS10 Bromofluorobenzene	19.72	95.0	218180	49.16	UG/L	92

* Compound is ISTD

Compliance run
CMA 11/9/93

QA/QC Check Report

Data File: >S1450 Analysis Time: 11/09/93 11:14
Type: ,,,W
Misc: VBLK48,L,WATER,VBLK48,V,5ML

==========

Internal Standard Comparison
Std Data File: >S1449
Analysis Time: 11/09/93 10:30

Internal Standard	Sample Area	Std Area	%
CI01 Bromochloromethane	49027	60114	81.6
CI10 1,4 Difluorobenzene	242796	306772	79.1
CI20 Chlorobenzene-d5	276572	332583	83.2

% = (Sample Area/Std Area)*100
* Area outside limits

==========

Surrogate Recovery Summary

Surrogate Compound	Added	(Corr.) Found	%Rec	QC Limits Lower	Upper
CS15 1,2-Dichloroethane-d4	50	53	106	76	114
CS05 Toluene-d8	50	48	96	88	110
[illegible]0 Bromofluorobenzene	50	49	98	86	115

* Recovery value outside limits

Compliant run

[illegible] 11/9/93

100098

MS data file header from : >S1450::A0

ıple: ,,,W Operator: MIKE REG. GRP. 11/09/93 11:14
Misc : VBLK48,L,WATER,VBLK48,V,5ML
Sys. #: 1 MS model: 70 SW/HW rev.: LF ALS # : 0 Equip ID: S
Method file: MET826 Tuning file: BFBHP2 No. of extra records: 2
Source temp.: N/A Analyzer temp.: N/A Transfer line temp. : 0

Chromatographic temperatures :	10.	240.	240.	0.	0.
Chromatographic times, min. :	2.0	0.0	12.0	0.0	0.0
Chromatographic rate, deg/min:	12.0	12.0	0.0	.2	0.0

No peaks found.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	464353.	12.54	3.78 - 13.14
2	50.0	726215.	13.75	13.14 - 15.90
3	50.0	1053450.	18.05	15.90 - 28.02

Dilution Factor = 1.00 This sample was 5.00000 g or mL

ɔrrection Factor = 1.00

$$\text{Unknown Concentration} = \left| \frac{\text{Conc Int Std} * \text{Area Unknown}}{\text{Area Int Std}} \right| * \text{Correction Factor}$$

1:27 PM TUE., 9 NOV., 1993

100089

MATRIX SPIKE DATA

6850 Versar Center • P. O. Box 1549 • Springfield, Virginia 22151 • Telephone: (703) 750-3000 • 1-800-282-7797

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W-5(S)MS

I Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12144MS

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: S1443

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/08/93

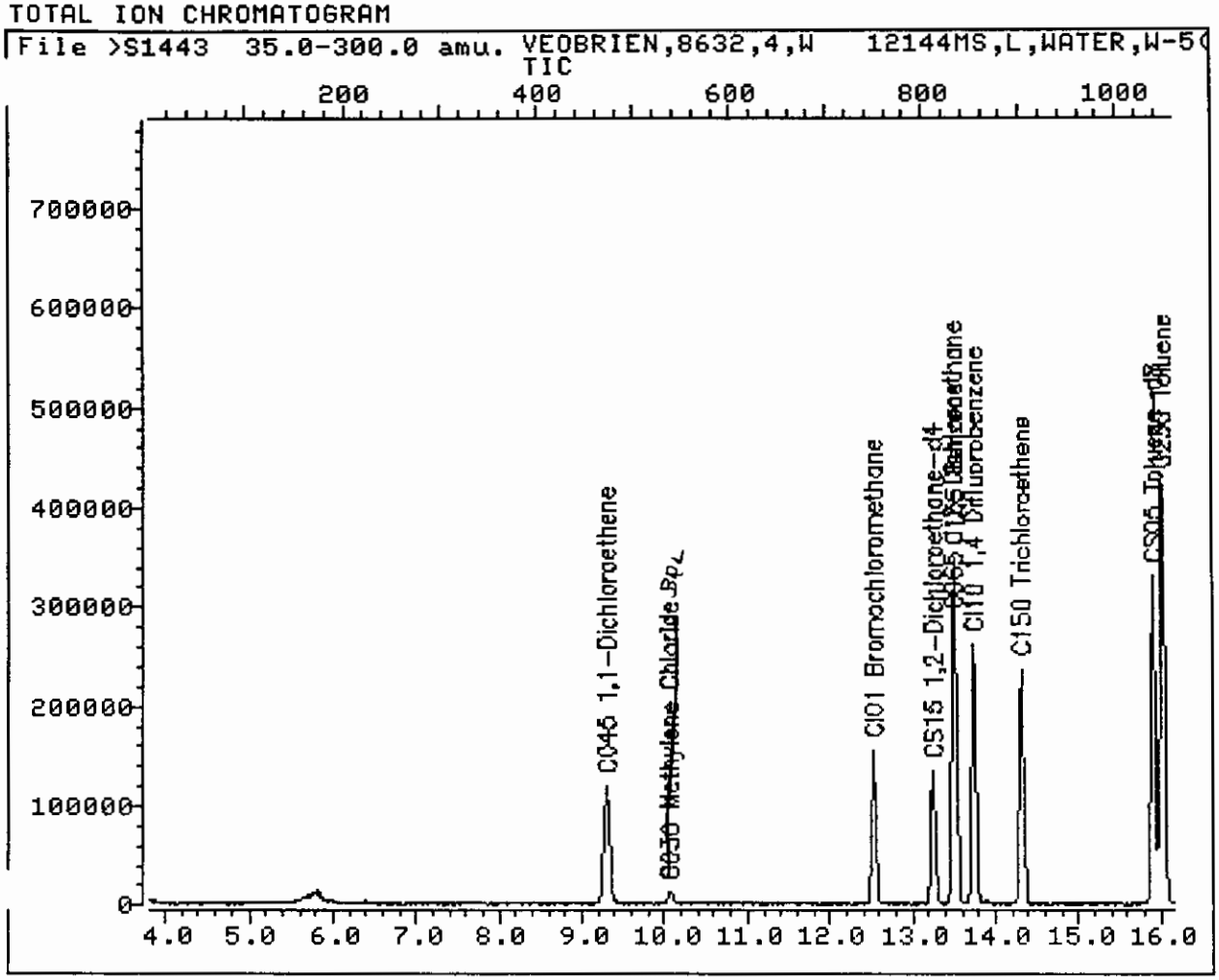
GC Column: CAP ID: 0.320 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	10	U
75-35-4	1,1-Dichloroethene	51	
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	49	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	53	
10061-02-6	Trans-1,3-dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	54	
108-90-7	Chlorobenzene	51	
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Total xylenes	10	U

