ROADWAY EXPRESS, INC.
700 & 650 COMMERCIAL AVENUE
CARLSTADT, NEW JERSEY

ATTACHMENTS

VOLUME III

447697

ATTACHMENTS

A	Legal Description
B	Property Deed
C	Property Leases
D	Storm Water Permit
E	Summary of Findings Report-Project #3477 dated April 18, 1986 by O. H. Materials Corp.
F	Site Remediation Report dated April, 1987 by ERM-Tanknomics, Inc.
G	Current Underground Storage Tank Specifications
H	Removal and Disposal of Four Underground Storage Tanks dated July 13, 1989 by Groundwater Technology, Inc.
I	UST Investigation Report dated October 17, 1990 by Melick-Tully Environmental, Inc.
J	Site/Remedial Investigation Report dated March 31, 1993 by Aaron Environmental Specialists
K	New Jersey Department of Environmental Protection letter dated March 11, 1999
L	Evaluation of Subsurface Conditions, 2nd Round Sampling and Analysis dated April 29, 1992 by Aaron Environmental Specialists
M	UST Closure Report dated October 17, 1992 by Aaron Environmental Specialists
N	Remedial Action Workplan dated January, 1997 by Geraghty & Miller, Inc.
O	Historical Aerial Photographs and Topographic Maps
P	Waste Manifests and Summary Table
Q	List of Transporters and Disposal Facilities
R	Roadway Waste Management Manuals
S	Ryder Truck Rental Garage Audit
T	Spill Report
U	Storm Water Pollution Prevention Plan (SWP3)
V	Storm Water Test Results

ATTACHMENT L

Evaluation of Subsurface Conditions, 2nd Round Sampling

And Analysis Dated April 29, 1992

By Aaron Environmental Specialists

AARON
AARON ENVIRONMENTAL SPECIALISTS

937 South Main Street • Plantsville, Connecticut 06479
Telephone (203) 628-9858
Fax (203) 621-1464

May 22, 1992

Mr. R. Vijayvargiya, P.E.
Roadway Services, Inc.
1077 Gorge Blvd.
Akron, Ohio 44309-0088
(216) 384-2324
fax.# 258-6042

RECEIVED
MAY 27 1992
PROPERTY

RE: Carlstadt, NJ

Dear Mr. Vijayvargiya,

Enclosed please find an original and two copies of our report concerning the second round of sample collection and laboratory analysis of two monitoring wells located at the Ryder Truck facility in Carlstadt, NJ. Following review by Roadway, this document should be forwarded to the New Jersey DEPE. Due to the bulk of the analytical data, I have only included the required laboratory information in the report text. I have also enclosed two copies of the full laboratory text which should be kept on file at Roadway. The NJ DEPE has the right to request this data in the future.

For your convenience a draft letter to the NJ DEPE has been attached (if possible, you may wish to include a schedule concerning the estimated date of completion with respect to the soil disposal). Should you have any questions concerning this project, please contact this office at (203) 628-9858.

Very truly yours,

Richard J. Vocke
Project Manager

AARON ENVIRONMENTAL SPECIALISTS

937 South Main Street • Plantsville, Connecticut 06479
Telephone (203) 628-9858
Fax (203) 621-1464

EVALUATION OF SUBSURFACE CONDITIONS, 2nd ROUND SAMPLING & ANALYSIS

RYDER TRUCK TERMINAL
CARLSTADT, NEW JERSEY

APRIL 1992

Prepared for:

Mr. Ram Vijayvargiya, P.E.
Roadway Services, Inc.
1077 Gorge Boulevard
Akron, Ohio 44309
(216) 384-2324

29 April, 1992

Daniel R. Kogut, P.E.
Environmental Manager

Richard J. Vocke
Project Manager

SECTION I

GROUND WATER SAMPLING REPORT

937 South Main Street, Plantsville, CT 06479 Tel: 203-628-9858 Fax: 203-621-1464

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SECTION I

GROUND WATER SAMPLING REPORT

1.0 INTRODUCTION 1
1.1 Purpose

2.0 SUMMARY 2

3.0 CONCLUSIONS 2

4.0 RECOMMENDATIONS 3

5.0 PROJECT LIMITATIONS 4

SECTION II

LABORATORY DATA, CHAIN OF CUSTODY

2.0 SUMMARY

2.1 On April 2, 1992, AARON Environmental Specialists (AARON) conducted field sampling at the Ryder Truck facility, 650 Commercial Avenue in Carlstadt, New Jersey.

2.2 Static water levels were recorded for each well using an electronic water level indicator. No free product sheens were identified. A minimum of five well volumes of water was purged from each well prior to sample collection. Wells were purged using a centrifugal pump and dedicated tubing. After returning to static level, samples were collected from each well using dedicated PVC bailers. Samples were collected from within two feet of static water level.

2.3 Ground water samples along with field and trip blanks were transported under controlled conditions (i.e., cooler @ 4 degrees C) to ECRA Laboratories, Inc. in Randolph, New Jersey for analysis.

3.0 CONCLUSIONS

3.1 Laboratory results are summarized in the table below. Two targeted Volatile Organic Compounds were identified above detection levels in monitoring well #1. Base Neutral Extractables were below detection levels for all compounds targeted.

MW #	Compound Identified	Conc.	MDL
MW-1	Benzene	1 ppb	5 ppb
MW-1	Chlorobenzene	76 ppb	5 ppb
MW-1	1,2-Dichlorobenzene	16 ppb	5 ppb
MW-1	Naphthalene	8 ppb	10 ppb
MW-2	None Detected Above MDL		

1.0 INTRODUCTION

1.1 Purpose

AARON Environmental Specialists (AARON) was contracted by Roadway Services, Inc. to complete a second round of ground water sampling and laboratory analysis at their Carlstadt, New Jersey facility.

1.2 Background

1.2.1 This second round of sampling, serves as a confirmation round concerning a discharge investigation report submitted to the New Jersey Department of Environmental Protection & Energy (NJ DEPE) in February 1991, (Case #89-04-17-1356).

1.2.2 The Scope of Work completed included the following:

1. The collection of ground water samples from the two monitoring wells, previously installed at the site (MW#1, MW#2). Applicable Trip & Field Blanks were also utilized.

2. The laboratory analysis of collected samples for VOA+15 (including xylene's, MTBE & TBA) and B/N+15 by EPA Method 624+15 & 625+15.

3. The review of laboratory data, and report preparation.

Key people from AARON involved throughout the duration of the project were as follows: Daniel R. Kogut, Senior Project Engineer/Environmental Manager; Richard J. Vocke, Project Manager.

5.0 PROJECT LIMITATIONS

All work product and reports provided by AARON Environmental Specialists (AARON) in connection with the performance of Environmental Investigations/Underground Storage Tank Projects are subject to the following limitations:

1. The observations described in the report were made under the conditions stated therein. The conclusions presented in the report were based solely upon the services described therein, and not on scientific tasks or procedures beyond the scope of described services or the time and budgetary constraints imposed by the client.

2. In preparing this report, AARON has relied on certain information provided by State and Local Officials and information and representations made by other parties referenced therein, and on information contained in the files of State and/or Local Agencies made available to AARON at the time of the writing. To the extent that such files are missing, incomplete or not provided to AARON, AARON is not responsible. Although there may have been some degree of overlap in the information provided by these various sources, AARON did not attempt to independently verify the accuracy or completeness of all information reviewed during the course of this project.

3. If the conclusions and recommendations contained in this project report are based in part upon data obtained from a limited number of soil samples obtained from widely spaced subsurface explorations; then the nature and extent of variations between these explorations may not become evident until further exploration. If variations or other latent conditions then appear evident, it will be necessary to reevaluate the conclusions and recommendations of this report.

4. Except as noted within the text of the report, no quantitative laboratory testing was performed as part of the project. Where such analysis have been conducted by an outside laboratory, AARON has relied upon the data provided, and has not conducted an independent evaluation of the reliability of the test data.

5. Chemical analysis may have been performed for specific parameters during the course of this project, as described in the text. However, it should be noted that

MDL = Minimum Detection Level, ppb = parts per billion

3.2 The library search (+15), tentatively identified the following compounds:

MW #	Compound Identified	Est. Conc
MW-1	Benzene (Substituted)	49 ppb
MW-2	No Peaks Detected	EPA 624
MW-2	(4) Peaks Unknown (EPA 625)	354 ppb (total)
MW-1	Benzene, chloro-	26 ppb
MW-1	Benzene, 1-ethyl-2-methyl	19 ppb
MW-1	Naphthalene, 1-methyl-	16 ppb
MW-1	Phenol, 4-(1,1,3,3-tetramethyl)-	6 ppb
MW-1	(7) Unknown Peaks (EPA 625)	127 ppb (total)

4.0 RECOMMENDATIONS

4.1 Based on the laboratory data listed in part 3 of this report and the initial sampling results previously submitted to the NJ DEPE, AARON recommends that no further actions be conducted concerning the subject underground storage tank removals. Only low concentrations of contaminates have been identified in the shallow ground water. No potable wells have been identified in the immediate downgradient area.

4.2 Following approval by the NJ DEPE, the two monitoring wells should be permanently sealed.

SECTION II

LABORATORY DATA, CHAIN OF CUSTODY

additional chemical constituents not searched for during the current project may be present in soil and/or groundwater at the site.

6. If the conclusions and recommendations contained in this report are based, in part, upon various types of chemical data; then the conclusions and recommendations are contingent upon the validity of such data. The data has been reviewed and interpretations made in this report. If indicated within the report, some of this data may be preliminary "screening" level data and should be confirmed with quantitative analysis if more specific information is necessary. Moreover, if should be noted that variations in the types and concentrations of contaminants and variations in their flow paths may occur due to seasonal water table fluctuations, past disposal practices, the passage of time, and other factors. Should additional chemical data become available in the future, this data should be reviewed by AARON and the conclusions and recommendations represented herein modified accordingly.

7. It is recommended that AARON be retained to provide further hydrogeologic and engineering services during the construction and/or implementation of any remedial measures recommended in this report. This is to allow AARON to observe compliance with the concepts and recommendations contained herein, and to allow the development of changes to the remedial program in the event that subsurface conditions or other conditions differ from those anticipated.

8. The installation of test borings, in substitution for tank removal, cannot be used as conclusive evidence to determine the environmental quality of the soils and groundwater. It should be noted that AARON can draw no conclusions concerning the presence of soil or groundwater contamination, unless the tanks are removed and soil samples are collected and analyzed for the appropriate parameters.

9. Plot plans, sketches, and other illustrative materials in this report are included to assist the reader in visualizing the site and are not necessarily drawn to scale.

10. No definitive conclusion can be drawn concerning the environmental quality of soils or groundwater at this site without the implementation of a detailed hydrogeologic investigation and sampling program.

ENVIRONMENTAL
CONSULTANTS
RESEARCH
ANALYTICAL
LABORATORIES INC.

NJDEP LAB CERT. I.D. NO. 14580
273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
FAX: (201) 361-1021

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CHAIN OF CUSTODY	04
LABORATORY CHRONICLE(S)	06
ANALYSIS CONFORMANCE SUMMARY	08
QUALIFIERS	10

ANALYTICAL DATA RESULTS with QA/QC SUMMARY as listed:

CASE SUMMARY (IF REQUIRED)	____
RESULT SUMMARY	11
PERCENT SOLIDS	____
PH	____
TDS/TSS/TEMP	____
BOD/COD/DO	____
TURBIDITY	____
CONDUCTIVITY	____
TOTAL COLIFORM/TOTAL FECAL COLIFORM	____
FLUORESCEIN	____
CYANIDES	____
PHENOLS	____
FLASH POINT	____
CORROSIVITY	____
IGNITABILITY	____
REACTIVITY	____
PCB/PEST	____
HERBICIDES	____
EPTOX/TCLP PEST	____
EPTOX/TCLP HERB	____
EPTOX/TCLP METAL	____
TCLP-VOA	____
TCLP-AEBN	____
PHC	____
PHC BY GC/FID	____
OIL & GREASE	____
METALS	____
BTEX	____
VOA	30
VOA/TBA/MTBE	____
PAH	____
AE	____
BN	126
AEBN	____
RADIOLOGICAL	____
AMBIENT AIR ANALYSIS	____
STACK TESTING AIR ANALYSIS	____
APPENDIX I - SUB CONTRACTED RESULTS	____

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ANALYTICAL DATA REPORT

AARON ENVIRONMENTAL

92-33-01

APRIL 22, 1992

SAMPLING DATE: APRIL 2, 1992

LABORATORY DELIVERABLES

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT AND ACCOMPANY ALL DATA SUBMISSIONS

The following laboratory deliverables shall be included in the data submission. All deviations from the accepted methodology and procedures, or performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages may be returned or held without review until the data package is completed.

		Check if Complete
I.	Cover Page, Format, and Laboratory Certification (Include Cross Reference Table of Field I.D. # and Laboratory I.D. #)	✓
II.	Chain of Custody	✓
III.	Summary Sheets Listing Analytical Results Including QA Data Information (see Attached Form and ESPG Attachment 2.B.2.C.)	✓
IV.	Laboratory Chronicle and Methodology Summary including Sampling Holding Time Check	✓
V.	Initial Calibration and Continuing Calibration	✓
VI.	Tune Summary (MS)	✓
VII.	Blanks (Method, Field, Trip)	✓
VIII.	Surrogate Recovery Summary	✓
IX.	Chromatographs Labelled/Compound Identification	✓
X.	Non-Conformance Summary	✓

Jean Claude Torres
Laboratory Manager or Environmental Consultant's Signature

04/21/92
Date

ENVIRONMENTAL
CONSULTANTS
RESEARCH
ANALYTICAL
LABORATORIES INC.

NJDEP LAB CERT. I.D. NO. 14580
273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
FAX: (201) 361-1021

ANALYTICAL DATA REPORT PACKAGE FOR:

PROJECT NAME: AARON ENVIRONMENTAL

PROJECT NUMBER: 92-33-01

	FIELD SAMPLE NUMBER	LABORATORY SAMPLE NUMBER
01:	92-33-01-MW-1	92-04-743
02:	92-33-01-MW-2	92-04-803
03:	92-33-01-MW-2	92-04-745
04:	92-33-01-MW-1	92-04-805
05:	92-33-01-FIELD BLANK	92-04-747
06:	92-33-01-FIELD BLANK	92-04-804
07:	92-33-01-TRIP BLANK	92-04-749
08:		
09:		
10:		
11:		
12:		
13:		
14:		
15:		
16:		
17:		
18:		
19:		
20:		
21:		
22:		
23:		
24:		
25:		
26:		

NAME OF LABORATORY ECRA LABORATORIES, INC.

NJDEPE CERTIFICATION NO. 14580

QA/QC OFFICER: CAROLYN MAYERS, Ph.D.

SIGNATURE: Carolyn Mayers

LABORATORY DIRECTOR: STEPHEN J. FLEISCHACKER

SIGNATURE.: [signature]

DATE SUBMITTED: 4/22/92

12/91

CHAIN OF CUSTODY

NO. 92-172
(LAB USE ONLY)

ENVIRONMENTAL
CONSULTANTS
RESEARCH
ANALYTICAL
LABORATORIES INC.

NJDEP LAB CERT. I.D. NO. 14580
273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
FAX: (201) 361-1021

DELIVERABLES (CIRCLE)
STANDARD (TIER II) TIER I

CLIENT: AARON ENVIRONMENTAL

SEND REPORT TO: AARON ENVIRONMENTAL

PROJECT NAME: ROADWAY, CARLSTADT

PROJECT #: 92-33-01

SAMPLER(S): SB KLUSKA, S FLEISCHACKER

ADDRESS:

NAME: S FLEISCHACKER SIGNATURE:

PHONE #:

SAMPLE IDENTIFICATION LAB		SAMPLING LOCATION POINT	SAMPLING DATE	SAMPLING TIME	AM	PM	SAMPLE MATRIX	SAMPLE TYPE COMP.	GRAB	ANALYSES REQUIRED (CODE #)	NO. OF CONTAINERS
803	MW-2	MW-2	4-13-92	11:10	X		AQ.		X	04	2
804	F. BLANK	NEAR MW-1	4-13-92	11:35	X		AQ.		X	04	1
805	MW-1	MW-1	4-13-92	11:50	X		AQ.		X	04	2

METHOD OF RELINQUISHMENT: DROP-OFF

NAME OF LABORATORY: ECRA

RELINQUISHED BY: (SIGN):

RECEIVED BY: (SIGN.)

DATE/TIME

RELINQUISHED BY: (SIGN):

RECEIVED BY: (SIGN.)

DATE/TIME

RELINQUISHED TO LABORATORY BY (SIGN.):

RECEIVED FOR LABORATORY BY: (SIGN.)

DATE/TIME 4/13/92 3:30 PM

ANALYSIS	CODE	ANALYSIS	CODE	ANALYSIS	CODE	ANALYSIS	CODE
PRIORITY POLLUTANT+40	01	CADMIUM	10	ZINC	19	TCLP PEST.HERB	28
PETROLEUM HYDROCARBONS	02	CHROMIUM	11	13 PP METALS	20	TCLP ACID&BASE/NEUTRALS	29
VOLATILE ORGANICS+15 (VO+15)	03	COPPER	12	BARIUM	21	TCLP ZHS VO	30
BASE NEUTRALS+15	04	LEAD	13	CYANIDE	22	IGNITABILITY	31
ACID&BASE/NEUTRALS+25	05	MERCURY	14	PCB	23	CORROSIVITY	32
VO+15 + MTBE/TBA	06	NICKEL	15	pH	24	REACTIVITY(CN&SULFIDE)	33
ANTIMONY	07	SELENIUM	16	TSS	25	WASTE CHAR(02,23,27-33)	34
ARSENIC	08	SILVER	17	TDS	26	OTHER (SEE BELOW)	35
BERYLLIUM	09	THALLIUM	18	TCLP METALS	27	OTHER (SEE BELOW)	36

OTHER ANALYSES, SPECIAL HANDLING AND/OR GENERAL COMMENTS: RE-SAMPLED BY ECRA LABS.

SAMPLES STORED AT 4°C — INIT.

SAMPLES CHEMICALLY PRESERVED, AS REQUIRED — INIT.

000005

Rev. 02

12/91

CHAIN OF CUSTODY

Revised 4/6/92

NO. 92-159 (LAB USE ONLY)

ENVIRONMENTAL CONSULTANTS RESEARCH ANALYTICAL LABORATORIES INC.

NJDEP LAB CERT. I.D. NO. 14580
273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
FAX: (201) 361-1021

DELIVERABLES (CIRCLE): STANDARD (TIER II) TIER I

CLIENT: AARON Environmental

SEND REPORT TO: Aaron Environmental

PROJECT NAME: Roadway Carlstadt

PROJECT #: 92-33-01 ~~51331~~

SAMPLER(S): Rich Vache

ADDRESS:

NAME:

SIGNATURE

PHONE #:

SAMPLE IDENTIFICATION LAB		SAMPLING LOCATION POINT	SAMPLING DATE	SAMPLING TIME	AM	PM	SAMPLE MATRIX	SAMPLE TYPE COMP.	GRAB	ANALYSES REQUIRED (CODE #)	NO. OF CONTAINERS
743	MW-1	MW-1	4-2-92	430		X	Aq		X	06	2
744	MW-2	MW-1	4-2-92	430		X	Aq		X	04	1
745	MW-2	MW-2	4-2-92	415		X	Aq		X	06	2
746	MW-2	MW-2	4-2-92	415		X	Aq		X	04	1
747	FIELD BLK	Field Blank	4-2-92	500		X	Aq		X	06	1
748	~~TRIP~~ FIELD BLK	Field Blank	4-2-92	500		X	Aq		X	04	1
749	TRIP BL	Trip BL	4-2-92	—	—		Aq	—		06	1

METHOD OF RELINQUISHMENT: DROP-OFF

NAME OF LABORATORY: ECRA

RELINQUISHED BY: (SIGN):

RECEIVED BY: (SIGN.)

DATE/TIME 4-3-92 10:45

RELINQUISHED BY: (SIGN):

RECEIVED BY: (SIGN.)

DATE/TIME

RELINQUISHED TO LABORATORY BY: (SIGN.):

RECEIVED FOR LABORATORY BY: (SIGN.)

DATE/TIME 1255 4/3/92

ANALYSIS	CODE	ANALYSIS	CODE	ANALYSIS	CODE	ANALYSIS	CODE
PRIORITY POLLUTANT+40	01	CADMIUM	10	ZINC	19	TCLP PEST.HERB	28
PETROLEUM HYDROCARBONS	02	CHROMIUM	11	13 PP METALS	20	TCLP ACID&BASE/NEUTRALS	29
VOLATILE ORGANICS+15 (VO+15)	~~03~~	COPPER	12	BARIUM	21	TCLP ZHS VO	30
BASE NEUTRALS+15	04	LEAD	13	CYANIDE	22	IGNITABILITY	31
ACID&BASE/NEUTRALS+25	05	MERCURY	14	PCB	23	CORROSIVITY	32
VO+15 + MTBE/TBA	06	NICKEL	15	pH	24	REACTIVITY(CN&SULFIDE)	33
ANTIMONY	07	SELENIUM	16	TSS	25	WASTE CHAR(02,23,27-33)	34
ARSENIC	08	SILVER	17	TDS	26	OTHER (SEE BELOW)	35
BERYLLIUM	09	THALLIUM	18	TCLP METALS	27	OTHER (SEE BELOW)	36

OTHER ANALYSES, SPECIAL HANDLING AND/OR GENERAL COMMENTS

Samples were received on 4/3/92 with no duplicate container for Parameters other than VOA. SBO. 4/3/92

SAMPLES STORED AT 4°C — INIT.

SAMPLES CHEMICALLY PRESERVED, AS REQUIRED — INIT.

000004

Rev. 02

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FAX: (201) 361-1021

LAB CHRONICLE

CLIENT: AARON 92-33-01

SAMPLING DATE: 04/13/92

DATE RECEIVED @ LAB: 04/13/92

NUMBER OF SAMPLES: 3

SAMPLE I.D. NO.	ANALYTICAL PARAMETER	EXTRACTION DATE	ANALYSIS DATE	INITIALS
1. 92-33-01-MW-2	BN	04/14/92	04/15/92	JCF JCF
2. 92-33-01-F. BLANK	BN	04/14/92	04/15/92	JCF JCF
3. 92-33-01-MW-1	BN	04/14/92	04/15/92	JCF JCF

DEPARTMENT SUPERVISOR Jean Claude Tolbas

ENVIRONMENTAL
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FAX: (201) 361-1021

LAB CHRONICLE

CLIENT: ARRON 92-33-01

SAMPLING DATE: 04/02/92

DATE RECEIVED @ LAB: 04/03/92

NUMBER OF SAMPLES: 4

SAMPLE I.D. NO.	ANALYTICAL PARAMETER	EXTRACTION DATE	ANALYSIS DATE	INITIALS
1. 92-33-01-MW-1/MW-1-DUP	VOA	N/A	04/06+08/92	MK MK
2. 92-33-01-MW-2	VOA	N/A	04/06/92	MK MK
3. 92-33-01-FIELD BLK	VOA	N/A	04/08/92	MK MK
4. 92-33-01-TRP BL	VOA	N/A	04/06/92	MK MK
5.				

DEPARTMENT SUPERVISOR Maurice L. Kreps

ENVIRONMENTAL
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LABORATORIES INC.

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273 FRANKLIN ROAD
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PHONE: (201) 361-4252
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SEMIVOLATILE ANALYSIS CONFORMANCE SUMMARY

CLIENT: AARON DATE: 4/20/92.

1) GC/MS TUNE SPECIFICATIONS

DFTPP PASSED EVERY 12 HOURS |✓|

2) GC/MS TUNING FREQUENCY

PERFORMED EVERY 12 HOURS |✓|

3) GC/MS CALIBRATION

INITIAL CALIBRATION CURVE OR
CALIBRATION CHECK STANDARD RUN EVERY 12 HOURS |✓|

4) GC/MS CALIBRATION REQUIREMENTS MET

a) CALIBRATION CHECK COMPOUNDS |✓|

b) SYSTEM PERFORMANCE CHECK COMPOUNDS |✓|

5) BLANK CONTAMINATION - COMPOUNDS LISTED

_____

_____

6) SURROGATE RECOVERIES MEET CRITERIA (IF NOT MET, REFER TO INDIVIDUAL SURROGATE RECOVERY FORMS FOR ACTUAL RECOVERIES) |✓|

7) SAMPLE HOLDING TIMES MET YES |✓| NO |___|

8) MINIMUM DETECTION LIMITS AT IFB LEVELS. (IF NOT CHECKED REFER TO INDIVIDUAL ANALYSIS REPORT FOR THE ACTUAL MDL'S) |✓|

9) ADDITIONAL COMMENTS: _____

000079

DEPT. SUPERVISOR: Jean Claude Fabre.

ENVIRONMENTAL
CONSULTANTS
RESEARCH
ANALYTICAL
LABORATORIES INC.

NJDEP LAB CERT. I.D. NO. 14580
273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
FAX: (201) 361-1021

VOLATILE ANALYSIS CONFORMANCE SUMMARY

CLIENT: ARRONENVIRONMENTAL DATE: 04/09/92

1) GC/MS TUNE SPECIFICATIONS

BFB PASSED EVERY 12 HOURS |✓|

2) GC/MS TUNING FREQUENCY

PERFORMED EVERY 12 HOURS |✓|

3) GC/MS CALIBRATION

INITIAL CALIBRATION CURVE OR
CALIBRATION CHECK STANDARD RUN EVERY 12 HOURS |✓|

4) GC/MS CALIBRATION REQUIREMENTS MET

a) CALIBRATION CHECK COMPOUNDS |✓|

b) SYSTEM PERFORMANCE CHECK COMPOUNDS |✓|

5) BLANK CONTAMINATION - COMPOUNDS LISTED

Low levels - Methylene Chloride
Trichlorofluoromethane

6) SURROGATE RECOVERIES MEET CRITERIA (IF NOT MET, REFER TO INDIVIDUAL SURROGATE RECOVERY FORMS FOR ACTUAL RECOVERIES) |✓|

7) SAMPLE HOLDING TIMES MET YES |✓| NO |__|

8) MINIMUM DETECTION LIMITS AT IFB LEVELS. (IF NOT CHECKED REFER TO INDIVIDUAL ANALYSIS REPORT FOR THE ACTUAL MDL'S) |✓|

9) ADDITIONAL COMMENTS:

000008

DEPT. SUPERVISOR: Jean Clement

ENVIRONMENTAL
CONSULTANTS
RESEARCH
ANALYTICAL
LABORATORIES INC.

NJDEP LAB CERT. I.D. NO. 14580
273 FRANKLIN ROAD
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FAX: (201) 361-1021

RESULTS SUMMARY

ENVIRONMENTAL
CONSULTANTS
RESEARCH
ANALYTICAL
LABORATORIES INC.

NJDEP LAB CERT. I.D. NO. 14580
273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
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QUALIFIERS

MDL	=	METHOD DETECTION LIMIT. FOR SOIL SAMPLES ACTUAL MDL MAY VARY AS A FUNCTION OF MOISTURE LEVEL.
ug/L	=	MICROGRAMS PER LITER OR PARTS PER BILLION [PPB (WT/VOL)]
mg/L	=	MILLIGRAMS PER LITER OR PARTS PER MILLION [PPM (WT/VOL)]
ug/Kg	=	MICROGRAMS PER KILOGRAM OR PARTS PER BILLION [PPB (WT/WT)]
mg/Kg	=	MILLIGRAMS PER KILOGRAM OR PARTS PER MILLION [PPM (WT/WT)]
N/A	=	NOT APPLICABLE
NR	=	NOT REQUESTED
U	=	INDICATES A COMPOUND WAS ANALYZED FOR BUT NOT DETECTED AT THAT SPECIFIED METHOD DETECTION LIMIT.
J	=	INDICATES AN ESTIMATED VALUE. IT IS UTILIZED WHEN THE ANALYTICAL RESULTS FOR THE SPECIFIED ANALYTE MEET THE IDENTIFICATION CRITERIA. THE CONCENTRATION LISTED IS LESS THAN THE SPECIFIED METHOD DETECTION LIMIT BUT GREATER THAN ZERO.
B	=	INDICATES THAT THE ANALYTE WAS FOUND IN THE METHOD BLANK AS WELL AS THE SAMPLE. IT INDICATES POSSIBLE LABORATORY CONTAMINATION.
<	=	LESS THAN
DWB	=	DRY WEIGHT BASIS
N.D.	=	NOT DETECTED
SONC	=	SONIFICATION EXTRACTION (EPA METHOD 3550, SW-846, THIRD EDITION)
SEPF	=	SEPARATORY EXTRACTION (EPA METHOD 3510, SW-846, THIRD EDITION
BR	=	BLANK REMOVES
DUP	=	INDICATES THAT THE SAMPLE MATRIX WAS ANALYZED A SECOND TIME FOR QA/QC PURPOSES.
TRIP	=	INDICATES THAT THE SAMPLE MATRIX WAS ANALYZED A THIRD TIME FOR QA/QC PURPOSES.

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VOLATILE ORGANICS ANALYSIS DATA SHEET

ECRA LABORATORIES, INC.

LABORATORY REPORT-VOLATILE ORGANICS ANALYSIS-EPA METHOD 624

CLIENT NAME: ARRON 92-33-01

SAMPLE ID #: 92-33-01-MW-1-DUP

LAB ID #:92-04-743

DATA FILE: >G2114::B1

DILUTION FACTOR: 1.00000

EXTRACTION:N/A

METHOD DETECTION LIMIT: 5 UG/L

DATE SAMPLED:04/02/92

DATE RECEIVED:04/03/92

DATE EXTRACTED:N/A

DATE ANALYZED: 4/08/92 14:55

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
74-87-3	Chloromethane	10.	IU
74-83-9	Bromomethane	10.	IU
75-01-4	Vinyl Chloride	10.	IU
75-00-3	Chloroethane	10.	IU
75-09-2	Methylene Chloride	2.	IJB
75-69-4	Trichlorofluoromethane	5.	IU
75-35-4	1,1-Dichloroethene	5.	IU
75-34-3	1,1-Dichloroethane	5.	IU
540-59-0	Trans-1,2-Dichloroethylene	5.	IU
67-66-3	Chloroform	5.	IU
107-02-2	1,2-Dichloroethane	5.	IU
71-55-6	1,1,1-Trichloroethane	5.	IU
56-23-5	Carbon Tetrachloride	5.	IU
75-27-4	Bromodichloromethane	5.	IU
78-87-5	1,2-Dichloropropane	5.	IU
10061-01-5	cis-1,3-Dichloropropene	5.	IU
110-75-8	2-Chloroethyl vinyl ether	10.	IU
79-01-6	Trichloroethylene	5.	IU
124-48-1	Dibromochloromethane	5.	IU
79-00-5	1,1,2-Trichloroethane	5.	IU
71-43-2	Benzene	1.	IJ
10061-02-6	trans-1,3-Dichloropropene	5.	IU
75-25-2	Bromoform	5.	IU
127-18-4	Tetrachloroethylene	5.	IU
79-34-5	1,1,2,2-Tetrachloroethane	5.	IU
108-88-3	Toluene	5.	IU
108-90-7	Chlorobenzene	73.	I
100-41-4	Ethylbenzene	5.	IU
133-02-7	M-Xylene	5.	IU
95-47-6	O,P-Xylene	5.	IU
106-42-3			
95-50-1	1,2-Dichlorobenzene	17.	I
541-73-1	1,3-Dichlorobenzene	5.	IU
106-46-7	1,4-Dichlorobenzene	5.	IU
1634-04-4	Methyl-t-Butyl Ether	5.	IU
75-65-0	t-Butyl Alcohol	10.	IU

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VOLATILE ORGANICS ANALYSIS DATA SHEET

:CRA LABORATORIES, INC.

LABORATORY REPORT-VOLATILE ORGANICS ANALYSIS-EPA METHOD 624

CLIENT NAME: ARRON 92-33-01

SAMPLE ID #: 92-33-01-MW-1 LAB ID #:92-04-743

DATA FILE: >G2090::B3 DILUTION FACTOR: 1.00000

EXTRACTION:N/A METHOD DETECTION LIMIT: 5 UG/L

DATE SAMPLED:04/02/92 DATE RECEIVED:04/03/92

DATE EXTRACTED:N/A DATE ANALYZED: 4/06/92 18:39

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION 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	2.	JB
75-69-4	Trichlorofluoromethane	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	Trans-1,2-Dichloroethylene	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
110-75-8	2-Chloroethyl vinyl ether	10.	U
79-01-6	Trichloroethylene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	1.	J
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
127-18-4	Tetrachloroethylene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	76.	
100-41-4	Ethylbenzene	5.	U
133-02-7	M-Xylene	5.	U
95-47-6	O,P-Xylene	5.	U
106-42-3			
95-50-1	1,2-Dichlorobenzene	16.	
541-73-1	1,3-Dichlorobenzene	5.	U
106-46-7	1,4-Dichlorobenzene	5.	U
1634-04-4	Methyl-t-Butyl Ether	5.	U
75-65-0	t-Butyl Alcohol	10.	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

ECRA LABORATORIES, INC.

LABORATORY REPORT-VOLATILE ORGANICS ANALYSIS-EPA METHOD 624

CLIENT NAME: ARRON 92-33-01

SAMPLE ID #: 92-33-01-MW-2 | LAB ID #:92-04-745

DATA FILE: >G2088::B3 | DILUTION FACTOR: 1.00000

EXTRACTION:N/A | METHOD DETECTION LIMIT: 5 UG/L

DATE SAMPLED:04/02/92 | DATE RECEIVED:04/03/92

DATE EXTRACTED:N/A | DATE ANALYZED: 4/06/92 17:02

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION 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	1.	JB
75-69-4	Trichlorofluoromethane	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	Trans-1,2-Dichloroethylene	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
110-75-8	2-Chloroethyl vinyl ether	10.	U
79-01-6	Trichloroethylene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
127-18-4	Tetrachloroethylene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
133-02-7	M-Xylene	5.	U
95-47-6	O,P-Xylene	5.	U
106-42-3			
95-50-1	1,2-Dichlorobenzene	5.	U
541-73-1	1,3-Dichlorobenzene	5.	U
106-46-7	1,4-Dichlorobenzene	5.	U
1634-04-4	Methyl-t-Butyl Ether	5.	U
75-65-0	t-Butyl Alcohol	10.	U

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES,INC.

lient Name: ARRON 92-33-01

SAMPLE ID #: 92-33-01-MW-1 LAB ID #: 92-04-743

ata File: >G2090

Methanol Ext.:

EPA METHOD #624

ilution Factor: 1.00000

Concentration Units: UG/L

UMBER OF TIC'S DETECTED: 2

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	76131	Ethane, 1,1,2-trichloro-1,2,2-trifluoro-	11.93	7.	*
2.		Benzene, (Substituted)	58.77	49.	***
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					

NR = Not reviewed

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VOLATILE ORGANICS ANALYSIS DATA SHEET

ECRA LABORATORIES, INC.

LABORATORY REPORT-VOLATILE ORGANICS ANALYSIS-EPA METHOD 624

CLIENT NAME: ARRON 92-33-01

SAMPLE ID #: 92-33-01-FIELD BLK — LAB ID #:92-04-747

DATA FILE: >G2113::B2 — DILUTION FACTOR: 1.00000

EXTRACTION:N/A — METHOD DETECTION LIMIT: 5 UG/L

DATE SAMPLED:04/02/92 — DATE RECEIVED:04/03/92

DATE EXTRACTED:N/A — DATE ANALYZED: 4/08/92 14:01

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION 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	6.	B
75-69-4	Trichlorofluoromethane	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	Trans-1,2-Dichloroethylene	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
110-75-8	2-Chloroethyl vinyl ether	10.	U
79-01-6	Trichloroethylene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
127-18-4	Tetrachloroethylene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
133-02-7	M-Xylene	5.	U
95-47-6	O,P-Xylene	5.	U
106-42-3			
95-50-1	1,2-Dichlorobenzene	5.	U
541-73-1	1,3-Dichlorobenzene	5.	U
106-46-7	1,4-Dichlorobenzene	5.	U
1634-04-4	Methyl-t-Butyl Ether	5.	U
75-65-0	t-Butyl Alcohol	10.	U

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES,INC.

Client Name: ARRON 92-33-01

SAMPLE ID #: 92-33-01-MW-2 LAB ID #: 92-04-745

Data File: >G2088

Methanol Ext.:

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

EPA METHOD #624

Dilution Factor: 1.00000

Concentration Units: UG/L

NUMBER OF TIC'S DETECTED: 0

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		No Peaks Detected			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					

N.R. = Not reviewed

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VOLATILE ORGANICS ANALYSIS DATA SHEET

ECRA LABORATORIES, INC.

LABORATORY REPORT-VOLATILE ORGANICS ANALYSIS-EPA METHOD 624

CLIENT NAME: ARRON 92-33-01

SAMPLE ID #: 92-33-01-TRP BL

LAB ID #:92-04-749

DATA FILE: >G2086::B3

DILUTION FACTOR: 1.00000

EXTRACTION:N/A

METHOD DETECTION LIMIT: 5 UG/L

DATE SAMPLED:04/02/92

DATE RECEIVED:04/03/92

DATE EXTRACTED:N/A

DATE ANALYZED: 4/06/92 15:25

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION 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	4.	JB
75-69-4	Trichlorofluoromethane	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	Trans-1,2-Dichloroethylene	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
71-55-6	1,1,1-Trichloroethane	2.	J
56-23-5	Carbon Tetrachloride	5.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
110-75-8	2-Chloroethyl vinyl ether	10.	U
79-01-6	Trichloroethylene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
127-18-4	Tetrachloroethylene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
133-02-7	M-Xylene	5.	U
95-47-6	O,P-Xylene	5.	U
106-42-3			
95-50-1	1,2-Dichlorobenzene	5.	U
541-73-1	1,3-Dichlorobenzene	5.	U
106-46-7	1,4-Dichlorobenzene	5.	U
1634-04-4	Methyl-t-Butyl Ether	5.	U
75-65-0	t-Butyl Alcohol	10.	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES, INC.

lient Name: ARRON 92-33-01

SAMPLE ID #: 92-33-01-FIELD BLK LAB ID #: 92-04-747

ata File: >G2113

Methanol Ext.:

EPA METHOD #624

ilution Factor: 1.00000

Concentration Units: UG/L

UMBER OF TIC'S DETECTED: 0

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Peaks Detected			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

R = Not reviewed FORM I VOA-TIC 1/87 Rev.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET-(PAGE 1 OF 2)

ECRA LABORATORIES, INC.

ABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: AARON 92-33-01

AMPLE ID #: 92-33-01-MW-2 LAB ID #:92-04-803

ATA FILE: >F4719::F1 DILUTION FACTOR: 1.00000

EXTRACTION:SEPF METHOD DETECTION LIMIT: 10 UG/L

ATE SAMPLED:04/13/92 DATE RECEIVED:04/13/92

DATE EXTRACTED:04/14/92 DATE ANALYZED: 4/15/92 15:11

ATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
111-44-4	bis(2-Chloroethyl)Ether	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
62-75-9	N-Nitrosodimethylamine	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	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
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
87-68-3	Hexachlorobutadiene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
91-58-7	2-Chloronaphthalene	10.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
83-32-9	Acenaphthene	10.	U
92-87-5	Benzidine	80.	U
121-14-2	2,4-Dinitrotoluene	10.	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES,INC.

lient Name: ARRON 92-33-01

SAMPLE ID #: 92-33-01-TRP BL LAB ID #: 92-04-749

ata File: >G2086

ethanol Ext.:

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

EPA METHOD #624

ilution Factor: 1.00000

Concentration Units: UG/L

UMBER OF TIC'S DETECTED: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Peaks Detected			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

R = Not reviewed

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FAX: (201) 361-1021

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES, INC.

Client Name: AARON 92-33-01

SAMPLE ID #: 92-33-01-MW-2 LAB ID # 92-04-803

Data File: >F4719

Extraction: SEPF

EPA METHOD #625

Dilution Factor: 1.00000

Concentration Units: UG/L

NUMBER OF TIC'S DETECTED: 5

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	57556	1,2-Propanediol	5.66	26.	*/**
2.		Unknown	12.42	110.	
3.		Unknown	12.49	58.	
4.		Unknown	12.76	180.	
5.		Unknown	25.59	6.	
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					

R = Not reviewed

FORM I SV-TIC 1/87 Rev.

ENVIRONMENTAL
CONSULTANTS
RESEARCH
ANALYTICAL
LABORATORIES INC.

NJDEP LAB CERT. I.D. NO. 14580
273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
FAX: (201) 361-1021

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET-(PAGE 2 OF 2)

ECRA LABORATORIES, INC.

ABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: AARON 92-33-01

AMPLE ID #: 92-33-01-MW-2 LAB ID #:92-04-803

ATA FILE: >F4719::F1 DILUTION FACTOR: 1.00000

EXTRACTION:SEPF METHOD DETECTION LIMIT: 10 UG/L

ATE SAMPLED:04/13/92 DATE RECEIVED:04/13/92

DATE EXTRACTED:04/14/92 DATE ANALYZED: 4/15/92 15:11

ATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	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	20.	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-octylphthalate	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	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET-(PAGE 2 OF 2)

ECRA LABORATORIES, INC.

LABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: AARON 92-33-01

SAMPLE ID #: 92-33-01 F.BLANK — LAB ID #:92-04-804

DATA FILE: >F4717::F1 — DILUTION FACTOR: 1.00000

EXTRACTION:SEPF — METHOD DETECTION LIMIT: 10 UG/L

DATE SAMPLED:04/13/92 — DATE RECEIVED:04/13/92

DATE EXTRACTED:04/14/92 — DATE ANALYZED: 4/15/92 12:47

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	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	20.	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-octylphthalate	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	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

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LABORATORIES INC.

NJDEP LAB CERT. I.D. NO. 14580
273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET-(PAGE 1 OF 2)

ECRA LABORATORIES, INC.

LABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: AARON 92-33-01

SAMPLE ID #: 92-33-01 F.BLANK

LAB ID #:92-04-804

DATA FILE: >F4717::F1

DILUTION FACTOR: 1.00000

EXTRACTION:SEPF

METHOD DETECTION LIMIT: 10 UG/L

DATE SAMPLED:04/13/92

DATE RECEIVED:04/13/92

DATE EXTRACTED:04/14/92

DATE ANALYZED: 4/15/92 12:47

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
111-44-4	bis(2-Chloroethyl)Ether	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
62-75-9	N-Nitrosodimethylamine	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	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
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
87-68-3	Hexachlorobutadiene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
91-58-7	2-Chloronaphthalene	10.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
83-32-9	Acenaphthene	10.	U
92-87-5	Benzidine	80.	U
121-14-2	2,4-Dinitrotoluene	10.	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET-(PAGE 1 OF 2)

ECRA LABORATORIES, INC.

LABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: AARON 92-33-01

SAMPLE ID #: 92-33-01-MW-1 LAB ID #:92-04-805

DATA FILE: >F4718::F1 DILUTION FACTOR: 1.00000

EXTRACTION:SEPF METHOD DETECTION LIMIT: 10 UG/L

DATE SAMPLED:04/13/92 DATE RECEIVED:04/13/92

DATE EXTRACTED:04/14/92 DATE ANALYZED: 4/15/92 13:59

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
111-44-4	bis(2-Chloroethyl)Ether	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
62-75-9	N-Nitrosodimethylamine	10.	U
95-50-1	1,2-Dichlorobenzene	10.	
39638-32-9	bis(2-chloroisopropyl)ether	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
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	8.	J
87-68-3	Hexachlorobutadiene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
91-58-7	2-Chloronaphthalene	10.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
83-32-9	Acenaphthene	10.	U
92-87-5	Benzidine	80.	U
121-14-2	2,4-Dinitrotoluene	10.	U

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FAX: (201) 361-1021

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES, INC.

Client Name: AARON 92-33-01

SAMPLE ID #: 92-33-01 F.BLANK LAB ID # 92-04-804

Data File: >F4717

Extraction: SEPF

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

EPA METHOD #625

Dilution Factor: 1.00000

Concentration Units: UG/L

NUMBER OF TIC'S DETECTED: 5

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	57556	1,2-Propanediol	5.68	22.	*/**
2.		Unknown	29.44	6.	
3.		Unknown	29.53	6.	
4.		Unknown	31.98	9.	
5.		Unknown	34.34	31.	
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					

NR = Not reviewed

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1/87 Rev.

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1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

b Name:ECRA LABORATORIES,INC.

lient Name: AARON 92-33-01

MPLE ID #: 92-33-01-MW-1 LAB ID # 92-04-805

ata File: >F4718

traction: SEPF

A METHOD #625

ilution Factor: 1.00000

ncentration Units: UG/L

UMBER OF TIC'S DETECTED: 11

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	57556	1,2-Propanediol	5.68	34.	*/**
2.	108907	Benzene, chloro-	8.71	26.	
3.		Unknown	12.40	43.	
4.		Unknown	12.49	35.	
5.		Unknown	12.74	19.	
6.	611143	Benzene, 1-ethyl-2-methyl-	13.22	19.	
7.	90120	Naphthalene, 1-methyl-	19.61	16.	
8.		Unknown	21.01	7.	
9.		Unknown	24.22	5.	
10.	140669	Phenol, 4-(1,1,3,3-tetramethyl)-	24.49	6.	
11.		Unknown	25.62	12.	
12.		Unknown	26.63	6.	
13.					
14.					
15.					

ID = Not reviewed

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET-(PAGE 2 OF 2)

ECRA LABORATORIES, INC.

LABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: AARON 92-33-01

SAMPLE ID #: 92-33-01-MW-1 LAB ID #:92-04-805

DATA FILE: >F4718::F1 DILUTION FACTOR: 1.00000

EXTRACTION:SEPF METHOD DETECTION LIMIT: 10 UG/L

DATE SAMPLED:04/13/92 DATE RECEIVED:04/13/92

DATE EXTRACTED:04/14/92 DATE ANALYZED: 4/15/92 13:59

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	1.	J
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	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-octylphthalate	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	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

ENVIRONMENTAL
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LABORATORIES INC.

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PHONE: (201) 361-4252
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RECEIVED
MAY 27 1992
PROPERT

ANALYTICAL DATA REPORT

AARON ENVIRONMENTAL

92-33-01

APRIL 22, 1992

SAMPLING DATE: APRIL 2, 1992

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LABORATORIES INC.

NJDEP LAB CERT. I.D. NO. 14580
273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
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TABLE OF CONTENTS

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ANALYTICAL DATA SHEET(S)	02
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CHAIN OF CUSTODY	04
LABORATORY CHRONICLE(S)	06
ANALYSIS CONFORMANCE SUMMARY	08
QUALIFIERS	10

ANALYTICAL DATA RESULTS with QA/QC SUMMARY as listed:

CASE SUMMARY (IF REQUIRED)	____
RESULT SUMMARY	11
PERCENT SOLIDS	____
PH	____
TDS/TSS/TEMP	____
BOD/COD/DO	____
TURBIDITY	____
CONDUCTIVITY	____
TOTAL COLIFORM/TOTAL FECAL COLIFORM	____
FLUORESCEIN	____
CYANIDES	____
PHENOLS	____
FLASH POINT	____
CORROSIVITY	____
IGNITABILITY	____
REACTIVITY	____
PCB/PEST	____
HERBICIDES	____
EPTOX/TCLP PEST	____
EPTOX/TCLP HERB	____
EPTOX/TCLP METAL	____
TCLP-VOA	____
TCLP-AEBN	____
PHC	____
PHC BY GC/FID	____
OIL & GREASE	____
METALS	____
BTEX	____
VOA	30
VOA/TBA/MTBE	____
PAH	____
AE	____
BN	126
AEBN	____
RADIOLOGICAL	____
AMBIENT AIR ANALYSIS	____
STACK TESTING AIR ANALYSIS	____
APPENDIX I - SUB CONTRACTED RESULTS	____

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LABORATORIES INC.

NJDEP LAB CERT. I.D. NO. 14580
273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
FAX: (201) 361-1021

ANALYTICAL DATA REPORT PACKAGE FOR:

PROJECT NAME: AARON ENVIRONMENTAL

PROJECT NUMBER: 92-33-01

	FIELD SAMPLE NUMBER	LABORATORY SAMPLE NUMBER
01:	92-33-01-MW-1	92-04-743
02:	92-33-01-MW-2	92-04-803
03:	92-33-01-MW-2	92-04-745
04:	92-33-01-MW-1	92-04-805
05:	92-33-01-FIELD BLANK	92-04-747
06:	92-33-01-FIELD BLANK	92-04-804
07:	92-33-01-TRIP BLANK	92-04-749
08:		
09:		
10:		
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20:		
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22:		
23:		
24:		
25:		
26:		

NAME OF LABORATORY ECRA LABORATORIES, INC.

NJDEPE CERTIFICATION NO. 14580

QA/QC OFFICER: CAROLYN MAYERS, Ph.D.

SIGNATURE: Carolyn Mayers

LABORATORY DIRECTOR: STEPHEN J. FLEISCHACKER

SIGNATURE.: [signature]

DATE SUBMITTED: 4/22/92

LABORATORY DELIVERABLES

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT AND ACCOMPANY ALL DATA SUBMISSIONS

The following laboratory deliverables shall be included in the data submission. All deviations from the accepted methodology and procedures, or performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages may be returned or held without review until the data package is completed.

		Check if Complete
I.	Cover Page, Format, and Laboratory Certification (Include Cross Reference Table of Field I.D. # and Laboratory I.D. #)	✓
II.	Chain of Custody	✓
III.	Summary Sheets Listing Analytical Results Including QA Data Information (see Attached Form and ESPG Attachment 2.B.2.C.)	✓
IV.	Laboratory Chronicle and Methodology Summary including Sampling Holding Time Check	✓
V.	Initial Calibration and Continuing Calibration	✓
VI.	Tune Summary (MS)	✓
VII.	Blanks (Method, Field, Trip)	✓
VIII.	Surrogate Recovery Summary	✓
IX.	Chromatographs Labelled/Compound Identification	✓
X.	Non-Conformance Summary	✓

Jean Claude [illegible]
Laboratory Manager or Environmental Consultant's Signature

04/21/92
Date

Rev 02

12/91

CHAIN OF CUSTODY

NO. 92-159 (LAB USE ONLY)

Revised 4/6/92

ENVIRONMENTAL CONSULTANTS RESEARCH ANALYTICAL LABORATORIES INC.

NJDEP LAB CERT. I.D. NO. 14580
273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
FAX: (201) 361-1021

DELIVERABLES (CIRCLE): STANDARD (TIER II) TIER I

CLIENT: AARON Environmental

SEND REPORT TO: Aaron Environmental

PROJECT NAME: Rooney Carlstadt

PROJECT #: 92-33-01 ~~5133~~

SAMPLER(S): Rich Vocke

ADDRESS:

NAME:

SIGNATURE

PHONE #:

SAMPLE IDENTIFICATION LAB		SAMPLING LOCATION POINT	SAMPLING DATE	SAMPLING TIME	AM	PM	SAMPLE MATRIX	SAMPLE TYPE COMP.	GRAB	ANALYSES REQUIRED (CODE #)	NO. OF CONTAINERS
743	MW-1	MW-1	4-2-92	430		X	Aq		X	06	2
744	MW-2	MW-1	4-2-92	430		X	Aq		X	04	1
745	MW-2	MW-2	4-2-92	415		X	Aq		X	06	2
746	MW-2	MW-2	4-2-92	415		X	Aq		X	04	1
747	FIELD BLK	Field Blank	4-2-92	500		X	Aq		X	06	1
748	~~FIELD TRIP~~ FIELD BLK	Field Blank	4-2-92	500		X	Aq		X	04	1
749	TRIP BL	Trip BL	4-2-92	—	—	—	Aq	—	—	06	1

METHOD OF RELINQUISHMENT: DROP-OFF

NAME OF LABORATORY: ECRA

RELINQUISHED BY: (SIGN):

RECEIVED BY: (SIGN.)

DATE/TIME 4-3-92 10:45

RELINQUISHED BY: (SIGN):

RECEIVED BY: (SIGN.)

DATE/TIME

RELINQUISHED TO LABORATORY BY (SIGN.):

RECEIVED FOR LABORATORY BY: (SIGN.)

DATE/TIME 12:55 4/3/92

ANALYSIS	CODE	ANALYSIS	CODE	ANALYSIS	CODE	ANALYSIS	CODE
PRIORITY POLLUTANT+40	01	CADMIUM	10	ZINC	19	TCLP PEST.HERB	28
PETROLEUM HYDROCARBONS	02	CHROMIUM	11	13 PP METALS	20	TCLP ACID&BASE/NEUTRALS	29
VOLATILE ORGANICS+15 (VO+15)	03	COPPER	12	BARIUM	21	TCLP ZHS VO	30
BASE NEUTRALS+15	04	LEAD	13	CYANIDE	22	IGNITABILITY	31
ACID&BASE/NEUTRALS+25	05	MERCURY	14	PCB	23	CORROSIVITY	32
VO+15 + MTBE/TBA	06	NICKEL	15	pH	24	REACTIVITY(CN&SULFIDE)	33
ANTIMONY	07	SELENIUM	16	TSS	25	WASTE CHAR(02,23,27-33)	34
ARSENIC	08	SILVER	17	TDS	26	OTHER (SEE BELOW)	35
BERYLLIUM	09	THALLIUM	18	TCLP METALS	27	OTHER (SEE BELOW)	36

OTHER ANALYSES, SPECIAL HANDLING AND/OR GENERAL COMMENTS

Samples were received on 4/3/92 with no duplicate container for Parameters other than VOA. SBO. 4/3/92

SAMPLES STORED AT 4°C ____ INIT.

SAMPLES CHEMICALLY PRESERVED, AS REQUIRED ____ INIT.

000004

Rev. 02

12/91

CHAIN OF CUSTODY

NO. 92-172
(LAB USE ONLY)

ENVIRONMENTAL
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LABORATORIES INC.

NJDEP LAB CERT. I.D. NO. 14580
273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
FAX: (201) 361-1021

DELIVERABLES (CIRCLE)
STANDARD (TIER II) TIER I

CLIENT: AARON ENVIRONMENTAL

SEND REPORT TO: AARON ENVIRONMENTAL

PROJECT NAME: ROADWAY/CARLSTADT

PROJECT #: 92-33-01

SAMPLER(S): SB KLUSKA S FLEISCHACKER

ADDRESS:

NAME: S FLEISCHACKER

SIGNATURE:

PHONE #:

SAMPLE IDENTIFICATION LAB		SAMPLING LOCATION POINT	SAMPLING DATE	SAMPLING TIME	AM	PM	SAMPLE MATRIX	SAMPLE TYPE COMP.	GRAB	ANALYSES REQUIRED (CODE #)	NO. OF CONTAINERS
803	MW-2	MW-2	4-13-92	11:10	X		AQ.		X	04	2
804	F. BLANK	NEAR MW-1	4-13-92	11:35	X		AQ.		X	04	1
805	MW-1	MW-1	4-13-92	11:50	X		AQ.		X	04	2

METHOD OF RELINQUISHMENT: DROP OFF

NAME OF LABORATORY: ECRA

RELINQUISHED BY: (SIGN):

RECEIVED BY: (SIGN.)

DATE/TIME

RELINQUISHED BY: (SIGN):

RECEIVED BY: (SIGN.)

DATE/TIME

RELINQUISHED TO LABORATORY BY (SIGN.):

RECEIVED FOR LABORATORY BY: (SIGN.)

DATE/TIME 4/13/92 3:30 PM

ANALYSIS	CODE	ANALYSIS	CODE	ANALYSIS	CODE	ANALYSIS	CODE
PRIORITY POLLUTANT+40	01	CADMIUM	10	ZINC	19	TCLP PEST.HERB	28
PETROLEUM HYDROCARBONS	02	CHROMIUM	11	13 PP METALS	20	TCLP ACID&BASE/NEUTRALS	29
VOLATILE ORGANICS+15 (VO+15)	03	COPPER	12	BARIUM	21	TCLP ZHS VO	30
BASE NEUTRALS+15	(04)	LEAD	13	CYANIDE	22	IGNITABILITY	31
ACID&BASE/NEUTRALS+25	05	MERCURY	14	PCB	23	CORROSIVITY	32
VO+15 + MTBE/TBA	06	NICKEL	15	pH	24	REACTIVITY(CN&SULFIDE)	33
ANTIMONY	07	SELENIUM	16	TSS	25	WASTE CHAR.(02,23,27-33)	34
ARSENIC	08	SILVER	17	TDS	26	OTHER (SEE BELOW)	35
BERYLLIUM	09	THALLIUM	18	TCLP METALS	27	OTHER (SEE BELOW)	36

OTHER ANALYSES, SPECIAL HANDLING AND/OR GENERAL COMMENTS: RE-SAMPLED BY ECRA LABS.

SAMPLES STORED AT 4°C — INIT.

SAMPLES CHEMICALLY PRESERVED, AS REQUIRED — INIT.

000005

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273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
FAX: (201) 361-1021

LAB CHRONICLE

CLIENT: ARRON 92-33-01

SAMPLING DATE: 04/02/92

DATE RECEIVED @ LAB: 04/03/92

NUMBER OF SAMPLES: 4

SAMPLE I.D. NO.	ANALYTICAL PARAMETER	EXTRACTION DATE	ANALYSIS DATE	INITIALS
1. 92-33-01-MW-1/MW-1-DUP	VOA	N/A	04/06+08/92	MK MK
2. 92-33-01-MW-2	VOA	N/A	04/06/92	MK MK
3. 92-33-01-FIELD BLK	VOA	N/A	04/08/92	MK MK
4. 92-33-01-TRP BL	VOA	N/A	04/06/92	MK MK
5.				

DEPARTMENT SUPERVISOR Maurice L Krupsi

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FAX: (201) 361-1021

LAB CHRONICLE

CLIENT: AARON 92-33-01

SAMPLING DATE: 04/13/92

DATE RECEIVED @ LAB: 04/13/92

NUMBER OF SAMPLES: 3

SAMPLE I.D. NO.	ANALYTICAL PARAMETER	EXTRACTION DATE	ANALYSIS DATE	INITIALS
1. 92-33-01-MW-2	BN	04/14/92	04/15/92	JCF JCF
2. 92-33-01-F. BLANK	BN	04/14/92	04/15/92	JCF JCF
3. 92-33-01-MW-1	BN	04/14/92	04/15/92	JCF JCF

DEPARTMENT SUPERVISOR Jean Claude Tolsy

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VOLATILE ANALYSIS CONFORMANCE SUMMARY

CLIENT: ARRONENVIRONMENTAL DATE: 04/09/92

1) GC/MS TUNE SPECIFICATIONS

BFB PASSED EVERY 12 HOURS |✓|

2) GC/MS TUNING FREQUENCY

PERFORMED EVERY 12 HOURS |✓|

3) GC/MS CALIBRATION

INITIAL CALIBRATION CURVE OR
CALIBRATION CHECK STANDARD RUN EVERY 12 HOURS |✓|

4) GC/MS CALIBRATION REQUIREMENTS MET

a) CALIBRATION CHECK COMPOUNDS |✓|

b) SYSTEM PERFORMANCE CHECK COMPOUNDS |✓|

5) BLANK CONTAMINATION - COMPOUNDS LISTED

Low levels - Methylene Chloride
Trichlorofluoromethane

6) SURROGATE RECOVERIES MEET CRITERIA (IF NOT MET, REFER TO INDIVIDUAL SURROGATE RECOVERY FORMS FOR ACTUAL RECOVERIES) |✓|

7) SAMPLE HOLDING TIMES MET YES |✓| NO |__|

8) MINIMUM DETECTION LIMITS AT IFB LEVELS. (IF NOT CHECKED REFER TO INDIVIDUAL ANALYSIS REPORT FOR THE ACTUAL MDL'S) |✓|

9) ADDITIONAL COMMENTS:

000008

DEPT. SUPERVISOR: Jean Clement

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SEMIVOLATILE ANALYSIS CONFORMANCE SUMMARY

CLIENT: AARON DATE: 4/20/92.

1) GC/MS TUNE SPECIFICATIONS

DFTPP PASSED EVERY 12 HOURS |✓|

2) GC/MS TUNING FREQUENCY

PERFORMED EVERY 12 HOURS |✓|

3) GC/MS CALIBRATION

INITIAL CALIBRATION CURVE OR
CALIBRATION CHECK STANDARD RUN EVERY 12 HOURS |✓|

4) GC/MS CALIBRATION REQUIREMENTS MET

a) CALIBRATION CHECK COMPOUNDS |✓|

b) SYSTEM PERFORMANCE CHECK COMPOUNDS |✓|

5) BLANK CONTAMINATION - COMPOUNDS LISTED

_____

_____

6) SURROGATE RECOVERIES MEET CRITERIA (IF NOT MET, REFER TO INDIVIDUAL SURROGATE RECOVERY FORMS FOR ACTUAL RECOVERIES) |✓|

7) SAMPLE HOLDING TIMES MET YES |✓| NO |___|

8) MINIMUM DETECTION LIMITS AT IFB LEVELS. (IF NOT CHECKED REFER TO INDIVIDUAL ANALYSIS REPORT FOR THE ACTUAL MDL'S) |✓|

9) ADDITIONAL COMMENTS: _____

000079

DEPT. SUPERVISOR: Jean Claude [illegible].

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QUALIFIERS

MDL	=	METHOD DETECTION LIMIT. FOR SOIL SAMPLES ACTUAL MDL MAY VARY AS A FUNCTION OF MOISTURE LEVEL.
ug/L	=	MICROGRAMS PER LITER OR PARTS PER BILLION [PPB (WT/VOL)]
mg/L	=	MILLIGRAMS PER LITER OR PARTS PER MILLION [PPM (WT/VOL)]
ug/Kg	=	MICROGRAMS PER KILOGRAM OR PARTS PER BILLION [PPB (WT/WT)]
mg/Kg	=	MILLIGRAMS PER KILOGRAM OR PARTS PER MILLION [PPM (WT/WT)]
N/A	=	NOT APPLICABLE
NR	=	NOT REQUESTED
U	=	INDICATES A COMPOUND WAS ANALYZED FOR BUT NOT DETECTED AT THAT SPECIFIED METHOD DETECTION LIMIT.
J	=	INDICATES AN ESTIMATED VALUE. IT IS UTILIZED WHEN THE ANALYTICAL RESULTS FOR THE SPECIFIED ANALYTE MEET THE IDENTIFICATION CRITERIA. THE CONCENTRATION LISTED IS LESS THAN THE SPECIFIED METHOD DETECTION LIMIT BUT GREATER THAN ZERO.
B	=	INDICATES THAT THE ANALYTE WAS FOUND IN THE METHOD BLANK AS WELL AS THE SAMPLE. IT INDICATES POSSIBLE LABORATORY CONTAMINATION.
<	=	LESS THAN
DWB	=	DRY WEIGHT BASIS
N.D.	=	NOT DETECTED
SONC	=	SONIFICATION EXTRACTION (EPA METHOD 3550, SW-846, THIRD EDITION)
SEPF	=	SEPARATORY EXTRACTION (EPA METHOD 3510, SW-846, THIRD EDITION
BR	=	BLANK REMOVES
DUP	=	INDICATES THAT THE SAMPLE MATRIX WAS ANALYZED A SECOND TIME FOR QA/QC PURPOSES.
TRIP	=	INDICATES THAT THE SAMPLE MATRIX WAS ANALYZED A THIRD TIME FOR QA/QC PURPOSES.

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RESULTS SUMMARY

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VOLATILE ORGANICS ANALYSIS DATA SHEET

ECRA LABORATORIES, INC.

LABORATORY REPORT-VOLATILE ORGANICS ANALYSIS-EPA METHOD 624

CLIENT NAME: ARRON 92-33-01

SAMPLE ID #: 92-33-01-MW-1

LAB ID #:92-04-743

DATA FILE: >G2090::B3

DILUTION FACTOR: 1.00000

EXTRACTION:N/A

METHOD DETECTION LIMIT: 5 UG/L

DATE SAMPLED:04/02/92

DATE RECEIVED:04/03/92

DATE EXTRACTED:N/A

DATE ANALYZED: 4/06/92 18:39

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
74-87-3	Chloromethane	10.	IU
74-83-9	Bromomethane	10.	IU
75-01-4	Vinyl Chloride	10.	IU
75-00-3	Chloroethane	10.	IU
75-09-2	Methylene Chloride	2.	IJB
75-69-4	Trichlorofluoromethane	5.	IU
75-35-4	1,1-Dichloroethene	5.	IU
75-34-3	1,1-Dichloroethane	5.	IU
540-59-0	Trans-1,2-Dichloroethylene	5.	IU
67-66-3	Chloroform	5.	IU
107-02-2	1,2-Dichloroethane	5.	IU
71-55-6	1,1,1-Trichloroethane	5.	IU
56-23-5	Carbon Tetrachloride	5.	IU
75-27-4	Bromodichloromethane	5.	IU
78-87-5	1,2-Dichloropropane	5.	IU
10061-01-5	cis-1,3-Dichloropropene	5.	IU
110-75-8	2-Chloroethyl vinyl ether	10.	IU
79-01-6	Trichloroethylene	5.	IU
124-48-1	Dibromochloromethane	5.	IU
79-00-5	1,1,2-Trichloroethane	5.	IU
71-43-2	Benzene	1.	IJ
10061-02-6	trans-1,3-Dichloropropene	5.	IU
75-25-2	Bromoform	5.	IU
127-18-4	Tetrachloroethylene	5.	IU
79-34-5	1,1,2,2-Tetrachloroethane	5.	IU
108-88-3	Toluene	5.	IU
108-90-7	Chlorobenzene	76.	I
100-41-4	Ethylbenzene	5.	IU
133-02-7	M-Xylene	5.	IU
95-47-6	O,P-Xylene	5.	IU
106-42-3			
95-50-1	1,2-Dichlorobenzene	16.	I
541-73-1	1,3-Dichlorobenzene	5.	IU
106-46-7	1,4-Dichlorobenzene	5.	IU
1634-04-4	Methyl-t-Butyl Ether	5.	IU
75-65-0	t-Butyl Alcohol	10.	IU

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VOLATILE ORGANICS ANALYSIS DATA SHEET

ECRA LABORATORIES, INC.

LABORATORY REPORT-VOLATILE ORGANICS ANALYSIS-EPA METHOD 624

CLIENT NAME: ARRON 92-33-01

SAMPLE ID #: 92-33-01-MW-1-DUP

LAB ID #:92-04-743

DATA FILE: >G2114::B1

DILUTION FACTOR: 1.00000

EXTRACTION:N/A

METHOD DETECTION LIMIT: 5 UG/L

DATE SAMPLED:04/02/92

DATE RECEIVED:04/03/92

DATE EXTRACTED:N/A

DATE ANALYZED: 4/08/92 14:55

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION 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	2.	JB
75-69-4	Trichlorofluoromethane	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	Trans-1,2-Dichloroethylene	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
110-75-8	2-Chloroethyl vinyl ether	10.	U
79-01-6	Trichloroethylene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	1.	J
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
127-18-4	Tetrachloroethylene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	73.	
100-41-4	Ethylbenzene	5.	U
133-02-7	M-Xylene	5.	U
95-47-6	O,P-Xylene	5.	U
106-42-3			
95-50-1	1,2-Dichlorobenzene	17.	
541-73-1	1,3-Dichlorobenzene	5.	U
106-46-7	1,4-Dichlorobenzene	5.	U
1634-04-4	Methyl-t-Butyl Ether	5.	U
75-65-0	t-Butyl Alcohol	10.	U

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES, INC.

Client Name: ARRON 92-33-01

SAMPLE ID #: 92-33-01-MW-1 LAB ID #: 92-04-743

Data File: >G2090

Methanol Ext.:

EPA METHOD #624

Dilution Factor: 1.00000

Concentration Units: UG/L

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

NUMBER OF TIC'S DETECTED: 2

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 76131	Ethane, 1,1,2-trichloro-1,2,2-trifluoro-	11.93	7.	*
2.	Benzene, (Substituted)	58.77	49.	***
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

NR = Not reviewed

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VOLATILE ORGANICS ANALYSIS DATA SHEET

ECRA LABORATORIES, INC.

LABORATORY REPORT-VOLATILE ORGANICS ANALYSIS-EPA METHOD 624

CLIENT NAME: ARRON 92-33-01

SAMPLE ID #: 92-33-01-MW-2 LAB ID #:92-04-745

DATA FILE: >G2088::B3 DILUTION FACTOR: 1.00000

EXTRACTION:N/A METHOD DETECTION LIMIT: 5 UG/L

DATE SAMPLED:04/02/92 DATE RECEIVED:04/03/92

DATE EXTRACTED:N/A DATE ANALYZED: 4/06/92 17:02

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
74-87-3	Chloromethane	10.	IU
74-83-9	Bromomethane	10.	IU
75-01-4	Vinyl Chloride	10.	IU
75-00-3	Chloroethane	10.	IU
75-09-2	Methylene Chloride	1.	IJB
75-69-4	Trichlorofluoromethane	5.	IU
75-35-4	1,1-Dichloroethene	5.	IU
75-34-3	1,1-Dichloroethane	5.	IU
540-59-0	Trans-1,2-Dichloroethylene	5.	IU
67-66-3	Chloroform	5.	IU
107-02-2	1,2-Dichloroethane	5.	IU
71-55-6	1,1,1-Trichloroethane	5.	IU
56-23-5	Carbon Tetrachloride	5.	IU
75-27-4	Bromodichloromethane	5.	IU
78-87-5	1,2-Dichloropropane	5.	IU
10061-01-5	cis-1,3-Dichloropropene	5.	IU
110-75-8	2-Chloroethyl vinyl ether	10.	IU
79-01-6	Trichloroethylene	5.	IU
124-48-1	Dibromochloromethane	5.	IU
79-00-5	1,1,2-Trichloroethane	5.	IU
71-43-2	Benzene	5.	IU
10061-02-6	trans-1,3-Dichloropropene	5.	IU
75-25-2	Bromoform	5.	IU
127-18-4	Tetrachloroethylene	5.	IU
79-34-5	1,1,2,2-Tetrachloroethane	5.	IU
108-88-3	Toluene	5.	IU
108-90-7	Chlorobenzene	5.	IU
100-41-4	Ethylbenzene	5.	IU
133-02-7	M-Xylene	5.	IU
95-47-6	O,P-Xylene	5.	IU
106-42-3			
95-50-1	1,2-Dichlorobenzene	5.	IU
541-73-1	1,3-Dichlorobenzene	5.	IU
106-46-7	1,4-Dichlorobenzene	5.	IU
1634-04-4	Methyl-t-Butyl Ether	5.	IU
75-65-0	t-Butyl Alcohol	10.	IU

000015

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES,INC.

lient Name: ARRON 92-33-01

SAMPLE ID #: 92-33-01-MW-2 LAB ID #: 92-04-745

ata File: >G2088

Methanol Ext.:

PA METHOD #624

ilution Factor: 1.00000

Concentration Units: UG/L

UMBER OF TIC'S DETECTED: 0

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Peaks Detected			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

R = Not reviewed

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VOLATILE ORGANICS ANALYSIS DATA SHEET

ECRA LABORATORIES, INC.

LABORATORY REPORT-VOLATILE ORGANICS ANALYSIS-EPA METHOD 624

CLIENT NAME: ARRON 92-33-01

SAMPLE ID #: 92-33-01-FIELD BLK

LAB ID #:92-04-747

DATA FILE: >G2113::B2

DILUTION FACTOR: 1.00000

EXTRACTION:N/A

METHOD DETECTION LIMIT: 5 UG/L

DATE SAMPLED:04/02/92

DATE RECEIVED:04/03/92

DATE EXTRACTED:N/A

DATE ANALYZED: 4/08/92 14:01

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION 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	6.	B
75-69-4	Trichlorofluoromethane	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	Trans-1,2-Dichloroethylene	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
110-75-8	2-Chloroethyl vinyl ether	10.	U
79-01-6	Trichloroethylene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
127-18-4	Tetrachloroethylene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
133-02-7	M-Xylene	5.	U
95-47-6	O,P-Xylene	5.	U
106-42-3			
95-50-1	1,2-Dichlorobenzene	5.	U
541-73-1	1,3-Dichlorobenzene	5.	U
106-46-7	1,4-Dichlorobenzene	5.	U
1634-04-4	Methyl-t-Butyl Ether	5.	U
75-65-0	t-Butyl Alcohol	10.	U

000017

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES, INC.

Client Name: ARRON 92-33-01

SAMPLE ID #: 92-33-01-FIELD BLK LAB ID #: 92-04-747

Data File: >G2113

Methanol Ext.:

EPA METHOD #624

Dilution Factor: 1.00000

Concentration Units: UG/L

NUMBER OF TIC'S DETECTED: 0

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Peaks Detected			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

NR = Not reviewed

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RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
FAX: (201) 361-1021

VOLATILE ORGANICS ANALYSIS DATA SHEET

ECRA LABORATORIES, INC.

LABORATORY REPORT-VOLATILE ORGANICS ANALYSIS-EPA METHOD 624

CLIENT NAME: ARRON 92-33-01

SAMPLE ID #: 92-33-01-TRP BL

LAB ID #:92-04-749

DATA FILE: >G2086::B3

DILUTION FACTOR: 1.00000

EXTRACTION:N/A

METHOD DETECTION LIMIT: 5 UG/L

DATE SAMPLED:04/02/92

DATE RECEIVED:04/03/92

DATE EXTRACTED:N/A

DATE ANALYZED: 4/06/92 15:25

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
74-87-3	Chloromethane	10.	IU
74-83-9	Bromomethane	10.	IU
75-01-4	Vinyl Chloride	10.	IU
75-00-3	Chloroethane	10.	IU
75-09-2	Methylene Chloride	4.	IJB
75-69-4	Trichlorofluoromethane	5.	IU
75-35-4	1,1-Dichloroethene	5.	IU
75-34-3	1,1-Dichloroethane	5.	IU
540-59-0	Trans-1,2-Dichloroethylene	5.	IU
67-66-3	Chloroform	5.	IU
107-02-2	1,2-Dichloroethane	5.	IU
71-55-6	1,1,1-Trichloroethane	2.	IJ
56-23-5	Carbon Tetrachloride	5.	IU
75-27-4	Bromodichloromethane	5.	IU
78-87-5	1,2-Dichloropropane	5.	IU
10061-01-5	cis-1,3-Dichloropropene	5.	IU
110-75-8	2-Chloroethyl vinyl ether	10.	IU
79-01-6	Trichloroethylene	5.	IU
124-48-1	Dibromochloromethane	5.	IU
79-00-5	1,1,2-Trichloroethane	5.	IU
71-43-2	Benzene	5.	IU
10061-02-6	trans-1,3-Dichloropropene	5.	IU
75-25-2	Bromoform	5.	IU
127-18-4	Tetrachloroethylene	5.	IU
79-34-5	1,1,2,2-Tetrachloroethane	5.	IU
108-88-3	Toluene	5.	IU
108-90-7	Chlorobenzene	5.	IU
100-41-4	Ethylbenzene	5.	IU
133-02-7	M-Xylene	5.	IU
95-47-6	O,P-Xylene	5.	IU
106-42-3			
95-50-1	1,2-Dichlorobenzene	5.	IU
541-73-1	1,3-Dichlorobenzene	5.	IU
106-46-7	1,4-Dichlorobenzene	5.	IU
1634-04-4	Methyl-t-Butyl Ether	5.	IU
75-65-0	t-Butyl Alcohol	10.	IU

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES,INC.

Client Name: ARRON 92-33-01

SAMPLE ID #: 92-33-01-TRP BL LAB ID #: 92-04-749

Data File: >G2086

Methanol Ext.:

EPA METHOD #624

Dilution Factor: 1.00000

Concentration Units: UG/L

NUMBER OF TIC'S DETECTED: 0

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Peaks Detected			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET-(PAGE 1 OF 2)

ECRA LABORATORIES, INC.

LABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: AARON 92-33-01

SAMPLE ID #: 92-33-01-MW-2 LAB ID #:92-04-803

DATA FILE: >F4719::F1 DILUTION FACTOR: 1.00000

EXTRACTION:SEPF METHOD DETECTION LIMIT: 10 UG/L

DATE SAMPLED:04/13/92 DATE RECEIVED:04/13/92

DATE EXTRACTED:04/14/92 DATE ANALYZED: 4/15/92 15:11

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
111-44-4	bis(2-Chloroethyl)Ether	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
62-75-9	N-Nitrosodimethylamine	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	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
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
87-68-3	Hexachlorobutadiene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
91-58-7	2-Chloronaphthalene	10.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
83-32-9	Acenaphthene	10.	U
92-87-5	Benzidine	80.	U
121-14-2	2,4-Dinitrotoluene	10.	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET-(PAGE 2 OF 2)

ECRA LABORATORIES, INC.

LABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: AARON 92-33-01

SAMPLE ID #: 92-33-01-MW-2

LAB ID #:92-04-803

DATA FILE: >F4719::F1

DILUTION FACTOR: 1.00000

EXTRACTION:SEPF

METHOD DETECTION LIMIT: 10 UG/L

DATE SAMPLED:04/13/92

DATE RECEIVED:04/13/92

DATE EXTRACTED:04/14/92

DATE ANALYZED: 4/15/92 15:11

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	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	20.	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-octylphthalate	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	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

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1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES, INC.

Client Name: AARON 92-33-01

SAMPLE ID #: 92-33-01-MW-2 LAB ID # 92-04-803

Data File: >F4719

Extraction: SEPF

EPA METHOD #625

Dilution Factor: 1.00000

Concentration Units: UG/L

NUMBER OF TIC'S DETECTED: 5

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	57556	1,2-Propanediol	5.66	26.	*/**
2.		Unknown	12.42	110.	
3.		Unknown	12.49	58.	
4.		Unknown	12.76	180.	
5.		Unknown	25.59	6.	
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET-(PAGE 1 OF 2)

ECRA LABORATORIES, INC.

LABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: AARON 92-33-01

SAMPLE ID #: 92-33-01 F.BLANK

LAB ID #:92-04-804

DATA FILE: >F4717::F1

DILUTION FACTOR: 1.00000

EXTRACTION:SEPF

METHOD DETECTION LIMIT: 10 UG/L

DATE SAMPLED:04/13/92

DATE RECEIVED:04/13/92

DATE EXTRACTED:04/14/92

DATE ANALYZED: 4/15/92 12:47

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
111-44-4	bis(2-Chloroethyl)Ether	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
62-75-9	N-Nitrosodimethylamine	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	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
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
87-68-3	Hexachlorobutadiene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
91-58-7	2-Chloronaphthalene	10.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
83-32-9	Acenaphthene	10.	U
92-87-5	Benzidine	80.	U
121-14-2	2,4-Dinitrotoluene	10.	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET-(PAGE 2 OF 2)

ECRA LABORATORIES, INC.

LABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: AARON 92-33-01

SAMPLE ID #: 92-33-01 F.BLANK — LAB ID #:92-04-804

DATA FILE: >F4717::F1 — DILUTION FACTOR: 1.00000

EXTRACTION:SEPF — METHOD DETECTION LIMIT: 10 UG/L

DATE SAMPLED:04/13/92 — DATE RECEIVED:04/13/92

DATE EXTRACTED:04/14/92 — DATE ANALYZED: 4/15/92 12:47

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	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	20.	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-octylphthalate	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	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES, INC.

Client Name: AARON 92-33-01

SAMPLE ID #: 92-33-01 F.BLANK LAB ID # 92-04-804

Data File: >F4717

Extraction: SEPF

EPA METHOD #625

Dilution Factor: 1.00000

Concentration Units: UG/L

NUMBER OF TIC'S DETECTED: 5

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	57556	1,2-Propanediol	5.68	22.	*/**
2.		Unknown	29.44	6.	
3.		Unknown	29.53	6.	
4.		Unknown	31.98	9.	
5.		Unknown	34.34	31.	
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					

R = Not reviewed

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET-(PAGE 1 OF 2)

ECRA LABORATORIES, INC.

LABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: AARON 92-33-01

SAMPLE ID #: 92-33-01-MW-1 LAB ID #:92-04-805

DATA FILE: >F4718::F1 DILUTION FACTOR: 1.00000

EXTRACTION:SEPF METHOD DETECTION LIMIT: 10 UG/L

DATE SAMPLED:04/13/92 DATE RECEIVED:04/13/92

DATE EXTRACTED:04/14/92 DATE ANALYZED: 4/15/92 13:59

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
111-44-4	bis(2-Chloroethyl)Ether	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
62-75-9	N-Nitrosodimethylamine	10.	U
95-50-1	1,2-Dichlorobenzene	10.	
39638-32-9	bis(2-chloroisopropyl)ether	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
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	8.	J
87-68-3	Hexachlorobutadiene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
91-58-7	2-Chloronaphthalene	10.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
83-32-9	Acenaphthene	10.	U
92-87-5	Benzidine	80.	U
121-14-2	2,4-Dinitrotoluene	10.	U

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ECRA LABORATORIES, INC.

LABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: AARON 92-33-01

SAMPLE ID #: 92-33-01-MW-1 LAB ID #:92-04-805

DATA FILE: >F4718::F1 DILUTION FACTOR: 1.00000

EXTRACTION:SEPF METHOD DETECTION LIMIT: 10 UG/L

DATE SAMPLED:04/13/92 DATE RECEIVED:04/13/92

DATE EXTRACTED:04/14/92 DATE ANALYZED: 4/15/92 13:59

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	1.	J
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	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-octylphthalate	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	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES, INC.

Client Name: AARON 92-33-01

SAMPLE ID #: 92-33-01-MW-1 LAB ID # 92-04-805

Data File: >F4718

Extraction: SEPF

EPA METHOD #625

Dilution Factor: 1.00000

Concentration Units: UG/L

NUMBER OF TIC'S DETECTED: 11

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	57556	1,2-Propanediol	5.68	34.	*/**
2.	108907	Benzene, chloro-	8.71	26.	
3.		Unknown	12.40	43.	
4.		Unknown	12.49	35.	
5.		Unknown	12.74	19.	
6.	611143	Benzene, 1-ethyl-2-methyl-	13.22	19.	
7.	90120	Naphthalene, 1-methyl-	19.61	16.	
8.		Unknown	21.01	7.	
9.		Unknown	24.22	5.	
10.	140669	Phenol, 4-(1,1,3,3-tetramethyl)-	24.49	6.	
11.		Unknown	25.62	12.	
12.		Unknown	26.63	6.	
13.					
14.					
15.					

NR = Not reviewed FORM I SV-TIC 1/87 Rev.

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AARON ENVIRONMENTAL

92-33-01

PRIORITY POLLUTANT VOLATILES

(VOA)

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3.0 QA/QC DATA SUMMARY

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FAX: (201) 361-1021

METHODOLOGY SUMMARY

This summary is based upon ECRA Labs, Inc. Standard Operating Procedure No. SOP-EL-022-A.

1.0 Parameter: **Gas Chromatography/Mass Spectrometry for Volatile Organics in Water.**

2.0 Reference: Code of Federal Regulation 40,Pt. 136; Appendix A, EPA Method #624/#524.1

3.0 Method Description:

3.1 Calibration: Calibration is achieved by running a series of volatile organic standards on a Gas Chromatograph/Mass Spectrometer which is interfaced with an HP-1000 RTE-6/VM computer system. The computer detects, acquires, and stores all mass spectral data aquired during the program and calculates a response factor for each volatile contaminant purged. The computer identifies the peaks by comparing the retention time and the extracted ion current profile to that which is stored in a library file.

3.2 Sample Analysis: An inert gas (helium) is purged through a purge chamber containing a 5 ml/25 ml aliquot of water sample. The purgeable analytes are then transferred from the aqueous phase to the vapor phase and absorbed onto a multi-component trap. The trap is heated and backfushed with helium, and the analytes are desorbed onto a Gas Chromatograph equipped with a SP-1000 Supelco packed column. The gas chromatograph undergoes a temperature ramp from 45°C to 220°C at a rate of 20°C for the complete separation of volatile contaminants.

3.3 Calculation: Qualitative identification is obtained by the same method as described in 3.1. Quantitation is achieved by comparing one characteristic mass (m/z) abundance of a specific analyte with a characteristic mass (m/z) abundance of an internal QA/QC standards.

4.0 MDL: The MDL for volatile organics is dependant upon any interferences that may appear in the chromatogram. A typical MDL is 1-10 PPB micrograms per liter [PPB].

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SECTION 1.0

SAMPLE ANALYSIS REPORTS

QUANT REPORTS WITH TOTAL ION CHROMATOGRAMS

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Continuing Calibration Check
HSL Compounds

Case No:

Calibration Date: 04/06/92

Contractor: ECRA LABS

Time: 08:09

Contract No:

Laboratory ID: >G2079

Instrument ID: HPMSD-VOA

Initial Calibration Date: 03/30/92

Minimum $\overline{RF}$ for SPCC is .30 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
CHLOROMETHANE	.47809	.41501	13.19		**	
BROMOMETHANE	.84709	.78026	7.89			
VINYL CHLORIDE	.68042	.68018	.04	*		
CHLOROETHANE	.49492	.50179	1.39			
METHYLENE CHLORIDE	1.12318	1.36332	21.38			
ACROLEIN	-	-	-			(Conc=400.00)
ACRYLONITRILE	-	-	-			(Conc=400.00)
ACETONE	-	-	-			
CARBON DISULFIDE	-	-	-			
TRICHLOROFLUOROMETHANE	2.21113	1.93634	12.43			
1,1-DICHLOROETHENE	1.48632	1.32756	10.68	*		
T-BUTYL ALCOHOL	.04485	.03287	26.71			(Conc=100.00)
1,1-DICHLOROETHANE	1.59972	1.49218	6.72		**	
TRANS-1,2-DICHLOROETHYLENE	.79246	.70935	10.49			
CHLOROFORM	1.94427	1.74950	10.02	*		
1,2-DICHLOROETHANE	1.19272	1.07724	9.68			
1,2-DICHLOROETHANE-D4 (SURG.)	1.13817	1.05586	7.23			(Conc=50.00)
1,1,1-TRICHLOROETHANE	.70568	.66129	6.29			
METHYL T-BUTYL ETHER	.59624	.66483	11.50			(Conc=100.00)
2-BUTANONE	-	-	-			
CARBON TETRACHLORIDE	.63876	.58360	8.64			
VINYL ACETATE	-	-	-			
BROMODICHLOROMETHANE	.79118	.73367	7.27			
1,2-DICHLOROPROPANE	.38429	.38076	.92	*		
TRANS-1,3-DICHLOROPROPENE	1.27437	1.17718	7.63			(Conc=76.00)
TRICHLOROETHYLENE	.46824	.44125	5.76			
DIBROMOCHLOROMETHANE	.58496	.52432	10.37			
1,1,2-TRICHLOROETHANE	.32332	.29957	7.34			
BENZENE	.88425	.85706	3.07			
CIS-1,3-DICHLOROPROPENE	.14960	.14088	5.83			(Conc=124.00)
DIISOPROPYL ETHER	.14623	-	-			(Conc=100.00)
2-CHLOROETHYL VINYL ETHER	.03813	.03526	7.53			

RF - Response Factor from daily standard file at 100.00 UG/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

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Continuing Calibration Check
HSL Compounds

Case No:

Calibration Date: 04/06/92

Contractor: ECRA LABS

Time: 08:09

Contract No:

Laboratory ID: >G2079

Instrument ID: HPMSD-VOA

Initial Calibration Date: 03/30/92

Minimum $\overline{RF}$ for SPCC is .30 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
BROMOFORM	.37334	.29819	20.13		**	
4-METHYL-2-PENTANONE	-	-	-			
2-HEXANONE	-	-	-			
TETRACHLOROETHYLENE	.40466	.39939	1.30			
TOLUENE-D8 (SURG.)	1.21255	1.21533	.23			(Conc=50.00)
1,1,2,2-TETRACHLOROETHANE	.41208	.37122	9.92		**	
TOLUENE	.74935	.71686	4.34	*		
CHLOROBENZENE	.94061	.89310	5.05		**	
ETHYLBENZENE	.46300	.45930	.80	*		
BROMOFLUOROBENZENE (SURG.)	.87411	.81739	6.49			(Conc=50.00)
STYRENE	-	-	-			
M-XYLENE	.63304	.60123	5.02			
O,P-XYLENE	.62333	.59705	4.21			(Conc=200.00)
1,2-DICHLOROBENZENE	1.09390	1.06755	2.41			
1,3-DICHLOROBENZENE	1.11042	1.02008	8.14			
1,4-DICHLOROBENZENE	1.17633	1.07246	8.83			

RF - Response Factor from daily standard file at 100.00 UG/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES,INC.

Client Name: ARRON 92-33-01

SAMPLE ID #: 92-33-01-MW-1 LAB ID #: 92-04-743

Data File: >G2090

Methanol Ext.:

EPA METHOD #624

Dilution Factor: 1.00000

Concentration Units: UG/L

NUMBER OF TIC'S DETECTED: 2

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	76131	Ethane, 1,1,2-trichloro-1,2,2-trifluoro-	11.93	7.	*
2.		Benzene, (Substituted)	58.77	49.	***
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					

NR = Not reviewed

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QUANT REPORT

Operator ID: MAURIE Quant Rev: 6 Quant Time: 920406 20:10
Output File: ^G2090::QT Injected at: 920406 18:39
Data File: >G2090::B3 Dilution Factor: 1.00000
Name: ARRON 92-33-01
Misc: 92-33-01-MW-1/04/02-03 PORT 12

ID File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920330 12:29

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	9.39	436	20438	50.00	UG/L	78
6)	METHYLENE CHLORIDE	6.12	270	823M	1.79	UG/L BJ	100
18)	1,2-DICHLOROETHANE-D4 (SURG.)	12.23	580	20599	44.28	UG/L 89	91
19)	*1,4-DIFLUOROBENZENE	19.97	973	42097	50.00	UG/L	100
31)	BENZENE	17.31	838	972	1.31	UG/L J	100
38)	*CHLOROBENZENE-D5	25.00	1228	34493	50.00	UG/L	100
40)	TOLUENE-D8 (SURG.)	23.77	1166	40785	48.76	UG/L 98	90
43)	CHLOROBENZENE	25.13	1235	49391	76.12	UG/L	95
45)	BROMOFLUOROBENZENE (SURG.)	29.82	1473	27978M	46.40	UG/L 93	88
49)	1,2-DICHLOROBENZENE	37.55	1865	12312M	16.32	UG/L	52

* Compound is ISTD

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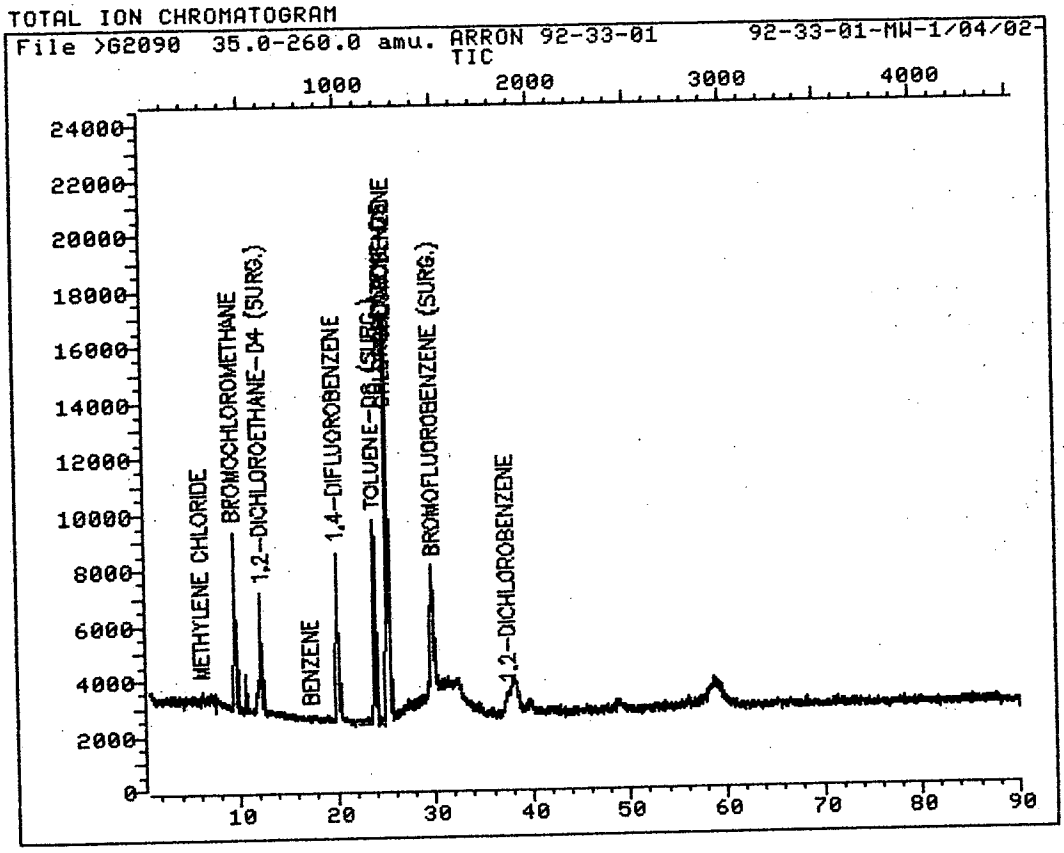
TOTAL ION CHROMATOGRAM



Data File: >G2090::B3 Quant Output File: ^G2090::QT
Name: ARRON 92-33-01
Misc: 92-33-01-MW-1/04/02-03 PORT 12

Id File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920330 12:29

Operator ID: MAURIE
Quant Time: 920406 20:10
Injected at: 920406 18:39

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QUANT REPORT

Operator ID: MAURIE Quant Rev: 6 Quant Time: 920408 16:27
Output File: ^G2114::QT Injected at: 920408 14:55
Data File: >G2114::B1 Dilution Factor: 1.00000
Name: ARRON 92-33-01
Misc: 92-33-01-MW-1-DUP/04/02-03 PORT 8

ID File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920408 13:37

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	9.18	425	21088	50.00	UG/L	82
6)	METHYLENE CHLORIDE	5.93	260	1432	2.49	UG/L 8J	100
18)	1,2-DICHLOROETHANE-D4 (SURG.)	11.98	567	21103	49.75	UG/L 100	93
19)	*1,4-DIFLUOROBENZENE	19.62	955	43706	50.00	UG/L	100
31)	BENZENE	17.00	822	758M	1.02	UG/L J	100
38)	*CHLOROBENZENE-D5	24.55	1205	37359	50.00	UG/L	100
40)	TOLUENE-D8 (SURG.)	23.30	1142	42518	47.12	UG/L 94	88
43)	CHLOROBENZENE	24.63	1209	48783	72.95	UG/L	98
45)	BROMOFLUOROBENZENE (SURG.)	28.94	1428	31921M	51.24	UG/L 102	80
49)	1,2-DICHLOROBENZENE	35.80	1772	12930M	16.88	UG/L	

* Compound is ISTD

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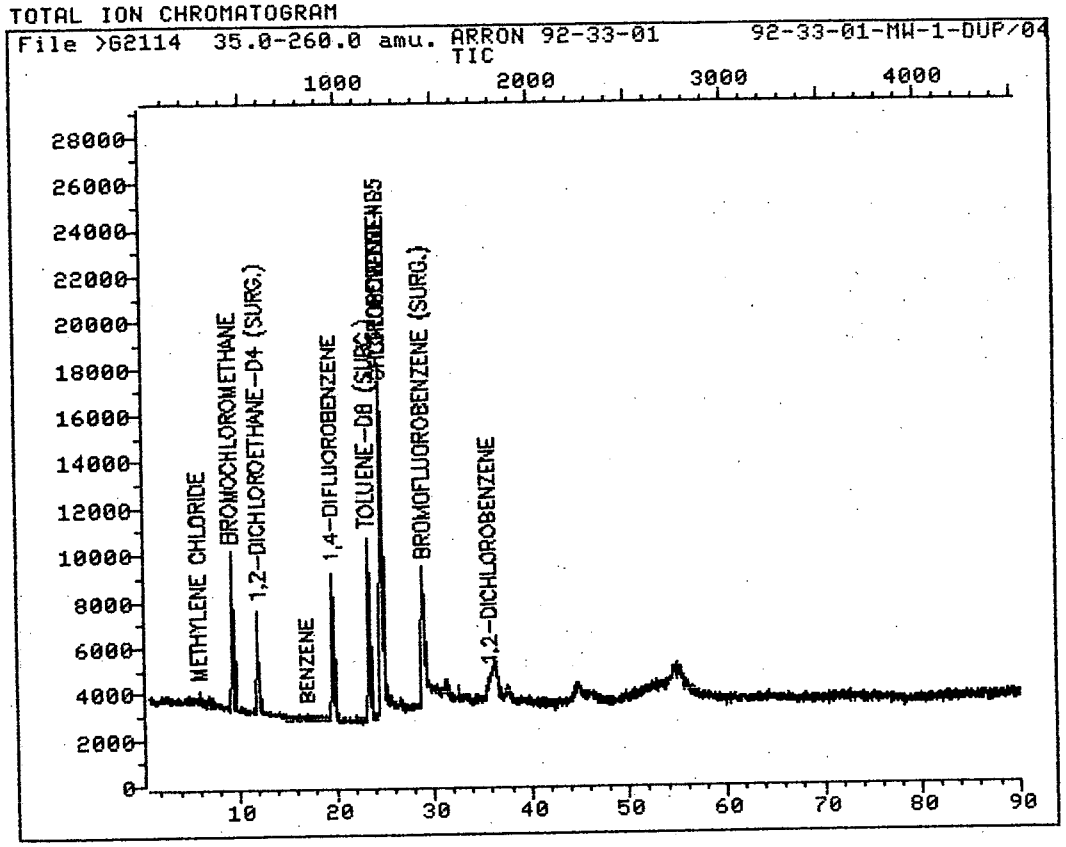
TOTAL ION CHROMATOGRAM



Data File: >G2114::B1 Quant Output File: ^G2114::QT
Name: ARRON 92-33-01
Misc: 92-33-01-MW-1-DUP/04/02-03 PORT 8

Id File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920408 13:37

Operator ID: MAURIE
Quant Time: 920408 16:27
Injected at: 920408 14:55

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MS data file header from : >G2090

Sample: ARRON 92-33-01 Operator: MAURIE MS 4/06/92 18:39
Misc : 92-33-01-MW-1/04/02-03 PORT 12
Sys. #: 1 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: VOAZ Tuning file: MTG001 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 290 Transfer line temp. : 0

Chromatographic temperatures :	45.	220.	221.	222.	0.
Chromatographic times, min. :	3.0	25.0	30.0	30.0	0.0
Chromatographic rate, deg/min:	8.0	1.0	1.0	1.0	0.0

G2090 ARRON 92-33-01 92-33-01-MW-1/04/02-03 PORT 12
35.01 260.0 CLP ADC TIC
Upslope: .20 Area Reject: 7739. Max Peaks: 1 Bunching: 1
Onslope: 0.00 Results File IG2090 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	11.93	557	565	569	1148	17869	10394	100.00	100.000

Sum of corrected areas: 10394.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	77392.	9.39	.82 - 14.68
2	50.0	84677.	19.97	14.68 - 22.48
3	50.0	* ~~266857.~~	24.99	22.48 - 90.03

Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 1.00 Amount Used (AU) = 1.00

*Second internal std used due to matrix interference on the 3rd.