100101

TOTAL ION CHROMATOGRAM



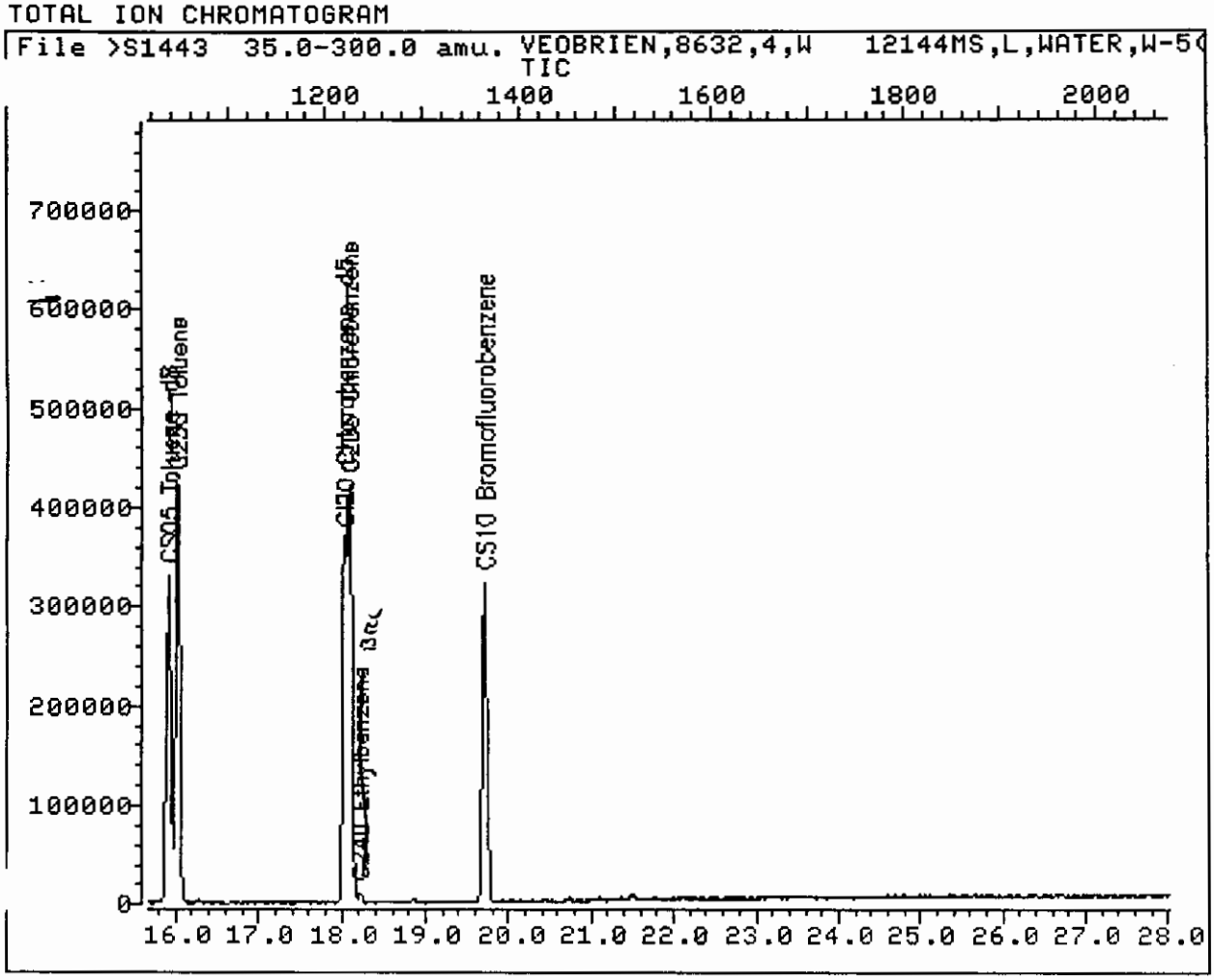
Data File: >S1443::A0 Quant Output File: ^S1443::D1
Name: VEOBRIEN,8632,4,W Instrument ID: S
Misc: 12144MS,L,WATER,W-5(S)MS,V,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

Operator ID: MIKE
Quant Time : 931108 18:43
Injected at: 931108 18:14

Page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >S1443::A0 Quant Output File: ^S1443::D1
Name: VEOBRIEN,8632,4,W Instrument ID: S
Misc: 12144MS,L,WATER,W-5(S)MS,V,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

Operator ID: MIKE
Quant Time : 931108 18:43
Injected at: 931108 18:14

QUANT REPORT

Operator ID: MIKE
Quant Rev: 7
Quant Time: 931108 18:43
Injected at: 931108 18:14
Dilution Factor: 1.00000
Instrument ID: S
Name: VEOBRIEN,8632,4,W
Misc: 12144MS,L,WATER,W-5(S)MS,V,5ML

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07
Last Qcal Time: 931108 14:05

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01 Bromochloromethane	12.53	128.0	60095	50.00	UG/L	92
8)	C030 Methylene Chloride	10.06	84.0	9580	~~3.49~~	~~UG/L~~ BRL	88
11)	C045 1,1-Dichloroethene	9.30	96.0	97378	51.14	UG/L MS	84
16)	CS15 1,2-Dichloroethane-d4	13.25	65.0	192222	50.38	UG/L	98
17)	C065 1,2-Dichloroethane	13.50	62.0	5833	~~1.06~~	~~UG/L~~ BRL	77
22)	*CI10 1,4 Difluorobenzene	13.74	114.0	319514	50.00	UG/L	99
30)	C150 Trichloroethene	14.32	130.0	133503	49.06	UG/L MS	86
33)	C165 Benzene	13.51	78.0	520655	52.58	UG/L MS	100
36)	*CI20 Chlorobenzene-d5	18.04	117.0	332406	50.00	UG/L	97
41)	C230 Toluene	16.02	91.0	572910	53.64	UG/L MS	89
42)	CS05 Toluene-d8	15.92	98.0	402806	48.92	UG/L	97
43)	C235 Chlorobenzene	18.10	112.0	358683	51.39	UG/L MS	89
44)	C240 Ethylbenzene	18.21	106.0	3757	~~1.11~~	~~UG/L~~ BRL	72
48)	CS10 Bromofluorobenzene	19.72	95.0	260944	50.80	UG/L	93

Compound is ISTD

Compliant run

11/9/93

QA/QC Check Report

Data File: >S1443 Analysis Time: 11/08/93 18:14
: e: VEOBRIEN,8632,4,W
c: 12144MS,L,WATER,W-5(S)MS,V,5ML

==========

Internal Standard Comparison
Std Data File: >S1436
Analysis Time: 11/08/93 14:05

Internal Standard	Sample Area	Std Area	%
CI01 Bromochloromethane	60095	67600	88.9
CI10 1,4 Difluorobenzene	319514	366329	87.2
CI20 Chlorobenzene-d5	332406	373834	88.9

% = (Sample Area/Std Area)*100
* Area outside limits

==========

Surrogate Recovery Summary

Surrogate Compound	Added	(Corr.) Found	%Rec	QC Limits Lower	Upper
CS15 1,2-Dichloroethane-d4	50	50	100	76	114
CS05 Toluene-d8	50	49	98	88	110
CS10 Bromofluorobenzene	50	51	102	86	115