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

7:59 AM THU., 9 APR., 1992

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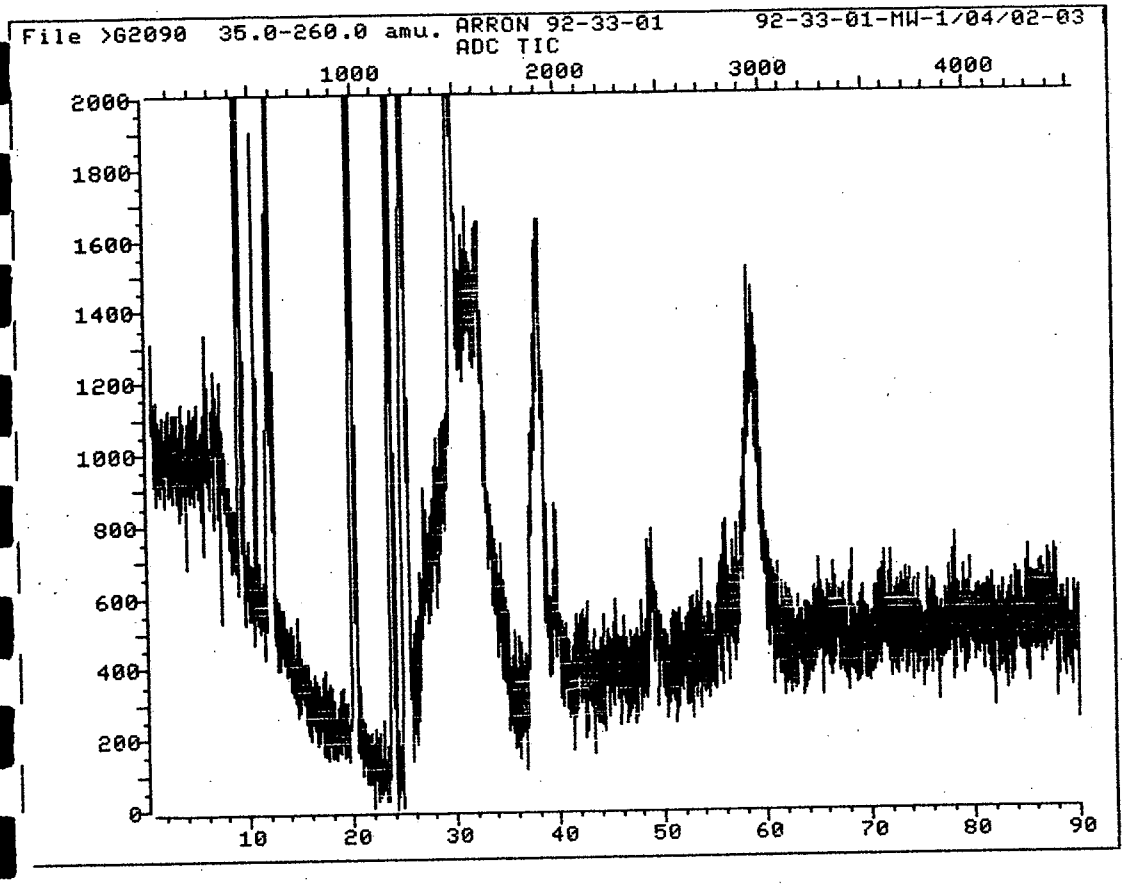

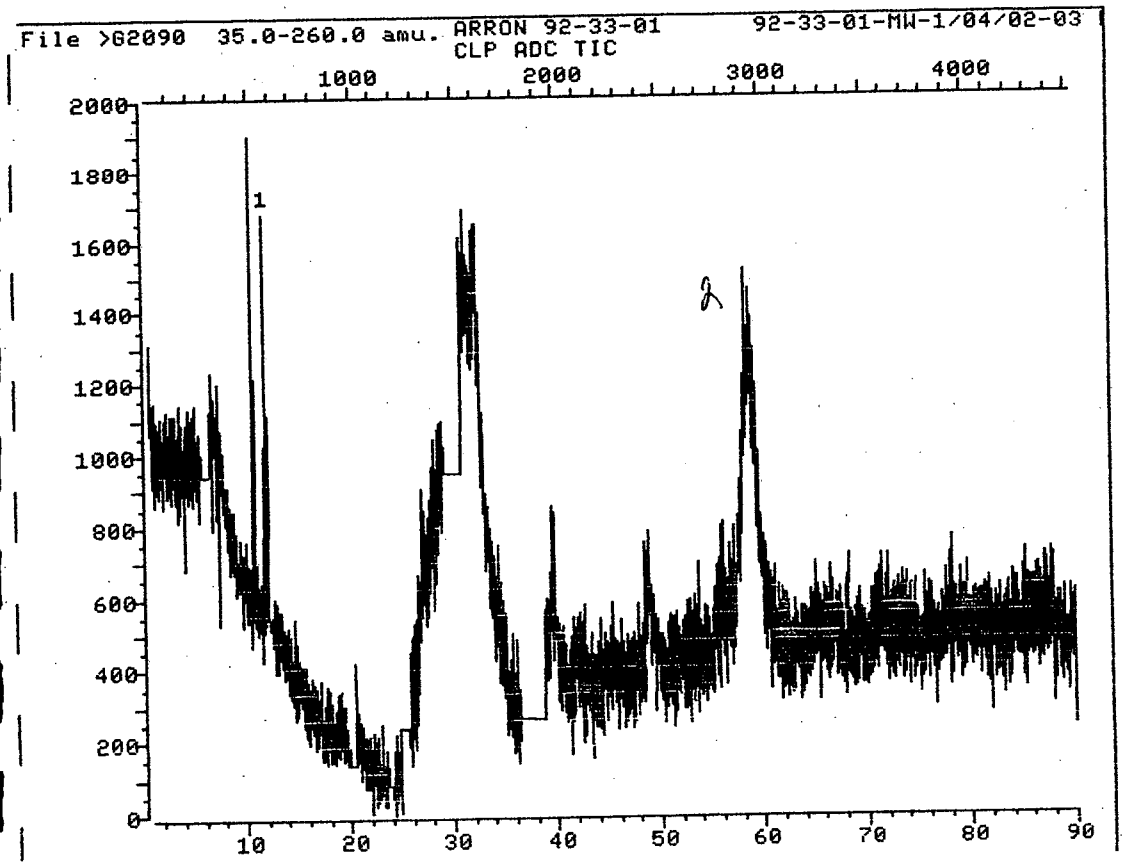

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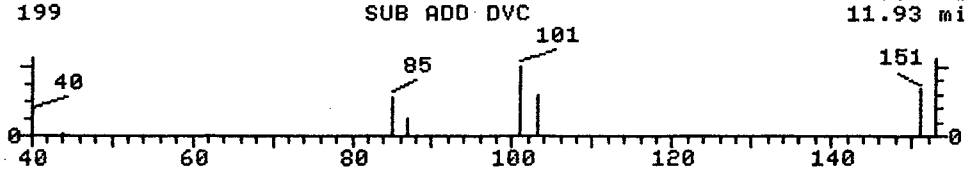
File >G2090 ARRON 92-33-01 92-33-01-MW-1/04/02-03 PORT 1 Scan 565
Bpk Ab 199 SUB ADD DVC 11.93 min.



. Unknown #,1
Area = 10394.00 Tentative Concentration is 7.00

Sample file: >G2090 Spectrum #: 565

No data base entries were retrieved.

Cas # 76131
Ethane, 1,1,2-trichloro-1,2,2-trifluoro-

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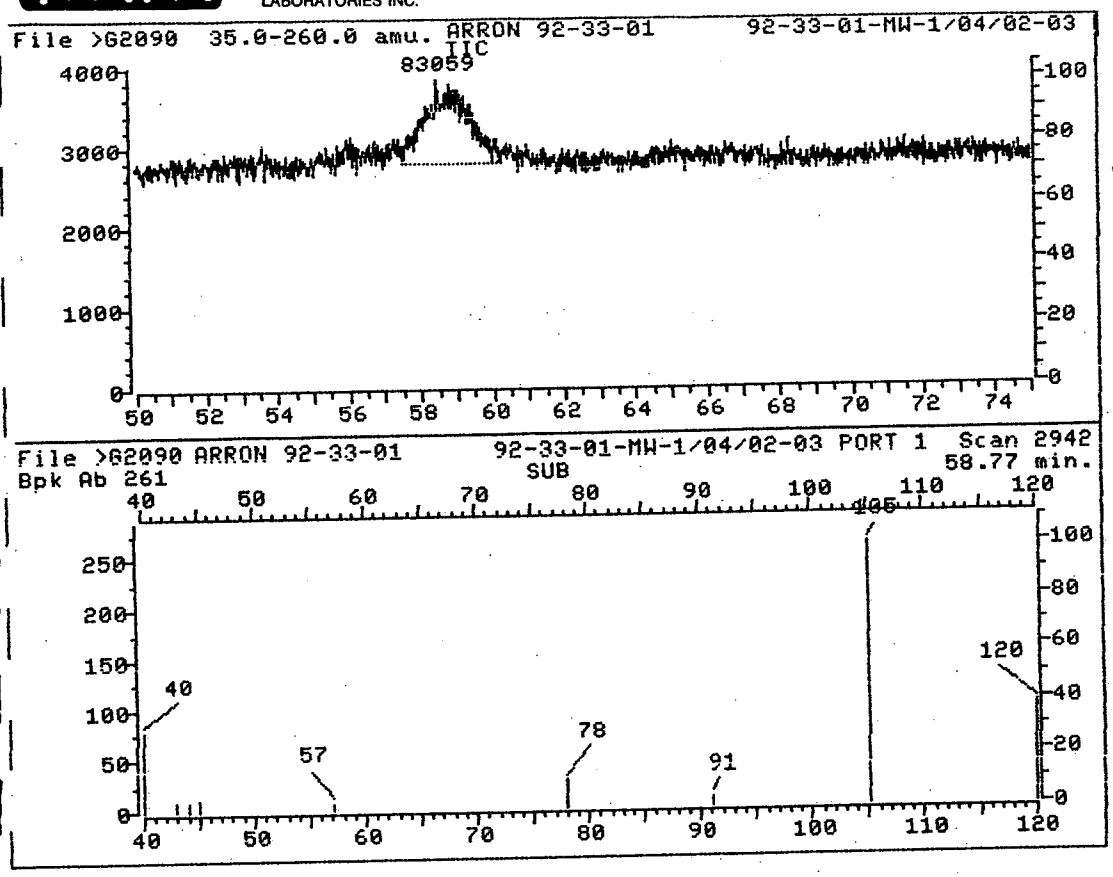

#2

$$\frac{83059 \times 50 \times 1.0}{84677} = 49$$

Sample file: >G2090 Spectrum #: 2942

No data base entries were retrieved.

Benzene (Substituted)

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VOLATILE ORGANICS ANALYSIS DATA SHEET

ECRA LABORATORIES, INC.

LABORATORY REPORT-VOLATILE ORGANICS ANALYSIS-EPA METHOD 624

CLIENT NAME: ARRON 92-33-01

SAMPLE ID #: 92-33-01-MW-2 LAB ID #:92-04-745

DATA FILE: >G2088::B3 DILUTION FACTOR: 1.00000

EXTRACTION:N/A METHOD DETECTION LIMIT: 5 UG/L

DATE SAMPLED:04/02/92 DATE RECEIVED:04/03/92

DATE EXTRACTED:N/A DATE ANALYZED: 4/06/92 17:02

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
74-87-3	Chloromethane	10.	IU
74-83-9	Bromomethane	10.	IU
75-01-4	Vinyl Chloride	10.	IU
75-00-3	Chloroethane	10.	IU
75-09-2	Methylene Chloride	1.	IJB
75-69-4	Trichlorofluoromethane	5.	IU
75-35-4	1,1-Dichloroethene	5.	IU
75-34-3	1,1-Dichloroethane	5.	IU
540-59-0	Trans-1,2-Dichloroethylene	5.	IU
67-66-3	Chloroform	5.	IU
107-02-2	1,2-Dichloroethane	5.	IU
71-55-6	1,1,1-Trichloroethane	5.	IU
56-23-5	Carbon Tetrachloride	5.	IU
75-27-4	Bromodichloromethane	5.	IU
78-87-5	1,2-Dichloropropane	5.	IU
10061-01-5	cis-1,3-Dichloropropene	5.	IU
110-75-8	2-Chloroethyl vinyl ether	10.	IU
79-01-6	Trichloroethylene	5.	IU
124-48-1	Dibromochloromethane	5.	IU
79-00-5	1,1,2-Trichloroethane	5.	IU
71-43-2	Benzene	5.	IU
10061-02-6	trans-1,3-Dichloropropene	5.	IU
75-25-2	Bromoform	5.	IU
127-18-4	Tetrachloroethylene	5.	IU
79-34-5	1,1,2,2-Tetrachloroethane	5.	IU
108-88-3	Toluene	5.	IU
108-90-7	Chlorobenzene	5.	IU
100-41-4	Ethylbenzene	5.	IU
133-02-7	M-Xylene	5.	IU
95-47-6	O,P-Xylene	5.	IU
106-42-3			
95-50-1	1,2-Dichlorobenzene	5.	IU
541-73-1	1,3-Dichlorobenzene	5.	IU
106-46-7	1,4-Dichlorobenzene	5.	IU
1634-04-4	Methyl-t-Butyl Ether	5.	IU
75-65-0	t-Butyl Alcohol	10.	IU

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES,INC.

Client Name: ARRON 92-33-01

SAMPLE ID #: 92-33-01-MW-2 LAB ID #: 92-04-745

Data File: >G2088

Methanol Ext.:

EPA METHOD #624

Dilution Factor: 1.00000

Concentration Units: UG/L

NUMBER OF TIC'S DETECTED: 0

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Peaks Detected			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

NR = Not reviewed

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QUANT REPORT

Operator ID: MAURIE Quant Rev: 6 Quant Time: 920406 17:43
Output File: ^G2088::QT Injected at: 920406 17:02
Data File: >G2088::B3 Dilution Factor: 1.00000
Name: ARRON 92-33-01
Misc: 92-33-01-MW-2/04/02-03 PORT 10

ID File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920330 12:29

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	9.37	434	26834	50.00	UG/L	79
6)	METHYLENE CHLORIDE	6.14	270	775M	1.29	UG/L	100
18)	1,2-DICHLOROETHANE-D4 (SURG.)	12.20	578	26792	43.86	UG/L 88	96
19)	*1,4-DIFLUOROBENZENE	19.93	970	56745	50.00	UG/L	100
38)	*CHLOROBENZENE-D5	24.99	1227	46495	50.00	UG/L	100
40)	TOLUENE-D8 (SURG.)	23.73	1163	54805	48.61	UG/L 97	90
45)	BROMOFLUOROBENZENE (SURG.)	29.72	1467	36516M	44.92	UG/L 90	83

* Compound is ISTD

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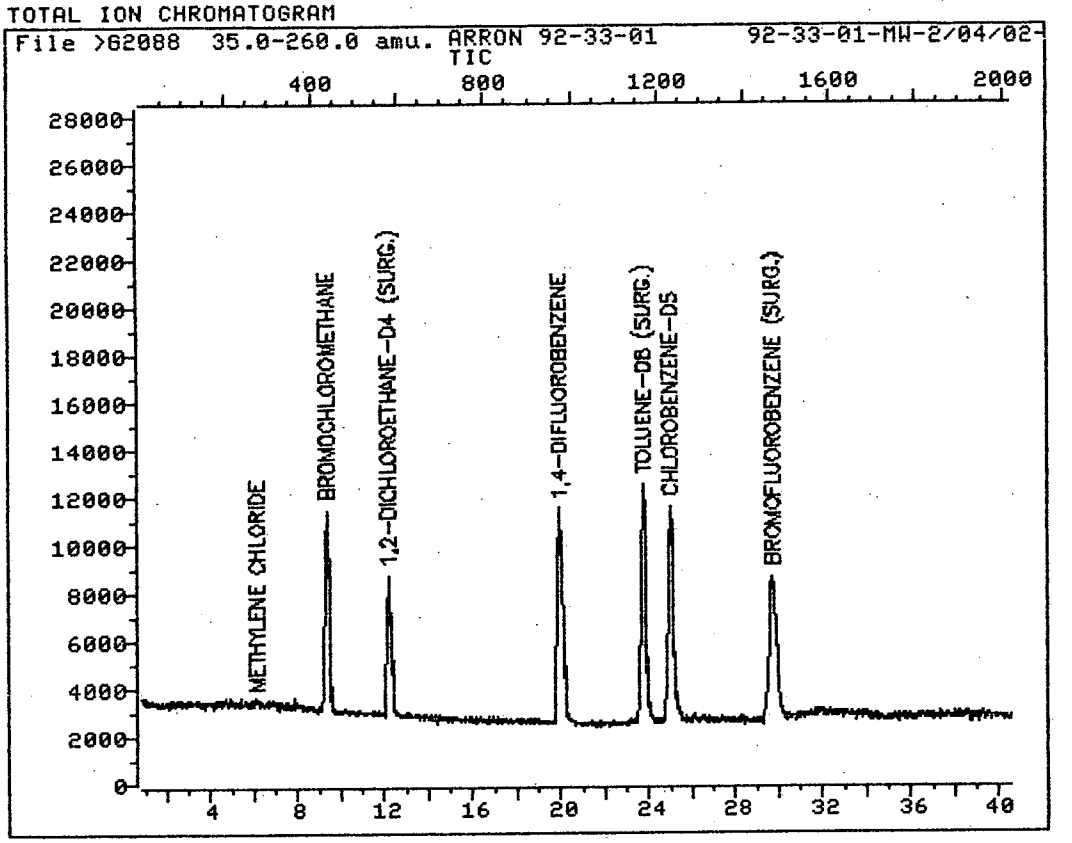
273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
FAX: (201) 361-1021

TOTAL ION CHROMATOGRAM



Data File: >G2088::B3 Quant Output File: ^G2088::QT
Name: ARRON 92-33-01
Misc: 92-33-01-MW-2/04/02-03 PORT 10

Id File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920330 12:29

Operator ID: MAURIE
Quant Time: 920406 17:43
Injected at: 920406 17:02

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MS data file header from : >G2088

Sample: ARRON 92-33-01 Operator: MAURIE MS 4/06/92 17:02
Misc : 92-33-01-MW-2/04/02-03 PORT 10
Sys. #: 1 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: VOA1 Tuning file: MTG001 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 290 Transfer line temp. : 0

Chromatographic temperatures :	45.	220.	0.	0.	0.
Chromatographic times, min. :	3.0	16.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	8.0	0.0	0.0	1.0	0.0

No peaks found.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	103651.	9.37	.84 - 14.65
2	50.0	124779.	19.93	14.65 - 22.46
3	50.0	140698.	24.99	22.46 - 40.54

Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 1.00 Amount Used (AU) = 1.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

8:16 AM TUE., 7 APR., 1992

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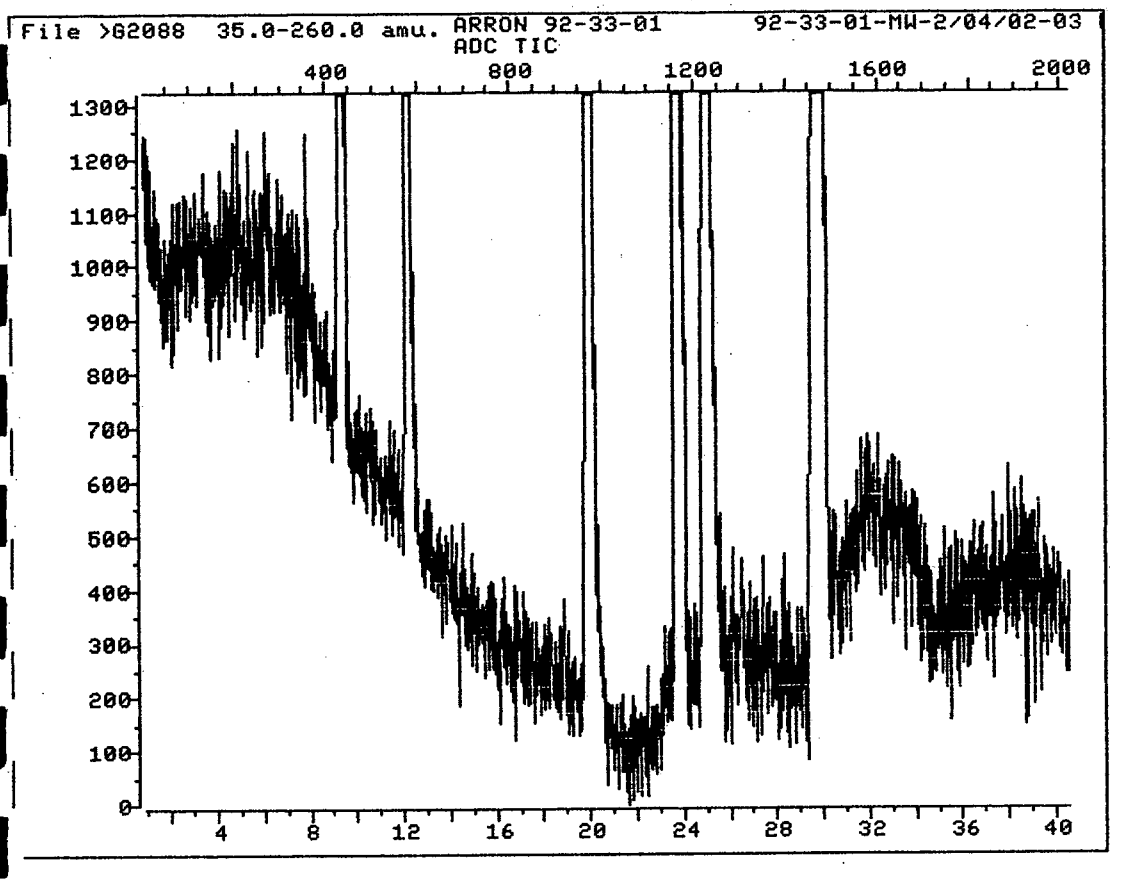

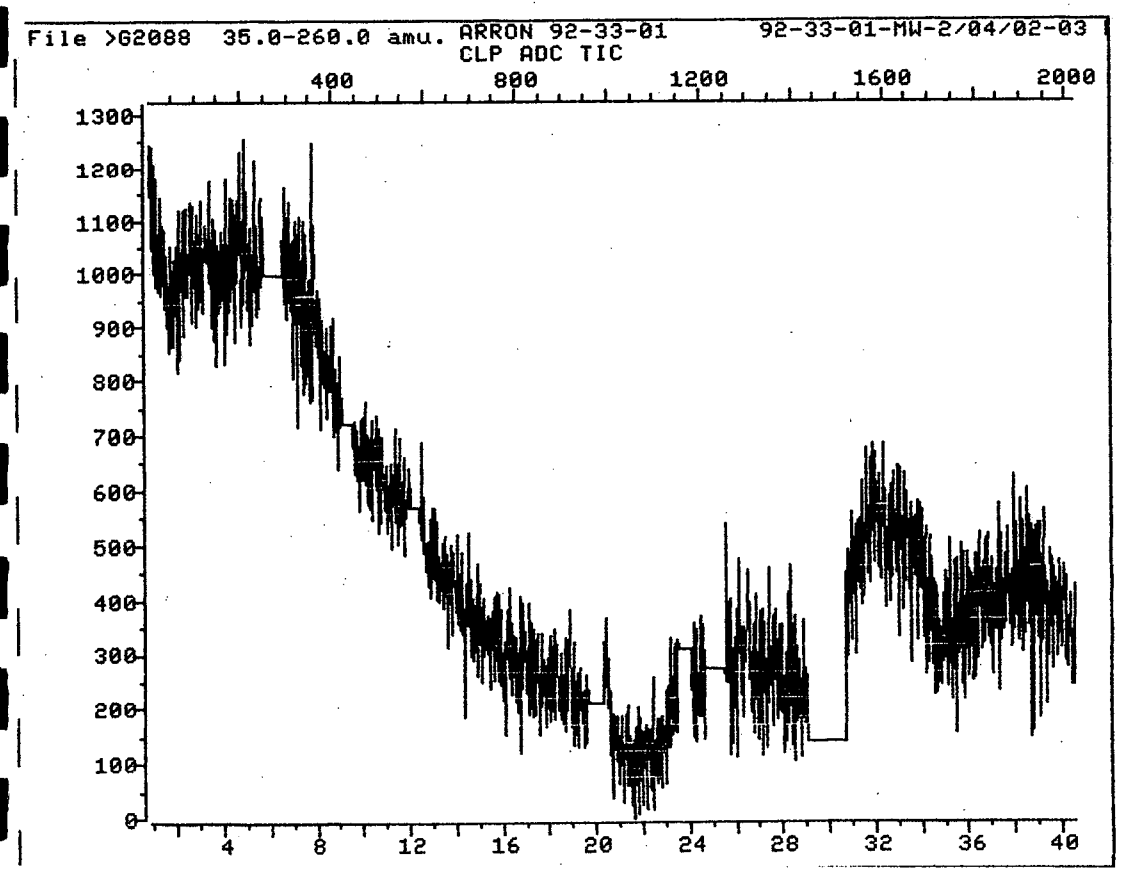

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```
vorking...
draw complete...
```

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working...
   There were no UNKNOWNS
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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES,INC.

Client Name: ARRON 92-33-01

SAMPLE ID #: 92-33-01-FIELD BLK LAB ID #: 92-04-747

Data File: >G2113

Methanol Ext.:

EPA METHOD #624

Dilution Factor: 1.00000

Concentration Units: UG/L

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

NUMBER OF TIC'S DETECTED: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Peaks Detected			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

NR = Not reviewed

FORM I VOA-TIC

1/87 Rev.

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QUANT REPORT

Operator ID: MAURIE Quant Rev: 6 Quant Time: 920408 14:48
Output File: ^G2113::QT Injected at: 920408 14:01
Data File: >G2113::B2 Dilution Factor: 1.00000
Name: ARRON 92-33-01
Misc: 92-33-01-FIELD BLK/04/02-03 PORT 4

ID File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920408 13:37

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	9.17	423	24955	50.00	UG/L	83
6)	METHYLENE CHLORIDE	5.96	260	4355	6.40	UG/L B	100
18)	1,2-DICHLOROETHANE-D4 (SURG.)	11.97	565	22542	44.90	UG/L 90	93
19)	*1,4-DIFLUOROBENZENE	19.59	952	47891M	50.00	UG/L	100
38)	*CHLOROBENZENE-D5	24.56	1204	38925	50.00	UG/L	100
40)	TOLUENE-D8 (SURG.)	23.31	1141	45134	48.01	UG/L 96	81
45)	BROMOFLUOROBENZENE (SURG.)	28.93	1426	33294M	51.30	UG/L 403	84

* Compound is ISTD

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PHONE: (201) 361-4252
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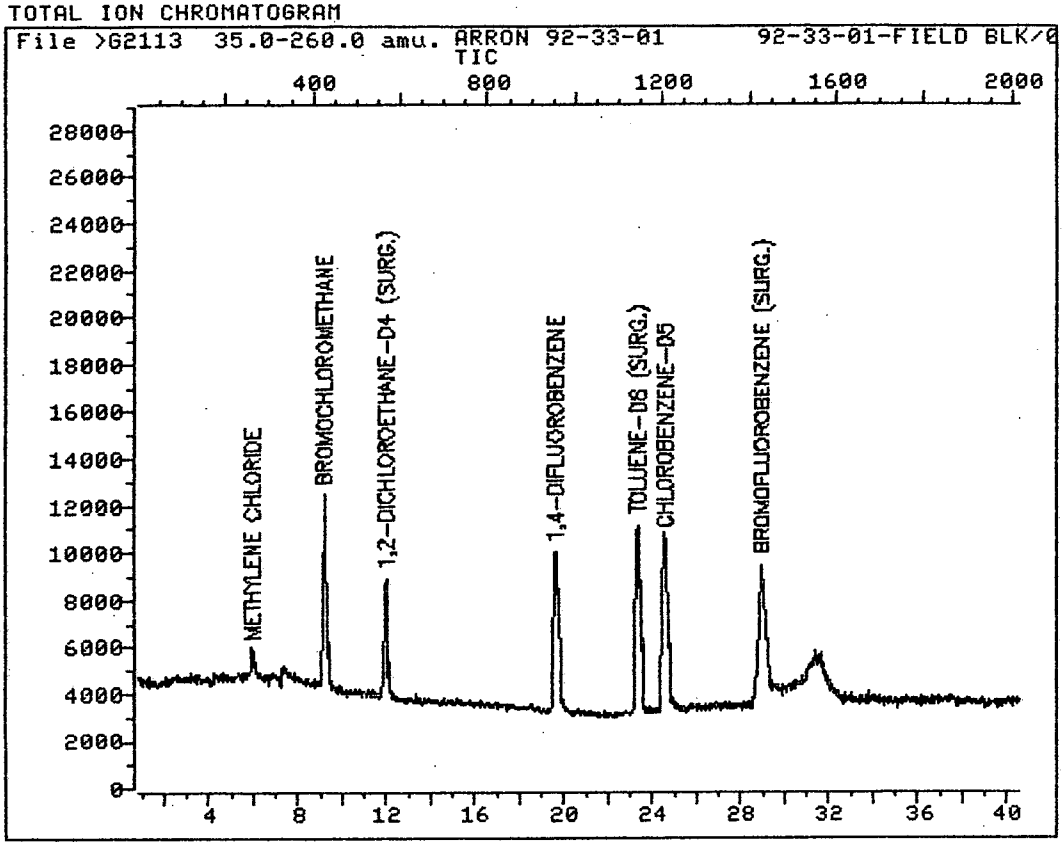
TOTAL ION CHROMATOGRAM



Data File: >G2113::B2 Quant Output File: ^G2113::QT
Name: ARRON 92-33-01
Misc: 92-33-01-FIELD BLK/04/02-03 PORT 4

Id File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920408 13:37

Operator ID: MAURIE
Quant Time: 920408 14:48
Injected at: 920408 14:01

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MS data file header from : >G2113

Sample: ARRON 92-33-01 Operator: MAURIE MS 4/08/92 14:01
Misc : 92-33-01-FIELD BLK/04/02-03 PORT 4
Sys. #: 1 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: VOA1 Tuning file: MTG001 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 290 Transfer line temp. : 0

Chromatographic temperatures :	45.	220.	0.	0.	0.
Chromatographic times, min. :	3.0	16.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	8.0	0.0	0.0	1.0	0.0

No peaks found.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	99731.	9.17	.85 - 14.38
2	50.0	102032.	19.59	14.38 - 22.07
3	50.0	120481.	24.56	22.07 - 40.54

Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 1.00 Amount Used (AU) = 1.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

7:51 AM THU., 9 APR., 1992

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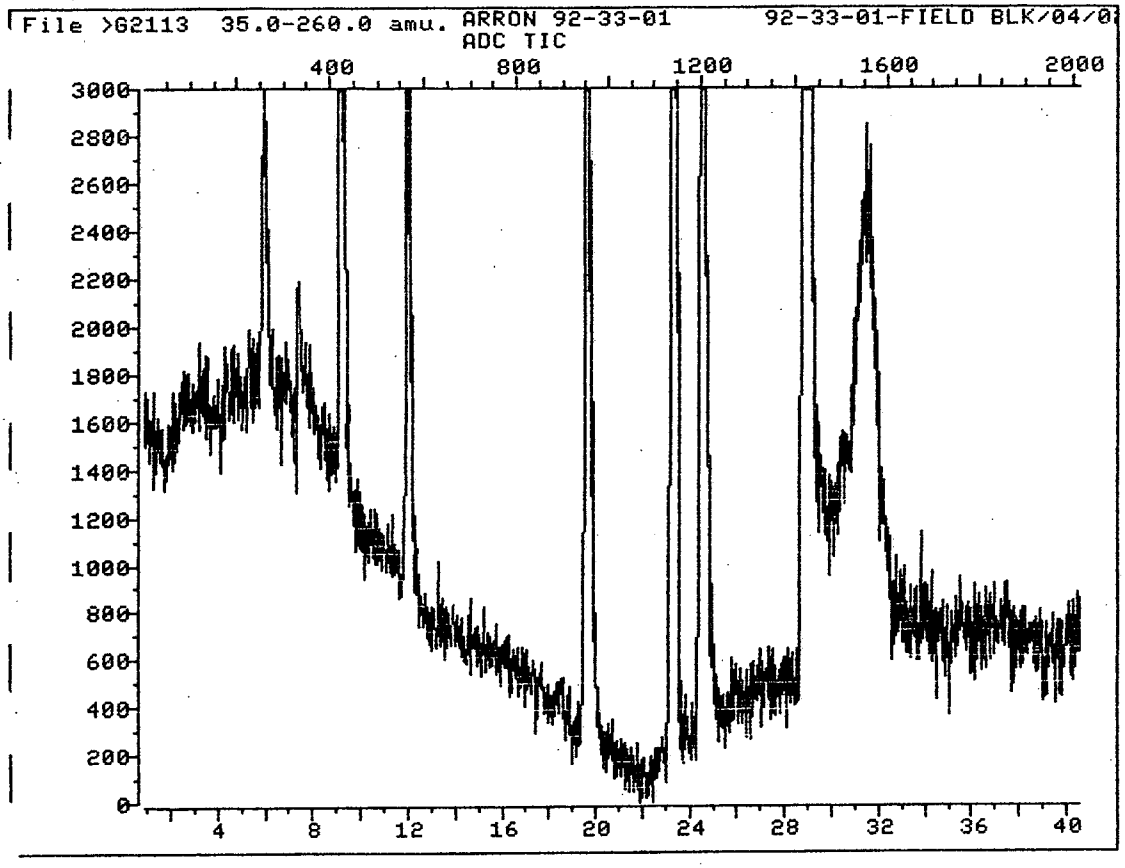

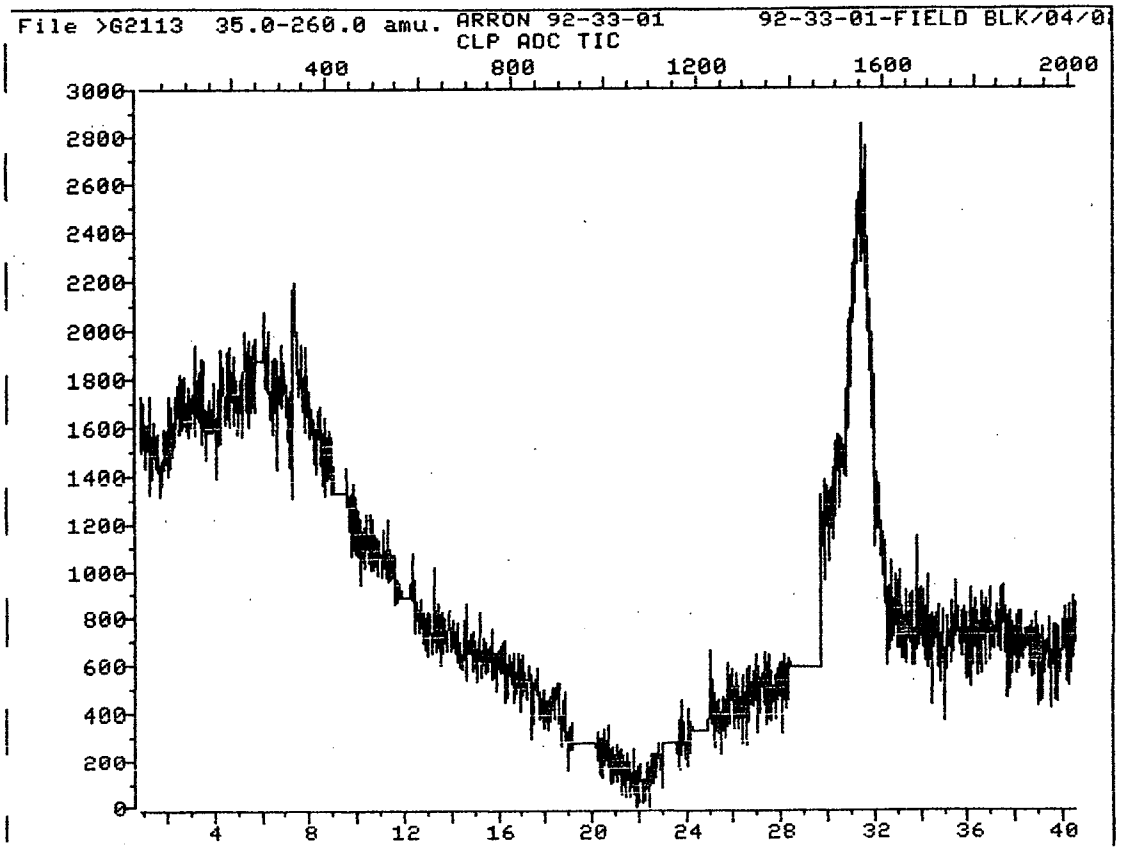

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```
working...
draw complete...
```

```
working...
.   There were no UNKNOWNS
```

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VOLATILE ORGANICS ANALYSIS DATA SHEET

ECRA LABORATORIES, INC.

LABORATORY REPORT-VOLATILE ORGANICS ANALYSIS-EPA METHOD 624

CLIENT NAME: ARRON 92-33-01

SAMPLE ID #: 92-33-01-TRP BL

LAB ID #:92-04-749

DATA FILE: >G2086::B3

DILUTION FACTOR: 1.00000

EXTRACTION:N/A

METHOD DETECTION LIMIT: 5 UG/L

DATE SAMPLED:04/02/92

DATE RECEIVED:04/03/92

DATE EXTRACTED:N/A

DATE ANALYZED: 4/06/92 15:25

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
74-87-3	Chloromethane	10.	IU
74-83-9	Bromomethane	10.	IU
75-01-4	Vinyl Chloride	10.	IU
75-00-3	Chloroethane	10.	IU
75-09-2	Methylene Chloride	4.	IJB
75-69-4	Trichlorofluoromethane	5.	IU
75-35-4	1,1-Dichloroethene	5.	IU
75-34-3	1,1-Dichloroethane	5.	IU
540-59-0	Trans-1,2-Dichloroethylene	5.	IU
67-66-3	Chloroform	5.	IU
107-02-2	1,2-Dichloroethane	5.	IU
71-55-6	1,1,1-Trichloroethane	2.	IJ
56-23-5	Carbon Tetrachloride	5.	IU
75-27-4	Bromodichloromethane	5.	IU
78-87-5	1,2-Dichloropropane	5.	IU
10061-01-5	cis-1,3-Dichloropropene	5.	IU
110-75-8	2-Chloroethyl vinyl ether	10.	IU
79-01-6	Trichloroethylene	5.	IU
124-48-1	Dibromochloromethane	5.	IU
79-00-5	1,1,2-Trichloroethane	5.	IU
71-43-2	Benzene	5.	IU
10061-02-6	trans-1,3-Dichloropropene	5.	IU
75-25-2	Bromoform	5.	IU
127-18-4	Tetrachloroethylene	5.	IU
79-34-5	1,1,2,2-Tetrachloroethane	5.	IU
108-88-3	Toluene	5.	IU
108-90-7	Chlorobenzene	5.	IU
100-41-4	Ethylbenzene	5.	IU
133-02-7	M-Xylene	5.	IU
95-47-6	O,P-Xylene	5.	IU
106-42-3			
95-50-1	1,2-Dichlorobenzene	5.	IU
541-73-1	1,3-Dichlorobenzene	5.	IU
106-46-7	1,4-Dichlorobenzene	5.	IU
1634-04-4	Methyl-t-Butyl Ether	5.	IU
75-65-0	t-Butyl Alcohol	10.	IU

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FAX: (201) 361-1021

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES,INC.

Client Name: ARRON 92-33-01

SAMPLE ID #: 92-33-01-TRP BL LAB ID #: 92-04-749

Data File: >G2086

Methanol Ext.:

EPA METHOD #624

Dilution Factor: 1.00000

Concentration Units: UG/L

NUMBER OF TIC'S DETECTED: 0

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Peaks Detected			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

NR = Not reviewed FORM I VOA-TIC 1/87 Rev.