* Recovery value outside limits

Compliant run

CMA 11/9/93

MATRIX SPIKE DUPLICATE DATA

6850 Versar Center • P. O. Box 1549 • Springfield, Virginia 22151

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W-5(S)MSD

Name: VERSAR INC. Contract: _____

Lab Code: VERSAR Case No.: R09042 SAS No.: _____ SDG No.: 4

Matrix: (soil/water) WATER Lab Sample ID: 12144MSD

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: S1444

Level: (low/med) LOW Date Received: 11/03/93

% Moisture: not dec. ____ Date Analyzed: 11/08/93

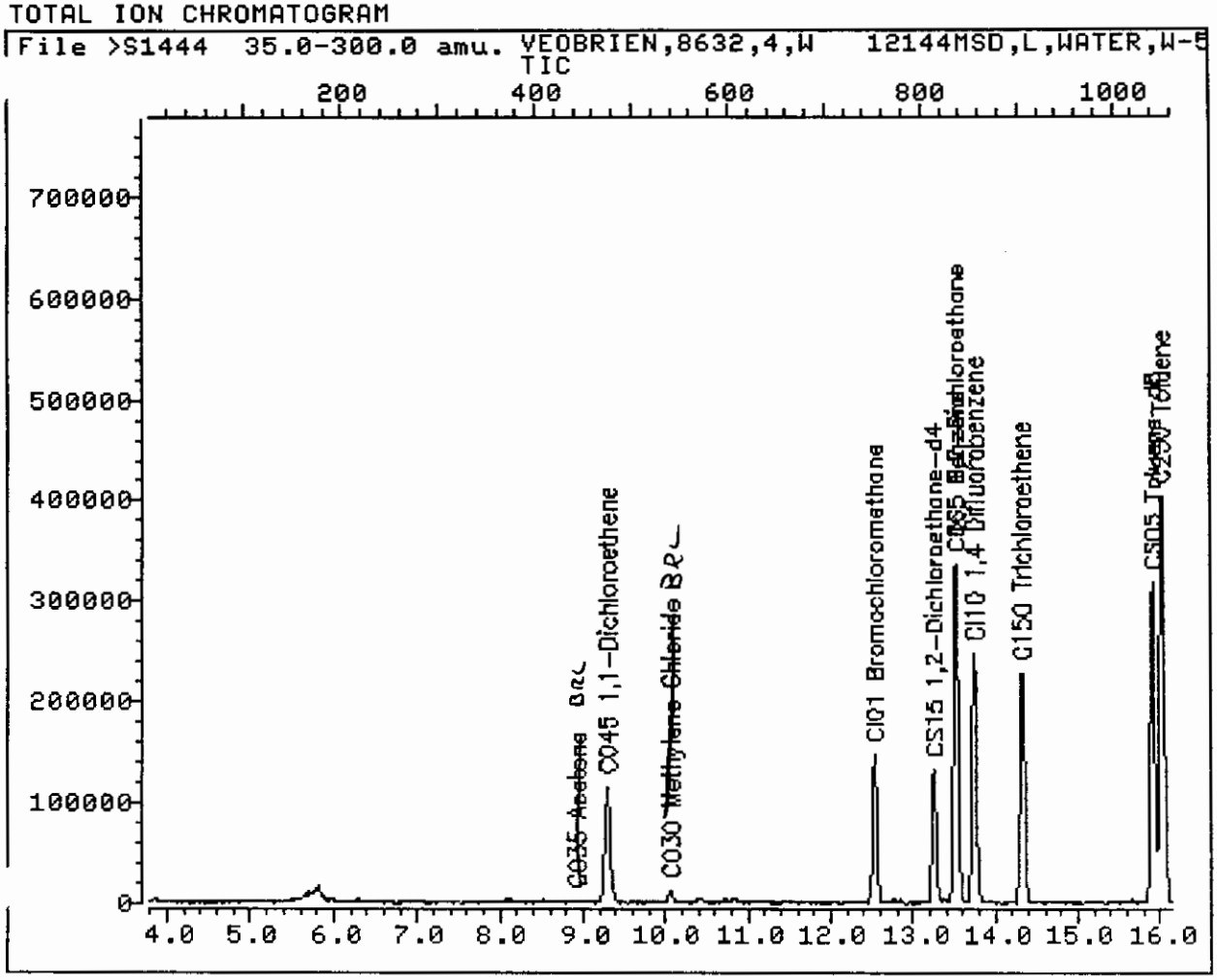
GC Column: CAP ID: _____ (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	10	U
75-35-4	1,1-Dichloroethene	50	
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	50	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	53	
10061-02-6	Trans-1,3-dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	53	
108-90-7	Chlorobenzene	52	
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Total xylenes	10	U