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QUANT REPORT

Operator ID: MAURIE Quant Rev: 6 Quant Time: 920406 16:06
Output File: ^G2086::QT Injected at: 920406 15:25
Data File: >G2086::B3 Dilution Factor: 1.00000
Name: ARRON 92-33-01
Misc: 92-33-01-TRP BL/04/02-03 PORT 8

ID File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920330 12:29

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	9.36	434	26792	50.00	UG/L	84
6)	METHYLENE CHLORIDE	6.09	268	2334	3.88	UG/L BJ	100
18)	1,2-DICHLOROETHANE-D4 (SURG.)	12.21	579	25983	42.60	UG/L 85	99
19)	*1,4-DIFLUOROBENZENE	19.94	971	55454	50.00	UG/L	100
20)	1,1,1-TRICHLOROETHANE	13.53	646	1926M	2.46	UG/L J	89
38)	*CHLOROBENZENE-D5	25.00	1228	44046	50.00	UG/L	100
40)	TOLUENE-D8 (SURG.)	23.70	1162	52580	49.22	UG/L 98	89
45)	BROMOFLUOROBENZENE (SURG.)	29.67	1465	36031M	46.79	UG/L 94	83

* Compound is ISTD

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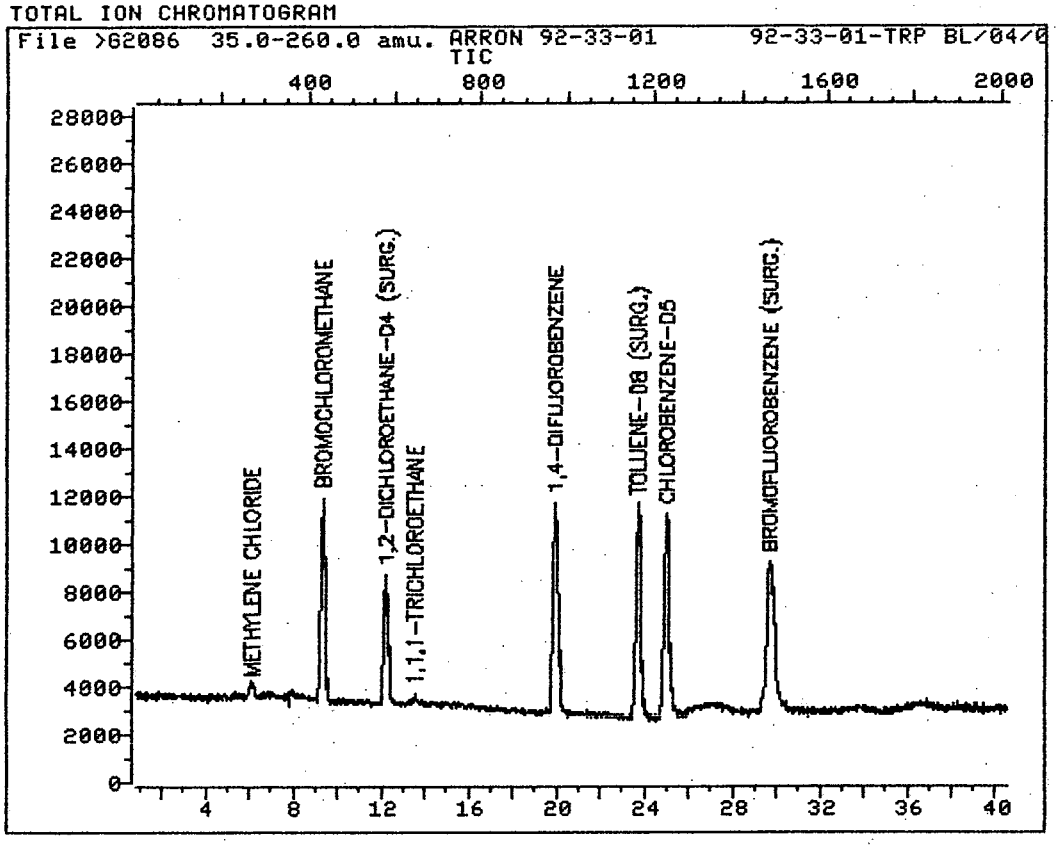
TOTAL ION CHROMATOGRAM



Data File: >G2086::B3 Quant Output File: ^G2086::QT
Name: ARRON 92-33-01
Misc: 92-33-01-TRP BL/04/02-03 PORT 8

Id File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920330 12:29

Operator ID: MAURIE
Quant Time: 920406 16:06
Injected at: 920406 15:25

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FAX: (201) 361-1021

MS data file header from : >G2086

Sample: ARRON 92-33-01 Operator: MAURIE MS 4/06/92 15:25
Disc : 92-33-01-TRP BL/04/02-03 PORT 8
Sys. #: 1 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: VOA1 Tuning file: MTG001 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 290 Transfer line temp. : 0

Chromatographic temperatures :	45.	220.	0.	0.	0.
Chromatographic times, min. :	3.0	16.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	8.0	0.0	0.0	1.0	0.0

No peaks found.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	103370.	9.36	.83 - 14.65
2	50.0	121560.	19.94	14.65 - 22.47
3	50.0	133051.	25.00	22.47 - 40.53

Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 1.00 Amount Used (AU) = 1.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

5:47 PM MON., 6 APR., 1992

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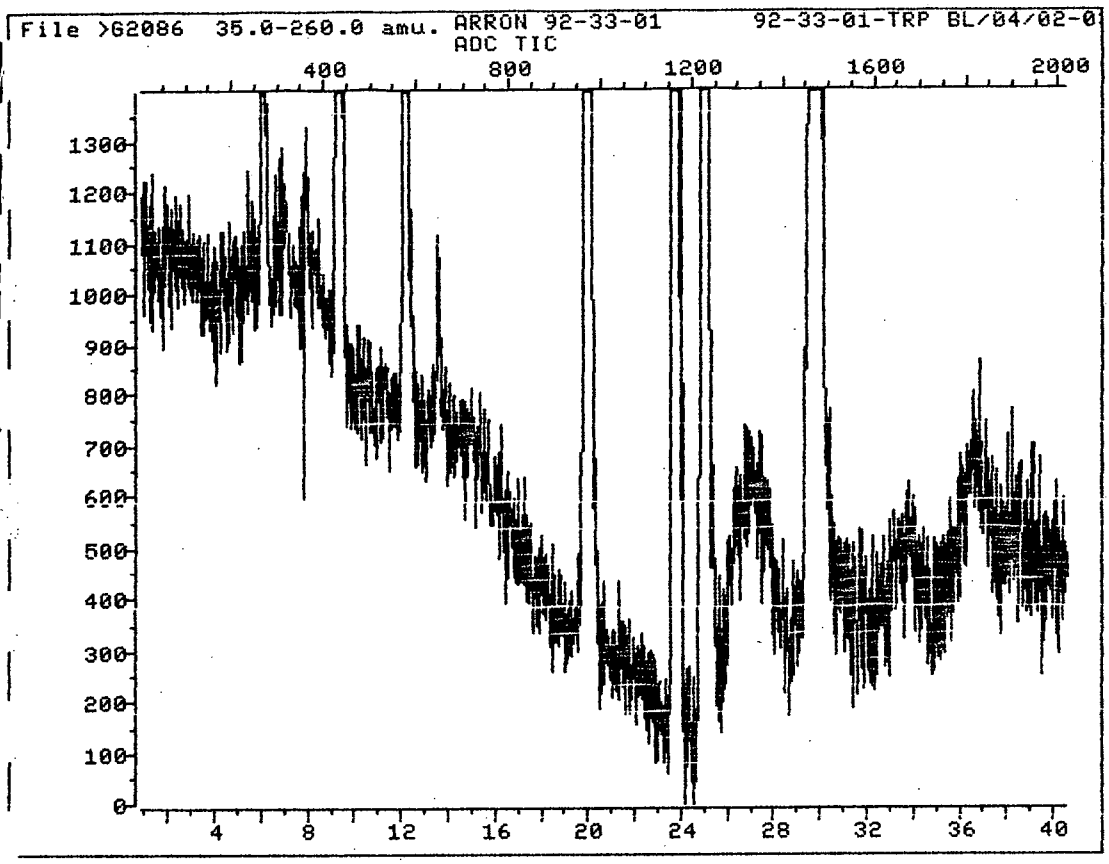