100107

TOTAL ION CHROMATOGRAM



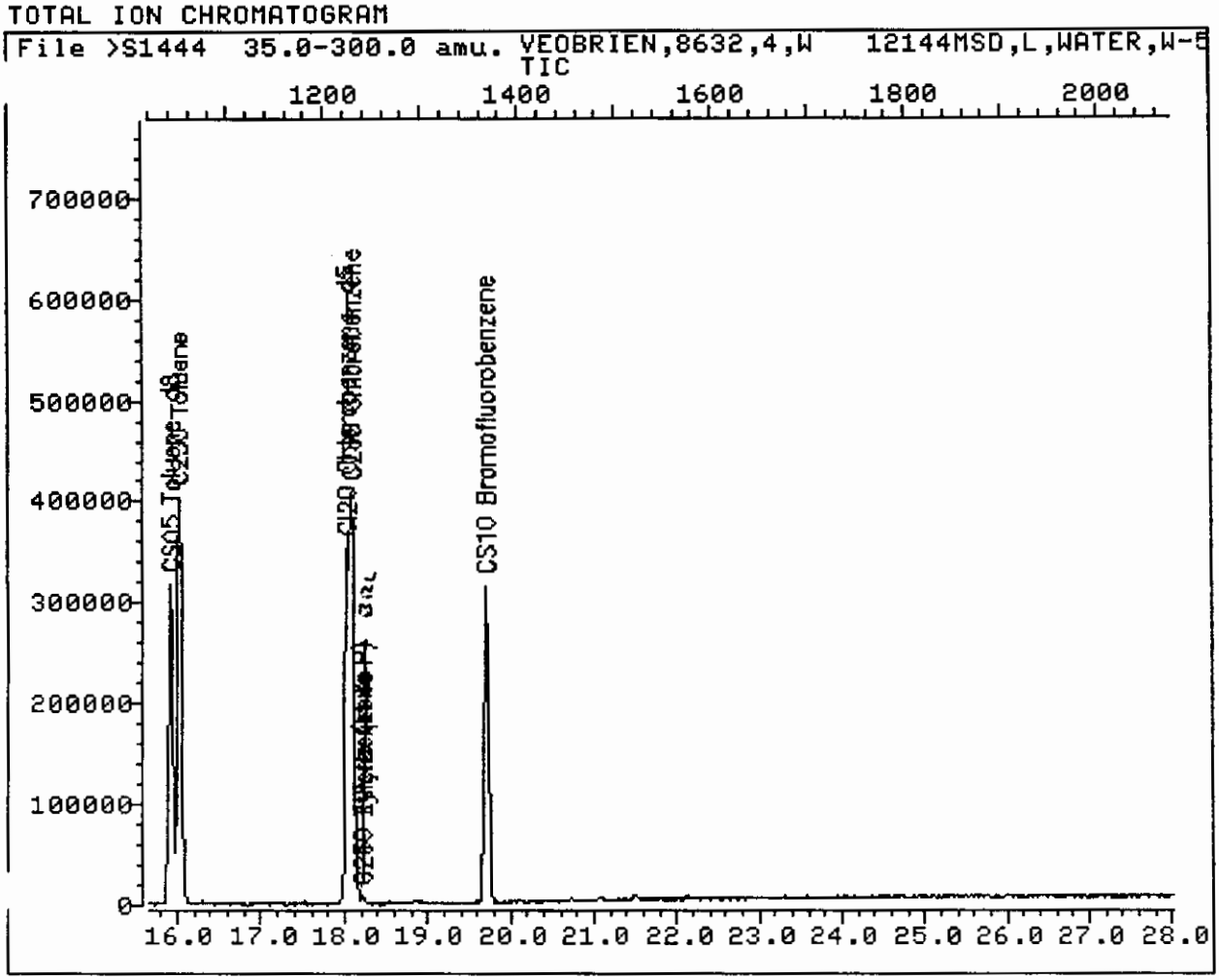
Data File: >S1444::A0 Quant Output File: ^S1444::D1
Name: VEOBRIEN,8632,4,W Instrument ID: S
Misc: 12144MSD,L,WATER,W-5(S)MSD,V,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

Operator ID: MIKE
Quant Time : 931108 19:16
Injected at: 931108 18:47

Page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >S1444::A0 Quant Output File: ^S1444::D1
Name: VEOBRIEN,8632,4,W Instrument ID: S
Misc: 12144MSD,L,WATER,W-5(S)MSD,V,5ML

Id File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07 Last Qcal Time: 931108 14:05

Operator ID: MIKE
Quant Time : 931108 19:16
Injected at: 931108 18:47

QUANT REPORT

Operator ID: MIKE
Quant Rev: 7
Quant Time: 931108 19:16
(put File: ^S1444::D1
Injected at: 931108 18:47
L..a File: >S1444::A0
Dilution Factor: 1.00000
Name: VEOBRIEN,8632,4,W
Instrument ID: S
Misc: 12144MSD,L,WATER,W-5(S)MSD,V,5ML

ID File: ID_CVI::QT
Title: IFB
Last Calibration: 931020 10:07
Last Qcal Time: 931108 14:05

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01 Bromochloromethane	12.53	128.0	57964	50.00	UG/L	89
8)	C030 Methylene Chloride	10.07	84.0	8752	~~3.30~~	~~UG/L~~ BRL	85
9)	C035 Acetone	8.93	43.0	4162	~~1.08~~	~~UG/L~~ BRL	93
11)	C045 1,1-Dichloroethene	9.30	96.0	91339	49.73	UG/L ms	86
16)	CS15 1,2-Dichloroethane-d4	13.26	65.0	179597	48.80	UG/L	98
17)	C065 1,2-Dichloroethane	13.52	62.0	5635	~~1.06~~	~~UG/L~~ BRL	89
22)	*CI10 1,4 Difluorobenzene	13.75	114.0	305007	50.00	UG/L	98
30)	C150 Trichloroethene	14.32	130.0	129924	50.02	UG/L ms	86
33)	C165 Benzene	13.52	78.0	497771	52.66	UG/L ms	100
36)	*CI20 Chlorobenzene-d5	18.04	117.0	320009	50.00	UG/L	98
41)	C230 Toluene	16.02	91.0	547238	53.22	UG/L ms	94
42)	CS05 Toluene-d8	15.92	98.0	384896	48.56	UG/L	97
43)	C235 Chlorobenzene	18.10	112.0	347960	51.78	UG/L ms	89
44)	C240 Ethylbenzene	18.22	106.0	4044	~~1.24~~	~~UG/L~~ NC	59
45)	C250 Xylene (M & P)	18.22	106.0	4044	~~1.03~~	~~UG/L~~ BRL	92
)	CS10 Bromofluorobenzene	19.71	95.0	250003	50.56	UG/L	89

* Compound is ISTD

Compliant run
[illegible] 11/9/93

QA/QC Check Report

I a File: >S1444 Analysis Time: 11/08/93 18:47
l.me: VEOBRIEN,8632,4,W
Misc: 12144MSD,L,WATER,W-5(S)MSD,V,5ML

==========

Internal Standard Comparison
Std Data File: >S1436
Analysis Time: 11/08/93 14:05

Internal Standard	Sample Area	Std Area	%
CI01 Bromochloromethane	57964	67600	85.7
CI10 1,4 Difluorobenzene	305007	366329	83.3
CI20 Chlorobenzene-d5	320009	373834	85.6

% = (Sample Area/Std Area)*100
* Area outside limits

==========

Surrogate Recovery Summary

Surrogate Compound	Added	(Corr.) Found	%Rec	QC Limits Lower	Upper
CS15 1,2-Dichloroethane-d4	50	49	98	76	114
C[illegible]5 Toluene-d8	50	49	98	88	110
[illegible].0 Bromofluorobenzene	50	51	102	86	115

* Recovery value outside limits

Compliant run

[illegible] 11/9/93

SAMPLE PREPARATION

Some items may not be present in data package:
Parameter Request Sheet
Chain of Custody
Additional Client Provided Information
Reextraction Notice
TCLP Preparation Sheets
Organic Extraction Lab notes on Samples
GC Screening Data
Organic Extraction Lab Chain of Custody (in-house)
Extracts Ready for Analysis Sheet
Extraction logsheet
Total Solids analysis results
GC/MS batch analysis logsheet
GC/MS Injection logbook pages

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VERSAR LIMS 11/04/93

VERSAR LABORATORIES INC.
PARAMETER REQUEST SHEET

Deliver To: 48

Control: 8632
Code: VEOBRIEN
Batch: 4
Job Number: 420.1.0

Case: R09042
SDG:
Quote: 9401136 - 94
Charge:

Manager: JAUFMANN
Company: VERSAR DIV 61

Site: O'BRIEN

Received: 03-NOV-93
Due: 23-NOV-93
Ext Due: 13-NOV-93

Sampled: 01-NOV-93
Report: 23-NOV-93
Disposal: 04-JAN-94

QC Level: CLP 390
Diskette: CUSTOM

Rep Type: S
Reports: 1 Type 4

Comments: 21 DAY TA FROM RECEIPT OF LAST SAMPLE--Samples shipping from 11/1 to 11/8. Do QC on designated sample if sufficient volume. Number of samples expected:10 for 3VOA&3BNA and 25 for 3CLP.

Test	Samp#	X	Comment	Field Number	Matrix	Location	Other Tests
3CLP - 43							
	12146	A	QC	W-5(S)	HOH	A-59	
X3SV - 46							
	12145	B	QC	W-5(S)	HOH	A-59	3BNA
IA - 48							
	12145	B	QC	W-5(S)	HOH	A-59	X3SV
3VOA - 48							
	12144	C	QC	W-5(S)	HOH	VOA-1	

QC = Quality Control; FDUP = Field Duplicate; FLT = Filtered; BKN = Broken; EMP = Empty; TB = Trip Blank; FB = Field Blank; SEE = See Batch Comments.

VBLK41 pH 37
12144 pH ≥1

VERSAR LABORATORIES INC.
PARAMETER REQUEST SHEET

Deliver To: 48

Control: 8650
Code: VEOBRIEN
Batch: 5
Job Number: 420.1.0

Case: R09042
SDG:
Quote: 9401136 - 94
Charge:

Manager: JAUFMANN
Company: VERSAR DIV 61

Site: O'BRIEN

Received: 05-NOV-93
Due: 24-NOV-93
Ext Due: 14-NOV-93

Sampled: 03-NOV-93
Report: 24-NOV-93
Disposal: 07-JAN-94

QC Level: CLP 390
Diskette: CUSTOM

Rep Type: S
Reports: 1 Type 4

Comments: 21 DAY TA FROM RECEIPT OF LAST SAMPLE--Samples shipping from 11/1 to 11/8. Do QC on designated sample if sufficient volumn. Prep, analyze and report with VEOBRIEN-4 (8632). Additional samples expected.