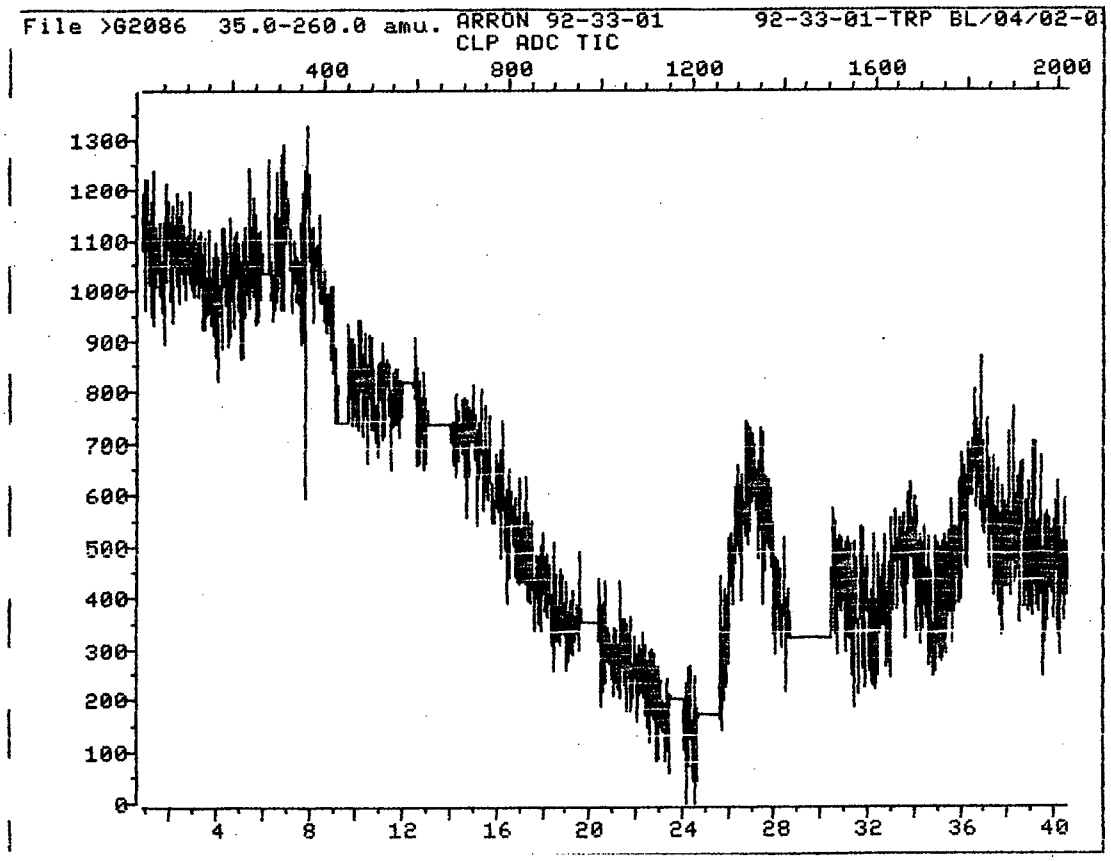

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FAX: (201) 361-1021

```
working...
draw complete...
```

```
working...
   There were no UNKNOWNS
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SECTION 2.0

GC/MS TUNING AND MASS CALIBRATION

CALIBRATION STANDARD QUANT REPORT/ CHROMATOGRAMS

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FAX: (201) 361-1021

5A

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

Lab Name: ECRA LABORATORIES, INC.

Lab File ID: >G2010 BFB Injection Date: 3/30/92

Instrument ID: HPMSD(G) BFB Injection Time: 3/30/92 7:37

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% OF MASS 95	23.3
75	30.0 - 60.0% OF MASS 95	55.6
95	Base peak, 100% relative abundance	100.
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	.2 (.3)1
174	Greater than 50.0% of mass 95	63.3
175	5.0 - 9.0% of mass 174	4.9 (7.7)1
176	Greater than 95.0%, but less than 101.0% of mass 174	62.6 (98.9)1
177	5.0 - 9.0% of mass 176	4.3 (6.9)2

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

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	N/A	METHOD BLANK	>G2011	3/30/92	7:54
02	N/A	METHANOL BLANK	>G2012	3/30/92	8:54
03	N/A	STD 100 PPB	>G2013	3/30/92	9:45
04	N/A	STD 20 PPB	>G2014	3/30/92	10:35
05	N/A	STD 200 PPB	>G2015	3/30/92	11:27
06	N/A	91-198-03-25-MS-DUP	>G2016	3/30/92	12:22
07	N/A	91-198-03-25-MG-DUP	>G2017	3/30/92	13:12
08	N/A	91-009-Z01-SC	>G2018	3/30/92	14:01
09	N/A	BLANK	>G2019	3/30/92	15:48
10	N/A	91-009-Z01-DUP	>G2020	3/30/92	17:27
11	N/A	BLANK	>G2021	3/30/92	19:05
12	N/A	BLANK	>G2022	3/30/92	20:44
13					
14					
15					
16					
17					
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20					
21					
22					

SC=SCREEN

000067

FORM V VOA 1/87 Rev.

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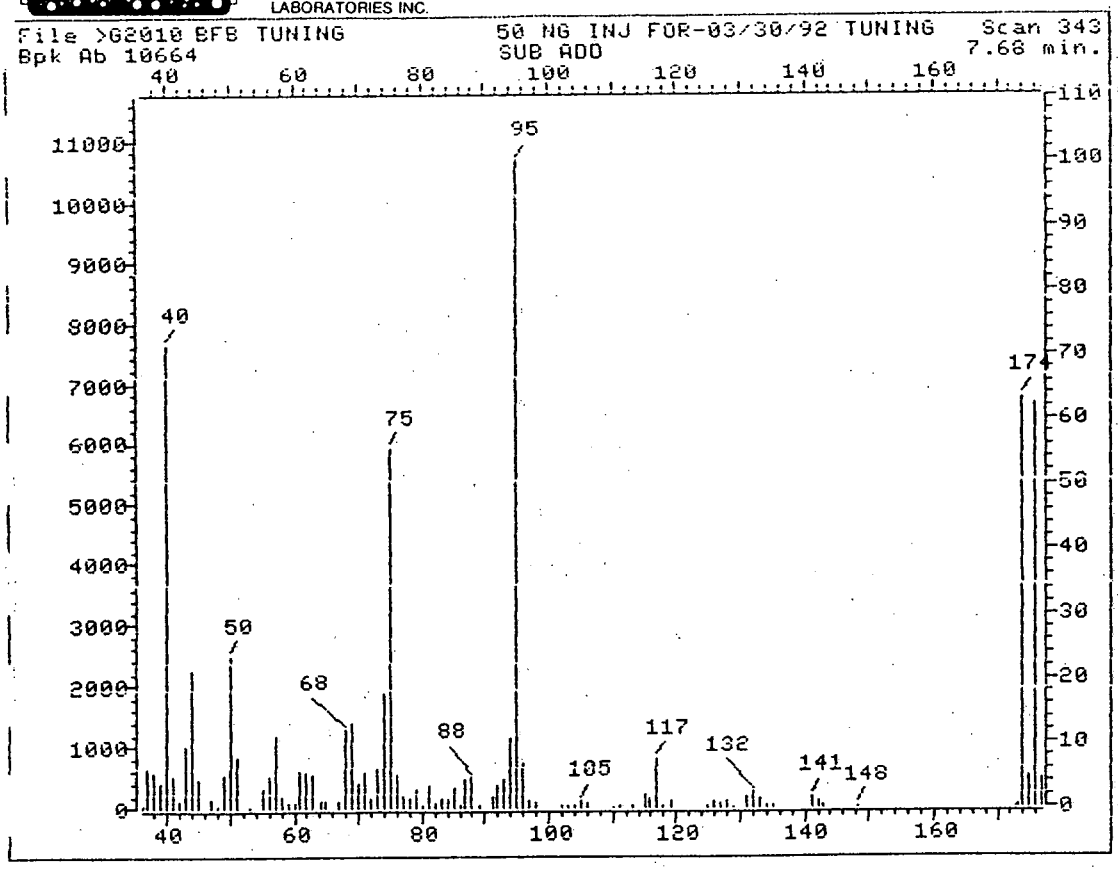
NJDEP LAB CERT. I.D. NO. 14580
273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
FAX: (201) 361-1021



GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
50	15-40% of mass 95	23.31	23.31	Ok
75	30-60% of mass 95	55.58	55.58	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	6.85	6.85	Ok
173	Less than 2% of mass 174	.19	.30	Ok
174	Greater than 50% of mass 95	63.27	63.27	Ok
175	5-9% of mass 174	4.88	7.71	Ok
176	95-101% of mass 174	62.57	98.89	Ok
177	5-9% of mass 176	4.29	6.86	Ok

Injection Date: 03/30/92
Injection Time: 07:37
Data File: >G2010
Scan: 343

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>G2010 BFB TUNING 50 NG INJ FOR-03/30/92 TUNING
343 SUB ADD NRM

File: >G2010 Scan #: 343 Retn. time: 7.68

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
36.05	.459	58.05	1.679	77.05	1.744	96.00	6.855	127.00	.553
37.00	5.926	59.05	.816	77.95	1.491	97.10	.910	128.10	.938
38.00	5.270	60.00	.863	78.95	2.682	98.05	.666	129.00	.141
39.00	3.770	61.00	5.636	79.95	.319	101.95	.309	131.10	1.829
40.00	71.559	62.00	5.242	80.95	3.273	103.05	.488	132.05	2.354
41.00	4.876	63.00	5.139	82.00	.797	104.00	.478	133.05	1.538
42.00	.900	64.10	1.182	83.10	1.369	105.00	1.013	134.15	.497
43.05	9.405	64.95	.994	84.00	1.341	106.00	.675	135.05	.281
43.95	21.249	67.05	.985	85.10	3.170	110.05	.188	141.00	1.566
45.05	4.464	67.95	12.125	86.10	.281	111.05	.244	142.10	.938
47.05	1.266	69.05	13.128	86.95	4.445	113.05	.469	142.75	.431
47.95	.431	70.05	3.723	87.95	4.576	115.00	2.110	148.10	.084
49.00	5.186	71.00	5.261	89.05	.535	116.00	1.453	172.80	.188
50.00	23.312	72.10	1.510	91.05	1.800	117.00	7.521	173.10	.459
51.00	7.764	73.00	6.020	92.05	3.460	118.00	.366	173.90	63.269
53.00	.028	74.00	17.779	93.00	4.511	119.10	1.088	174.90	4.876
55.05	2.748	75.00	55.580	94.00	10.887	125.05	.384	175.95	62.566
56.05	4.745	75.95	4.904	95.00	100.000	126.10	.938	176.95	4.295
57.05	11.056								

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5A

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

Lab Name: ECRA LABORATORIES, INC.

Lab File ID: >G2077 BFB Injection Date: 4/06/92

Instrument ID: HPMSD(G) BFB Injection Time: 4/06/92 7:06

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% OF MASS 95	19.5
75	30.0 - 60.0% OF MASS 95	54.0
95	Base peak, 100% relative abundance	100.
96	5.0 - 9.0% of mass 95	7.3
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	71.1
175	5.0 - 9.0% of mass 174	5.4 (7.6)1
176	Greater than 95.0%, but less than 101.0% of mass 174	69.3 (97.6)1
177	5.0 - 9.0% of mass 176	5.0 (7.2)2

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

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	N/A	METHOD BLANK	>G2078	4/06/92	7:19
02	N/A	STD 100 PPB	>G2079	4/06/92	8:09
03	N/A	92-16-14-W-2-MS	>G2080	4/06/92	10:23
04	N/A	92-16-14-W-2-MSD	>G2081	4/06/92	11:15
05	N/A	92-16-14-W-2	>G2082	4/06/92	12:06
06	N/A	92-16-15-W-1-DUP	>G2083	4/06/92	12:56
07	N/A	92-16-16-W-1-DUP	>G2084	4/06/92	13:48
08	N/A	91-032-C02-W	>G2085	4/06/92	14:36
09	N/A	92-33-01-TRP BL	>G2086	4/06/92	15:25
10	N/A	92-33-01-FIELD BLK-SC	>G2087	4/06/92	16:13
11	N/A	92-33-01-MW-2	>G2088	4/06/92	17:02
12	N/A	BLANK	>G2089	4/06/92	17:50
13	N/A	92-33-01-MW-1	>G2090	4/06/92	18:39
14	N/A	BLANK	>G2091	4/06/92	20:16
15					
16					
17					
18					
19					
20					
21					
22					

SC=SCREEN

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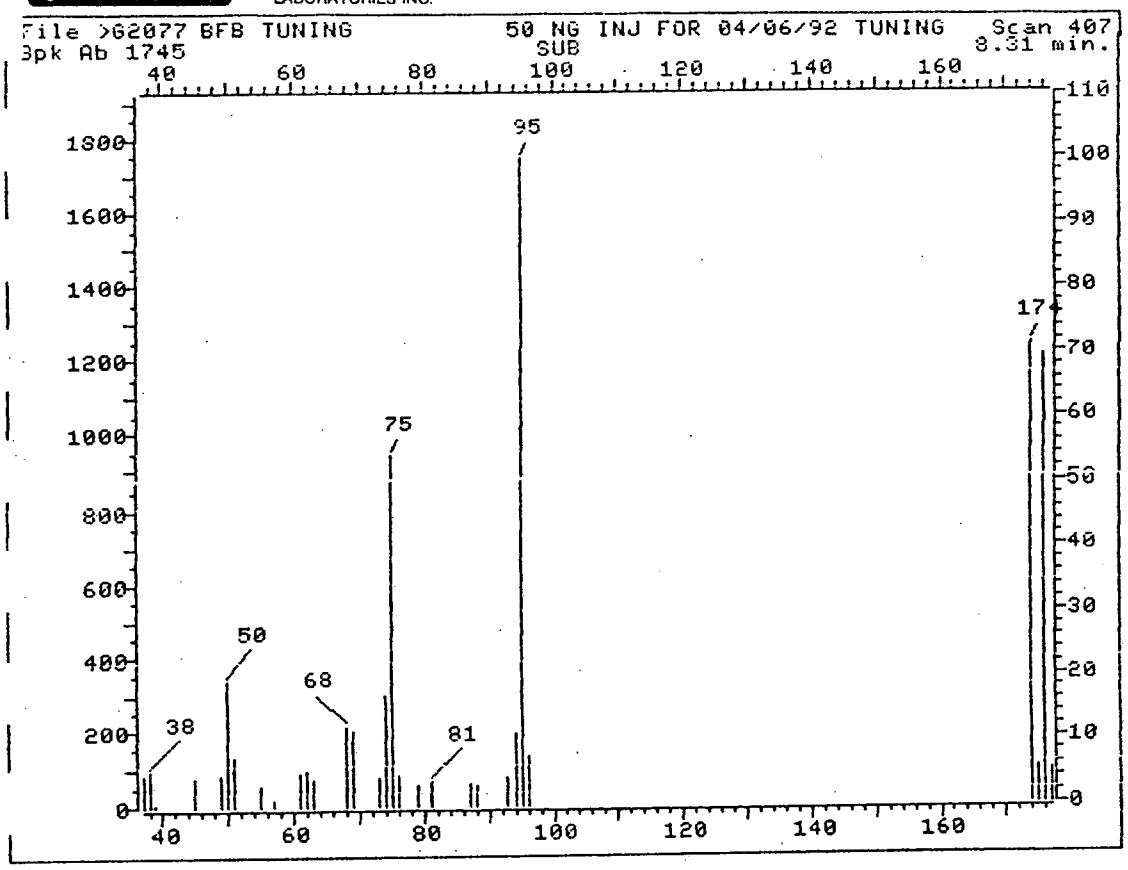

GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	19.48	19.48	Ok
75	30-60% of mass 95	54.04	54.04	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.34	7.34	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	71.06	71.06	Ok
175	5-9% of mass 174	5.39	7.58	Ok
176	95-101% of mass 174	69.34	97.58	Ok
177	5-9% of mass 176	4.99	7.19	Ok

Injection Date: 04/06/92
Injection Time: 07:06
Data File: >G2077
Scan: 407

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>G2077 BFB TUNING 50 NG INJ FOR 04/06/92 TUNING
407 SUB NRM

File: >G2077 Scan #: 407 Retn. time: 8.31

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
37.00	4.585	51.00	7.450	68.05	12.264	78.95	3.152	95.00	100.000
38.00	5.387	54.95	2.923	69.05	11.404	80.95	3.725	96.00	7.335
39.00	.401	57.05	.917	73.00	4.241	86.95	3.496	173.90	71.060
44.95	4.413	61.00	5.100	74.00	17.249	87.95	3.152	175.00	5.387
49.00	4.814	62.00	5.272	75.00	54.040	92.90	4.413	175.85	69.341
50.00	19.484	63.00	4.126	75.95	4.756	94.00	11.003	176.95	4.986

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5A

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

Lab Name: ECRA LABORATORIES, INC.

Lab File ID: >G2107 BFB Injection Date: 4/08/92

Instrument ID: HPMSD(G) BFB Injection Time: 4/08/92 7:10

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% OF MASS 95	19.1
75	30.0 - 60.0% OF MASS 95	54.6
95	Base peak, 100% relative abundance	100.
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	73.8
175	5.0 - 9.0% of mass 174	6.2 (8.3)1
176	Greater than 95.0%, but less than 101.0% of mass 174	74.5(101.0)1
177	5.0 - 9.0% of mass 176	5.3 (7.1)2

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

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	N/A	METHOD BLANK	>G2108	4/08/92	7:24
02	N/A	STD 20 PPB	>G2109	4/08/92	8:15
03	N/A	STD 100 PPB	>G2110	4/08/92	9:04
04	N/A	STD 200 PPB	>G2111	4/08/92	9:54
05	N/A	STD 20 PPB	>G2112	4/08/92	12:23
06	N/A	92-33-01-FIELD BLK	>G2113	4/08/92	14:01
07	N/A	92-33-01-MW-1-DUP	>G2114	4/08/92	14:55
08	N/A	91-009-SAND-MS	>G2115	4/08/92	16:33
09	N/A	91-009-SAND-MSD	>G2116	4/08/92	17:22
10	N/A	BLANK	>G2117	4/08/92	18:10
11	N/A	91-009-X10	>G2118	4/08/92	18:58
12	N/A	BLANK	>G2119	4/08/92	20:36
13	N/A	BLANK	>G2120	4/08/92	22:14
14					
15					

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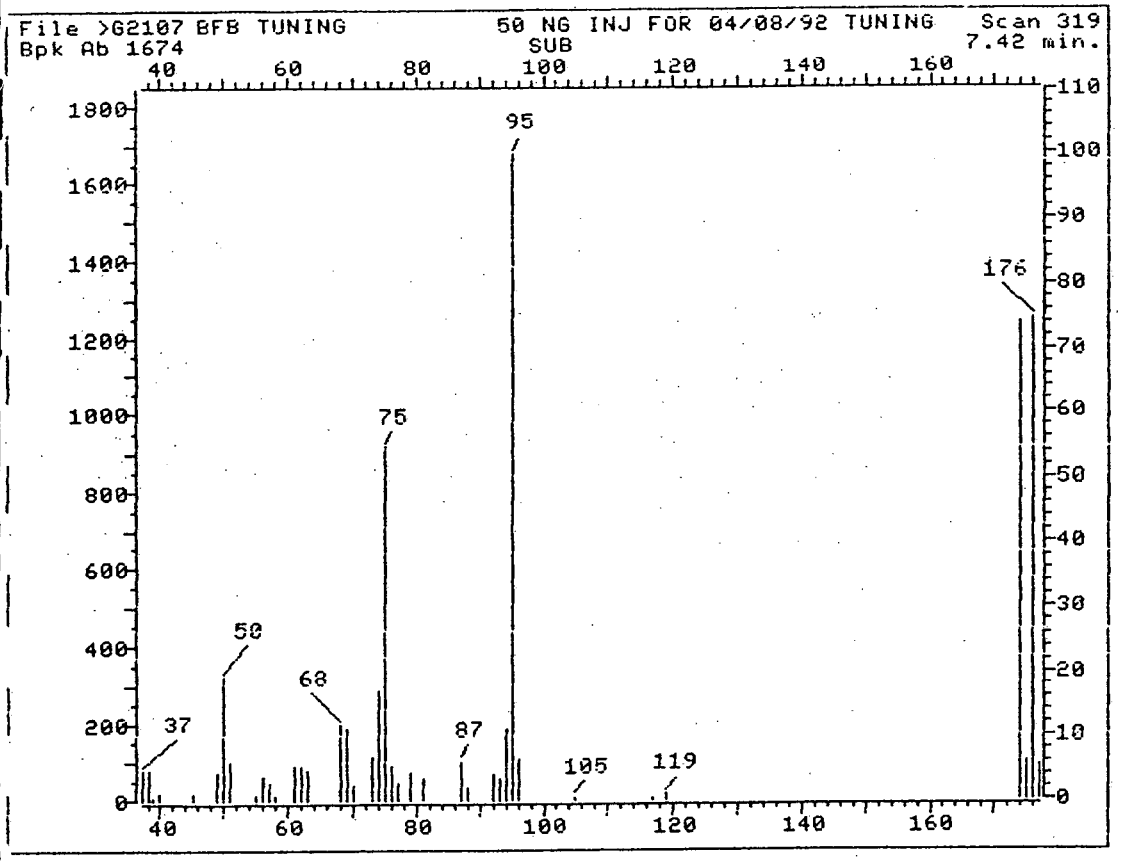

GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
50	15-40% of mass 95	19.12	19.12	Ok
75	30-60% of mass 95	54.60	54.60	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	6.57	6.57	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	73.78	73.78	Ok
175	5-9% of mass 174	6.15	8.34	Ok
176	95-101% of mass 174	74.49	100.97	Ok
177	5-9% of mass 176	5.32	7.14	Ok

Injection Date: 04/08/92
Injection Time: 07:10
Data File: >G2107
Scan: 319

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>G2107 BFB TUNING 50 NG INJ FOR 04/08/92 TUNING
319 SUB NRM

File: >G2107 Scan #: 319 Retn. time: 7.42

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
37.00	4.659	55.05	.597	69.05	11.111	80.95	3.405	105.00	.478
38.00	4.659	55.95	3.704	70.05	2.509	86.95	6.213	117.00	.538
39.00	.538	57.05	2.569	73.00	6.750	87.95	2.091	119.00	.956
40.00	1.016	58.05	.717	74.00	17.324	92.05	3.943	173.90	73.775
45.05	.956	61.00	5.496	75.00	54.600	93.00	3.405	175.00	6.153
49.00	4.480	62.00	5.556	76.05	5.496	94.00	11.231	175.95	74.492
50.00	19.116	63.00	4.779	76.95	2.688	95.00	100.000	176.95	5.317
51.00	6.033	68.05	11.768	78.95	4.540	96.10	6.571		

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Initial Calibration Data
HSL Compounds

Case No:

Instrument ID: HPMSD-VOA

Contractor: ECRA LABS

Calibration Date: 03/30/92

Contract No:

Minimum $\overline{RF}$ for SPCC is .30 Maximum % RSD for CCC is 30%

Laboratory ID:	>G2014	>G2013	>G2015						
Compound	RF 20.00	RF 100.00	RF 200.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC	
CHLOROMETHANE	.56100	.43347	.43978	.146	.47809	15.034		**	
BROMOMETHANE	1.11772	.74069	.68286	.241	.84709	27.878			
VINYL CHLORIDE	.86774	.63430	.53922	.315	.68042	24.845	*		
CHLOROETHANE	.55512	.46223	.46742	.427	.49492	10.546			
METHYLENE CHLORIDE	1.22707	1.08878	1.05370	.649	1.12318	8.161			
ACROLEIN	-	-	-	-	-	-			(Conc=200.0,400.0,800.0)
ACRYLONITRILE	-	-	-	-	-	-			(Conc=200.0,400.0,800.0)
ACETONE	-	-	-	-	-	-			
CARBON DISULFIDE	-	-	-	-	-	-			
TRICHLOROFLUOROMETHANE	2.41958	2.14959	2.06424	.867	2.21113	8.389			
1,1-DICHLOROETHENE	1.57905	1.44389	1.43601	.948	1.48632	5.410	*		
T-BUTYL ALCOHOL	.03506	.04897	.05052	1.212	.04485	18.981			
1,1-DICHLOROETHANE	1.75694	1.52559	1.51663	1.088	1.59972	8.516		**	
TRANS-1,2-DICHLOROETHYLENE	.86186	.76048	.75505	1.171	.79246	7.591			
CHLOROFORM	2.16715	1.84040	1.82524	1.232	1.94427	9.935	*		
1,2-DICHLOROETHANE	1.30333	1.12677	1.14807	1.316	1.19272	8.080			
1,2-DICHLOROETHANE-D4 (SURG.)	1.07964	1.12881	1.20606	1.306	1.13817	5.599			(Conc=50.0,50.0,50.0)
1,1,1-TRICHLOROETHANE	.79529	.65848	.66327	.678	.70568	11.003			
METHYL T-BUTYL ETHER	.69209	.57020	.52643	.671	.59624	14.398			
2-BUTANONE	-	-	-	-	-	-			
CARBON TETRACHLORIDE	.70021	.60093	.61514	.698	.63876	8.405			
VINYL ACETATE	-	-	-	-	-	-			
BROMODICHLOROMETHANE	.86268	.75472	.75613	.726	.79118	7.828			
1,2-DICHLOROPROPANE	.40262	.37895	.37131	.796	.38429	4.249	*		
TRANS-1,3-DICHLOROPROPENE	1.35986	1.22295	1.24030	.810	1.27437	5.849			(Conc=15.2,76.0,152.0)
TRICHLOROETHYLENE	.51323	.44796	.44353	.839	.46824	8.334			
DIBROMOCHLOROMETHANE	.63303	.56159	.56027	.869	.58496	7.117			
1,1,2-TRICHLOROETHANE	.36941	.31429	.28624	.875	.32332	13.087			
BENZENE	.98119	.84137	.83021	.865	.88425	9.515			
CIS-1,3-DICHLOROPROPENE	.14503	.15120	.15258	.876	.14960	2.687			(Conc=24.8,124.0,248.0)

RF - Response Factor (Subscript is amount in UG/L)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

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273 FRANKLIN ROAD
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PHONE: (201) 361-4252
FAX: (201) 361-1021

Initial Calibration Data
HSL Compounds

Case No:

Instrument ID: HPMSD-VOA

Contractor: ECRA LABS

Calibration Date: 03/30/92

Contract No:

Minimum $\overline{RF}$ for SPCC is .30 Maximum % RSD for CCC is 30%

Laboratory ID:	>G2014	>G2013	>G2015						
Compound	RF 20.00	RF 100.00	RF 200.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC	
DIISOPROPYL ETHER	.15847	.13922	.14101	.921	.14623	7.275			
2-CHLOROETHYL VINYL ETHER	.04230	.03890	.03320	.943	.03813	12.060			
BROMOFORM	.37834	.35772	.38397	1.011	.37334	3.702		**	
4-METHYL-2-PENTANONE	-	-	-	-	-	-			
2-HEXANONE	-	-	-	-	-	-			
TETRACHLOROETHYLENE	.43189	.38339	.39868	.904	.40466	6.128			
TOLUENE-D8 (SURG.)	1.19671	1.22311	1.21783	.950	1.21255	1.152			(Conc=50.0,50.0,50.0)
1,1,2,2-TETRACHLOROETHANE	.35956	.41380	.46288	.906	.41208	12.542		**	
TOLUENE	.80199	.71901	.72705	.957	.74935	6.108	*		
CHLOROBENZENE	1.02928	.88720	.90535	1.005	.94061	8.221		**	
ETHYLBENZENE	.50072	.44197	.44631	1.082	.46300	7.070	*		
BROMOFLUOROBENZENE (SURG.)	.88262	.87951	.86021	1.178	.87411	1.389			(Conc=50.0,50.0,50.0)
STYRENE	-	-	-	-	-	-			
M-XYLENE	.68059	.61310	.60541	1.241	.63304	6.535			
O,P-XYLENE	.68311	.60108	.58579	1.278	.62333	8.397			(Conc=40.0,200.0,400.0)
1,2-DICHLOROBENZENE	1.27281	1.03217	.97674	1.457	1.09390	14.388			
1,3-DICHLOROBENZENE	1.27394	1.05833	.99899	1.417	1.11042	13.030			
1,4-DICHLOROBENZENE	1.40826	1.14340	.97731	1.482	1.17633	18.477			

RF - Response Factor (Subscript is amount in UG/L)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

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QUANT REPORT

Operator ID: CHRIS
Output File: ^G2014::QT
Data File: >G2014::B2
Name: VOA STD 20 PPB
Misc: -03/30/92 TUNING

Quant Rev: 6
Quant Time: 920330 11:31
Injected at: 920330 10:35
Dilution Factor: 1.00000

ID File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920323 14:41

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	9.16	427	20392	50.00	UG/L	79
2)	CHLOROMETHANE	1.34	30	4576	25.10	UG/L	100
3)	BROMOMETHANE	2.21	74	9117	24.98	UG/L	96
4)	VINYL CHLORIDE	2.90	109	7078	25.62	UG/L	96
5)	CHLOROETHANE	3.92	161	4528	21.65	UG/L	89
6)	METHYLENE CHLORIDE	5.93	263	10009	24.82	UG/L	100
11)	TRICHLOROFLUOROMETHANE	7.96	366	19736	16.88	UG/L	100
12)	1,1-DICHLOROETHENE	8.67	402	12880	19.05	UG/L	91
13)	T-BUTYL ALCOHOL	11.11	526	286M	11.05	UG/L	
14)	1,1-DICHLOROETHANE	9.95	467	14331	20.21	UG/L	96
15)	TRANS-1,2-DICHLOROETHYLENE	10.72	506	7030	20.32	UG/L	87
16)	CHLOROFORM	11.27	534	17677	18.91	UG/L	98
17)	1,2-DICHLOROETHANE	12.04	573	10631	17.62	UG/L	92
18)	1,2-DICHLOROETHANE-D4 (SURG.)	11.94	568	22016	36.74	UG/L	98
19)	*1,4-DIFLUOROBENZENE	19.53	953	46222	50.00	UG/L	100
20)	1,1,1-TRICHLOROETHANE	13.24	634	14704	20.57	UG/L	98
21)	METHYL T-BUTYL ETHER	13.12	628	12796	22.12	UG/L	86
23)	CARBON TETRACHLORIDE	13.64	654	12946	19.91	UG/L	95
25)	BROMODICHLOROMETHANE	14.19	682	15950	21.50	UG/L	97
26)	1,2-DICHLOROPROPANE	15.57	752	7444	23.69	UG/L	93
27)	TRANS-1,3-DICHLOROPROPENE	15.86	767	19108	16.94	UG/L	99
28)	TRICHLOROETHYLENE	16.39	794	9489	22.66	UG/L	81
29)	DIBROMOCHLOROMETHANE	17.01	825	11704	21.10	UG/L	100
30)	1,1,2-TRICHLOROETHANE	17.10	830	6830	24.52	UG/L	98
31)	BENZENE	16.91	820	18141	24.74	UG/L	100
32)	CIS-1,3-DICHLOROPROPENE	17.12	831	3325M	22.66	UG/L	
33)	DIISOPROPYL ETHER	18.01	876	2930M	21.61	UG/L	
34)	2-CHLOROETHYL VINYL ETHER	18.40	896	782M	26.46	UG/L	100
35)	BROMOFORM	19.78	966	6995	19.09	UG/L	92
38)	*CHLOROBENZENE-D5	24.45	1203	37706	50.00	UG/L	100
39)	TETRACHLOROETHYLENE	22.13	1085	6514	20.91	UG/L	82
40)	TOLUENE-D8 (SURG.)	23.23	1141	45123	49.47	UG/L	88
41)	1,1,2,2-TETRACHLOROETHANE	22.21	1089	5423	17.30	UG/L	88
42)	TOLUENE	23.41	1150	12096	22.42	UG/L	95
43)	CHLOROBENZENE	24.59	1210	15524	22.45	UG/L	99
44)	ETHYLBENZENE	26.46	1305	7552	22.09	UG/L	84
45)	BROMOFLUOROBENZENE (SURG.)	28.81	1424	33280	45.84	UG/L	96
47)	M-XYLENE	30.35	1502	10265	21.85	UG/L	85
48)	O,P-XYLENE	31.29	1550	20606M	45.44	UG/L	83
49)	1,2-DICHLOROBENZENE	35.73	1775	19197M	22.91	UG/L	56
50)	1,3-DICHLOROBENZENE	34.74	1725	19214M	22.60	UG/L	
51)	1,4-DICHLOROBENZENE	36.32	1805	21240M	24.15	UG/L	54

000078

* Compound is ISTD

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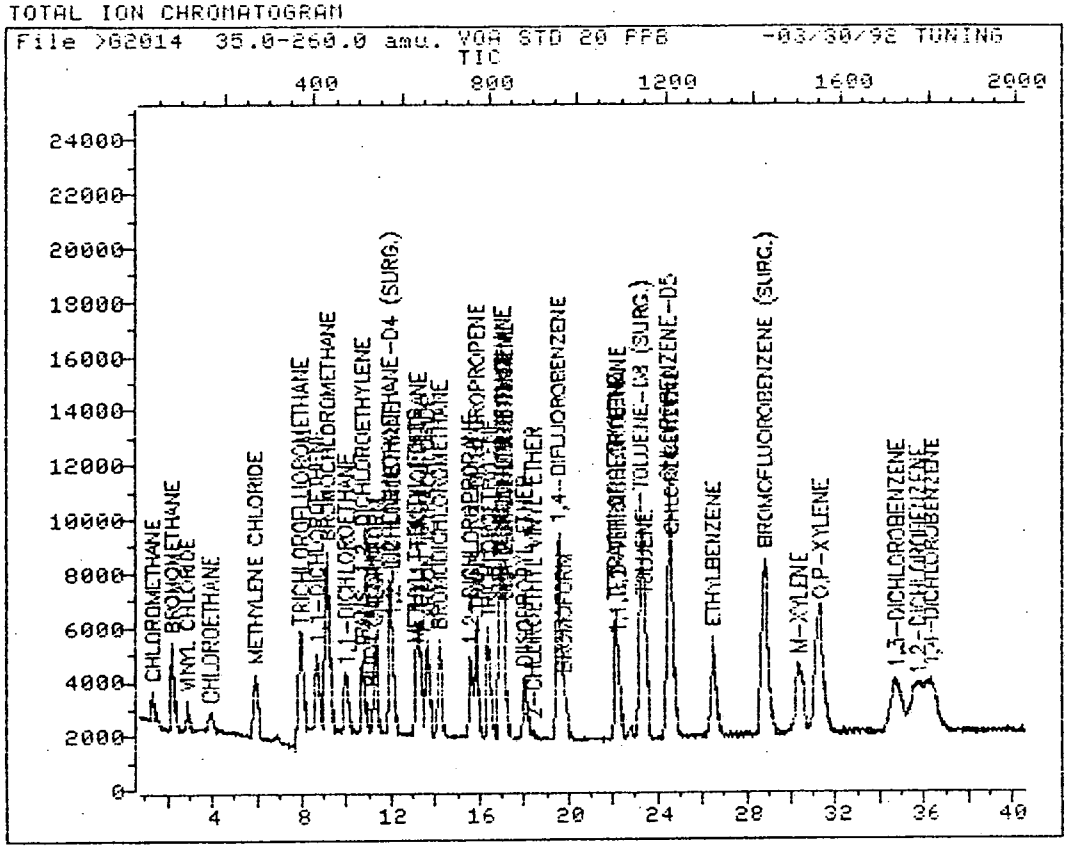
TOTAL ION CHROMATOGRAM



Data File: >G2014::B2 Quant Output File: ^G2014::QT
Name: VOA STD 20 PPB
Misc: -03/30/92 TUNING

Id File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920323 14:41

Operator ID: CHRIS
Quant Time: 920330 11:31
Injected at: 920330 10:35

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QUANT REPORT

Operator ID: CHRIS
Output File: ^G2013::QT
Data File: >G2013::B2
Name: VOA STD 100 PPB
Misc: -03/30/92 TUNING

Quant Rev: 6
Quant Time: 920330 10:34
Injected at: 920330 09:45
Dilution Factor: 1.00000

ID File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920323 14:41

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	9.13	423	22134	50.00	UG/L	78
2)	CHLOROMETHANE	1.33	27	19189	96.98	UG/L	100
3)	BROMOMETHANE	2.20	71	32789	82.78	UG/L	99
4)	VINYL CHLORIDE	2.87	105	28079	93.62	UG/L	98
5)	CHLOROETHANE	3.89	157	20462	90.16	UG/L	88
6)	METHYLENE CHLORIDE	5.92	260	48198	110.12	UG/L	100
11)	TRICHLOROFLUOROMETHANE	7.89	360	95158	74.97	UG/L	100
12)	1,1-DICHLOROETHENE	8.66	399	63918	87.07	UG/L	90
13)	T-BUTYL ALCOHOL	11.04	520	2168	77.18	UG/L	91
14)	1,1-DICHLOROETHANE	9.92	463	67535	87.72	UG/L	96
15)	TRANS-1,2-DICHLOROETHYLENE	10.69	502	33665	89.64	UG/L	89
16)	CHLOROFORM	11.24	530	81471	80.31	UG/L	94
17)	1,2-DICHLOROETHANE	11.99	568	49880	76.17	UG/L	99
18)	1,2-DICHLOROETHANE-D4 (SURG.)	11.91	564	24985	38.41	UG/L	97
19)	*1,4-DIFLUOROBENZENE	19.50	949	50421	50.00	UG/L	100
20)	1,1,1-TRICHLOROETHANE	13.23	631	66402	85.18	UG/L	97
21)	METHYL T-BUTYL ETHER	13.09	624	57500	91.10	UG/L	86
23)	CARBON TETRACHLORIDE	13.61	650	60599	85.46	UG/L	97
25)	BROMODICHLOROMETHANE	14.16	678	76107	94.04	UG/L	98
26)	1,2-DICHLOROPROPANE	15.52	747	38214	111.48	UG/L	97
27)	TRANS-1,3-DICHLOROPROPENE	15.79	761	93727	76.16	UG/L	94
28)	TRICHLOROETHYLENE	16.37	790	45173	98.91	UG/L	81
29)	DIBROMOCHLOROMETHANE	16.96	820	56632	93.59	UG/L	100
30)	1,1,2-TRICHLOROETHANE	17.08	826	31694	104.32	UG/L	97
31)	BENZENE	16.88	816	84845	106.09	UG/L	100
32)	CIS-1,3-DICHLOROPROPENE	17.10	827	18907M	118.11	UG/L	
33)	DIISOPROPYL ETHER	17.96	871	14039M	94.93	UG/L	
34)	2-CHLOROETHYL VINYL ETHER	18.42	894	3923	121.67	UG/L	100
35)	BROMOFORM	19.70	959	36073	90.23	UG/L	99
38)	*CHLOROBENZENE-D5	24.45	1200	41083	50.00	UG/L	100
39)	TETRACHLOROETHYLENE	22.10	1081	31502	92.80	UG/L	83
40)	TOLUENE-D8 (SURG.)	23.23	1138	50249	50.56	UG/L	86
41)	1,1,2,2-TETRACHLOROETHANE	22.14	1083	34000	99.54	UG/L	99
42)	TOLUENE	23.38	1146	59078	100.52	UG/L	98
43)	CHLOROBENZENE	24.55	1205	72898	96.74	UG/L	98
44)	ETHYLBENZENE	26.44	1301	36315	97.48	UG/L	93
45)	BROMOFLUOROBENZENE (SURG.)	28.78	1420	36133M	45.67	UG/L	
47)	M-XYLENE	30.30	1497	50376	98.40	UG/L	88
48)	O,P-XYLENE	31.19	1542	98777M	199.92	UG/L	86
49)	1,2-DICHLOROBENZENE	35.55	1763	84809M	92.90	UG/L	98
50)	1,3-DICHLOROBENZENE	34.64	1717	86959M	93.89	UG/L	96
51)	1,4-DICHLOROBENZENE	36.22	1797	93949M	98.06	UG/L	

000080

* Compound is ISTD

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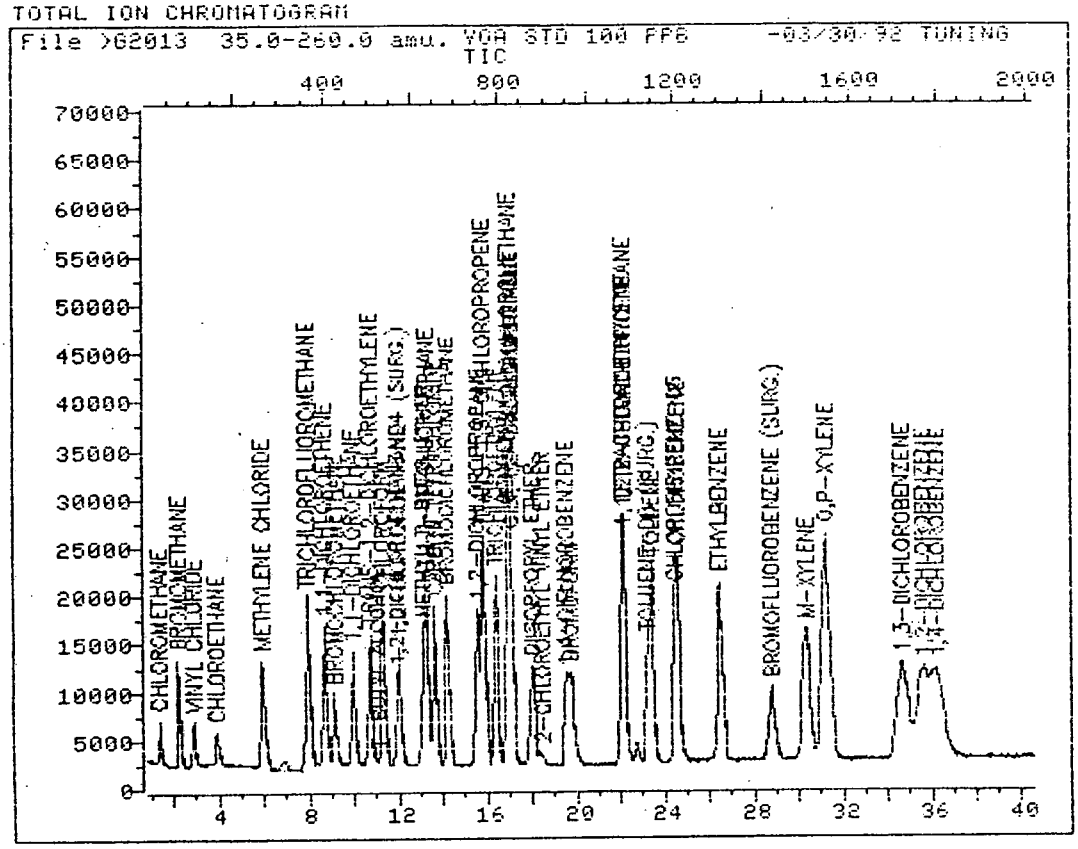
TOTAL ION CHROMATOGRAM



Data File: >G2013::B2
Name: VOA STD 100 PPB
Misc: -03/30/92 TUNING

Quant Output File: ^G2013::QT

Id File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920323 14:41

Operator ID: CHRIS
Quant Time: 920330 10:34
Injected at: 920330 09:45

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QUANT REPORT

Operator ID: MAURIE
Output File: ^G2015::QT
Data File: >G2015::B2
Name: VOA STD 200 PPB
Misc: -03/30/92 TUNING

Quant Rev: 6
Quant Time: 920330 12:12
Injected at: 920330 11:27
Dilution Factor: 1.00000

ID File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920323 14:41

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	9.10	420	21630	50.00	UG/L	82
2)	CHLOROMETHANE	1.34	26	38050	196.78	UG/L	100
3)	BROMOMETHANE	2.20	70	59081	152.64	UG/L	99
4)	VINYL CHLORIDE	2.87	104	46653	159.17	UG/L	99
5)	CHLOROETHANE	3.90	156	40441	182.34	UG/L	90
6)	METHYLENE CHLORIDE	5.93	259	91166	213.15	UG/L	100
11)	TRICHLOROFLUOROMETHANE	7.90	359	178598	143.99	UG/L	100