Test	Samp#	X	Comment	Field Number	Matrix	Location	Other Tests
3CLP - 43							
	12313	A		MW-12(S)	HOH	A-54	
	12314	A		MW-13(S)	HOH	A-54	
	12315	A		MW-14(S)	HOH	A-54	
	12316	A		MW-14(S)F	HOH	A-54	
	12317	A		MW-15(S)	HOH	A-54	
	12318	A		MW-15(S)F	HOH	A-54	
	12319	A		MW-11(S)	HOH	A-54	
	12325	A		MW-11(S)F	HOH	A-54	
X3SV - 46							
	12305	B		MW-12(S)	HOH	A-54	3BNA
	12307	B		MW-14(S)	HOH	A-54	3BNA
	12309	B		MW-15(S)	HOH	A-54	3BNA
	12311	B		MW-11(S)	HOH	A-54	3BNA
3BNA - 48							
	12305	B		MW-12(S)	HOH	A-54	X3SV
	12307	B		MW-14(S)	HOH	A-54	X3SV
	12309	B		MW-15(S)	HOH	A-54	X3SV
	12311	B		MW-11(S)	HOH	A-54	X3SV
3VOA - 48							
	12300	C pH<		MW-12(S)	HOH	VOA-4	
	12301	C pH<		MW-14(S)	HOH	VOA-4	
	12302	C pH<		MW-15(S)	HOH	VOA-4	
	12303	C pH<		MW-11(S)	HOH	VOA-4	
	12304	A pH<		W-100	HOH	VOA-4	

QC = Quality Control; FDUP = Field Duplicate; FLT = Filtered; BKN = Broken; EMP = Empty; TB = Trip Blank; FB = Field Blank; SEE = See Batch Comments.

VERSAR LABORATORIES INC.
GC/MS SECTION
Analysis Log

Control #: 8632
Code: VEOBRIEN - 4
Test: 3VOA
Matrix: HOH
Hold Time: 13-NOV-93
Due Date : 23-NOV-93

09-NOV-93

Batch Comments

21 DAY TA FROM RECEIPT OF LAST SAMPLE--Samples shipping from 11/1 to 11/8. Do QC on designated sample if sufficient volume. Number of samples expected:10 for 3VOA&3BNA and 25 for 3CLP.

Sample	CMT	Field Number	PH	File #	Run Date	Valid	HT Met	Comments	Rerun File	Valid	Rerun File	Valid
12144	QC	W-5(S)	1	>51442	11/8	Y	Y					
12144MS			1	>51443	↓	Y	Y					
12144MSD			1	>51444		Y	Y					

Analytical Difficulties:

Analysis Start Date 11/8/93

Data Completion Date 11/8/93

Completion Date

Report Date

100115

VERSAR LABORATORIES INC.
GC/MS SECTION
Analysis Log

Control #: 8650
Code: VEOBRIEN - 5
Test: 3VOA
Matrix: HOH
Hold Time: 15-NOV-93
Due Date : 24-NOV-93

09-NOV-93

Batch Comments

21 DAY TA FROM RECEIPT OF LAST SAMPLE--Samples shipping from 11/1 to 11/8. Do QC on designated sample if sufficient volumn. Prep, analyze and report with VEOBRIEN-4 (8632). Additional samples expected.

Sample	CMT	Field Number	PH	File #	Run Date	Valid	HT Met	Comments	Rerun File	Valid	Rerun File	Valid
12300		MW-12(S)	1	751445	11/8	Y	Y					
12301		MW-14(S)	1	751451	11/9	Y	Y					
12302		MW-15(S)	1	751452	11/9	Y	Y					
12303		MW-11(S)	1	751453	11/9	Y	Y					
12304		W-100	1	751455	11/9	Y	Y					

Analytical Difficulties:

Analysis Start Date 11/8/93

Completion Date 11/9/93

Data Completion Date ~~11/9/93~~

Report Date

100116

VERSAR LABORATORIES INC. VOA INJECTION LOG GC/MS INSTRUMENT ID S DATE 11/8/93 ASCII FILE _____ STREAMER NO. _____

000047

FILE NAME	METHOD	CONTROL NUMBER	BATCH	FIELD NUMBER	LEVEL	MATRX	VERSAR NUMBER	TYPE	CODE	DIL. F/T	DIL. F/T	VOL. PURGED	FINAL DIL	IS NUMBER	HOLD TIME	VALID ANALY
>S1427				VBLK27			VBLK27					5mL		32996B		
>S1428				VBLK28			VBLK28									
>S1429				VBLK29			VBLK29									
>S1430				VBLK30			VBLK30									
>S1431				VBLK31			VBLK31									
>S1432				VBLK32			VBLK32									
>S1433	2/88 3/90			BFB 50ng			31342D									
>S1434	2/88 3/90			BFB 50ng 12:27			31342D									
>S1435	2/88 3/90			VSTD050	L	W	33213					5mL		32996B		
>S1436	2/88 3/90			VSTD050 um ~~VBLK36~~ 11/8/93			33215 um ~~VBLK36~~	11/8/93						32996E		
>S1437	2/88 3/90			VSTD200			33216									
>S1438	2/88 3/90			VSTD100			33217									
>S1439	2/88 3/90			VSTD020			33218									
>S1440	2/88 3/90			VSTD010			33219									
>S1441	2/88 3/90			VBLK41	L	W	VBLK41					5mL		32996B		Y
>S1442	3/90	8632	4	W-5(S)	L	W	12144		VEOBRIEN			5mL				Y

Baked out ALS + LSC lines after >S1429

QCAL on >S1436

ANALYST SIGNATURE [signature] DATE 11/8/93

VERSAR LABORATORIES INC. VOA INJECTION LOG GC/MS INSTRUMENT ID 5 DATE 11/8/93 ASCII FILE _____ STREAMER NO. _____

000046

FILE NAME	METHOD	CONTROL NUMBER	BATCH	FIELD NUMBER	LEVEL	MATRX	VERSAR NUMBER	TYPE	CODE	DIL. F/T	DIL. F/T	VOL. PURGED	FINAL DIL	IS NUMBER	HOLD TIME	VALID ANALYS
		~~MW 11/5/93~~														
251443	3/90	8632 ~~8650~~	4 ~~5~~	W-5MS ~~MW-12(5)~~ MW 11/5/93	L	W	12144MS		VEOBRIEN			5mL		32946B		Y
251444	↓	↓	↓	W-5MSD ~~MW-14(5)~~ MW 11/8/93	↓	↓	12144MSD		↓			↓		↓		Y
251445	3/90	8650	5	MW 12(5) ~~MW-15(5)~~			12300									Y
251446	↓	↓	↓	MW-14(5) ~~MW-11(5)~~			12301									
251447				MW-15(5) ~~MW-1~~			12302									
251448				MW-11(5)			12303									
251449	3/90			VBLK49			VBLK49									
251450	↓	8650	5	W-100			12304									
251451	(TCLP) 8240	8628	1	PB0200			PB0200		ZAPATA	1mL/5mL		5mL	1/5	32946B		
251452	↓	↓	↓	1			12133		↓	1mL/5mL		↓	1/5	↓		
251453				1 MS			12133MS			1mL/5mL			1/5			

ANALYST SIGNATURE Mike [illegible] DATE 11/8/93

Power Failure after >51445

VERSAR LABORATORIES INC. VOA INJECTION LOG GC/MS INSTRUMENT ID 5 DATE 11/9/93 ASCII FILE _____ STREAMER NO. _____

000049

FILE NAME	METHOD	CONTROL NUMBER	BATCH	FIELD NUMBER	LEVEL	MATRX	VERSAR NUMBER	TYPE	CODE	DIL. F/T	DIL. F/T	VOL. PURGED	FINAL DIL	IS NUMBER	HOLD TIME	VALID ANALYSI
>S1446	3190 8240			8:11 -> 20:11 BFB 50ng			31342D									
>S1447				VSTD050	L	W	33220					5mL	1	32996B		
>S1448				VSTD050			33220									
>S1449				VSTD050			33222									
>S1450				VBLK50			VBLK50									Y
>S1451	3190	8650	5	MW-14(S)			12301		VEOBRIEN							Y
>S1452				MW-15(S)			12302									Y
>S1453				MW-11(S)			12303									Y
>S1454				VBLK54			VBLK54									NA
>S1455				W-100			12304									Y
>S1456	(TCLP) 8240	8628	1	PB0200			PB0200		ZAPATA	1mL 5mL			1/5			Y
>S1457				1			12133			1mL 5mL			1/5			
>S1458				1 MS			12133MS			1mL 5mL			1/5			
>S1459	8240	8629	30	1193006	L	W	12136		Dewberry	10mL 100mL	1mL 10mL	5mL	1/100,000	32996B		
>S1460	PCG	8648	120	110293A			12289		PWCS							
>S1461				110293B			12290									

QCAL ON >S1449

ANALYST SIGNATURE [signature] DATE 11/9/93

VERSAR LABORATORIES INC. VOA INJECTION LOG GC/MS INSTRUMENT ID 5 DATE 11/9/93 ASCII FILE _____ STREAMER NO. _____

000050

FILE NAME	METHOD	CONTROL NUMBER	BATCH	FIELD NUMBER	LEVEL	MATRX	VERSAR NUMBER	TYPE	CODE	DIL. F/T	DIL. F/T	VOL. PURGED	FINAL DIL	IS NUMBER	HOLD TIME	VALID ANALY
>51462	PCE	8648	120	110293C	L	W	12291		PWCS			5ml		32996B		
>51463	↓	↓	↓	110293C Dup	↓	↓	12291D		↓			↓		↓		
>51464	↓	↓	↓	110293C MS	↓	↓	11291MS		↓			↓		↓		
>51465	↓	↓	↓	110293D	↓	↓	11292		↓			↓		↓		

NALYST SIGNATURE [signature] DATE 11/9/93