12)	1,1-DICHLOROETHENE	8.65	397	124244	173.20	UG/L	91
13)	T-BUTYL ALCOHOL	11.05	519	4371	159.22	UG/L	86
14)	1,1-DICHLOROETHANE	9.93	462	131219	174.42	UG/L	99
15)	TRANS-1,2-DICHLOROETHYLENE	10.68	500	65327	178.00	UG/L	88
16)	CHLOROFORM	11.25	529	157920	159.30	UG/L	90
17)	1,2-DICHLOROETHANE	12.02	568	99331	155.21	UG/L	98
18)	1,2-DICHLOROETHANE-D4 (SURG.)	11.92	563	26087	41.04	UG/L	96
19)	*1,4-DIFLUOROBENZENE	19.53	949	49245	50.00	UG/L	100
20)	1,1,1-TRICHLOROETHANE	13.24	630	130651	171.59	UG/L	99
21)	METHYL T-BUTYL ETHER	13.10	623	103697	168.22	UG/L	87
23)	CARBON TETRACHLORIDE	13.62	649	121171	174.95	UG/L	92
25)	BROMODICHLOROMETHANE	14.15	676	148942	188.43	UG/L	97
26)	1,2-DICHLOROPROPANE	15.53	746	73140	218.45	UG/L	95
27)	TRANS-1,3-DICHLOROPROPENE	15.80	760	185679	154.48	UG/L	97
28)	TRICHLOROETHYLENE	16.39	790	87367	195.87	UG/L	75
29)	DIBROMOCHLOROMETHANE	16.95	818	110362	186.74	UG/L	100
30)	1,1,2-TRICHLOROETHANE	17.09	825	56384	190.02	UG/L	97
31)	BENZENE	16.87	814	163534	209.36	UG/L	100
32)	CIS-1,3-DICHLOROPROPENE	17.11	826	37268M	238.37	UG/L	
33)	DIISOPROPYL ETHER	17.97	870	27776	192.31	UG/L	92
34)	2-CHLOROETHYL VINYL ETHER	18.39	891	6539	207.66	UG/L	100
35)	BROMOFORM	19.71	958	75635	193.71	UG/L	94
38)	*CHLOROBENZENE-D5	24.42	1197	39709	50.00	UG/L	100
39)	TETRACHLOROETHYLENE	22.07	1078	63325	193.00	UG/L	83
40)	TOLUENE-D8 (SURG.)	23.20	1135	48359	50.34	UG/L	89
41)	1,1,2,2-TETRACHLOROETHANE	22.11	1080	73522	222.69	UG/L	96
42)	TOLUENE	23.39	1145	115482	203.28	UG/L	98
43)	CHLOROBENZENE	24.54	1203	143802	197.44	UG/L	94
44)	ETHYLBENZENE	26.43	1299	70890	196.87	UG/L	93
45)	BROMOFLUOROBENZENE (SURG.)	28.77	1418	34158	44.67	UG/L	90
47)	M-XYLENE	30.31	1496	96161	194.34	UG/L	91
48)	O,P-XYLENE	31.22	1542	186088M	389.67	UG/L	84
49)	1,2-DICHLOROBENZENE	35.56	1762	155141M	175.83	UG/L	92
50)	1,3-DICHLOROBENZENE	34.55	1711	158675M	177.25	UG/L	87
51)	1,4-DICHLOROBENZENE	36.11	1790	155232M	167.63	UG/L	

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* Compound is ISTD

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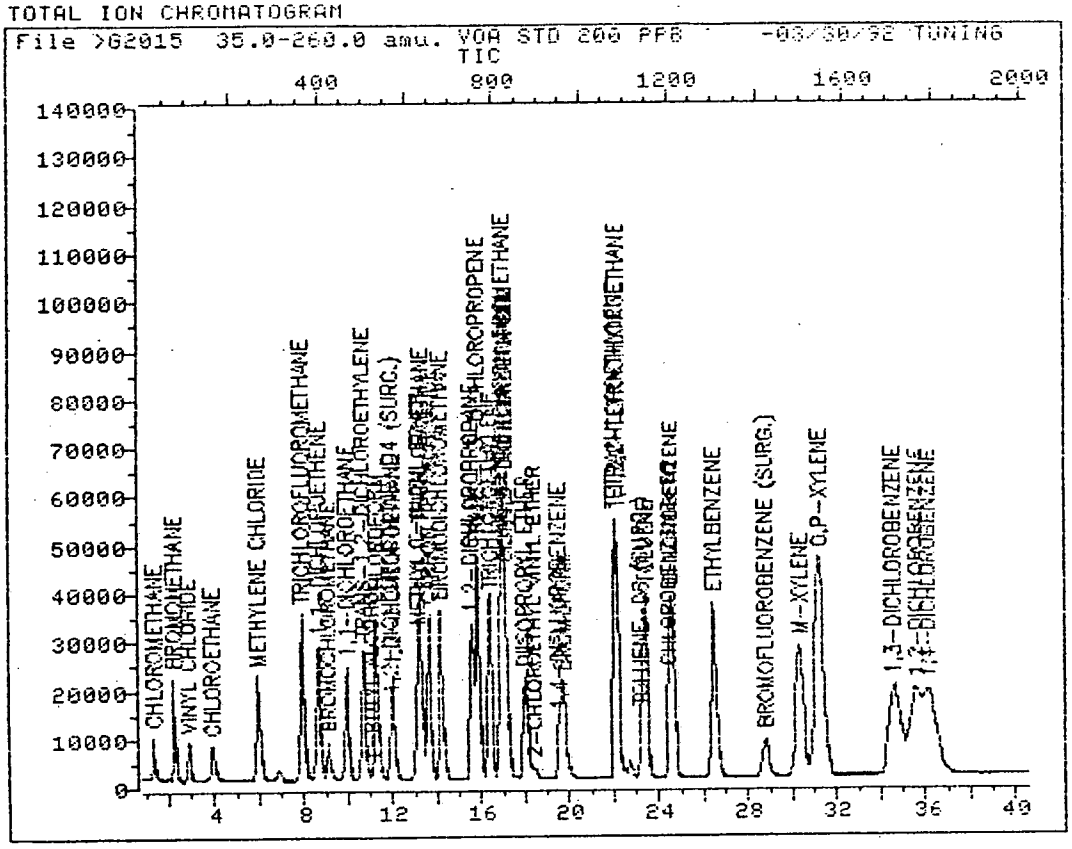
TOTAL ION CHROMATOGRAM



Data File: >G2015::B2
Name: VOA STD 200 PPB
Misc: -03/30/92 TUNING

Quant Output File: ^G2015::QT

Id File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920323 14:41

Operator ID: MAURIE
Quant Time: 920330 12:12
Injected at: 920330 11:27

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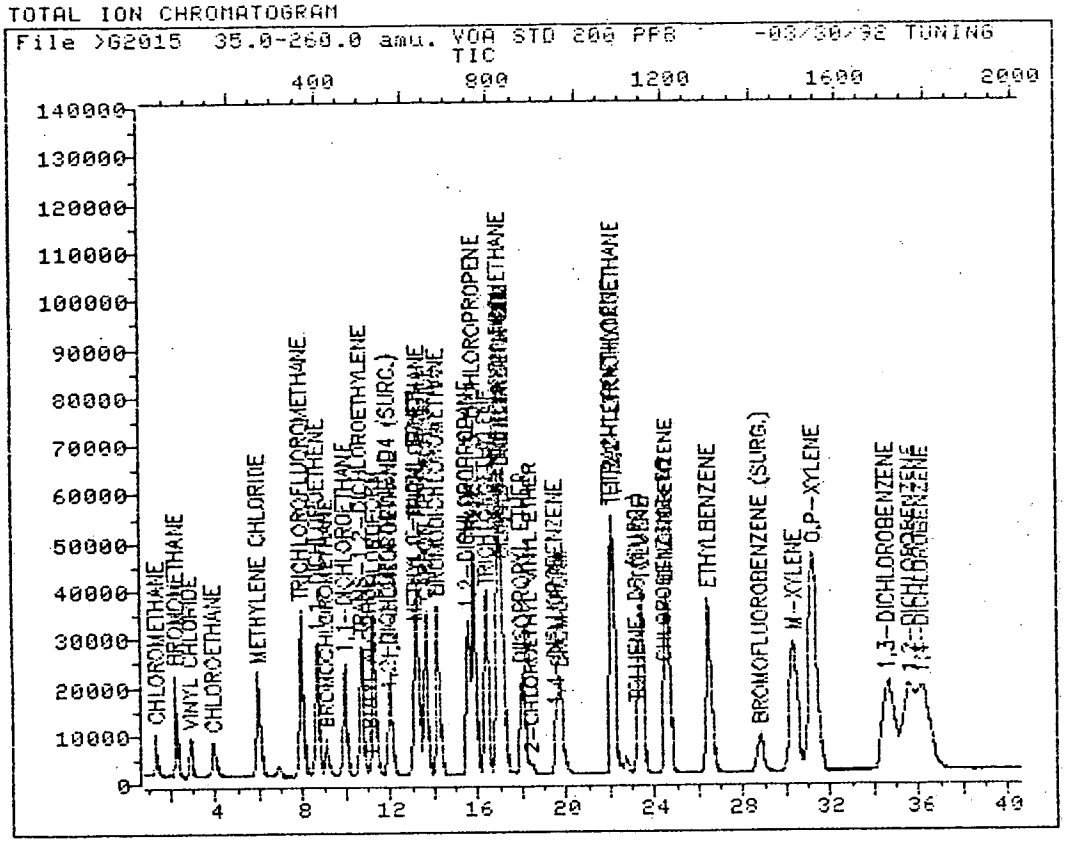
TOTAL ION CHROMATOGRAM



Data File: >G2015::B2
Name: VOA STD 200 PPB
Misc: -03/30/92 TUNING

Quant Output File: ^G2015::QT

Id File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920323 14:41

Operator ID: MAURIE
Quant Time: 920330 12:12
Injected at: 920330 11:27

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Continuing Calibration Check
HSL Compounds

Case No:

Calibration Date: 04/06/92

Contractor: ECRA LABS

Time: 08:09

Contract No:

Laboratory ID: >G2079

Instrument ID: HPMSD-VOA

Initial Calibration Date: 03/30/92

Minimum $\overline{RF}$ for SPCC is .30 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
CHLOROMETHANE	.47809	.41501	13.19		**	
BROMOMETHANE	.84709	.78026	7.89			
VINYL CHLORIDE	.68042	.68018	.04	*		
CHLOROETHANE	.49492	.50179	1.39			
METHYLENE CHLORIDE	1.12318	1.36332	21.38			
ACROLEIN	-	-	-			(Conc=400.00)
ACRYLONITRILE	-	-	-			(Conc=400.00)
ACETONE	-	-	-			
CARBON DISULFIDE	-	-	-			
TRICHLOROFLUOROMETHANE	2.21113	1.93634	12.43			
1,1-DICHLOROETHENE	1.48632	1.32756	10.68	*		
T-BUTYL ALCOHOL	.04485	.03287	26.71			(Conc=100.00)
1,1-DICHLOROETHANE	1.59972	1.49218	6.72		**	
TRANS-1,2-DICHLOROETHYLENE	.79246	.70935	10.49			
CHLOROFORM	1.94427	1.74950	10.02	*		
1,2-DICHLOROETHANE	1.19272	1.07724	9.68			
1,2-DICHLOROETHANE-D4 (SURG.)	1.13817	1.05586	7.23			(Conc=50.00)
1,1,1-TRICHLOROETHANE	.70568	.66129	6.29			
METHYL T-BUTYL ETHER	.59624	.66483	11.50			(Conc=100.00)
2-BUTANONE	-	-	-			
CARBON TETRACHLORIDE	.63876	.58360	8.64			
VINYL ACETATE	-	-	-			
BROMODICHLOROMETHANE	.79118	.73367	7.27			
1,2-DICHLOROPROPANE	.38429	.38076	.92	*		
TRANS-1,3-DICHLOROPROPENE	1.27437	1.17718	7.63			(Conc=76.00)
TRICHLOROETHYLENE	.46824	.44125	5.76			
DIBROMOCHLOROMETHANE	.58496	.52432	10.37			
1,1,2-TRICHLOROETHANE	.32332	.29957	7.34			
BENZENE	.88425	.85706	3.07			
CIS-1,3-DICHLOROPROPENE	.14960	.14088	5.83			(Conc=124.00)
DIISOPROPYL ETHER	.14623	-	-			(Conc=100.00)
2-CHLOROETHYL VINYL ETHER	.03813	.03526	7.53			

RF - Response Factor from daily standard file at 100.00 UG/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

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Continuing Calibration Check
HSL Compounds

Case No:

Calibration Date: 04/06/92

Contractor: ECRA LABS

Time: 08:09

Contract No:

Laboratory ID: >G2079

Instrument ID: HPMSD-VOA

Initial Calibration Date: 03/30/92

Minimum $\overline{RF}$ for SPCC is .30 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
BROMOFORM	.37334	.29819	20.13		**	
4-METHYL-2-PENTANONE	-	-	-			
2-HEXANONE	-	-	-			
TETRACHLOROETHYLENE	.40466	.39939	1.30			
TOLUENE-D8 (SURG.)	1.21255	1.21533	.23			(Conc=50.00)
1,1,2,2-TETRACHLOROETHANE	.41208	.37122	9.92		**	
TOLUENE	.74935	.71686	4.34	*		
CHLOROBENZENE	.94061	.89310	5.05		**	
ETHYLBENZENE	.46300	.45930	.80	*		
BROMOFLUOROBENZENE (SURG.)	.87411	.81739	6.49			(Conc=50.00)
STYRENE	-	-	-			
M-XYLENE	.63304	.60123	5.02			
O,P-XYLENE	.62333	.59705	4.21			(Conc=200.00)
1,2-DICHLOROBENZENE	1.09390	1.06755	2.41			
1,3-DICHLOROBENZENE	1.11042	1.02008	8.14			
1,4-DICHLOROBENZENE	1.17633	1.07246	8.83			

RF - Response Factor from daily standard file at 100.00 UG/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

000035

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QUANT REPORT

Operator ID: MAURIE
Output File: ^G2079::QT
Data File: >G2079::B2
Name: VOA STD 100 PPB
Misc: -04/06/92 TUNING

Quant Rev: 6
Quant Time: 920406 08:56
Injected at: 920406 08:09
Dilution Factor: 1.00000

ID File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920330 12:29

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	9.34	431	31258	50.00	UG/L	82
2)	CHLOROMETHANE	1.36	26	25945	86.81	UG/L	100
3)	BROMOMETHANE	2.27	72	48779	92.11	UG/L	99
4)	VINYL CHLORIDE	2.98	108	42522	99.96	UG/L	99
5)	CHLOROETHANE	4.04	162	31370	101.39	UG/L	88
6)	METHYLENE CHLORIDE	6.09	266	85229	121.38	UG/L	100
11)	TRICHLOROFLUOROMETHANE	8.12	369	121052	87.57	UG/L	100
12)	1,1-DICHLOROETHENE	8.91	409	82994	89.32	UG/L	96
13)	T-BUTYL ALCOHOL	11.35	533	2055M	73.29	UG/L	
14)	1,1-DICHLOROETHANE	10.19	474	93285	93.28	UG/L	98
15)	TRANS-1,2-DICHLOROETHYLENE	10.96	513	44346	89.51	UG/L	93
16)	CHLOROFORM	11.55	543	109372	89.98	UG/L	95
17)	1,2-DICHLOROETHANE	12.30	581	67345	90.32	UG/L	98
18)	1,2-DICHLOROETHANE-D4 (SURG.)	12.20	576	33004	46.38	UG/L	97
19)	*1,4-DIFLUOROBENZENE	19.97	970	65697	50.00	UG/L	100
20)	1,1,1-TRICHLOROETHANE	13.54	644	86889	93.71	UG/L	96
21)	METHYL T-BUTYL ETHER	13.42	638	87355	111.50	UG/L	85
23)	CARBON TETRACHLORIDE	13.94	664	76682M	91.36	UG/L	90
25)	BROMODICHLOROMETHANE	14.47	691	96400	92.73	UG/L	97
26)	1,2-DICHLOROPROPANE	15.89	763	50030	99.08	UG/L	96
27)	TRANS-1,3-DICHLOROPROPENE	16.16	777	117553	70.20	UG/L	96
28)	TRICHLOROETHYLENE	16.76	807	57978	94.24	UG/L	83
29)	DIBROMOCHLOROMETHANE	17.35	837	68892	89.63	UG/L	100
30)	1,1,2-TRICHLOROETHANE	17.49	844	39362	92.66	UG/L	94
31)	BENZENE	17.31	835	112613	96.93	UG/L	100
32)	CIS-1,3-DICHLOROPROPENE	17.49	844	22953M	116.77	UG/L	96
34)	2-CHLOROETHYL VINYL ETHER	18.81	911	4633	92.47	UG/L	100
35)	BROMOFORM	20.22	983	39180M	79.87	UG/L	95
38)	*CHLOROBENZENE-D5	24.97	1224	50294	50.00	UG/L	100
39)	TETRACHLOROETHYLENE	22.57	1102	40174	98.70	UG/L	83
40)	TOLUENE-D8 (SURG.)	23.73	1161	61124	50.11	UG/L	87
41)	1,1,2,2-TETRACHLOROETHANE	22.67	1107	37340	90.08	UG/L	96
42)	TOLUENE	23.93	1171	72108	95.66	UG/L	97
43)	CHLOROBENZENE	25.13	1232	89835	94.95	UG/L	97
44)	ETHYLBENZENE	27.12	1333	46200	99.20	UG/L	89
45)	BROMOFLUOROBENZENE (SURG.)	29.72	1465	41110M	46.76	UG/L	83
47)	M-XYLENE	31.38	1549	60477M	94.98	UG/L	82
48)	O,P-XYLENE	32.47	1604	120113M	191.57	UG/L	85
49)	1,2-DICHLOROBENZENE	37.41	1855	107383M	97.59	UG/L	98
50)	1,3-DICHLOROBENZENE	36.33	1800	102608M	91.86	UG/L	93
51)	1,4-DICHLOROBENZENE	38.03	1886	107877M	91.17	UG/L	95

000086

* Compound is ISTD

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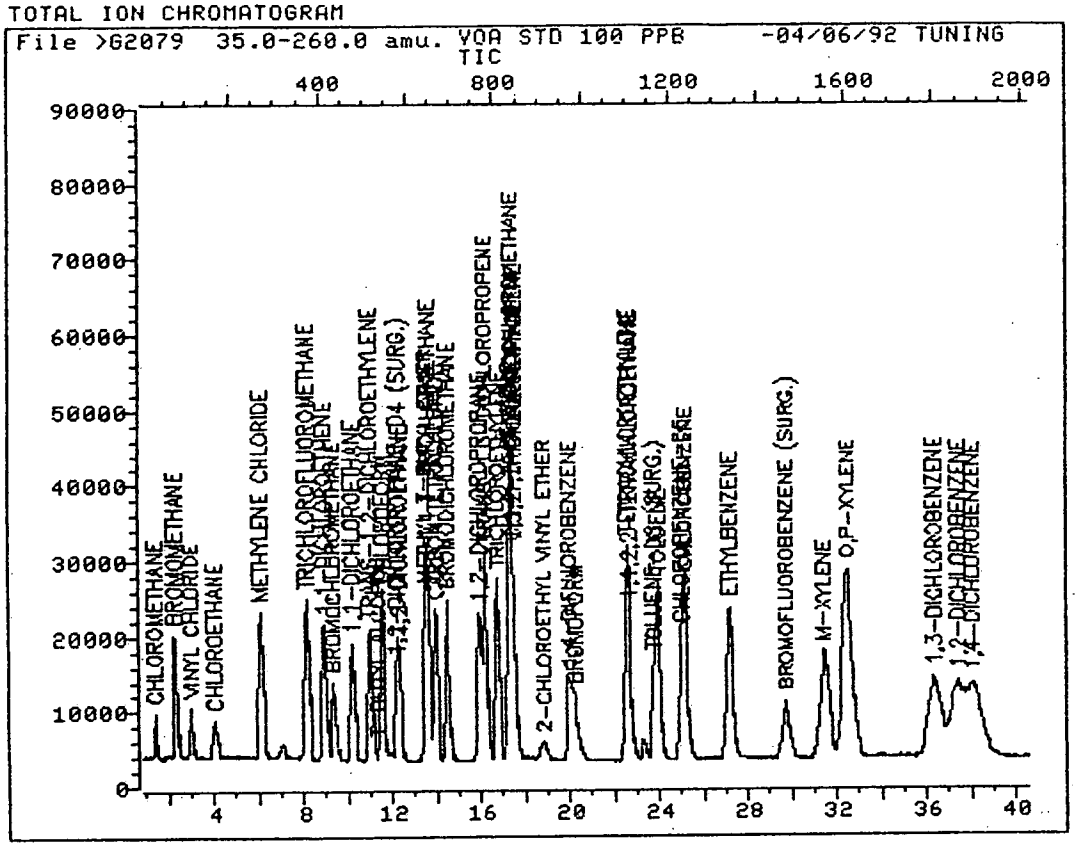
TOTAL ION CHROMATOGRAM



Data File: >G2079::B2 Quant Output File: ^G2079::QT
Name: VOA STD 100 PPB
Misc: -04/06/92 TUNING

Id File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920330 12:29

Operator ID: MAURIE
Quant Time: 920406 08:56
Injected at: 920406 08:09

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Initial Calibration Data
HSL Compounds

Case No:

Instrument ID: HPMSD-VOA

Contractor: ECRA LABS

Calibration Date: 04/08/92

Contract No:

Minimum $\overline{RF}$ for SPCC is .30 Maximum % RSD for CCC is 30%

Laboratory ID:	>G2112	>G2110	>G2111						
Compound	RF 20.00	RF 100.00	RF 200.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC	
CHLOROMETHANE	.33436	.51215	.36056	.146	.40236	23.856		**	
BROMOMETHANE	.86323	.73599	.66108	.242	.75343	13.564			
VINYL CHLORIDE	.65768	.64275	.53714	.316	.61252	10.727	*		
CHLOROETHANE	.50818	.45629	.44020	.429	.46822	7.588			
METHYLENE CHLORIDE	1.58182	1.30101	1.20993	.648	1.36425	14.209			
ACROLEIN	-	-	-	-	-	-			(Conc=200.0,400.0,800.0)
ACRYLONITRILE	-	-	-	-	-	-			(Conc=200.0,400.0,800.0)
ACETONE	-	-	-	-	-	-			
CARBON DISULFIDE	-	-	-	-	-	-			
TRICHLOROFLUOROMETHANE	1.95071	1.69401	1.77259	.868	1.80577	7.284			
1,1-DICHLOROETHENE	1.37381	1.25896	1.25298	.953	1.29525	5.258	*		
T-BUTYL ALCOHOL	.04659	.02987	.04531	1.216	.04059	22.924			
1,1-DICHLOROETHANE	1.56216	1.44420	1.41757	1.091	1.47464	5.218		**	
TRANS-1,2-DICHLOROETHYLENE	.73716	.68223	.64244	1.173	.68728	6.920			
CHLOROFORM	1.89446	1.72050	1.63566	1.235	1.75021	7.538	*		
1,2-DICHLOROETHANE	1.07761	1.01511	.99735	1.319	1.03002	4.093			
1,2-DICHLOROETHANE-D4 (SURG.)	.93765	1.01766	1.06208	1.306	1.00580	6.269			(Conc=50.0,50.0,50.0)
1,1,1-TRICHLOROETHANE	.72756	.64085	.62730	.678	.66523	8.177			
METHYL T-BUTYL ETHER	.82799	.89843	.80908	.672	.84517	5.571			
2-BUTANONE	-	-	-	-	-	-			
CARBON TETRACHLORIDE	.63392	.58092	.58936	.697	.60140	4.735			
VINYL ACETATE	-	-	-	-	-	-			
BROMODICHLOROMETHANE	.81104	.74225	.74180	.725	.76503	5.209			
1,2-DICHLOROPROPANE	.40274	.37532	.38454	.796	.38753	3.600	*		
TRANS-1,3-DICHLOROPROPENE	1.20778	1.17105	1.20892	.809	1.19592	1.801			(Conc=15.2,76.0,152.0)
TRICHLOROETHYLENE	.47926	.44171	.43668	.839	.45255	5.141			
DIBROMOCHLOROMETHANE	.61090	.55817	.56271	.868	.57726	5.063			
1,1,2-TRICHLOROETHANE	.32227	.29003	.28014	.874	.29748	7.405			
BENZENE	.90730	.83795	.79369	.866	.84632	6.766			
CIS-1,3-DICHLOROPROPENE	.14073	.14029	.14801	.876	.14301	3.032			(Conc=24.8,124.0,248.0)

RF - Response Factor (Subscript is amount in UG/L)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

000088

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Initial Calibration Data
HSL Compounds

Case No:

Instrument ID: HPMSD-VOA

Contractor: ECRA LABS

Calibration Date: 04/08/92

Contract No:

Minimum $\overline{RF}$ for SPCC is .30 Maximum % RSD for CCC is 30%

Laboratory ID:	>G2112	>G2110	>G2111						
Compound	RF 20.00	RF 100.00	RF 200.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC	
DIISOPROPYL ETHER	-	-	-	-	-	-			
2-CHLOROETHYL VINYL ETHER	.05367	.05866	.05536	.942	.05590	4.544			
BROMOFORM	.34658	.33663	.34934	1.012	.34418	1.943		**	
4-METHYL-2-PENTANONE	-	-	-	-	-	-			
2-HEXANONE	-	-	-	-	-	-			
TETRACHLOROETHYLENE	.46335	.40229	.40918	.905	.42494	7.871			
TOLUENE-D8 (SURG.)	1.23383	1.19366	1.19512	.950	1.20754	1.887			(Conc=50.0,50.0,50.0)
1,1,2,2-TETRACHLOROETHANE	.35968	.37898	.43955	.907	.39274	10.611		**	
TOLUENE	.77704	.68523	.69822	.958	.72016	6.899	*		
CHLOROBENZENE	.95430	.86118	.86965	1.005	.89504	5.753		**	
ETHYLBENZENE	.48198	.42824	.41721	1.083	.44248	7.832	*		
BROMOFLUOROBENZENE (SURG.)	.84876	.81821	.83421	1.179	.83373	1.833			(Conc=50.0,50.0,50.0)
STYRENE	-	-	-	-	-	-			
M-XYLENE	.64676	.56837	.56022	1.242	.59178	8.075			
O,P-XYLENE	.65525	.56164	.55278	1.278	.58989	9.625			(Conc=40.0,200.0,400.0)
1,2-DICHLOROBENZENE	1.27988	.96809	.82771	1.458	1.02523	22.574			
1,3-DICHLOROBENZENE	1.26406	.93140	.84571	1.420	1.01372	21.800			
1,4-DICHLOROBENZENE	1.39858	.92076	.91719	1.484	1.07884	25.667			

RF - Response Factor (Subscript is amount in UG/L)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

000039

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QUANT REPORT

Operator ID: MAURIE Quant Rev: 6 Quant Time: 920408 13:12
Output File: ^G2112::QT Injected at: 920408 12:23
Data File: >G2112::B2 Dilution Factor: 1.00000
Name: VOA STD 20 PPB
Misc: -04/08/92 TUNING

ID File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920408 09:32

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	9.14	421	36488	50.00	UG/L	79
2)	CHLOROMETHANE	1.34	25	4880	10.34	UG/L	100
3)	BROMOMETHANE	2.21	69	12599	18.95	UG/L	97
4)	VINYL CHLORIDE	2.90	104	9599	16.27	UG/L	96
5)	CHLOROETHANE	3.90	155	7417	19.06	UG/L	87
6)	METHYLENE CHLORIDE	5.91	257	23087	20.95	UG/L	100
11)	TRICHLOROFLUOROMETHANE	7.96	361	28471	20.15	UG/L	100
12)	1,1-DICHLOROETHENE	8.71	399	20051	19.99	UG/L	92
13)	T-BUTYL ALCOHOL	11.15	523	680M	20.78	UG/L	
14)	1,1-DICHLOROETHANE	9.99	464	22800	19.91	UG/L	99
15)	TRANS-1,2-DICHLOROETHYLENE	10.74	502	10759	19.93	UG/L	86
16)	CHLOROFORM	11.33	532	27650	20.57	UG/L	95
17)	1,2-DICHLOROETHANE	12.06	569	15728	19.82	UG/L	84
18)	1,2-DICHLOROETHANE-D4 (SURG.)	11.94	563	34213	46.17	UG/L	94
19)	*1,4-DIFLUOROBENZENE	19.59	951	75372	50.00	UG/L	100
20)	1,1,1-TRICHLOROETHANE	13.30	632	21935	19.76	UG/L	96
21)	METHYL T-BUTYL ETHER	13.18	626	24963	27.77	UG/L	83
23)	CARBON TETRACHLORIDE	13.65	650	19112M	19.36	UG/L	88
25)	BROMODICHLOROMETHANE	14.21	678	24452	20.02	UG/L	96
26)	1,2-DICHLOROPROPANE	15.62	750	12142	19.33	UG/L	97
27)	TRANS-1,3-DICHLOROPROPENE	15.86	762	27674	14.46	UG/L	98
28)	TRICHLOROETHYLENE	16.43	791	14449	20.24	UG/L	76
29)	DIBROMOCHLOROMETHANE	17.04	822	18418	21.01	UG/L	100
30)	1,1,2-TRICHLOROETHANE	17.14	827	9716	19.97	UG/L	98
31)	BENZENE	16.98	819	27354	19.32	UG/L	100
32)	CIS-1,3-DICHLOROPROPENE	17.18	829	5261M	26.74	UG/L	
34)	2-CHLOROETHYL VINYL ETHER	18.46	894	1618	16.58	UG/L	100
35)	BROMOFORM	19.84	964	10449	22.87	UG/L	90
38)	*CHLOROBENZENE-D5	24.51	1201	56091	50.00	UG/L	100
39)	TETRACHLOROETHYLENE	22.21	1084	10396	21.70	UG/L	86
40)	TOLUENE-D8 (SURG.)	23.33	1141	69207	51.34	UG/L	90
41)	1,1,2,2-TETRACHLOROETHANE	22.29	1088	8070	20.42	UG/L	98
42)	TOLUENE	23.51	1150	17434	20.51	UG/L	99
43)	CHLOROBENZENE	24.67	1209	21411	20.16	UG/L	98
44)	ETHYLBENZENE	26.58	1306	10814	22.88	UG/L	92
45)	BROMOFLUOROBENZENE (SURG.)	28.93	1425	47608	52.07	UG/L	89
47)	M-XYLENE	30.49	1504	14511M	20.36	UG/L	84
48)	O,P-XYLENE	31.36	1548	29403	41.57	UG/L	89
49)	1,2-DICHLOROBENZENE	35.81	1774	28716M	20.90	UG/L	
50)	1,3-DICHLOROBENZENE	34.89	1727	28361M	20.29	UG/L	
51)	1,4-DICHLOROBENZENE	36.54	1811	31379M	21.54	UG/L	

000090

* Compound is ISTD

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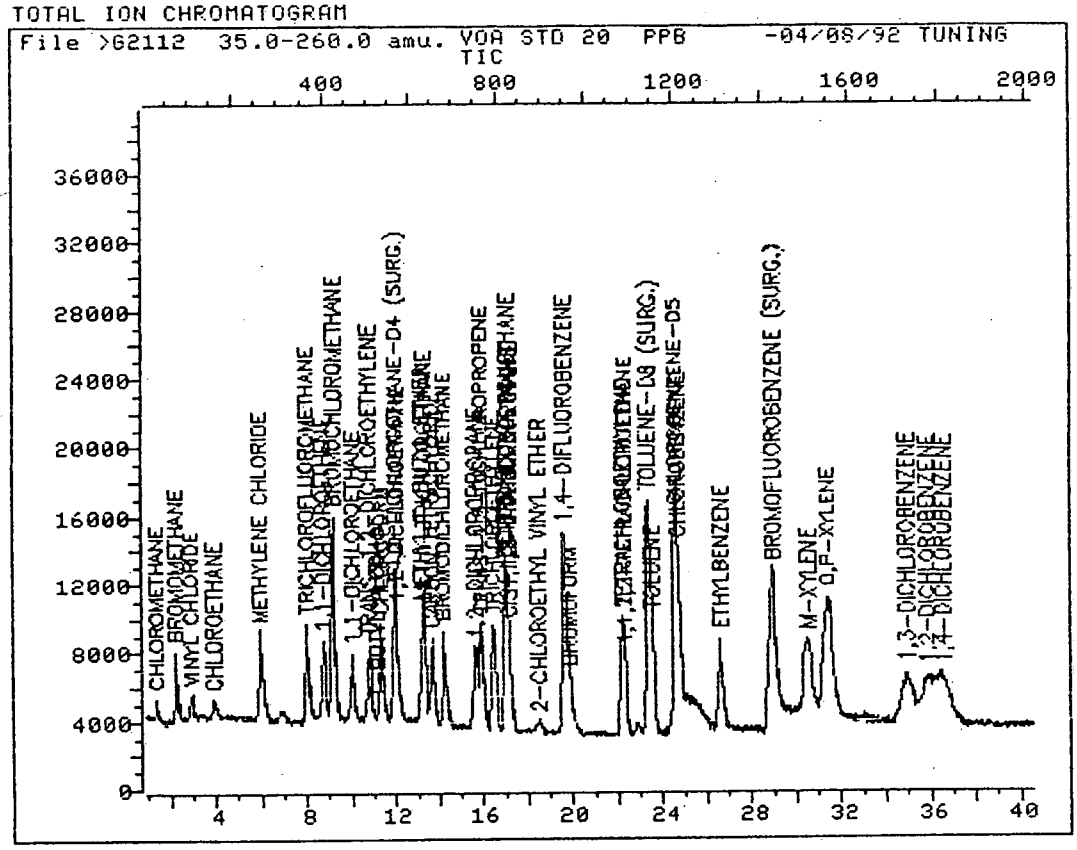
TOTAL ION CHROMATOGRAM



Data File: >G2112::B2 Quant Output File: ^G2112::QT
Name: VOA STD 20 PPB
Misc: -04/08/92 TUNING

Id File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920408 09:32

Operator ID: MAURIE
Quant Time: 920408 13:12
Injected at: 920408 12:23

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QUANT REPORT

Operator ID: MAURIE Quant Rev: 6 Quant Time: 920408 09:55
Output File: ^G2110::QT Injected at: 920408 09:04
Data File: >G2110::B2 Dilution Factor: 1.00000
Name: VOA STD 100 PPB
Misc: -04/08/92 TUNING

ID File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920408 09:32

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	9.13	423	33861	50.00	UG/L	80
2)	CHLOROMETHANE	1.33	27	34684	79.16	UG/L	100
3)	BROMOMETHANE	2.22	72	49843	80.79	UG/L	96
4)	VINYL CHLORIDE	2.89	106	43528	79.51	UG/L	98
5)	CHLOROETHANE	3.93	159	30901	85.56	UG/L	89
6)	METHYLENE CHLORIDE	5.92	260	88107	86.17	UG/L	100
11)	TRICHLOROFLUOROMETHANE	7.93	362	114722	87.49	UG/L	100
12)	1,1-DICHLOROETHENE	8.70	401	85259	91.59	UG/L	91
13)	T-BUTYL ALCOHOL	11.11	523	2023M	66.60	UG/L	
14)	1,1-DICHLOROETHANE	9.96	465	97804	92.02	UG/L	96
15)	TRANS-1,2-DICHLOROETHYLENE	10.69	502	46202	92.22	UG/L	84
16)	CHLOROFORM	11.26	531	116516	93.42	UG/L	91
17)	1,2-DICHLOROETHANE	12.03	570	68745	93.34	UG/L	99
18)	1,2-DICHLOROETHANE-D4 (SURG.)	11.93	565	34459	50.11	UG/L	99
19)	*1,4-DIFLUOROBENZENE	19.58	953	71332	50.00	UG/L	100
20)	1,1,1-TRICHLOROETHANE	13.25	632	91426	87.04	UG/L	98
21)	METHYL T-BUTYL ETHER	13.14	626	128173	150.68	UG/L	83
23)	CARBON TETRACHLORIDE	13.61	650	82877M	88.70	UG/L	91
25)	BROMODICHLOROMETHANE	14.18	679	105893	91.59	UG/L	95
26)	1,2-DICHLOROPROPANE	15.56	749	53544	90.05	UG/L	95
27)	TRANS-1,3-DICHLOROPROPENE	15.84	763	126971	70.10	UG/L	98
28)	TRICHLOROETHYLENE	16.41	792	63016	93.26	UG/L	76
29)	DIBROMOCHLOROMETHANE	16.96	820	79631	96.00	UG/L	100
30)	1,1,2-TRICHLOROETHANE	17.10	827	41377	89.87	UG/L	96
31)	BENZENE	16.92	818	119546	89.20	UG/L	100
32)	CIS-1,3-DICHLOROPROPENE	17.12	828	24817M	133.28	UG/L	
34)	2-CHLOROETHYL VINYL ETHER	18.44	895	8369	90.63	UG/L	100
35)	BROMOFORM	19.80	964	48025	111.07	UG/L	93
38)	*CHLOROBENZENE-D5	24.49	1202	55877M	50.00	UG/L	100
39)	TETRACHLOROETHYLENE	22.14	1083	44957	94.22	UG/L	83
40)	TOLUENE-D8 (SURG.)	23.27	1140	66698	49.67	UG/L	89
41)	1,1,2,2-TETRACHLOROETHANE	22.20	1086	42353	107.57	UG/L	96
42)	TOLUENE	23.45	1149	76577	90.44	UG/L	98
43)	CHLOROBENZENE	24.63	1209	96240	90.97	UG/L	95
44)	ETHYLBENZENE	26.54	1306	47857	101.63	UG/L	89
45)	BROMOFLUOROBENZENE (SURG.)	28.87	1424	45719	50.19	UG/L	90
47)	M-XYLENE	30.45	1504	63518M	89.47	UG/L	92
48)	O,P-XYLENE	31.29	1547	125532M	178.16	UG/L	85
49)	1,2-DICHLOROBENZENE	35.73	1772	108188M	79.05	UG/L	
50)	1,3-DICHLOROBENZENE	34.75	1722	104088M	74.76	UG/L	
51)	1,4-DICHLOROBENZENE	36.32	1802	102899M	70.92	UG/L	

0 0092

* Compound is ISTD

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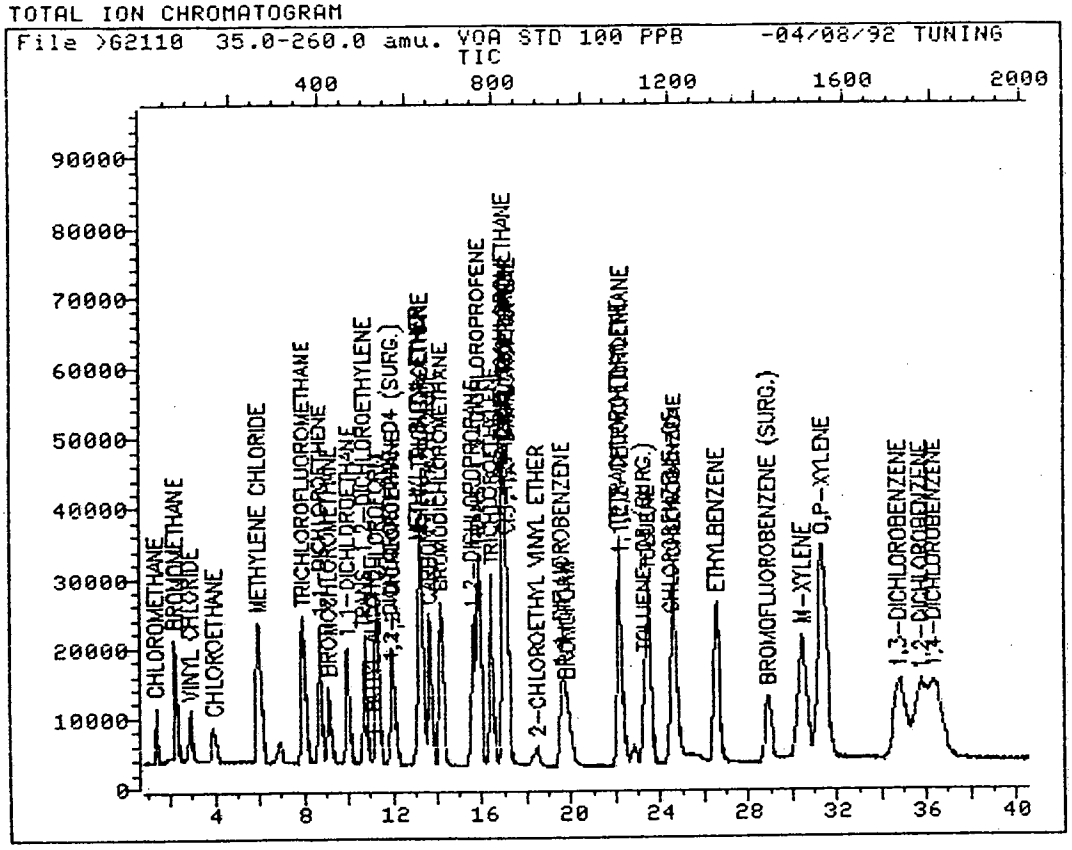
TOTAL ION CHROMATOGRAM



Data File: >G2110::B2
Name: VOA STD 100 PPB
Misc: -04/08/92 TUNING

Quant Output File: ^G2110::QT

Id File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920408 09:32

Operator ID: MAURIE
Quant Time: 920408 09:55
Injected at: 920408 09:04

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QUANT REPORT

Operator ID: MAURIE
Output File: ^G2111::QT
Data File: >G2111::B2
Name: VOA STD 200 PPB
Misc: -04/08/92 TUNING

Quant Rev: 6
Quant Time: 920408 10:40
Injected at: 920408 09:54
Dilution Factor: 1.00000

ID File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920408 09:32

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	9.12	422	37887	50.00	UG/L	80
2)	CHLOROMETHANE	1.34	27	54642	111.46	UG/L	100
3)	BROMOMETHANE	2.21	71	100185	145.13	UG/L	98
4)	VINYL CHLORIDE	2.88	105	81403	132.90	UG/L	95
5)	CHLOROETHANE	3.92	158	66711	165.08	UG/L	89
6)	METHYLENE CHLORIDE	5.93	260	183363	160.27	UG/L	100
11)	TRICHLOROFLUOROMETHANE	7.90	360	268633	183.09	UG/L	100
12)	1,1-DICHLOROETHENE	8.69	400	189887	182.32	UG/L	96
13)	T-BUTYL ALCOHOL	11.07	521	6867	202.05	UG/L	83
14)	1,1-DICHLOROETHANE	9.93	463	214830	180.64	UG/L	97
15)	TRANS-1,2-DICHLOROETHYLENE	10.70	502	97360	173.69	UG/L	98
16)	CHLOROFORM	11.25	530	247881	177.62	UG/L	98
17)	1,2-DICHLOROETHANE	12.04	570	151147	183.41	UG/L	97
18)	1,2-DICHLOROETHANE-D4 (SURG.)	11.92	564	40239	52.30	UG/L	97
19)	*1,4-DIFLUOROBENZENE	19.55	951	79582	50.00	UG/L	100
20)	1,1,1-TRICHLOROETHANE	13.24	631	199686	170.40	UG/L	98
21)	METHYL T-BUTYL ETHER	13.12	625	257552	271.39	UG/L	84
23)	CARBON TETRACHLORIDE	13.64	651	187610	179.98	UG/L	93
25)	BROMODICHLOROMETHANE	14.17	678	236135	183.07	UG/L	96
26)	1,2-DICHLOROPROPANE	15.55	748	122409	184.53	UG/L	97
27)	TRANS-1,3-DICHLOROPROPENE	15.83	762	292473	144.74	UG/L	98
28)	TRICHLOROETHYLENE	16.40	791	139007	184.39	UG/L	77
29)	DIBROMOCHLOROMETHANE	16.97	820	179125	193.56	UG/L	100
30)	1,1,2-TRICHLOROETHANE	17.11	827	89178	173.61	UG/L	99
31)	BENZENE	16.93	818	252655	168.98	UG/L	100
32)	CIS-1,3-DICHLOROPROPENE	17.13	828	58422M	281.22	UG/L	51
34)	2-CHLOROETHYL VINYL ETHER	18.43	894	17624	171.07	UG/L	100
35)	BROMOFORM	19.79	963	111205M	230.53	UG/L	94
38)	*CHLOROBENZENE-D5	24.50	1202	63050	50.00	UG/L	100
39)	TETRACHLOROETHYLENE	22.15	1083	103194	191.66	UG/L	81
40)	TOLUENE-D8 (SURG.)	23.26	1139	75352	49.73	UG/L	91
41)	1,1,2,2-TETRACHLOROETHANE	22.15	1083	110855	249.53	UG/L	97
42)	TOLUENE	23.46	1149	176090	184.32	UG/L	95
43)	CHLOROBENZENE	24.60	1207	219326	183.72	UG/L	98
44)	ETHYLBENZENE	26.51	1304	105220	198.03	UG/L	93
45)	BROMOFLUOROBENZENE (SURG.)	28.88	1424	52597M	51.18	UG/L	
47)	M-XYLENE	30.38	1500	141287	176.37	UG/L	95
48)	O,P-XYLENE	31.29	1546	278823M	350.69	UG/L	89
49)	1,2-DICHLOROBENZENE	35.65	1767	208749M	135.17	UG/L	
50)	1,3-DICHLOROBENZENE	34.74	1721	213287M	135.76	UG/L	84
51)	1,4-DICHLOROBENZENE	36.20	1795	231316M	141.29	UG/L	

000094

* Compound is ISTD

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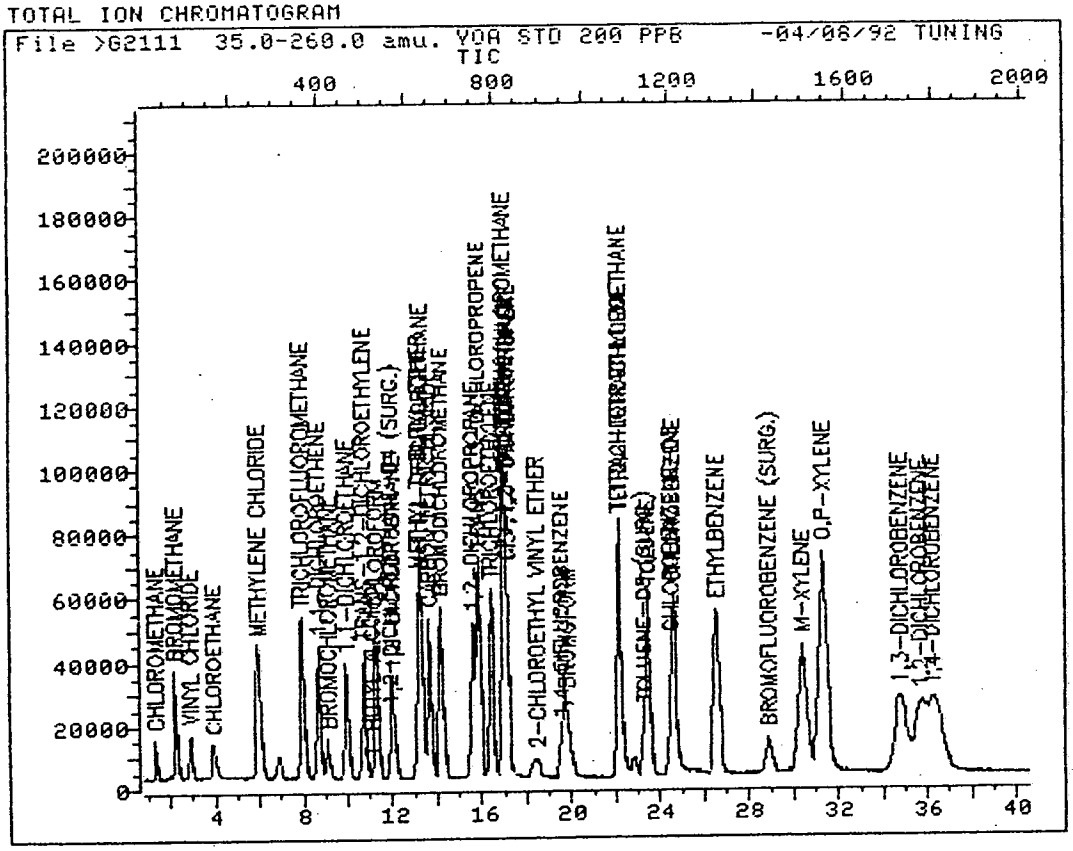
TOTAL ION CHROMATOGRAM



Data File: >G2111::B2
Name: VOA STD 200 PPB
Misc: -04/08/92 TUNING

Quant Output File: ^G2111::QT

Id File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920408 09:32

Operator ID: MAURIE
Quant Time: 920408 10:40
Injected at: 920408 09:54

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SECTION 3.0

QA/QC DATA SUMMARY

TARGETED COMPOUND LIST
SURROGATE RECOVERY RESULTS
METHOD BLANK RESULTS
MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

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PRACTICAL QUANTITATIVE LIMITS (PQL) FOR VOLATILE ORGANICS

		Practical Quantitative Limits**		
		Ground Water	Low Soil/ Sediment	Drinking Water
Volatiles	CAS #	ug/L	ug/Kg	ug/L
1. Chloromethane	74-87-3	10	10	0.5
2. Bromomethane	74-83-9	10	10	0.5
3. Vinyl Chloride	75-01-4	10	10	0.3
4. Chloroethane	75-00-3	10	10	0.5
5. Methylene Chloride	75-09-2	5	5	1.
6.@ Acetone	67-64-1	100	100	
7.@ Carbon Disulfide	75-15-0	5	5	
8. 1,1-Dichloroethene	75-35-4	5	5	0.2
9. 1,1-Dichloroethane	75-35-3	5	5	0.2
10. trans-1,2-Dichloroethene	156-60-5	5	5	0.2
11. Cis-1,2-Dichloroethene	156-59-4			.2
12. Chloroform	67-66-3	5	5	0.2
13. 1,2-Dichloroethane	107-06-2	5	5	0.2
14.@2-Butanone/MEK	78-93-3	100	100	
15. 1,1,1-Trichloroethane	71-55-6	5	5	0.3
16. Carbon Tetrachloride	56-23-5	5	5	0.3
17. Vinyl Acetate	108-05-4	50	50	
18. Bromodichloromethane	75-27-4	5	5	0.5
19. 1,1,2,2,-Tetrachloroethane	79-34-5	5	5	0.4
20. 1,2-Dichloropropane	78-87-5	5	5	0.5
21. trans-1,3-Dichloropropene	10061-02-6	5	5	0.5
22. Trichloroethene	79-01-6	5	5	0.4
23. Dibromochloromethane	124-48-1	5	5	0.4
24. 1,1,2-Trichloroethane	79-00-5	5	5	0.5
25. Benzene	71-43-2	5	5	0.1
26. cis-1,3-Dichloropropene	0061-01-5	5	5	0.5
27. 2-Chloroethyl Vinyl Ether	110-75-8	10	10	
28. Bromoform	75-25-2	5	5	0.7
29.@2-Hexanone	591-78-6	50	50	
30.@4-Methyl-2-pentanone/MIBK	108-10-1	50	50	
31. Tetrachloroethene	127-18-4	5	5	0.3

@ - HAZARDOUS SUBSTANCE LIST COMPOUNDS.

@ - CO-ELUTE

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Practical Quantitative Limits**

Volatiles	CAS Number	Ground Water ug/L	Low Soil/ Sediment ug/Kg	Drinking Water
32. Toluene	108-88-3	5	5	0.1
33. Chlorobenzene	108-90-7	5	5	0.1
34. Ethyl Benzene	100-41-4	5	5	0.5
35. @Styrene	100-42-5	5	5	0.2
36. @Total Xylenes		5	5	
37. Dichlorodifluromethane	75-71-8			2.
38. Dibromomethane	74-95-3			0.3
39. 2,2-Dichloropropane	590-20-7			0.5
40. 1,1-Dichloropropene	563-58-6			0.5
41. Trans-1,3-Dichloropropene	563-58-6			0.5
42. 1,3-Dichloropropane	142-28-9			0.1
43. 1,2,3-Trichloropropane	96-18-4			0.5
44. 1,2-Dibromo-3-chloropropane	96-12-8			2.
45. Bromobenzene	108-86-1			0.1
46. M-Xylene	133-02-7			0.5
47. O,P-Xylene	95-47-6			0.5
48. 2-Chlorotoluene	95-49-8			0.5
49. 4-Chlorotoluene	106-43-4			0.5
50. 1,2-Dichlorobenzene	95-50-1			1.
51. 1,3-Dichlorobenzene	541-73-1			1.
52. 1,4-Dichlorobenzene	106-46-7			2.
53. Trichlorofluoromethane	76-69-4			0.2
54. Bromochloromethane	74-97-5			0.5
55. 1,1,1,2-Tetrachloroethane	630-20-6			0.5
56. 1,2-Dibromomethane (EDB)	106-93-4			0.4

*/Sample PQL's are highly matrix-dependent. The PQL's listed herein are provided for guidance and may not always be achieveable. See the following information for further guidance on matrix-dependent PQL's.

**/PQL's listed for soil/sediment are based on wet weight. Normally data is reported on a dry weight basis; therefore, PQL's will be higher, based on the % moisture in each sample.

@/Hazardous substance list compounds.
@/CO-ELUTE

Other Matrices	Factor*
Water miscible liquid waste	50
High-level soil and sludges	125
Non-water miscible waste	500

*PQL = [PQL for ground water [(Table 2)]x [Factor]. For non-aqueous samples, the factor is on a wet-weight basis.

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SURROGATE PERCENT RECOVERY SUMMARY

CLIENT: AARON ENVIRONMENTAL PROJECT NUMBER: 92-33-01

LOW: X

SAMPLE ID NO.	MATRIX	FILE ID	1,2 DICHLORO-ETHANE-D4	TOLUENE-D8	BROMOFLUORO-BENZENE
01: METHOD BLANK	WATER	G2011	92	99	99
02: METHOD BLANK	WATER	G2078	86	97	92
03: METHOD BLANK	WATER	G2108	93	93	102
04: MATRIX SPIKE	WATER	G2080	84	100	90
05: MATRIX SPIKE DUP	WATER	G2081	89	100	96
06: 92-33-01-MW-1	WATER	G2090	89	98	93
07: 92-33-01-MW-1 DUP	WATER	G2114	100	94	102
08: 92-33-01-FIELD BLANK	WATER	G2113	90	96	103
09: 92-33-01-TRIP BLANK	WATER	G2086	85	98	94
10: 92-33-01-MW-2	WATER	G2088	88	97	90
11:					
12:					
13:					
14:					
15:					
16:					
17:					
18:					
19:					
20:					
SOIL QA/QC LIMITS			(70-121)	(81-117)	(74-121)
WATER QA/QC LIMITS			(76-114)	(88-110)	(86-115)

NO.: 0 OUT OF: 30 ; OUTSIDE OF QC LIMITS

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VOLATILE ORGANICS ANALYSIS DATA SHEET

ECRA LABORATORIES, INC.

LABORATORY REPORT-VOLATILE ORGANICS ANALYSIS-EPA METHOD 624

CLIENT NAME: .

SAMPLE ID #: METHOD BLANK

LAB ID #:N/A

DATA FILE: >G2011::B2

DILUTION FACTOR: 1.00000

EXTRACTION:N/A

METHOD DETECTION LIMIT: 5 UG/L

DATE SAMPLED:N/A

DATE RECEIVED:N/A

DATE EXTRACTED:N/A

DATE ANALYZED: 3/30/92 7:54

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION 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	8.	
75-69-4	Trichlorofluoromethane	1.	J
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	Trans-1,2-Dichloroethylene	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
110-75-8	2-Chloroethyl vinyl ether	10.	U
79-01-6	Trichloroethylene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
127-18-4	Tetrachloroethylene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
133-02-7	M-Xylene	5.	U
95-47-6	O,P-Xylene	5.	U
106-42-3			
95-50-1	1,2-Dichlorobenzene	5.	U
541-73-1	1,3-Dichlorobenzene	5.	U
106-46-7	1,4-Dichlorobenzene	5.	U

CC100

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1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES,INC.

Client Name: .

SAMPLE ID #: METHOD BLANK

LAB ID #: N/A

Data File: >G2011

Methanol Ext.:

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

EPA METHOD #624

Dilution Factor: 1.00000

Concentration Units: UG/L

NUMBER OF TIC'S DETECTED: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Peaks Dectected			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

NR = Not reviewed

FORM I VOA-TIC

1/87 Rev.

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FAX: (201) 361-1021

QUANT REPORT

Operator ID: MAURIE Quant Rev: 6 Quant Time: 920330 12:48
Output File: ^G2011::QT Injected at: 920330 07:54
Data File: >G2011::B2 Dilution Factor: 1.00000
Name: .
Misc: METHOD BLANK-03/30/92 TUNING

ID File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920330 12:29

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	9.17	424	26807	50.00	UG/L	74
6)	METHYLENE CHLORIDE	5.94	260	4859M	8.07	UG/L	100
11)	TRICHLOROFLUOROMETHANE	7.95	362	1674	1.41	UG/L J	100
18)	1,2-DICHLOROETHANE-D4 (SURG.)	11.95	565	28099	46.05	UG/L 92	96
19)	*1,4-DIFLUOROBENZENE	19.56	951	59845	50.00	UG/L	100
38)	*CHLOROBENZENE-D5	24.48	1201	49601	50.00	UG/L	100
40)	TOLUENE-D8 (SURG.)	23.26	1139	59428	49.41	UG/L 99	78
45)	BROMOFLUOROBENZENE (SURG.)	28.84	1422	42900M	49.47	UG/L 99	

* Compound is ISTD

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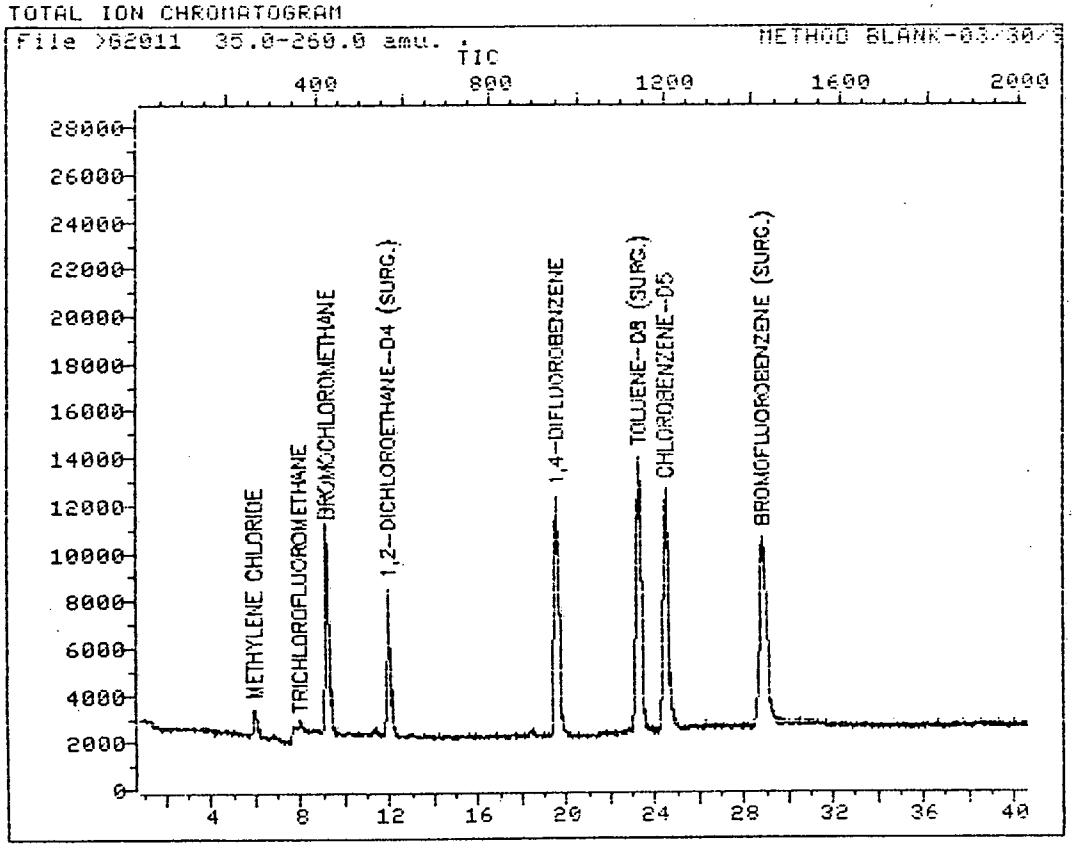
TOTAL ION CHROMATOGRAM



Data File: >G2011::B2 Quant Output File: ^G2011::QT
Name: .
Misc: METHOD BLANK-03/30/92 TUNING

Id File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920330 12:29

Operator ID: MAURIE
Quant Time: 920330 12:48
Injected at: 920330 07:54

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IS data file header from : >G2011

Sample: . Operator: MAURIE MS 3/30/92 7:54
Misc : METHOD BLANK-03/30/92 TUNING
Sys. #: 1 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: VOA1 Tuning file: MTG001 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 290 Transfer line temp. : 0

Chromatographic temperatures :	45.	220.	0.	0.	0.
Chromatographic times, min. :	3.0	16.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	8.0	0.0	0.0	1.0	0.0

No peaks found.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	107374.	9.17	.84 - 14.36
2	50.0	137542.	19.56	14.36 - 22.02
3	50.0	156917.	24.48	22.02 - 40.56

Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 1.00 Amount Used (AU) = 1.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

4:27 PM MON., 30 MAR., 1992

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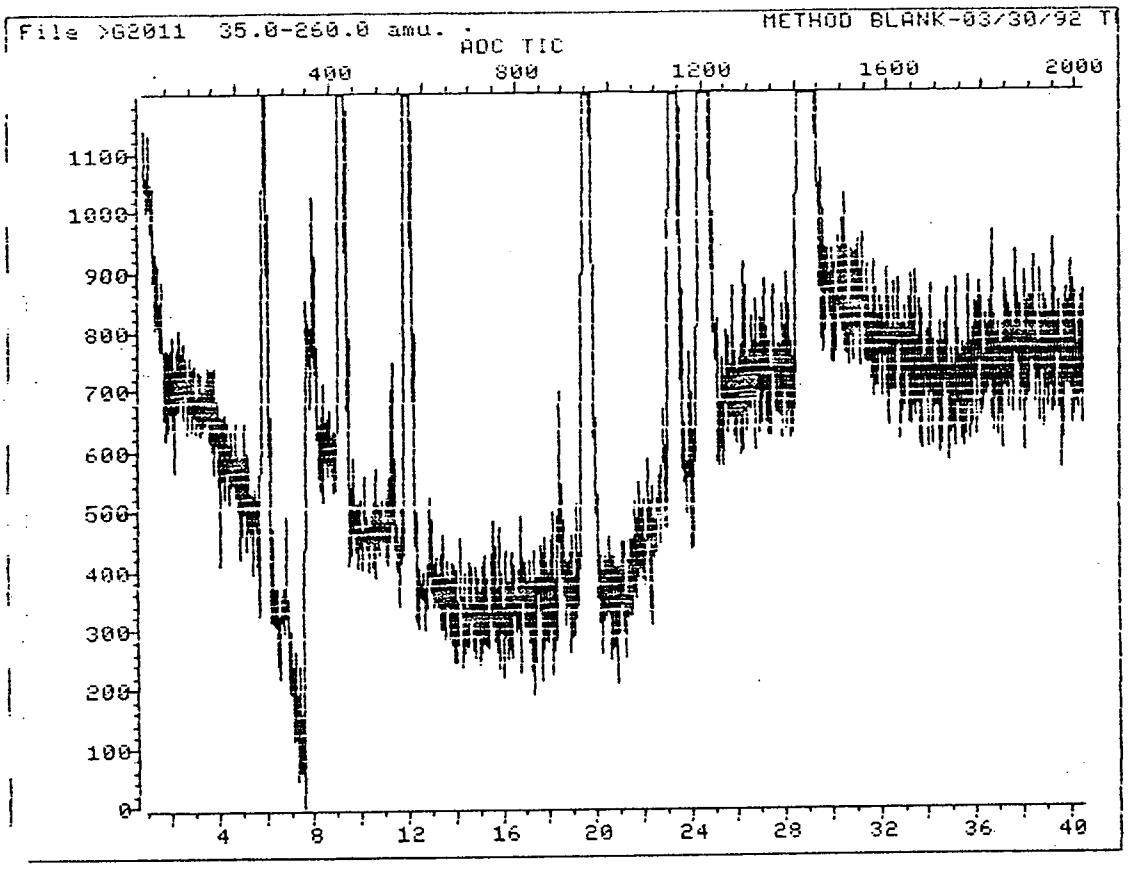
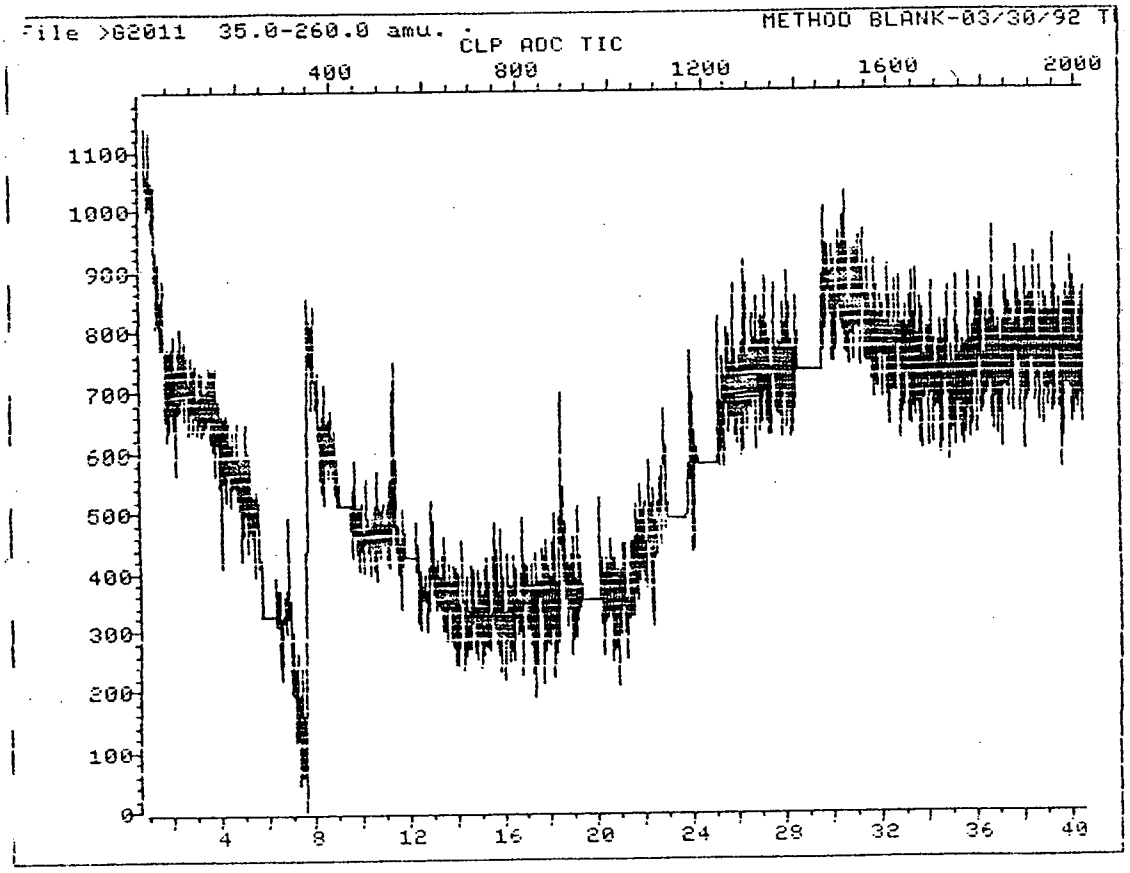
FAX: (201) 361-1021





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NJDEP LAB CERT. I.D. NO. 14580
273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
FAX: (201) 361-1021

working...
draw complete...

working...
There were no UNKNOWNS

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FAX: (201) 361-1021

VOLATILE ORGANICS ANALYSIS DATA SHEET

ECRA LABORATORIES, INC.

LABORATORY REPORT-VOLATILE ORGANICS ANALYSIS-EPA METHOD 624

CLIENT NAME: .

SAMPLE ID #: METHOD BLANK

LAB ID #:N/A

DATA FILE: >G2078::B2

DILUTION FACTOR: 1.00000

EXTRACTION:N/A

METHOD DETECTION LIMIT: 5 UG/L

DATE SAMPLED:N/A

DATE RECEIVED:N/A

DATE EXTRACTED:N/A

DATE ANALYZED: 4/06/92 7:19

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
74-87-3	Chloromethane	10.	IU
74-83-9	Bromomethane	10.	IU
75-01-4	Vinyl Chloride	10.	IU
75-00-3	Chloroethane	10.	IU
75-09-2	Methylene Chloride	2.	IJ
75-69-4	Trichlorofluoromethane	5.	IU
75-35-4	1,1-Dichloroethene	5.	IU
75-34-3	1,1-Dichloroethane	5.	IU
540-59-0	Trans-1,2-Dichloroethylene	5.	IU
67-66-3	Chloroform	5.	IU
107-02-2	1,2-Dichloroethane	5.	IU
71-55-6	1,1,1-Trichloroethane	5.	IU
56-23-5	Carbon Tetrachloride	5.	IU
75-27-4	Bromodichloromethane	5.	IU
78-87-5	1,2-Dichloropropane	5.	IU
10061-01-5	cis-1,3-Dichloropropene	5.	IU
110-75-8	2-Chloroethyl vinyl ether	10.	IU
79-01-6	Trichloroethylene	5.	IU
124-48-1	Dibromochloromethane	5.	IU
79-00-5	1,1,2-Trichloroethane	5.	IU
71-43-2	Benzene	5.	IU
10061-02-6	trans-1,3-Dichloropropene	5.	IU
75-25-2	Bromoform	5.	IU
127-18-4	Tetrachloroethylene	5.	IU
79-34-5	1,1,2,2-Tetrachloroethane	5.	IU
108-88-3	Toluene	5.	IU
108-90-7	Chlorobenzene	5.	IU
100-41-4	Ethylbenzene	5.	IU
133-02-7	M-Xylene	5.	IU
95-47-6	O,P-Xylene	5.	IU
106-42-3			
95-50-1	1,2-Dichlorobenzene	5.	IU
541-73-1	1,3-Dichlorobenzene	5.	IU
106-46-7	1,4-Dichlorobenzene	5.	IU
1634-04-4	Methyl-t-Butyl Ether	5.	IU
75-65-0	t-Butyl Alcohol	10.	IU

000107

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FAX: (201) 361-1021

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES,INC.

Client Name: .

SAMPLE ID #: METHOD BLANK LAB ID #: N/A

Data File: >G2078

Methanol Ext.:

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

EPA METHOD #624

Dilution Factor: 1.00000

Concentration Units: UG/L

NUMBER OF TIC'S DETECTED: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Peaks Detected			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

NR = Not reviewed FORM I VOA-TIC 1/87 Rev.

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RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
FAX: (201) 361-1021

QUANT REPORT

Operator ID: MAURIE Quant Rev: 6 Quant Time: 920406 08:14
Output File: ^G2078::QT Injected at: 920406 07:19
Data File: >G2078::B2 Dilution Factor: 1.00000
Name: .
Misc: METHOD BLANK-04/06/92 TUNING

ID File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920330 12:29

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	9.39	436	35322	50.00	UG/L	81
6)	METHYLENE CHLORIDE	6.10	269	1529	1.93	UG/L J	100
18)	1,2-DICHLOROETHANE-D4 (SURG.)	12.23	580	34396	42.78	UG/L 86	97
19)	*1,4-DIFLUOROBENZENE	19.95	972	72393M	50.00	UG/L	100
38)	*CHLOROBENZENE-D5	25.03	1230	55771	50.00	UG/L	100
40)	TOLUENE-D8 (SURG.)	23.77	1166	65798	48.65	UG/L 97	82
45)	BROMOFLUOROBENZENE (SURG.)	29.76	1470	44621M	45.76	UG/L 92	

* Compound is ISTD

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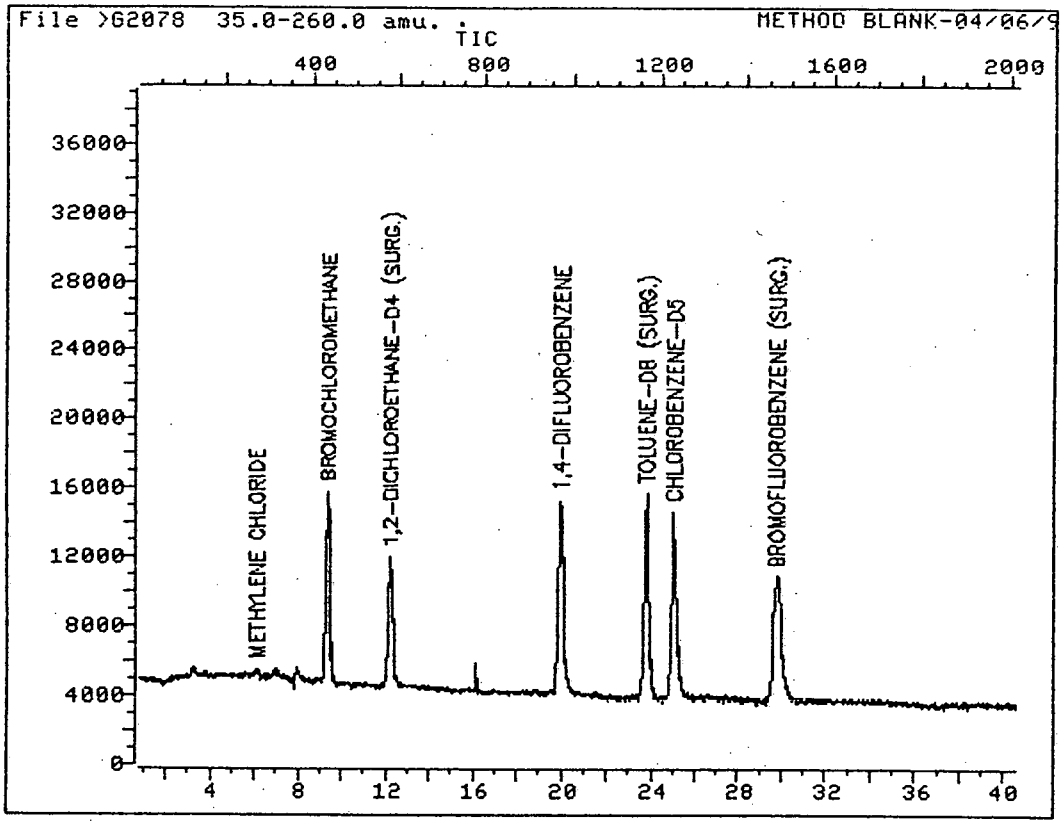
TOTAL ION CHROMATOGRAM



Data File: >G2078::B2 Quant Output File: ^G2078::QT
Name: .
Misc: METHOD BLANK-04/06/92 TUNING

Id File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920330 12:29

Operator ID: MAURIE
Quant Time: 920406 08:14
Injected at: 920406 07:19

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MS data file header from : >G2078

Sample: . Operator: MAURIE MS 4/06/92 7:19
Misc : METHOD BLANK-04/06/92 TUNING
Sys. #: 1 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: VOA1 Tuning file: MTG001 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 290 Transfer line temp. : 0

Chromatographic temperatures :	45.	220.	0.	0.	0.
Chromatographic times, min. :	3.0	16.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	8.0	0.0	0.0	1.0	0.0

No peaks found.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	140636.	9.39	.82 - 14.67
2	50.0	162370.	19.95	14.67 - 22.49
3	50.0	171974.	25.03	22.49 - 40.54

Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 1.00 Amount Used (AU) = 1.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

8:41 AM TUE., 7 APR., 1992

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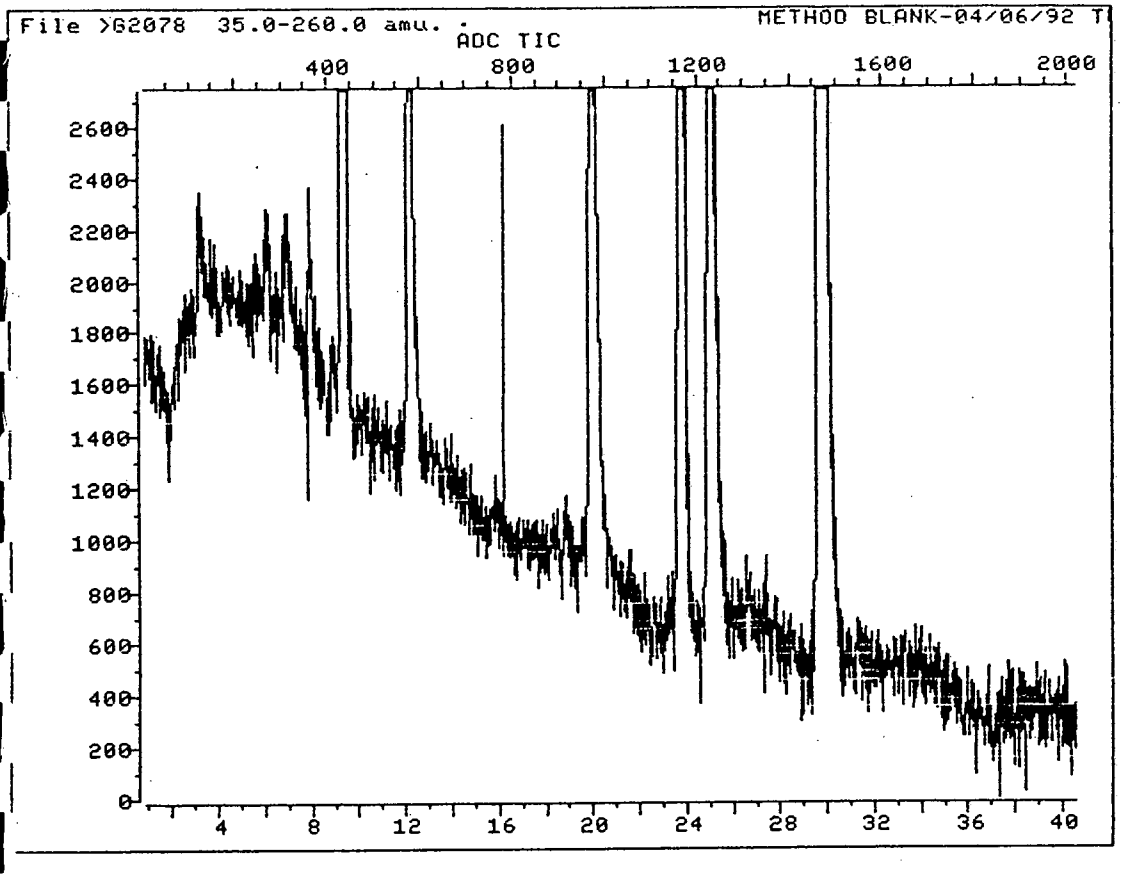

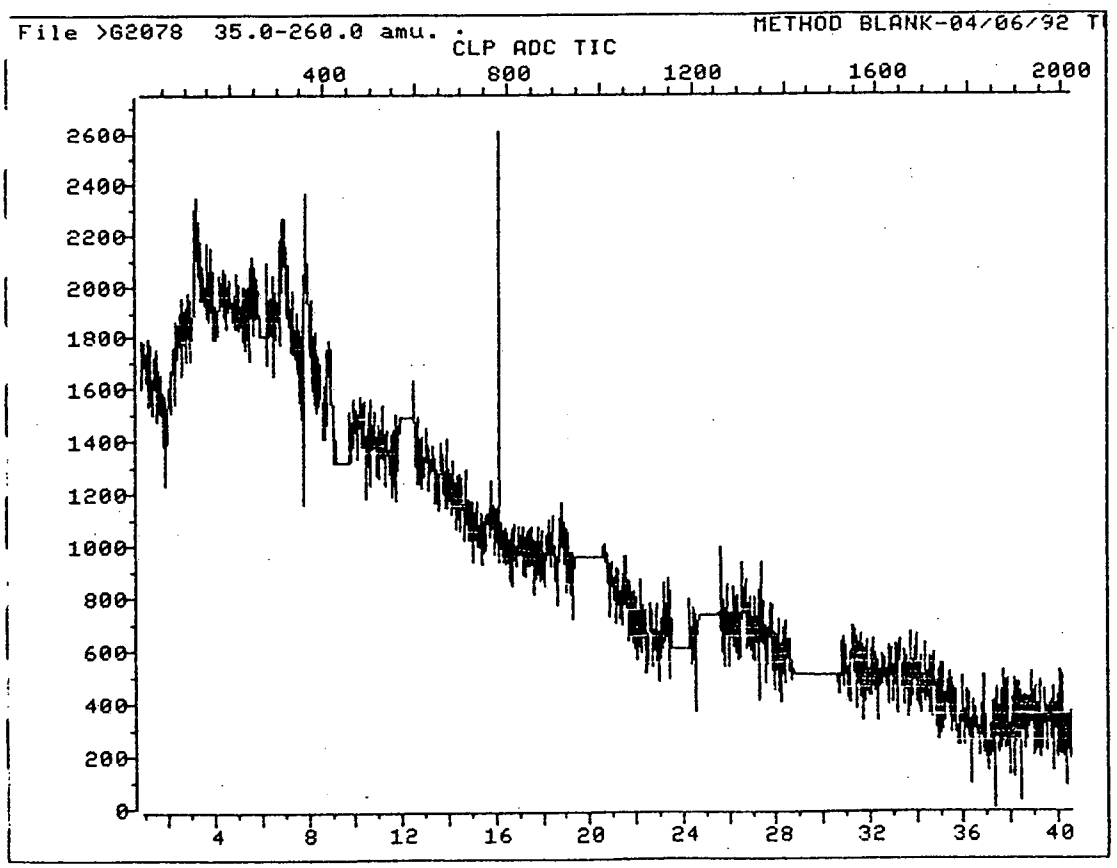

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working...
draw complete...

working...
. There were no UNKNOWNS

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VOLATILE ORGANICS ANALYSIS DATA SHEET

ECRA LABORATORIES, INC.

LABORATORY REPORT-VOLATILE ORGANICS ANALYSIS-EPA METHOD 624

CLIENT NAME: .

SAMPLE ID #: METHOD BLANK

LAB ID #:N/A

DATA FILE: >G2108::B2

DILUTION FACTOR: 1.00000

EXTRACTION:N/A

METHOD DETECTION LIMIT: 5 UG/L

DATE SAMPLED:N/A

DATE RECEIVED:N/A

DATE EXTRACTED:N/A

DATE ANALYZED: 4/08/92 7:24

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
74-87-3	Chloromethane	10.	IU
74-83-9	Bromomethane	10.	IU
75-01-4	Vinyl Chloride	10.	IU
75-00-3	Chloroethane	10.	IU
75-09-2	Methylene Chloride	8.	I
75-69-4	Trichlorofluoromethane	3.	IJ
75-35-4	1,1-Dichloroethene	5.	IU
75-34-3	1,1-Dichloroethane	5.	IU
540-59-0	Trans-1,2-Dichloroethylene	5.	IU
67-66-3	Chloroform	5.	IU
107-02-2	1,2-Dichloroethane	5.	IU
71-55-6	1,1,1-Trichloroethane	5.	IU
56-23-5	Carbon Tetrachloride	5.	IU
75-27-4	Bromodichloromethane	5.	IU
78-87-5	1,2-Dichloropropane	5.	IU
10061-01-5	cis-1,3-Dichloropropene	5.	IU
110-75-8	2-Chloroethyl vinyl ether	10.	IU
79-01-6	Trichloroethylene	5.	IU
124-48-1	Dibromochloromethane	5.	IU
79-00-5	1,1,2-Trichloroethane	5.	IU
71-43-2	Benzene	5.	IU
10061-02-6	trans-1,3-Dichloropropene	5.	IU
75-25-2	Bromoform	5.	IU
127-18-4	Tetrachloroethylene	5.	IU
79-34-5	1,1,2,2-Tetrachloroethane	5.	IU
108-88-3	Toluene	2.	IJ
108-90-7	Chlorobenzene	5.	IU
100-41-4	Ethylbenzene	5.	IU
133-02-7	M-Xylene	5.	IU
95-47-6	O,P-Xylene	5.	IU
106-42-3			
95-50-1	1,2-Dichlorobenzene	5.	IU
541-73-1	1,3-Dichlorobenzene	5.	IU
106-46-7	1,4-Dichlorobenzene	5.	IU
1634-04-4	Methyl-t-Butyl Ether	5.	IU
75-65-0	t-Butyl Alcohol	10.	IU

000114

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FAX: (201) 361-1021

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ab Name: ECRA LABORATORIES,INC.

Client Name: .

SAMPLE ID #: METHOD BLANK LAB ID #: N/A

ata File: >G2108

Methanol Ext.:

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

PA METHOD #624

Dilution Factor: 1.00000

Concentration Units: UG/L

UMBER OF TIC'S DETECTED: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Peaks Detected			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

NR = Not reviewed FORM I VOA-TIC 1/87 Rev.

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QUANT REPORT

Operator ID: MAURIE
Output File: ^G2108::QT
Data File: >G2108::B2
Name: .
Misc: METHOD BLANK-04/08/92 TUNING

Quant Rev: 6
Quant Time: 920408 13:41
Injected at: 920408 07:24
Dilution Factor: 1.00000

ID File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920408 13:37

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	9.17	425	29606	50.00	UG/L	81
6)	METHYLENE CHLORIDE	5.96	262	6259	7.75	UG/L	100
11)	TRICHLOROFLUOROMETHANE	7.97	364	3148	2.94	UG/L J	100
18)	1,2-DICHLOROETHANE-D4 (SURG.)	11.95	566	27745	46.59	UG/L 93	94
19)	*1,4-DIFLUOROBENZENE	19.58	953	54485	50.00	UG/L	100
38)	*CHLOROBENZENE-D5	24.54	1205	46883	50.00	UG/L	100
40)	TOLUENE-D8 (SURG.)	23.32	1143	52440	46.31	UG/L 93	84
42)	TOLUENE	23.50	1152	1097M	1.62	UG/L J	52
45)	BROMOFLUOROBENZENE (SURG.)	28.88	1425	39957M	51.11	UG/L 102	83

* Compound is ISTD

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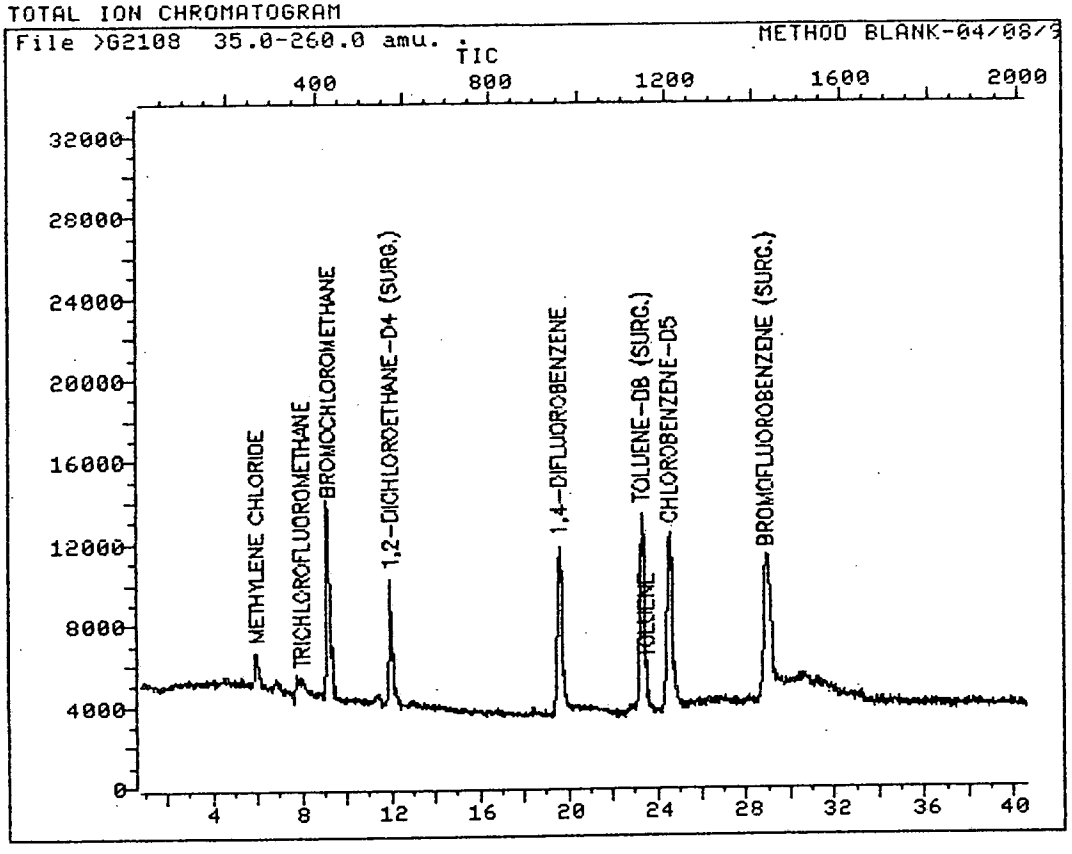
TOTAL ION CHROMATOGRAM



Data File: >G2108::B2 Quant Output File: ^G2108::QT
Name: .
Misc: METHOD BLANK-04/08/92 TUNING

Id File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920408 13:37

Operator ID: MAURIE
Quant Time: 920408 13:41
Injected at: 920408 07:24

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.S data file header from : >G2108

ample: . Operator: MAURIE MS 4/08/92 7:24
isc : METHOD BLANK-04/08/92 TUNING
Sys. #: 1 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: VOA1 Tuning file: MTG001 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 290 Transfer line temp. : 0

Chromatographic temperatures :	45.	220.	0.	0.	0.
Chromatographic times, min. :	3.0	16.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	8.0	0.0	0.0	1.0	0.0

No peaks found.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	112688.	9.17	.82 - 14.38
2	50.0	128363.	19.58	14.38 - 22.06
3	50.0	145259.	24.54	22.06 - 40.54

Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 1.00 Amount Used (AU) = 1.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

7:44 AM THU., 9 APR., 1992

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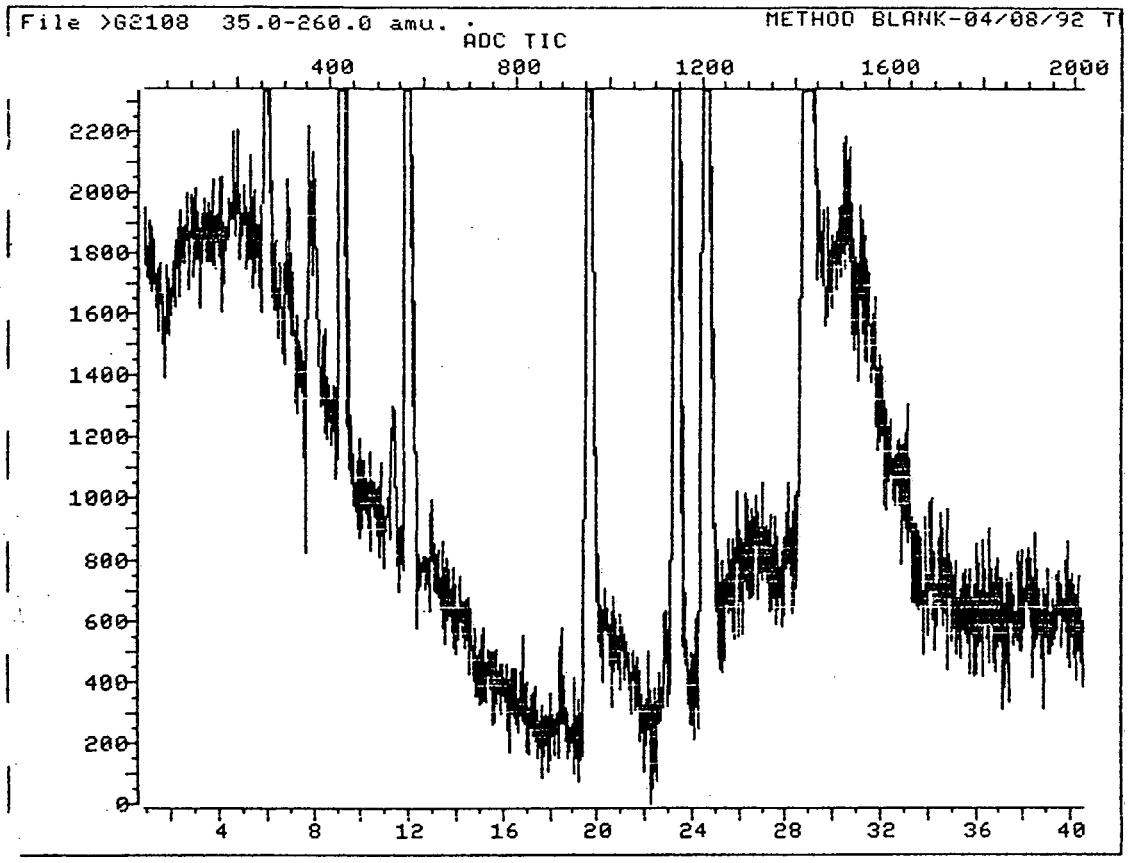

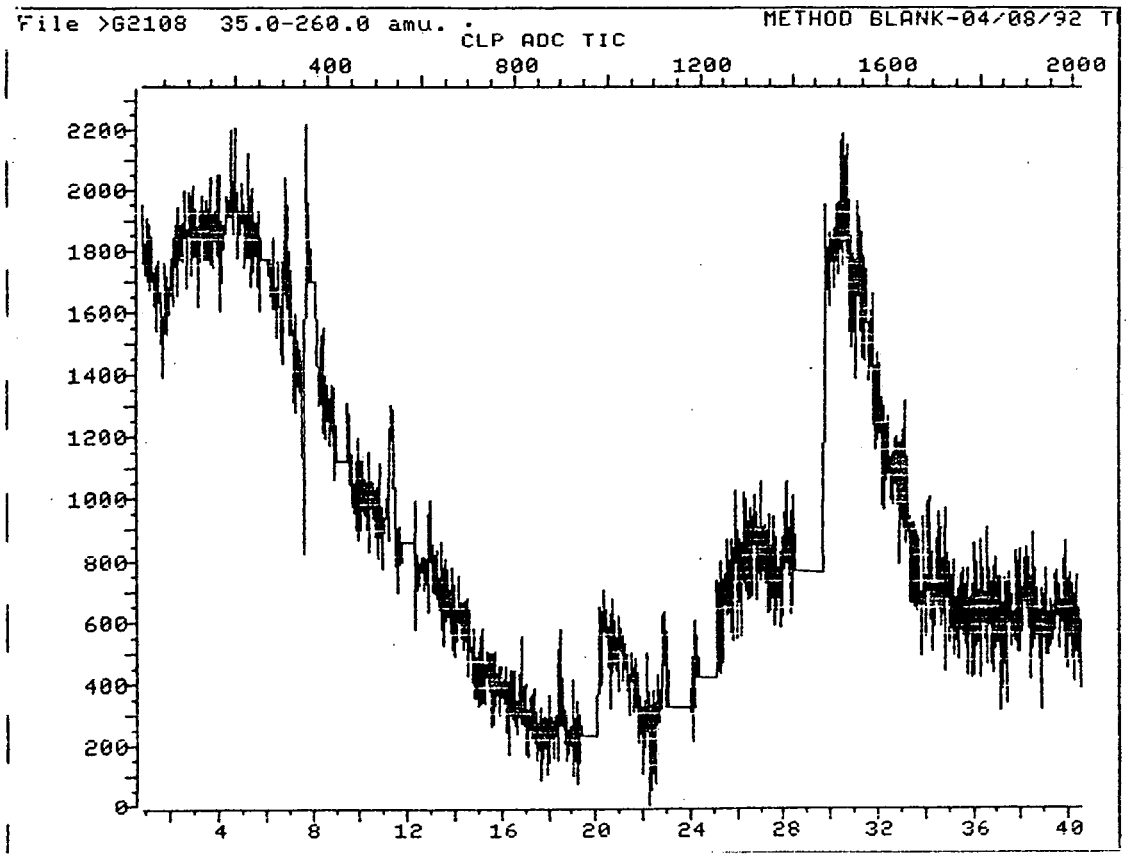

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273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
FAX: (201) 361-1021

```
working...
draw complete...
```

```
working...
.   There were no UNKNOWNS
```

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WATER SPIKE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

LAB I.D. #: 92-04-739 UNITS: ug/L
LOW-LEVEL: ____ SAMPLE ID NO: 92-16-14-WC2
EXTRACTION DATE: _____ ANALYZED: 4/6/92
CONT: _____

COMPOUND	CONC. SPIKE ADDED	SAMPLE RESULT	CONC. MS	PERCENT RECOVERY	CONC. MSD	PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
VOA									
1,1 DICHLORO-ETHENE:	50.0	ND	47.1	94	47.7	95	1.3	14	61-145
TRICHLOROETHENE:	50.0	ND	52.1	104	52.0	104	0.2	14	71-120
CHLOROBENZENE:	50.0	ND	51.1	102	50.0	100	2.2	13	75-130
TOLUENE:	50.0	ND	51.3	103	50.7	101	1.2	13	76-125
BENZENE**:	50.0	ND	54.5	109	53.0	106	2.8	11	76-127
B/N									
1,2,4-TRICHLORO-BENZENE*:								28	39--98
ACENAPHTHENE:								31	46-118
2,4 DINITRO--TOLUENE:								38	24--96
PYRENE:								31	26-127
N NITROSODI-n-PROPYLAMINE:								38	41-118
1,4-DICHLORO-BENZENE:								28	36--97
ACID									
PENTACHLOROPHENOL:								50	9--103
PHENOL*:								42	12--85
2 CHLOROPHENOL:								40	27-123
4 CHLORO 3 METHYL-PHENOL:								42	23--97
4 NITROPHENOL:								50	10--80
PEST									
LINDANE:								15	56-123
HEPTACHLOR:								20	40-131
ALDRIN:								22	40-120
DIELDRIN:								18	52-128
ENDRIN:								21	58-121
4,4 DDT:								27	38-127

RPD
VOA'S: 0 OUT OF: 5 OUTSIDE QC LIMITS
A/E'S: ____ OUT+OF: ____ OUTSIDE QC LIMITS
B/N'S: ____ OUT^OF: ____ OUTSIDE QC LIMITS
PEST : ____ OUT~OF: ____ OUTSIDE QC LIMITS

RECOVERY
VOA*: 0 OUT-OF: 10 OUTSIDE QC LIMIT
A/E*: ____ OUT|OF: ____ OUTSIDE QC LIMIT
B/N*: ____ OUT=OF: ____ OUTSIDE QC LIMIT
PEST: ____ OUT"OF: ____ OUTSIDE QC LIMIT

COMMENTS: NONE.

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NJDEP LAB CERT. I.D. NO. 14580
273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
FAX: (201) 361-1021

QUANT REPORT

Operator ID: MAURIE Quant Rev: 6 Quant Time: 920406 11:15
Output File: ^G2080::QT Injected at: 920406 10:23
Data File: >G2080::B2 Dilution Factor: 1.00000
Name: MATRIX SPIKE WATER
Misc: 92-16-14-W-2-MS/04/06/92 PORT 4

ID File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920330 12:29

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	9.35	433	33307	50.00	UG/L	83
4)	VINYL CHLORIDE	2.98	110	25630	56.55	UG/L	98
6)	METHYLENE CHLORIDE	6.08	267	47232	63.13	UG/L	100
12)	1,1-DICHLOROETHENE	8.92	411	46667	47.13	UG/L	88
15)	TRANS-1,2-DICHLOROETHYLENE	10.97	515	25750	48.78	UG/L	87
17)	1,2-DICHLOROETHANE	12.31	583	35226	44.34	UG/L	94
18)	1,2-DICHLOROETHANE-D4 (SURG.)	12.21	578	31948	42.14	UG/L 84	94
19)	*1,4-DIFLUOROBENZENE	19.93	970	65964	50.00	UG/L	100
20)	1,1,1-TRICHLOROETHANE	13.55	646	45114	48.46	UG/L	99
23)	CARBON TETRACHLORIDE	13.96	667	39773	47.20	UG/L	91
28)	TRICHLOROETHYLENE	16.76	809	32156	52.05	UG/L	81
31)	BENZENE	17.27	835	63613	54.53	UG/L	100
38)	*CHLOROBENZENE-D5	24.98	1226	53329	50.00	UG/L	100
39)	TETRACHLOROETHYLENE	22.57	1104	21759	50.41	UG/L	89
40)	TOLUENE-D8 (SURG.)	23.72	1162	64522	49.89	UG/L 100	94
42)	TOLUENE	23.93	1173	40981	51.27	UG/L	98
43)	CHLOROBENZENE	25.12	1233	51280	51.11	UG/L	98
45)	BROMOFLUOROBENZENE (SURG.)	29.71	1466	42152M	45.21	UG/L 90	
48)	O,P-XYLENE	32.41	1603	26325M	39.60	UG/L	80
49)	1,2-DICHLOROBENZENE	37.38	1855	55082M	47.21	UG/L	75
50)	1,3-DICHLOROBENZENE	36.35	1803	51597M	43.57	UG/L	81
51)	1,4-DICHLOROBENZENE	38.07	1890	48613M	38.75	UG/L	80

* Compound is ISTD

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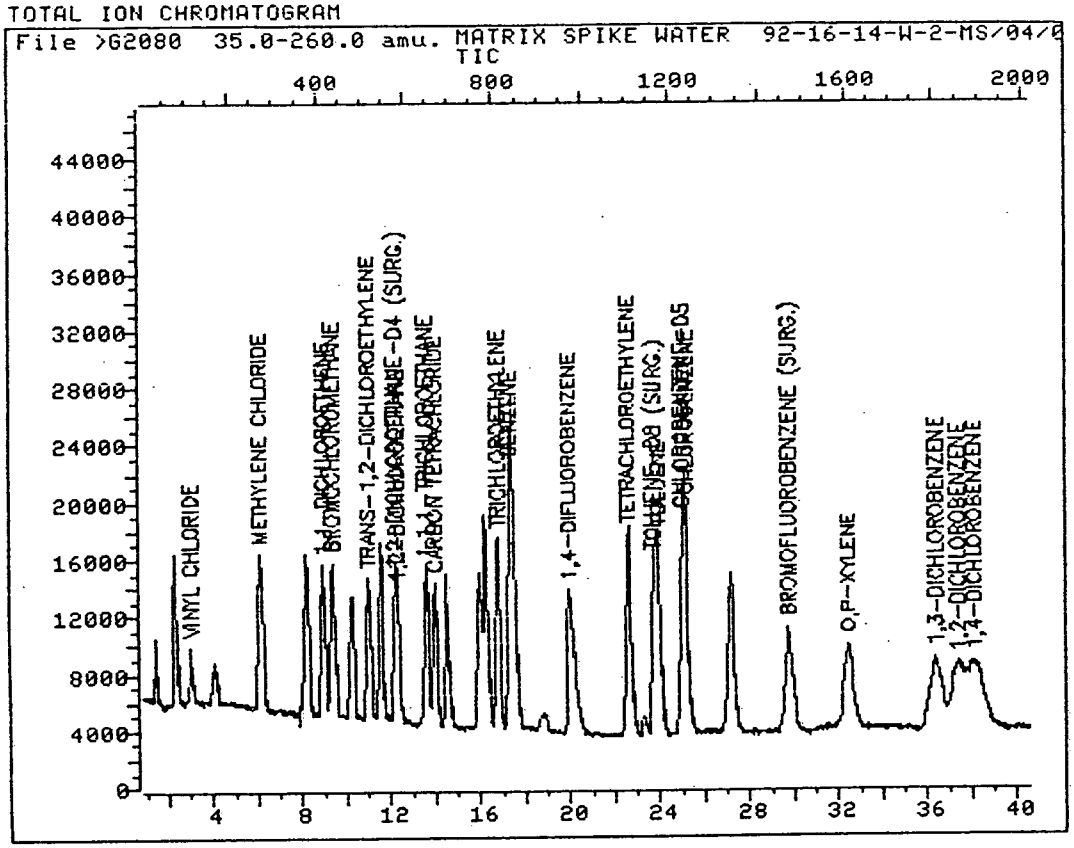
TOTAL ION CHROMATOGRAM



Data File: >G2080::B2 Quant Output File: ^G2080::QT
Name: MATRIX SPIKE WATER
Misc: 92-16-14-W-2-MS/04/06/92 PORT 4

Id File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920330 12:29

Operator ID: MAURIE
Quant Time: 920406 11:15
Injected at: 920406 10:23

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QUANT REPORT

Operator ID: MAURIE Quant Rev: 6 Quant Time: 920406 12:03
Output File: ^G2081::QT Injected at: 920406 11:15
Data File: >G2081::B2 Dilution Factor: 1.00000
Name: MATRIX SPK DUP WATER
Misc: 92-16-14-W-2-MSD/04/06/92 PORT 4

ID File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920330 12:29

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	9.33	433	29699	50.00	UG/L	88
4)	VINYL CHLORIDE	2.95	109	22824	56.47	UG/L	97
6)	METHYLENE CHLORIDE	6.08	268	41833	62.70	UG/L	100
12)	1,1-DICHLOROETHENE	8.90	411	42066	47.65	UG/L	91
15)	TRANS-1,2-DICHLOROETHYLENE	10.97	516	22190	47.14	UG/L	89
17)	1,2-DICHLOROETHANE	12.31	584	33679	47.54	UG/L	93
18)	1,2-DICHLOROETHANE-D4 (SURG.)	12.19	578	29967	44.33	UG/L 89	91
19)	*1,4-DIFLUOROBENZENE	19.95	972	61012	50.00	UG/L	100
20)	1,1,1-TRICHLOROETHANE	13.57	648	45365	52.68	UG/L	96
23)	CARBON TETRACHLORIDE	13.94	667	40936	52.52	UG/L	94
28)	TRICHLOROETHYLENE	16.72	808	29696	51.97	UG/L	79
31)	BENZENE	17.27	836	57236	53.05	UG/L	100
38)	*CHLOROBENZENE-D5	24.96	1226	48995	50.00	UG/L	100
39)	TETRACHLOROETHYLENE	22.54	1103	21579	54.42	UG/L	87
40)	TOLUENE-D8 (SURG.)	23.72	1163	59255	49.87	UG/L 100	84
42)	TOLUENE	23.90	1172	37230	50.70	UG/L	98
43)	CHLOROBENZENE	25.08	1232	46117	50.03	UG/L	97
45)	BROMOFLUOROBENZENE (SURG.)	29.67	1465	41266	48.18	UG/L 96	80
48)	O,P-XYLENE	32.29	1598	24738M	40.50	UG/L	
49)	1,2-DICHLOROBENZENE	37.24	1849	49655M	46.32	UG/L	94
50)	1,3-DICHLOROBENZENE	36.26	1799	52474M	48.23	UG/L	90
51)	1,4-DICHLOROBENZENE	37.93	1884	57604M	49.97	UG/L	91

* Compound is ISTD

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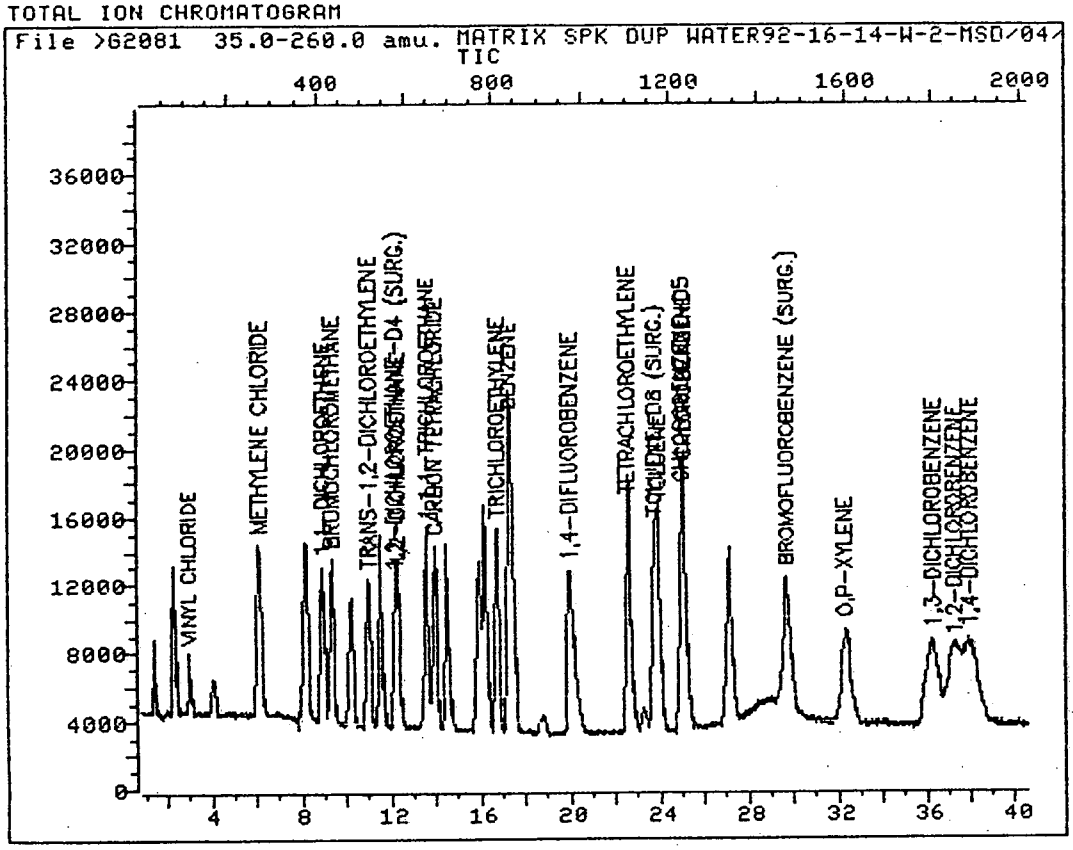
TOTAL ION CHROMATOGRAM



Data File: >G2081::B2 Quant Output File: ^G2081::QT
Name: MATRIX SPK DUP WATER
Misc: 92-16-14-W-2-MSD/04/06/92 PORT 4

Id File: MSDX::B2
Title: VOLATILE ORGANIC ANALYSIS BY EPA 624
Last Calibration: 920330 12:29

Operator ID: MAURIE
Quant Time: 920406 12:03
Injected at: 920406 11:15

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AARON ENVIRONMENTAL

92-33-01

BASE NEUTRAL EXTRACTABLES

SEMI - VOLATILES

(BN)

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3.0 QA/QC DATA SUMMARY

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METHODOLOGY SUMMARY

This summary is based upon ECRA Labs, Inc. Standard Operating Procedure No. SOP-EL-024.

1.0 Parameter: **Semi Volatile Analysis - Base/Neutrals and Acids in Water.**

2.0 Reference: Code of Federal Regulations 40, Pt. 136; Appendix A, EPA Method #625.

3.0 Method Description:

3.1 Sample Preparation: One liter of water sample is extracted with methylene chloride in a separatory funnel and subsequently filtered through sodium sulfate. This process is repeated twice, under acidic conditions and then again under basic conditions. The extract is filtered through sodium sulfate into a Kuderna-Danish Apparatus. The apparatus is placed on a water bath to remove the excess methylene chloride and the extract is concentrated to a volume of 1ml.

3.2 Calibration: Calibration is achieved by running a series of semi-volatile organic standards on a Gas Chromatograph/Mass Spectrometer which is interfaced with an HP-1000 RTE-6/VM computer system. The computer detects, acquires, and stores all data generated during the program and calculates a response factor for each contaminant injected. The computer identifies the peaks by comparing the retention time and the extracted ion current profile to that which is stored in a library file.

3.3 Sample Analysis: 2 ul of the extract is injected into a Gas Chromatograph/Mass Spectrometer equipped with a J & W-DB5 capillary column. The gas chromatograph undergoes a temperature ramp from 50°C to 300°C at a rate of 8°C/min. for the separation of semi-volatile contaminants.

3.4 Calculation: Qualitative identification is obtained by the same method as described in 3.2. Quantitation is achieved by comparison of one characteristic mass (m/z) abundance of a specific analyte with a characteristic mass (m/z) abundance of an internal QA/QC standard.

000128

4.0 MDL: The MDL for semi-volatile organics is dependant upon any interferences that may appear in the chromatogram. A typical MDL is 10 micrograms per liter. [PPB]

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SECTION 1.0

SAMPLE ANALYSIS REPORTS

QUANT REPORTS WITH TOTAL ION CHROMATOGRAMS

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET-(PAGE 1 OF 2)

ECRA LABORATORIES, INC.

LABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: AARON 92-33-01

SAMPLE ID #: 92-33-01-MW-2 LAB ID #:92-04-803

DATA FILE: >F4719::F1 DILUTION FACTOR: 1.00000

EXTRACTION:SEPF METHOD DETECTION LIMIT: 10 UG/L

DATE SAMPLED:04/13/92 DATE RECEIVED:04/13/92

DATE EXTRACTED:04/14/92 DATE ANALYZED: 4/15/92 15:11

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
111-44-4	bis(2-Chloroethyl)Ether	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
62-75-9	N-Nitrosodimethylamine	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	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
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
87-68-3	Hexachlorobutadiene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
91-58-7	2-Chloronaphthalene	10.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
83-32-9	Acenaphthene	10.	U
92-87-5	Benzidine	80.	U
121-14-2	2,4-Dinitrotoluene	10.	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET-(PAGE 2 OF 2)

ECRA LABORATORIES, INC.

LABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: AARON 92-33-01

SAMPLE ID #: 92-33-01-MW-2 LAB ID #:92-04-803

DATA FILE: >F4719::F1 DILUTION FACTOR: 1.00000

EXTRACTION:SEPF METHOD DETECTION LIMIT: 10 UG/L

DATE SAMPLED:04/13/92 DATE RECEIVED:04/13/92

DATE EXTRACTED:04/14/92 DATE ANALYZED: 4/15/92 15:11

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	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	20.	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-octylphthalate	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	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

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1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES, INC.

Client Name: AARON 92-33-01

SAMPLE ID #: 92-33-01-MW-2 LAB ID # 92-04-803

Data File: >F4719

Extraction: SEPF

EPA METHOD #625

Dilution Factor: 1.00000

Concentration Units: UG/L

NUMBER OF TIC'S DETECTED: 5

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	57556	1,2-Propanediol	5.66	26.	*/**
2.		Unknown	12.42	110.	
3.		Unknown	12.49	58.	
4.		Unknown	12.76	180.	
5.		Unknown	25.59	6.	
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					

NR = Not reviewed

FORM I SV-TIC

1/87 Rev.

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QUANT REPORT

Operator ID: JEAN Quant Rev: 6 Quant Time: 920415 16:16
Output File: ^F4719::QT Injected at: 920415 15:11
Data File: >F4719::F1 Dilution Factor: 1.00000
Name: AARON 92-33-01
Misc: 92-33-01-MW-2 04/13-13-14/92 BTL# 4

ID File: BNW2::M1
Title: BASE NEUTRAL EXTRACTABLES BY EPA METHOD 625
Last Calibration: 920407 16:47

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*1,4-DICHLOROBENZENE-D4	12.92	441	19045	50.00	UG/L	93
10)	*NAPHTHALENE-D8	16.94	662	66223	50.00	UG/L	98
11)	NITROBENZENE-D5(SURROGATE)	14.67	537	14079	24.83	UG/L 50	93
18)	*ACENAPHTHENE-D10	22.79	984	48995	50.00	UG/L	91
20)	2-FLUOROBIPHENYL(SURROGATE)	20.48	857	36690	30.80	UG/L 62	89
30)	*PHENANTHRENE-D10	27.69	1253	112835	50.00	UG/L	94
38)	*CHRYSENE-D12	36.84	1755	179569	50.00	UG/L	97
41)	TERPHENYL-D14(SURROGATE)	32.90	1539	94859	31.68	UG/L 63	94
47)	*PERYLENE-D12	45.45	2228	173150	50.00	UG/L	95

* Compound is ISTD

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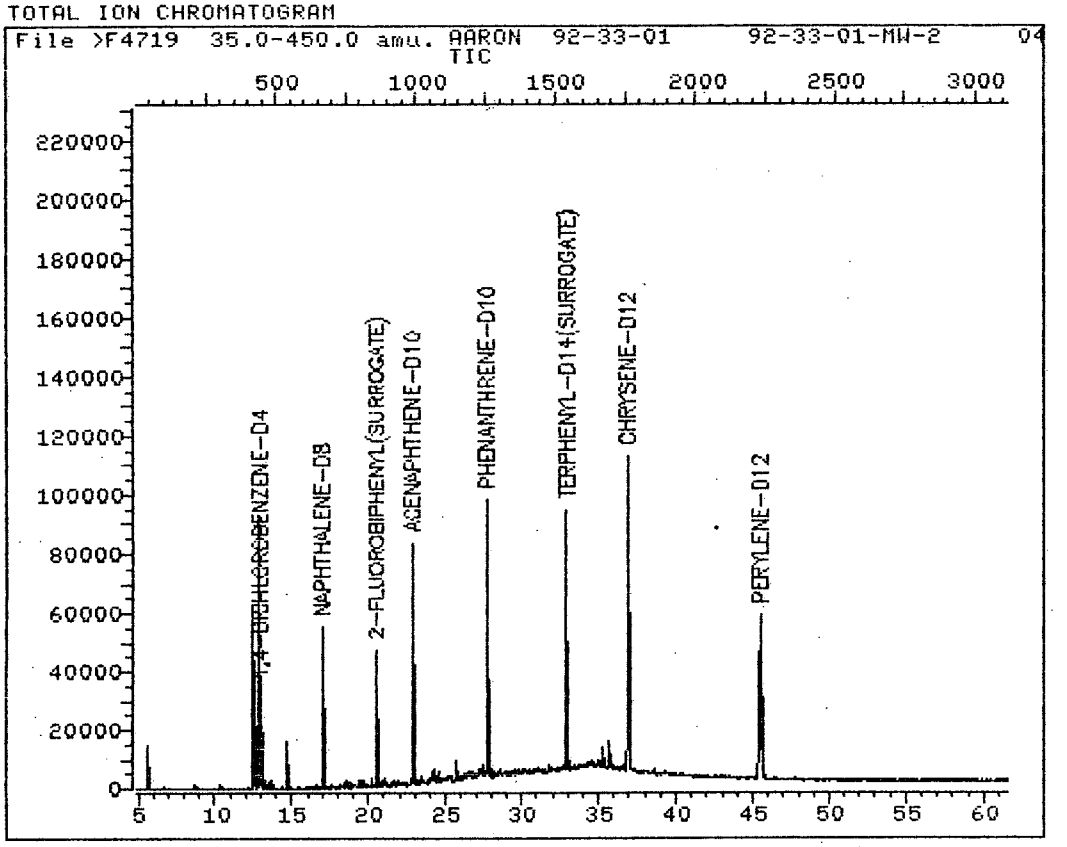
TOTAL ION CHROMATOGRAM



Data File: >F4719::F1 Quant Output File: ^F4719::QT
Name: AARON 92-33-01
Misc: 92-33-01-MW-2 04/13-13-14/92 BTL# 4

Id File: BNW2::M1
Title: BASE NEUTRAL EXTRACTABLES BY EPA METHOD 625
Last Calibration: 920407 16:47

Operator ID: JEAN
Quant Time: 920415 16:16
Injected at: 920415 15:11

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MS data file header from : >F4719

Sample: AARON 92-33-01 Operator: JEAN MS 4/15/92 15:11
Misc : 92-33-01-MW-2 04/13-13-14/92 BTL# 4
Sys. #: 2 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: PRIORF Tuning file: MTF001 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 290 Transfer line temp. : 240

Chromatographic temperatures :	50.	300.	301.	301.	0.
Chromatographic times, min. :	3.0	20.0	20.0	10.0	0.0
Chromatographic rate, deg/min:	8.0	1.0	.2	1.0	0.0

>F4719 AARON 92-33-01 92-33-01-MW-2 04/13-13-14/92
35.01 450.0 CLP ADC TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 8 Bunching: 1
Dnslope: 0.00 Results File IF4719 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	5.66	37	41	50	15135	44584	43012	14.63	5.908
2	12.42	408	413	415	62715	187055	186276	63.34	25.587
3	12.49	415	417	420	43556	99358	95864	32.60	13.16
4	12.76	427	432	435	93069	296395	294066	100.00	40.39
5	25.59	1134	1138	1146	7509	70422	39620	13.47	5.442
6	~~27.12~~	~~1215~~	~~1222~~	~~1225~~	~~2622~~	~~58379~~	~~16520~~	~~5.62~~	~~2.26~~
7	~~35.28~~	~~1662~~	~~1665~~	~~1668~~	~~6120~~	~~67922~~	~~16096~~	~~5.47~~	~~2.211~~
8	~~35.69~~	~~1688~~	~~1692~~	~~1700~~	~~9010~~	~~133879~~	~~36554~~	~~12.43~~	~~5.021~~

Sum of corrected areas: 728008.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	82604.	12.92	4.94 - 14.93
2	50.0	155065.	16.94	14.93 - 19.86
3	50.0	252696.	22.79	19.86 - 25.24
4	50.0	314680.	27.69	25.24 - 32.26
5	50.0	501741.	36.84	32.26 - 41.15
6	50.0	501889.	45.46	41.15 - 61.55

Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 1.00 Amount Used (AU) = 1.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

6:41 PM WED., 15 APR., 1992

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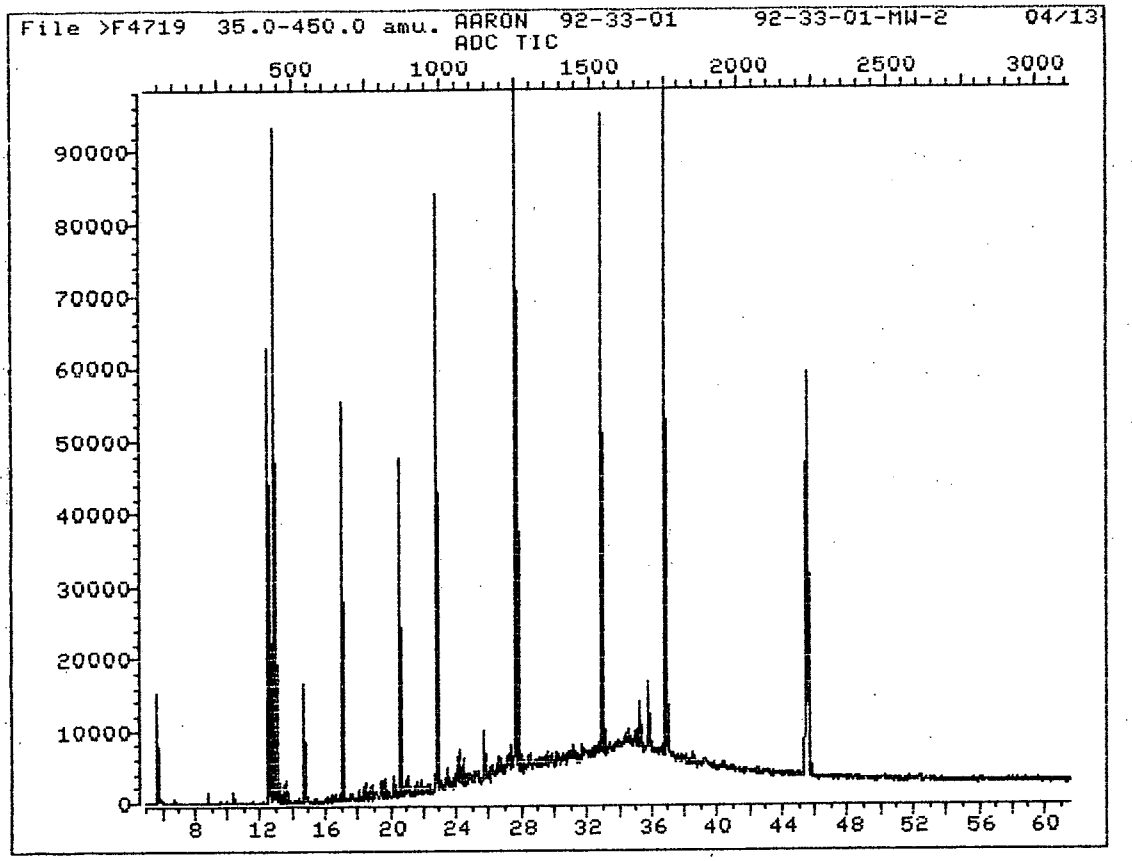

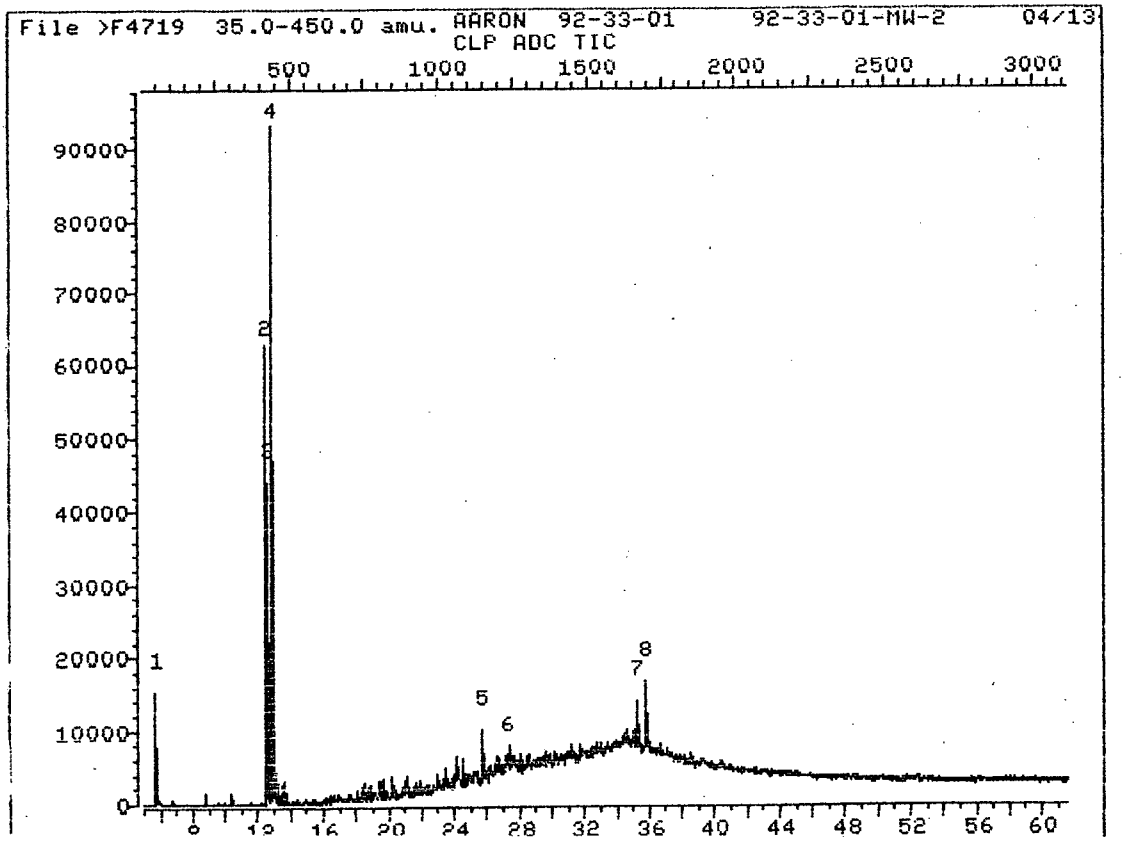

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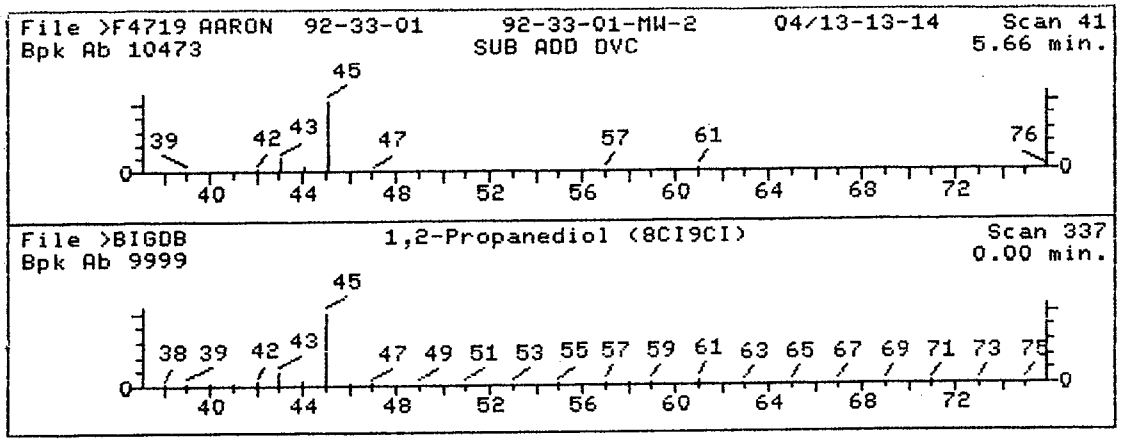

. Unknown #,1
Area = 43012.00 Tentative Concentration is 26.00

1. 1,2-Propanediol (8CI9CI) 76 C3H8O2

Sample file: >F4719 Spectrum #: 41
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.	52	57556	337	"BIGDB	38	45	1	0	72	20	20	1

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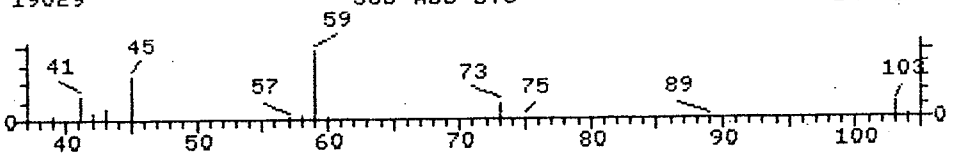
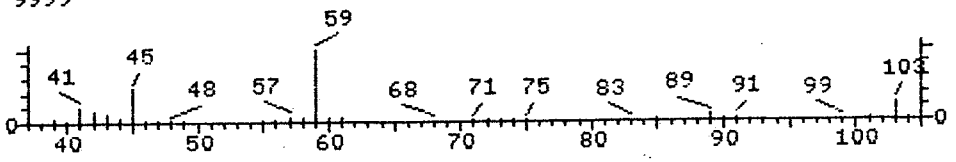
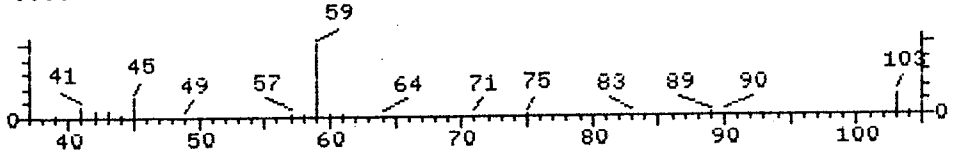
File >F4719 AARON 92-33-01 92-33-01-MW-2 04/13-13-14 Scan 413
Bpk Ab 19029 SUB ADD DVC 12.42 min.



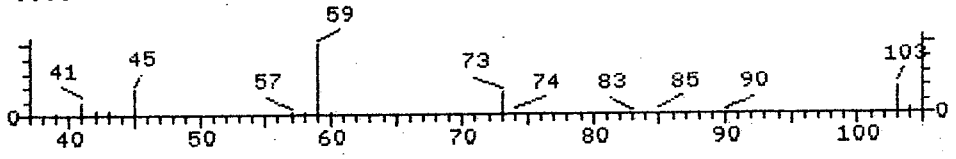
File >BIGDB 2-Propanol, 1,1'-oxybis- (9CI) Scan 1708
Bpk Ab 9999 0.00 min.



File >BIGDB 1-Propanol, 2-(2-hydroxypropoxy)- (8CI9CI) Scan 1706
Bpk Ab 9999 0.00 min.



File >BIGDB 2-Propanol, 1-(2-methoxy-1-methylethoxy)- (8CI9CI Scan 1724
Bpk Ab 9999 0.00 min.



Unknown #,2
Area = 186276.0 Tentative Concentration is 110.00

1.	2-Propanol, 1,1'-oxybis- (9CI)	134 C6H14O3
2.	1-Propanol, 2-(2-hydroxypropoxy)- (8CI9CI)	134 C6H14O3
3.	2-Propanol, 1-(2-methoxy-1-methylethoxy)- (8CI9CI)	148 C7H16O3
4.	Formamide, N-methyl- (8CI9CI)	59 C2H5NO
5.	1-Propanol, 2-ethoxy- (8CI9CI)	104 C5H12O2

unknown

Sample file: >F4719 Spectrum #: 413
Search speed: 1 Tilting option: N No. of ion ranges searched: 41

000138

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	42	110985	1708	"BIGDB	51	46	2	0	76	23	17	13
2.	37	106627	1706	"BIGDB	37	49	1	0	79	26	14	14
3.	27	20324327	1724	"BIGDB	40	53	1	0	57	36	10	13
4.	20*	123397	1582	"BIGDB	21	44	0	0	77	51	5	15
5.	20*	19089475	1611	"BIGDB	20	62	1	0	49	54	5	14

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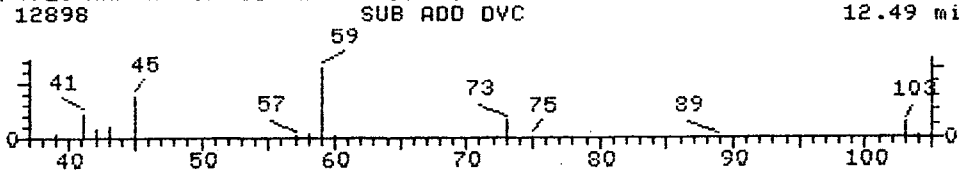
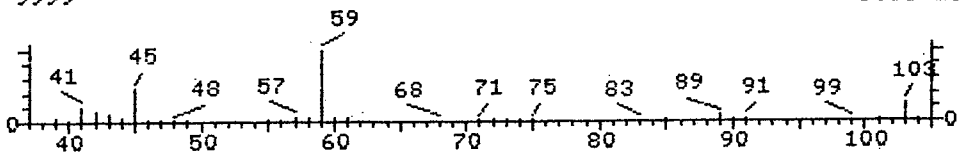
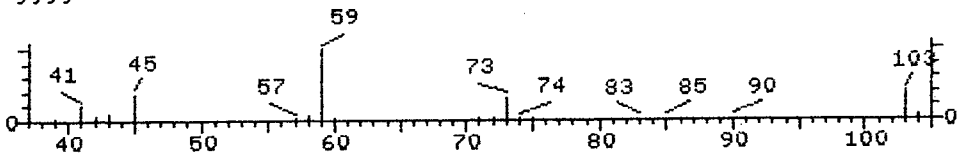
File >F4719 AARON 92-33-01 92-33-01-MW-2 04/13-13-14 Scan 417
Bpk Ab 12898 SUB ADD DVC 12.49 min.



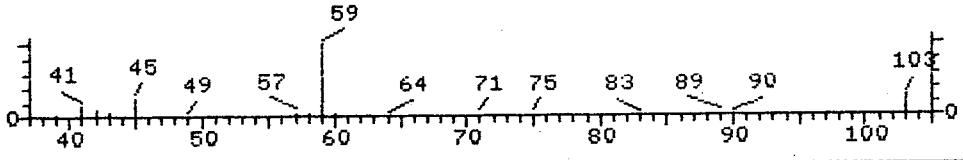
File >BIGDB 2-Propanol, 1,1'-oxybis- (9CI) Scan 1708
Bpk Ab 9999 0.00 min.



File >BIGDB 2-Propanol, 1-(2-methoxy-1-methylethoxy)- (8CI9CI Scan 1724
Bpk Ab 9999 0.00 min.



File >BIGDB 1-Propanol, 2-(2-hydroxypropoxy)- (8CI9CI) Scan 1706
Bpk Ab 9999 0.00 min.



Unknown #,3
Area = 95864.00 Tentative Concentration is 58.00

1. 2-Propanol, 1,1'-oxybis- (9CI) 134 C6H14O3
2. 2-Propanol, 1-(2-methoxy-1-methylethoxy)- (8CI9CI) 148 C7H16O3
3. 1-Propanol, 2-(2-hydroxypropoxy)- (8CI9CI) 134 C6H14O3
4. Formamide, N-methyl- (8CI9CI) 59 C2H5NO

unknown

Sample file: >F4719 Spectrum #: 417
Search speed: 1 Tilting option: N No. of ion ranges searched: 41

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	60	110985	1708	"BIGDB	51	46	2	0	84	12	30	1[illegible]
2.	42	20324327	1724	"BIGDB	46	47	2	0	80	23	17	13
3.	37	106627	1706	"BIGDB	37	49	1	0	78	27	14	1[illegible]
4.	25*	123397	1582	"BIGDB	21	44	1	0	80	50	7	1[illegible]

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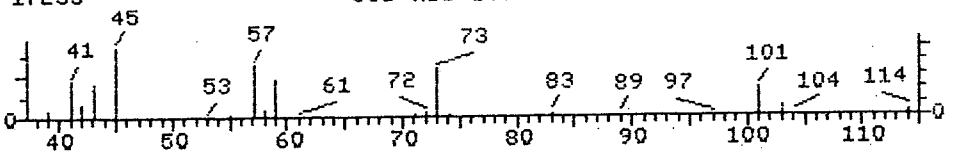
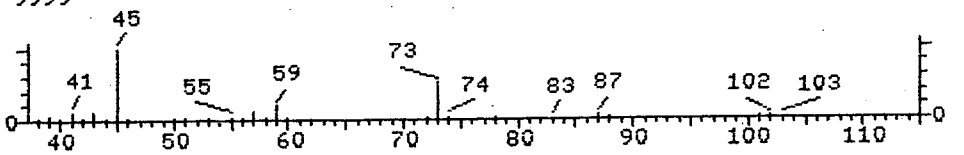
File >F4719 AARON 92-33-01 92-33-01-MW-2 04/13-13-14 Scan 432
Bpk Ab 17235 SUB ADD DVC 12.76 min.



File >BIGDB Butane, 2-ethoxy- (9CI) Scan 1654
Bpk Ab 9999 0.00 min.



Unknown #,4
Area = 294066.0 Tentative Concentration is 180.00

1. Butane, ~~2-ethoxy-~~ (9CI) 102 C6H14O

unknown

Sample file: >F4719 Spectrum #: 432
Search speed: 1 Tilting option: N No. of ion ranges searched: 41

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	15*	2679870	1654	"BIGDB	25	67	1	0	92	59	3	14

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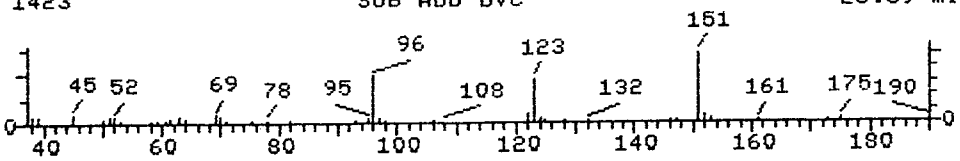
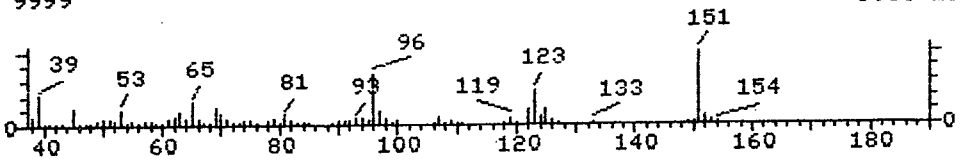
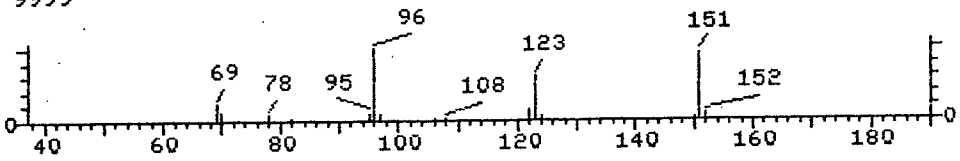
File >F4719 AARON 92-33-01 92-33-01-MW-2 04/13-13-14 Scan 1138
Bpk Ab 1423 SUB ADD DVC 25.59 min.



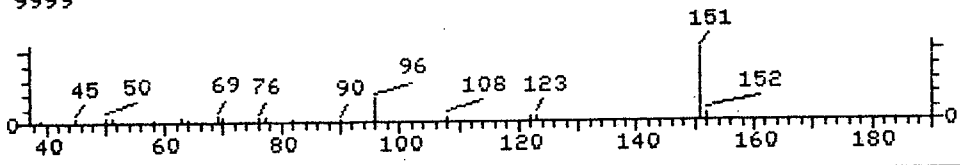
File >BIGDB Thiocyanic acid, 4-hydroxyphenyl ester (9CI) Scan 17480
Bpk Ab 9999 0.00 min.



File >BIGDB 2(3H)-Benzothiazolone (9CI) Scan 17447
Bpk Ab 9999 0.00 min.



File >BIGDB 1,2-Benzisothiazol-3(2H)-one (9CI) Scan 17452
Bpk Ab 9999 0.00 min.



Unknown #,5
Area = 39620.00 Tentative Concentration is 6.00

1.	Thiocyanic acid, 4-hydroxyphenyl ester (9CI)	151 C7H5NOS
2.	2(3H)-Benzothiazolone (9CI)	151 C7H5NOS
3.	1,2-Benzisothiazol-3(2H)-one (9CI)	151 C7H5NOS
4.	2(3H)-Benzoxazolethione (9CI)	151 C7H5NOS
5.	Benzaldehyde, 3-methoxy-, oxime (9CI)	151 C8H9NO2
6.	Pyridine, 2,3,5,6-tetrafluoro- (8CI9CI)	151 C5HF4N
7.	2-Thiopheneacetonitrile (8CI9CI)	123 C6H5NS

unknown

Sample file: >F4719 Spectrum #: 1138
Search speed: 1 Tilting option: N No. of ion ranges searched: 41

000141

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	60*	3774525	17480	"BIGDB	28	98	3	0	97	12	30	[illegible]
2.	55*	934349	17447	"BIGDB	62	39	2	0	68	33	22	40
3.	28*	2634335	17452	"BIGDB	32	58	2	0	95	41	8	[illegible]
4.	25*	2382969	17478	"BIGDB	34	62	2	0	67	47	7	[illegible]
5.	20*	38489804	17470	"BIGDB	31	45	2	0	86	53	5	[illegible]
6.	20*	2875185	17453	"BIGDB	25	66	2	0	100	52	5	[illegible]
7.	15*	20893305	12670	"BIGDB	34	72	3	0	70	58	3	[illegible]

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET-(PAGE 1 OF 2)

ECRA LABORATORIES, INC.

LABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: AARON 92-33-01

SAMPLE ID #: 92-33-01 F.BLANK

LAB ID #:92-04-804

DATA FILE: >F4717::F1

DILUTION FACTOR: 1.00000

EXTRACTION:SEPF

METHOD DETECTION LIMIT: 10 UG/L

DATE SAMPLED:04/13/92

DATE RECEIVED:04/13/92

DATE EXTRACTED:04/14/92

DATE ANALYZED: 4/15/92 12:47

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
111-44-4	bis(2-Chloroethyl)Ether	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
62-75-9	N-Nitrosodimethylamine	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	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
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
87-68-3	Hexachlorobutadiene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
91-58-7	2-Chloronaphthalene	10.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
83-32-9	Acenaphthene	10.	U
92-87-5	Benzidine	80.	U
121-14-2	2,4-Dinitrotoluene	10.	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET-(PAGE 2 OF 2)

ECRA LABORATORIES, INC.

LABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: AARON 92-33-01

SAMPLE ID #: 92-33-01 F.BLANK

LAB ID #:92-04-804

DATA FILE: >F4717::F1

DILUTION FACTOR: 1.00000

EXTRACTION:SEPF

METHOD DETECTION LIMIT: 10 UG/L

DATE SAMPLED:04/13/92

DATE RECEIVED:04/13/92

DATE EXTRACTED:04/14/92

DATE ANALYZED: 4/15/92 12:47

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	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	20.	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-octylphthalate	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	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

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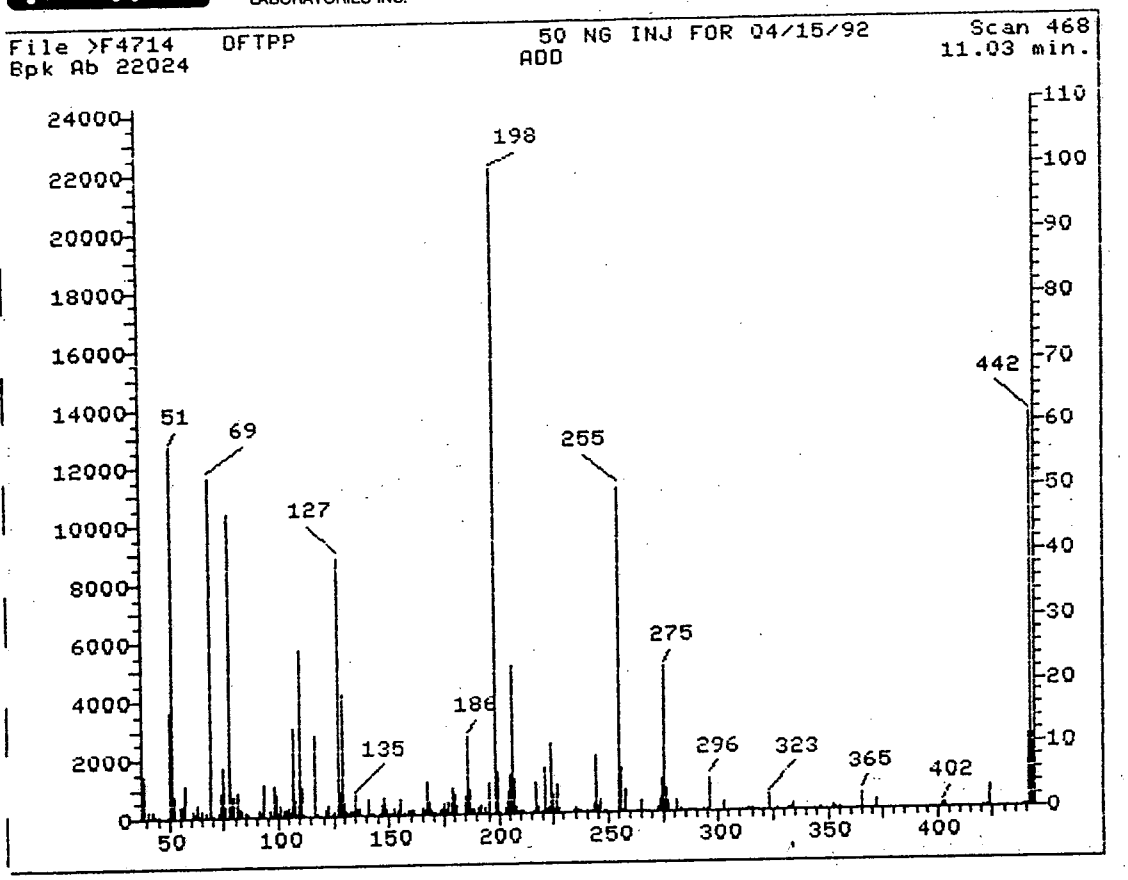

GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
51	30-60% of mass 198	57.65	57.65	Ok
68	Less than 2% of mass 69	.12	.22	Ok
69	(reference only)	52.83	52.83	Ok
70	Less than 2% of mass 69	.23	.43	Ok
127	40-60% of mass 198	40.13	40.13	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.46	6.46	Ok
275	10-30% of mass 198	22.40	22.40	Ok
365	Greater than 1% of mass 198	2.42	2.42	Ok
441	0-100% of mass 443	11.02	98.26	Ok
442	Greater than 40% of mass 198	61.06	61.06	Ok
443	17-23% of mass 442	11.22	18.37	Ok

Injection Date: 04/15/92
Injection Time: 09:17
Data File: >F4714
Scan: 468

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1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECRA LABORATORIES, INC.

Client Name: AARON 92-33-01

SAMPLE ID #: 92-33-01 F.BLANK LAB ID # 92-04-804

Data File: >F4717

Extraction: SEPF

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

EPA METHOD #625

Dilution Factor: 1.00000

Concentration Units: UG/L

NUMBER OF TIC'S DETECTED: 5

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	57556	1,2-Propanediol	5.68	22.	*/**
2.		Unknown	29.44	6.	
3.		Unknown	29.53	6.	
4.		Unknown	31.98	9.	
5.		Unknown	34.34	31.	
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					

NR = Not reviewed FORM I SV-TIC 1/87 Rev.

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QUANT REPORT

Operator ID: JEAN Quant Rev: 6 Quant Time: 920415 13:52
Output File: ^F4717::QT Injected at: 920415 12:47
Data File: >F4717::F1 Dilution Factor: 1.00000
Name: AARON 92-33-01
Misc: 92-33-01 F.BLANK 04/13-13-14/92 BTL# 2

ID File: BNW2::M1
Title: BASE NEUTRAL EXTRACTABLES BY EPA METHOD 625
Last Calibration: 920407 16:47

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*1,4-DICHLOROBENZENE-D4	12.92	443	20678M	50.00	UG/L	97
10)	*NAPHTHALENE-D8	16.95	665	68048	50.00	UG/L	99
11)	NITROBENZENE-D5(SURROGATE)	14.68	540	17918	30.75	UG/L 62	92
18)	*ACENAPHTHENE-D10	22.79	987	50083	50.00	UG/L	90
20)	2-FLUOROBIPHENYL(SURROGATE)	20.49	860	47361	38.89	UG/L 78	93
30)	*PHENANTHRENE-D10	27.69	1257	122044	50.00	UG/L	94
38)	*CHRYSENE-D12	36.85	1761	185720	50.00	UG/L	97
41)	TERPHENYL-D14(SURROGATE)	32.91	1544	119507	38.59	UG/L 77	96
47)	*PERYLENE-D12	45.48	2236	173881	50.00	UG/L	98

* Compound is ISTD

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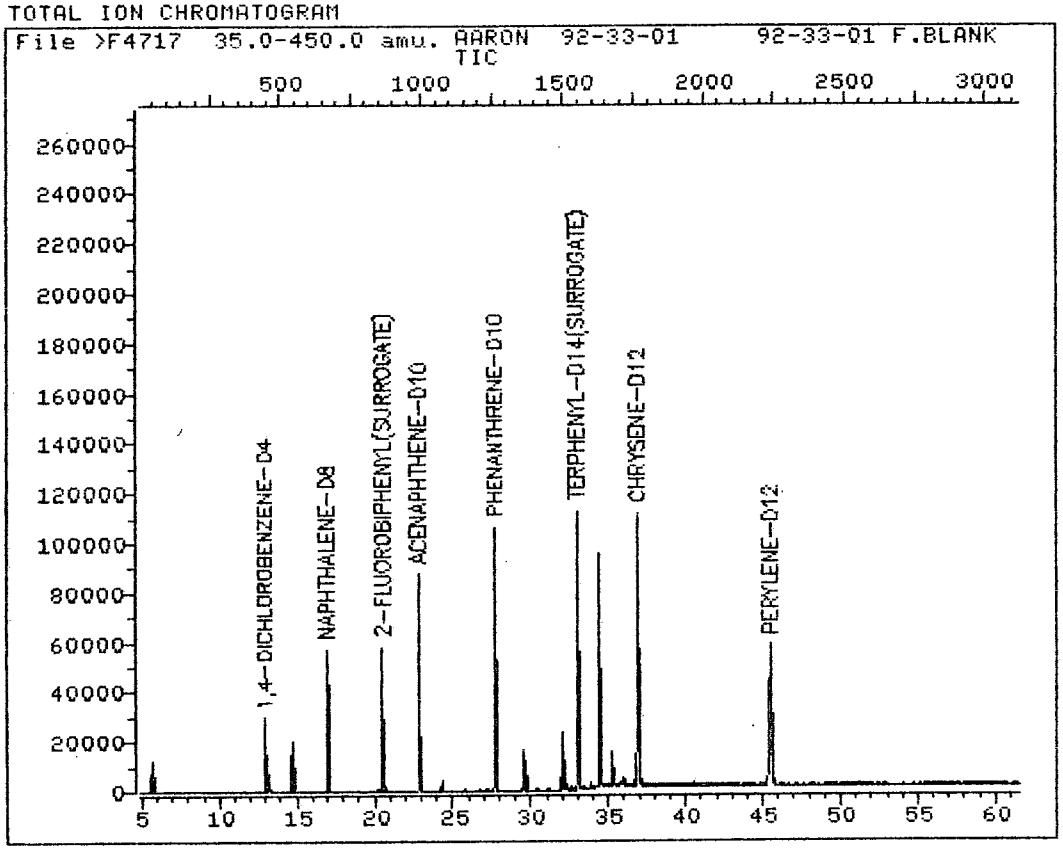
TOTAL ION CHROMATOGRAM



Data File: >F4717::F1 Quant Output File: ^F4717::QT
Name: AARON 92-33-01
Misc: 92-33-01 F.BLANK 04/13-13-14/92 BTL# 2

Id File: BNW2::M1
Title: BASE NEUTRAL EXTRACTABLES BY EPA METHOD 625
Last Calibration: 920407 16:47

Operator ID: JEAN
Quant Time: 920415 13:52
Injected at: 920415 12:47

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ANALYTICAL
LABORATORIES INC.

NJDEP LAB CERT. I.D. NO. 14580
273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
FAX: (201) 361-1021

MS data file header from : >F4717

Sample: AARON 92-33-01 Operator: JEAN MS 4/15/92 12:47
Misc : 92-33-01 F.BLANK 04/13-13-14/92 BTL# 2
Sys. #: 2 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: PRIORF Tuning file: MTF001 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 290 Transfer line temp. : 240

Chromatographic temperatures :	50.	300.	301.	301.	0.
Chromatographic times, min. :	3.0	20.0	20.0	10.0	0.0
Chromatographic rate, deg/min:	8.0	1.0	.2	1.0	0.0

>F4717 AARON 92-33-01 92-33-01 F.BLANK 04/13-13-14/92
35.01 450.0 CLP ADC TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 7 Bunching: 1
Dnslope: 0.00 Results File IF4717 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	5.68	40	44	46	12138	37598	37598	11.18	6.505
2	29.44	1350	1353	1356	16356	40885	40230	11.96	6.960
3	29.53	1356	1358	1365	13444	39182	37578	11.17	6.501
4	31.98	1490	1493	1497	23494	66844	63138	18.77	10.923
5	34.34	1618	1623	1630	93732	359982	336298	100.00	58.183
6	~~35.21~~	~~1667~~	~~1671~~	~~1676~~	~~13901~~	~~64467~~	~~42094~~	~~12.52~~	~~7.283~~
7	~~35.07~~	~~1702~~	~~1707~~	~~1713~~	~~3095~~	~~49725~~	~~21069~~	~~6.26~~	~~3.645~~

Sum of corrected areas: 578005.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	83948.	12.92	4.90 - 14.93
2	50.0	151992.	16.95	14.93 - 19.87
3	50.0	219176.	22.79	19.87 - 25.24
4	50.0	339438.	27.69	25.24 - 32.27
5	50.0	534610.	36.85	32.27 - 41.17
6	50.0	505570.	45.48	41.17 - 61.55

Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 1.00 Amount Used (AU) = 1.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

5:46 PM WED., 15 APR., 1992

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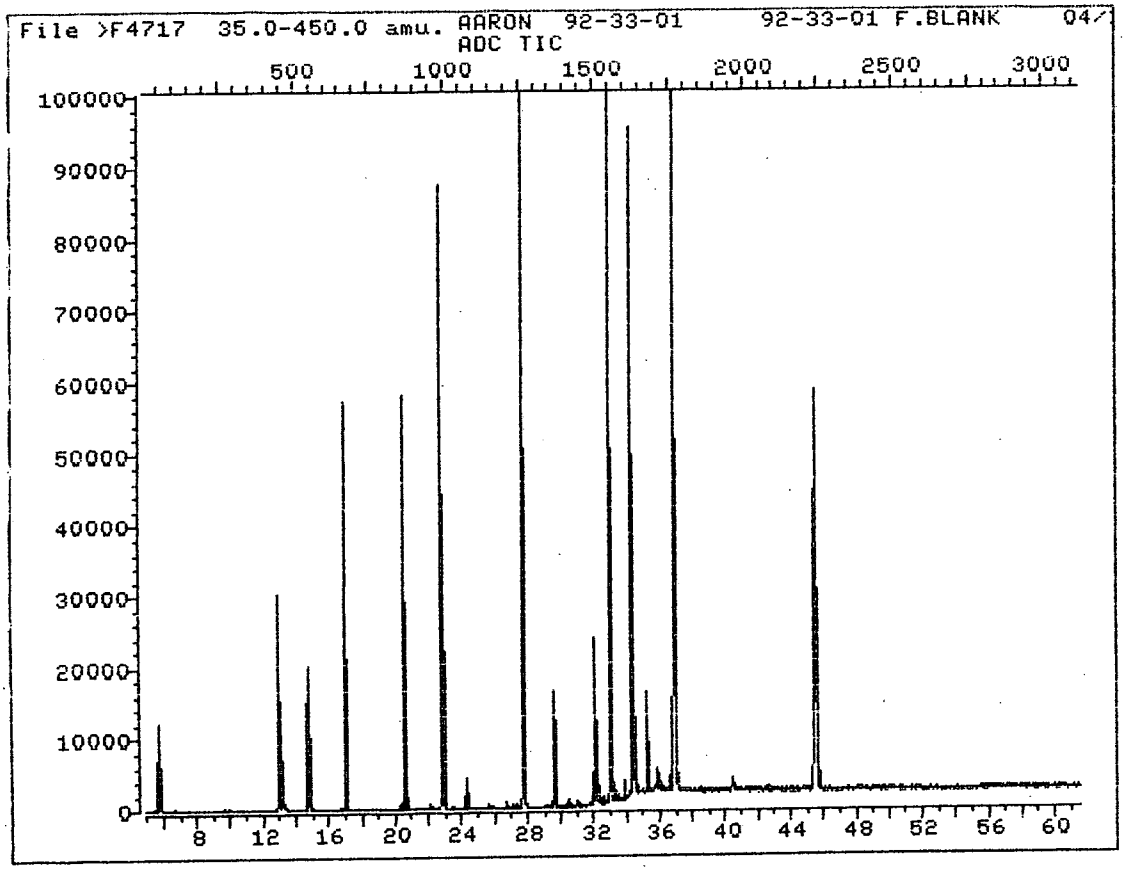

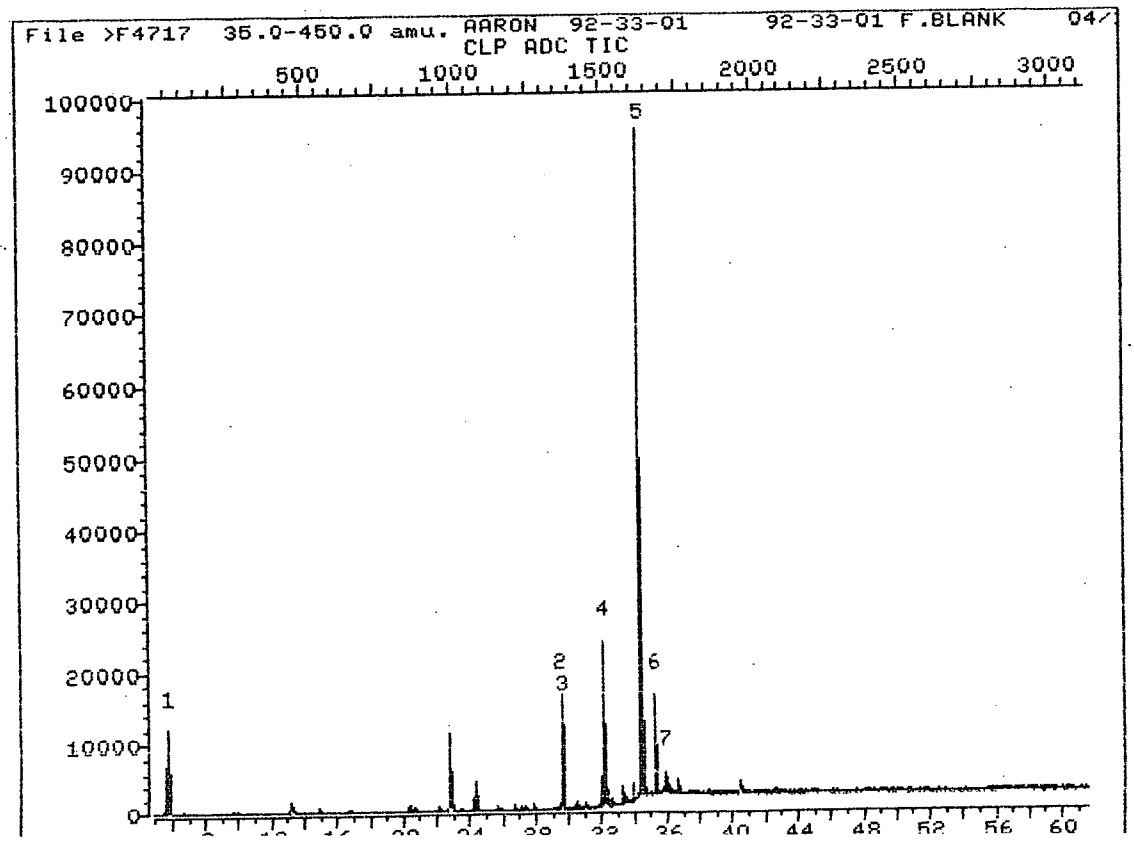

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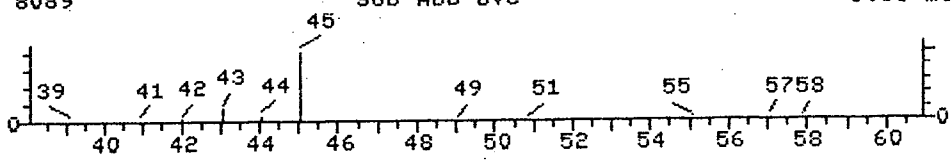
File >F4717 AARON 92-33-01 92-33-01 F.BLANK 04/13-13- Scan 44
Bpk Ab 8089 SUB ADD DVC 5.68 min.



Unknown #,1
Area = 37598.00 Tentative Concentration is 22.00

Sample file: >F4717 Spectrum #: 44

No data base entries were retrieved.

1,2 - Propanediol
S7556

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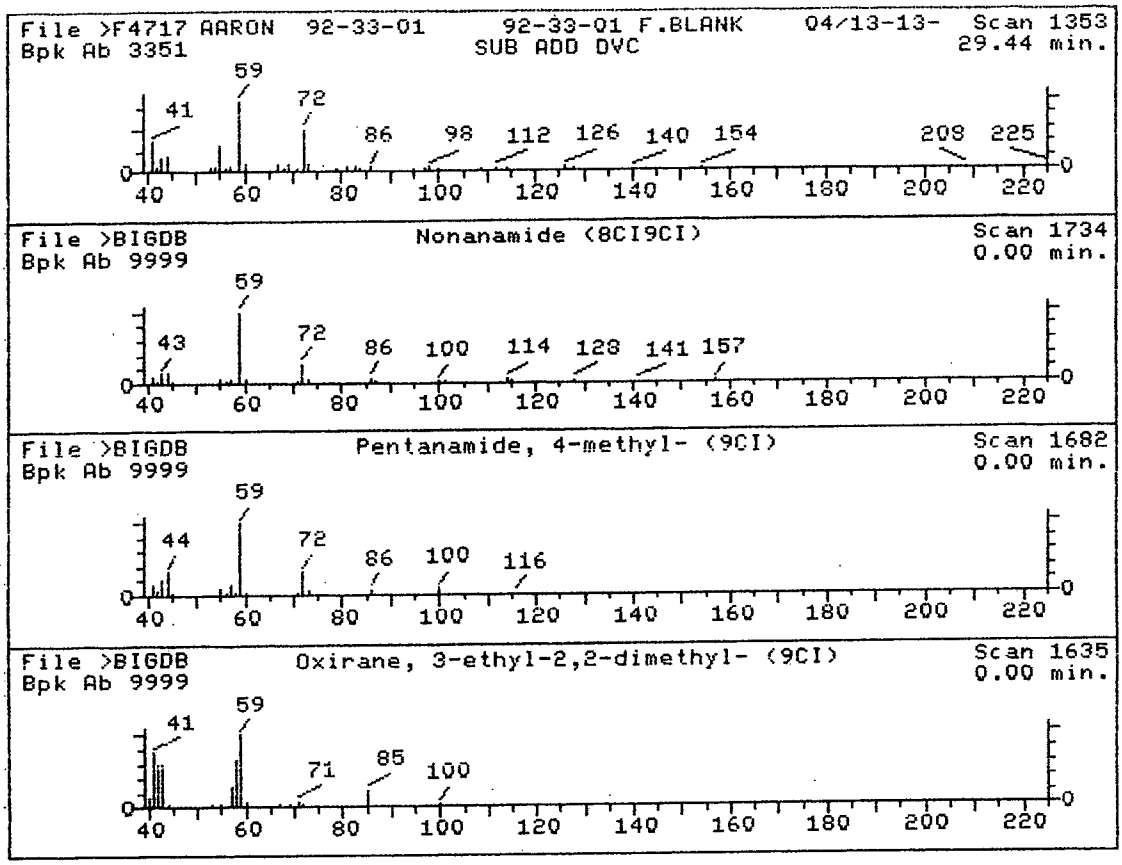

Unknown #,2
Area = 40230.00 Tentative Concentration is 6.00

1. Nonanamide (8CI9CI) — 157 C9H19NO
2. Pentanamide, 4-methyl- (9CI) — 115 C6H13NO
3. Oxirane, 3-ethyl-2,2-dimethyl- (9CI) — 100 C6H12O
4. 1,8-Nonanediol, 8-methyl- (9CI) — 174 C10H22O2
5. Dodecanamide (9CI) — 199 C12H25NO
6. Hexanamide (8CI9CI) — 115 C6H13NO

unknown

Sample file: >F4717 Spectrum #: 1353
Search speed: 1 Tilting option: N No. of ion ranges searched: 43

000150

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	45	1120076	1734	"BIGDB	41	45	0	0	96	26	19	2
2.	36*	1119295	1682	"BIGDB	40	47	2	0	71	31	12	1
3.	26*	1192229	1635	"BIGDB	24	78	3	0	100	37	10	12
4.	25	54725734	1629	"BIGDB	36	43	2	0	100	48	7	1[illegible]
5.	15	1120167	1768	"BIGDB	26	66	0	0	44	57	3	1
6.	11*	628024	1869	"BIGDB	34	67	2	0	50	65	2	14

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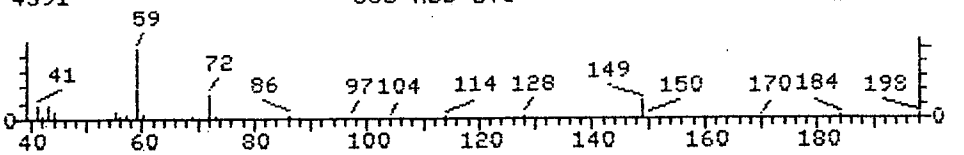
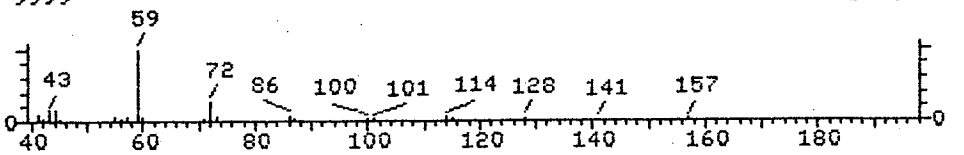
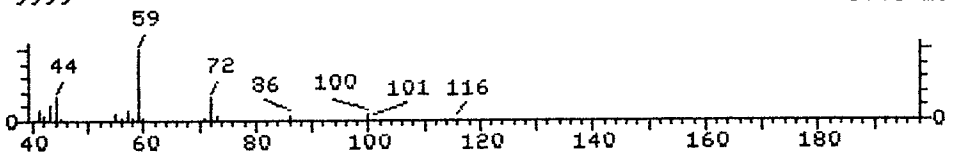
File >F4717 AARON 92-33-01 92-33-01 F.BLANK 04/13-13- Scan 1358
Bpk Ab 4391 SUB ADD DVC 29.53 min.



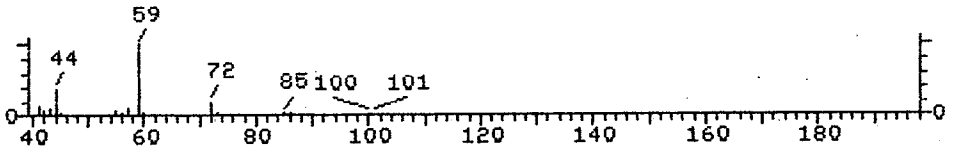
File >BIGDB Nonanamide (8CI9CI) Scan 1734
Bpk Ab 9999 0.00 min.



File >BIGDB Pentanamide, 4-methyl- (9CI) Scan 1682
Bpk Ab 9999 0.00 min.



File >BIGDB Pentanamide (9CI) Scan 1603
Bpk Ab 9999 0.00 min.



Unknown #,3
Area = 37578.00 Tentative Concentration is 6.00

1. Nonanamide (8CI9CI) 157 C9H19NO
2. Pentanamide, 4-methyl- (9CI) 115 C6H13NO
3. Pentanamide (9CI) 101 C5H11NO

unknown

Sample file: >F4717 Spectrum #: 1358
Search speed: 1 Tilting option: N No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	52	1120076	1734	"BIGDB	49	37	2	0	83	20	20	17
2.	42*	1119295	1682	"BIGDB	25	62	3	0	100	25	17	13
3.	38*	626971	1603	"BIGDB	31	54	2	0	100	27	14	15

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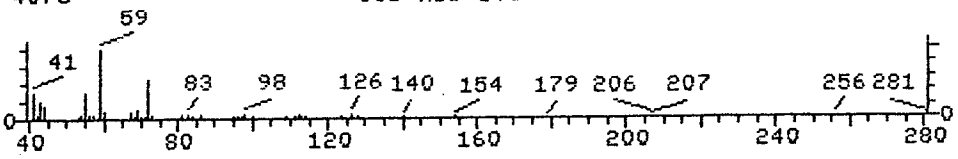
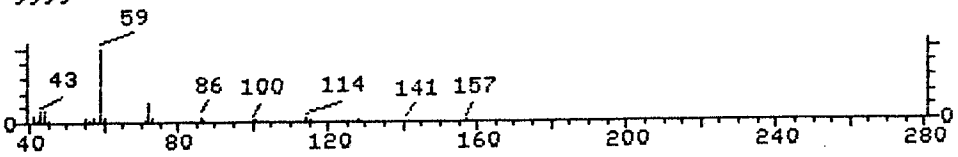
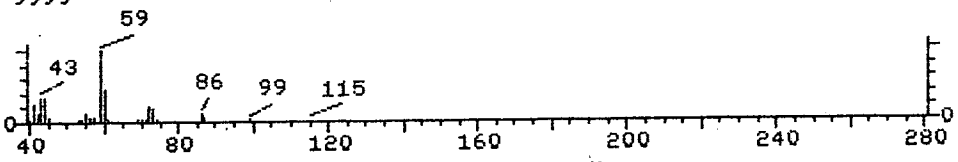
File >F4717 AARON 92-33-01 92-33-01 F.BLANK 04/13-13- Scan 1493
Bpk Ab 4073 SUB ADD DVC 31.98 min.



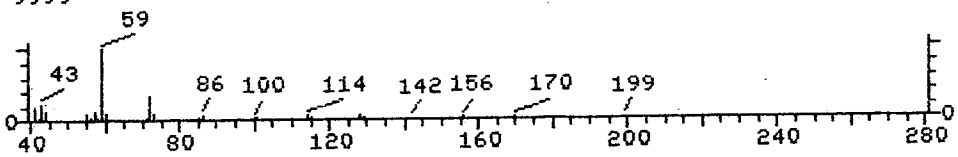
File >BIGDB Nonanamide (8CI9CI) Scan 1734
Bpk Ab 9999 0.00 min.



File >BIGDB Hexanamide (8CI9CI) Scan 1869
Bpk Ab 9999 0.00 min.



File >BIGDB Dodecanamide (9CI) Scan 1768
Bpk Ab 9999 0.00 min.



Unknown #,4
Area = 63138.00 Tentative Concentration is 9.00

1. Nonanamide (8CI9CI)	157	C9H19NO
2. Hexanamide (8CI9CI)	115	C6H13NO
3. Dodecanamide (9CI)	199	C12H25NO
4. Oxirane, 3-ethyl-2,2-dimethyl- (9CI)	100	C6H12O
5. Oxepane, 2,2,3-trimethyl- (9CI)	100	C6H12O
6. 1,7-Octanediol, 3,7-dimethyl- (8CI9CI)	174	C10H22O2
7. 1,8-Nonanediol, 8-methyl- (9CI)	174	C10H22O2

unknown

Sample file: >F4717 Spectrum #: 1493
Search speed: 1 Tilting option: N No. of ion ranges searched: 43

000152

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	45	1120076	1734	"BIGDB	41	45	0	0	100	26	19	2
2.	30*	628024	1869	"BIGDB	26	75	3	0	100	33	12	13
3.	30	1120167	1768	"BIGDB	56	54	0	0	61	50	10	26
4.	26*	1192229	1635	"BIGDB	24	78	3	0	100	38	10	1
5.	25*	23120436	1638	"BIGDB	25	69	3	0	100	43	8	19
6.	25	107744	1764	"BIGDB	52	41	2	0	89	46	7	17
7.	24	54725734	1629	"BIGDB	36	43	2	0	100	45	8	1

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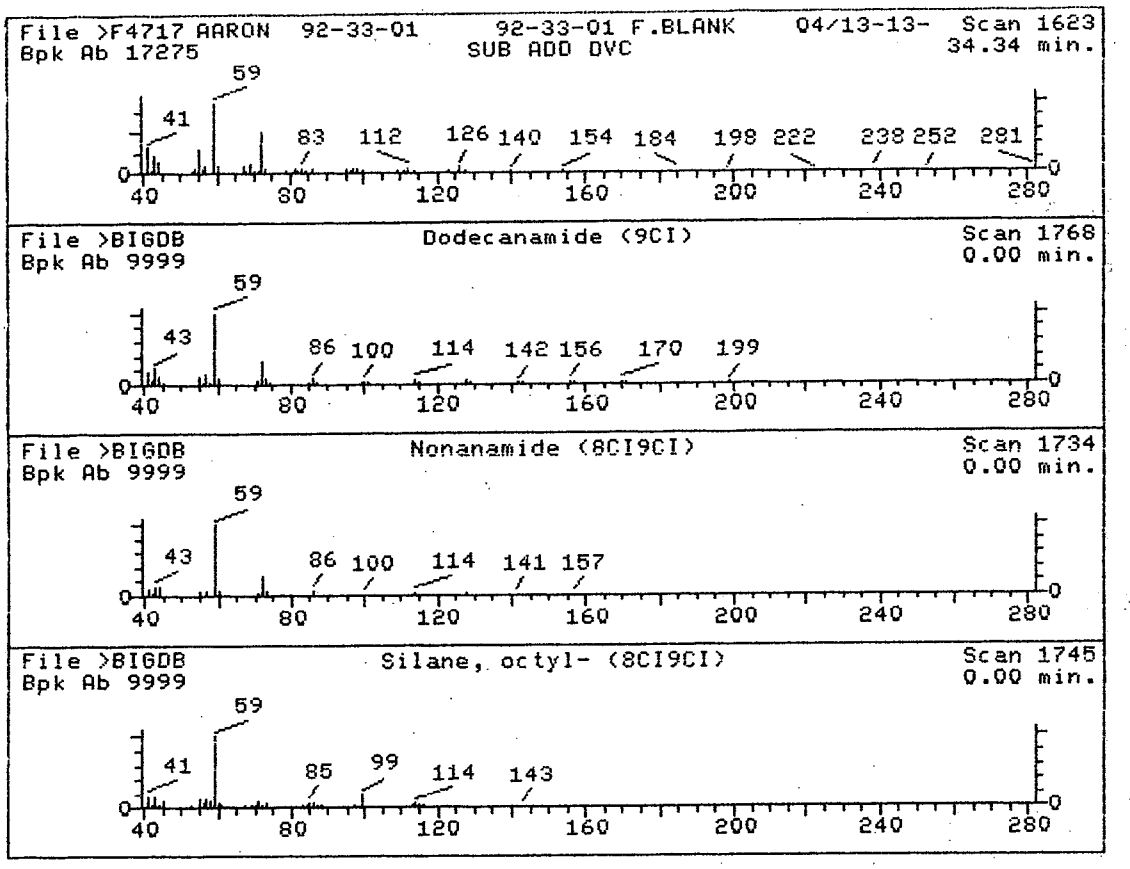

Unknown #,5
Area = 336298.0 Tentative Concentration is 31.00

1. Dodecanamide (9CI)	199	C12H25NO
2. Nonanamide (8CI9CI)	157	C9H19NO
3. Silane, octyl- (8CI9CI)	144	C8H20Si
4. 1-Propanamine (9CI)	59	C3H9N
5. Oxirane, 2-ethyl-3-propyl- (9CI)	114	C7H14O
6. Oxepane, 2,2,3-trimethyl- (9CI)	100	C6H12O
7. Pentanamide (9CI)	101	C5H11NO

unknown

Sample file: >F4717 Spectrum #: 1623
Search speed: 1 Tilting option: N No. of ion ranges searched: 43

000153

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	47	1120167	1768	"BIGDB	68	42	1	0	69	26	19	25
2.	42	1120076	1734	"BIGDB	52	34	1	0	100	30	14	19
3.	28	871921	1745	"BIGDB	51	45	2	0	86	39	10	14
4.	25*	107108	97	"BIGDB	21	42	2	0	910	49	7	13
5.	25*	53897328	4144	"BIGDB	36	66	3	0	132	46	7	13
6.	25*	23120436	1638	"BIGDB	25	69	3	0	100	46	7	13
7.	25*	626971	1603	"BIGDB	20	65	2	0	98	41	8	13

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET-(PAGE 1 OF 2)

ECRA LABORATORIES, INC.

LABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: AARON 92-33-01

SAMPLE ID #: 92-33-01-MW-1 LAB ID #:92-04-805

DATA FILE: >F4718::F1 DILUTION FACTOR: 1.00000

EXTRACTION:SEPF METHOD DETECTION LIMIT: 10 UG/L

DATE SAMPLED:04/13/92 DATE RECEIVED:04/13/92

DATE EXTRACTED:04/14/92 DATE ANALYZED: 4/15/92 13:59

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
111-44-4	bis(2-Chloroethyl)Ether	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
62-75-9	N-Nitrosodimethylamine	10.	U
95-50-1	1,2-Dichlorobenzene	10.	
39638-32-9	bis(2-chloroisopropyl)ether	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
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	8.	J
87-68-3	Hexachlorobutadiene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
91-58-7	2-Chloronaphthalene	10.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
83-32-9	Acenaphthene	10.	U
92-87-5	Benzidine	80.	U
121-14-2	2,4-Dinitrotoluene	10.	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET-(PAGE 2 OF 2)

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LABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: AARON 92-33-01

SAMPLE ID #: 92-33-01-MW-1 LAB ID #:92-04-805

DATA FILE: >F4718::F1 DILUTION FACTOR: 1.00000

EXTRACTION:SEPF METHOD DETECTION LIMIT: 10 UG/L

DATE SAMPLED:04/13/92 DATE RECEIVED:04/13/92

DATE EXTRACTED:04/14/92 DATE ANALYZED: 4/15/92 13:59

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	1.	J
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	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-octylphthalate	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	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

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1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:ECRA LABORATORIES,INC.

Client Name: AARON 92-33-01

SAMPLE ID #: 92-33-01-MW-1 LAB ID # 92-04-805

Data File: >F4718

Extraction: SEPF

EPA METHOD #625

Dilution Factor: 1.00000

Concentration Units: UG/L

NUMBER OF TIC'S DETECTED: 11

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	57556	1,2-Propanediol	5.68	34.	*/**
2.	108907	Benzene, chloro-	8.71	26.	
3.		Unknown	12.40	43.	
4.		Unknown	12.49	35.	
5.		Unknown	12.74	19.	
6.	611143	Benzene, 1-ethyl-2-methyl-	13.22	19.	
7.	90120	Naphthalene, 1-methyl-	19.61	16.	
8.		Unknown	21.01	7.	
9.		Unknown	24.22	5.	
10.	140669	Phenol, 4-(1,1,3,3-tetramethyl)-	24.49	6.	
11.		Unknown	25.62	12.	
12.		Unknown	26.63	6.	
13.					
14.					
15.					

NR = Not reviewed FORM I SV-TIC 1/87 Rev.

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QUANT REPORT

Operator ID: JEAN Quant Rev: 6 Quant Time: 920415 15:04
Output File: ^F4718::QT Injected at: 920415 13:59
Data File: >F4718::F1 Dilution Factor: 1.00000
Name: AARON 92-33-01
Misc: 92-33-01-MW-1 04/13-13-14/92 BTL# 3

ID File: BNW2::M1
Title: BASE NEUTRAL EXTRACTABLES BY EPA METHOD 625
Last Calibration: 920407 16:47

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*1,4-DICHLOROBENZENE-D4	12.92	443	20621	50.00	UG/L	98
6)	1,2-DICHLOROBENZENE	13.54	477	3594	10.06	UG/L	98
10)	*NAPHTHALENE-D8	16.94	664	65509	50.00	UG/L	98
11)	NITROBENZENE-D5(SURROGATE)	14.67	539	16871	30.07	UG/L 60	95
16)	NAPHTHALENE	17.01	668	10456	8.39	UG/L J	98
18)	*ACENAPHTHENE-D10	22.78	985	48561	50.00	UG/L	93
20)	2-FLUOROBIPHENYL(SURROGATE)	20.49	859	39048	33.07	UG/L 66	90
30)	*PHENANTHRENE-D10	27.68	1254	111099	50.00	UG/L	98
36)	DI-N-BUTYLPHTHALATE	29.53	1355	3954	1.23	UG/L J	98
38)	*CHRYSENE-D12	36.85	1756	175766	50.00	UG/L	96
41)	TERPHENYL-D14(SURROGATE)	32.89	1539	90604	30.92	UG/L 62	97
47)	*PERYLENE-D12	45.46	2229	169798	50.00	UG/L	92

* Compound is ISTD

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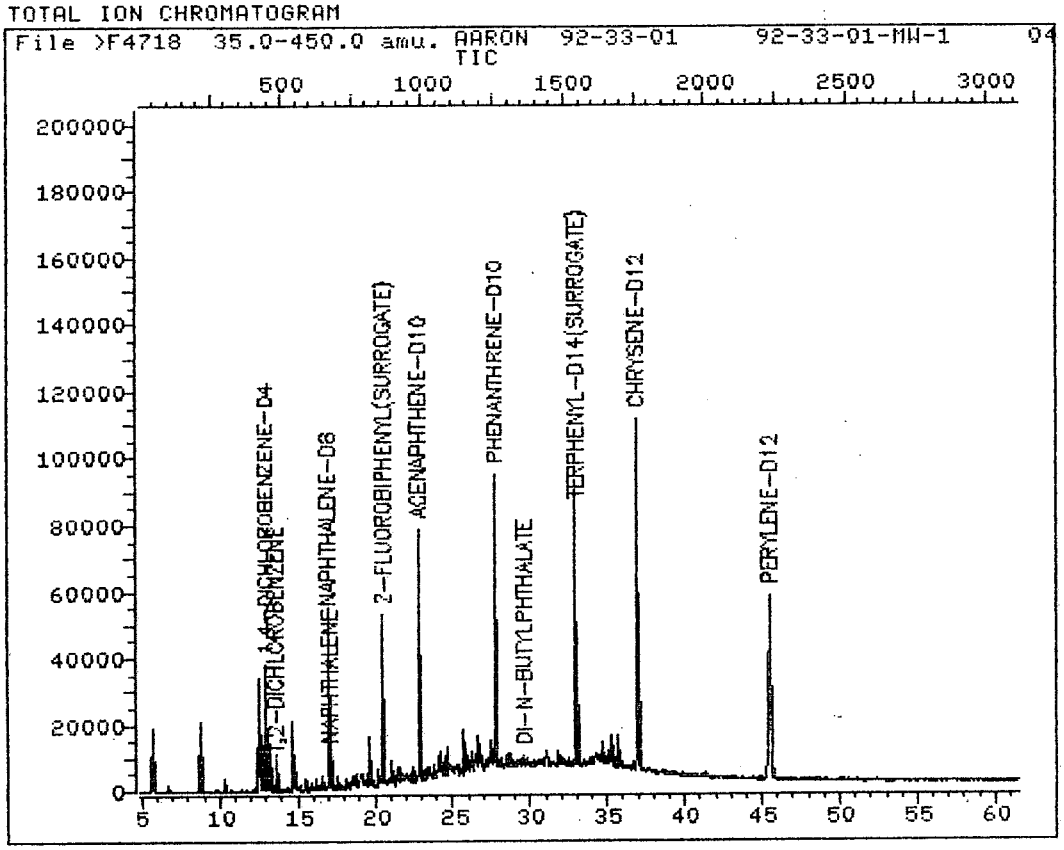
TOTAL ION CHROMATOGRAM



Data File: >F4718::F1 Quant Output File: ^F4718::QT
Name: AARON 92-33-01
Misc: 92-33-01-MW-1 04/13-13-14/92 BTL# 3

Id File: BNW2::M1
Title: BASE NEUTRAL EXTRACTABLES BY EPA METHOD 625
Last Calibration: 920407 16:47

Operator ID: JEAN
Quant Time: 920415 15:04
Injected at: 920415 13:59

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MS data file header from : >F4718

Sample: AARON 92-33-01 Operator: JEAN MS 4/15/92 13:59
Misc : 92-33-01-MW-1 04/13-13-14/92 BTL# 3
Sys. #: 2 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: PRIORF Tuning file: MTF001 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 290 Transfer line temp. : 240

Chromatographic temperatures :	50.	300.	301.	301.	0.
Chromatographic times, min. :	3.0	20.0	20.0	10.0	0.0
Chromatographic rate, deg/min:	8.0	1.0	.2	1.0	0.0

>F4718 AARON 92-33-01 92-33-01-MW-1 04/13-13-14/92
35.0| 450.0 CLP ADC TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 15 Bunching: 1
Dnslope: 0.00 Results File IF4718 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	5.68	39	44	56	19197	64066	63177	79.33	9.377
2	8.71	208	211	218	20896	48822	48365	60.73	7.178
3	12.40	411	414	416	34149	80753	79641	100.00	11.820
4	12.49	416	419	422	23303	65874	63529	79.77	9.429
5	12.74	429	433	439	13382	39265	34524	43.35	5.124
6	13.22	456	459	468	13923	39325	35139	44.12	5.215
7	19.61	808	811	815	14691	64378	51300	64.41	7.614
8	21.01	883	888	895	6738	64661	32538	40.86	4.829
9	24.22	1061	1064	1069	7557	65214	27208	34.16	4.038
10	24.49	1074	1079	1081	8675	61416	27641	34.71	4.103
11	25.62	1136	1141	1148	14045	128104	68595	86.13	10.181
12	26.63	1192	1196	1198	9538	80141	33303	41.82	4.943
13	~~26.70~~	~~1198~~	~~1200~~	~~1205~~	~~6583~~	~~84359~~	~~28259~~	~~35.48~~	~~4.194~~
14	~~35.21~~	~~1662~~	~~1666~~	~~1671~~	~~9226~~	~~108908~~	~~34492~~	~~43.31~~	~~5.119~~
15	~~35.70~~	~~1689~~	~~1693~~	~~1699~~	~~10072~~	~~116577~~	~~46046~~	~~57.82~~	~~6.834~~

Sum of corrected areas: 673757.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	91785.	12.92	4.90 - 14.93
2	50.0	160061.	16.94	14.93 - 19.86
3	50.0	249391.	22.78	19.86 - 25.23
4	50.0	295318.	27.68	25.23 - 32.27
5	50.0	497051.	36.85	32.27 - 41.16
6	50.0	484989.	45.46	41.16 - 61.55

Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 1.00 Amount Used (AU) = 1.00

000159

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

Conc Int Std

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$$\text{Unknown Concentration} = \frac{\text{Area Unk}}{\text{Area Int Std}} * \text{Correction Factor}$$

6:06 PM WED., 15 APR., 1992

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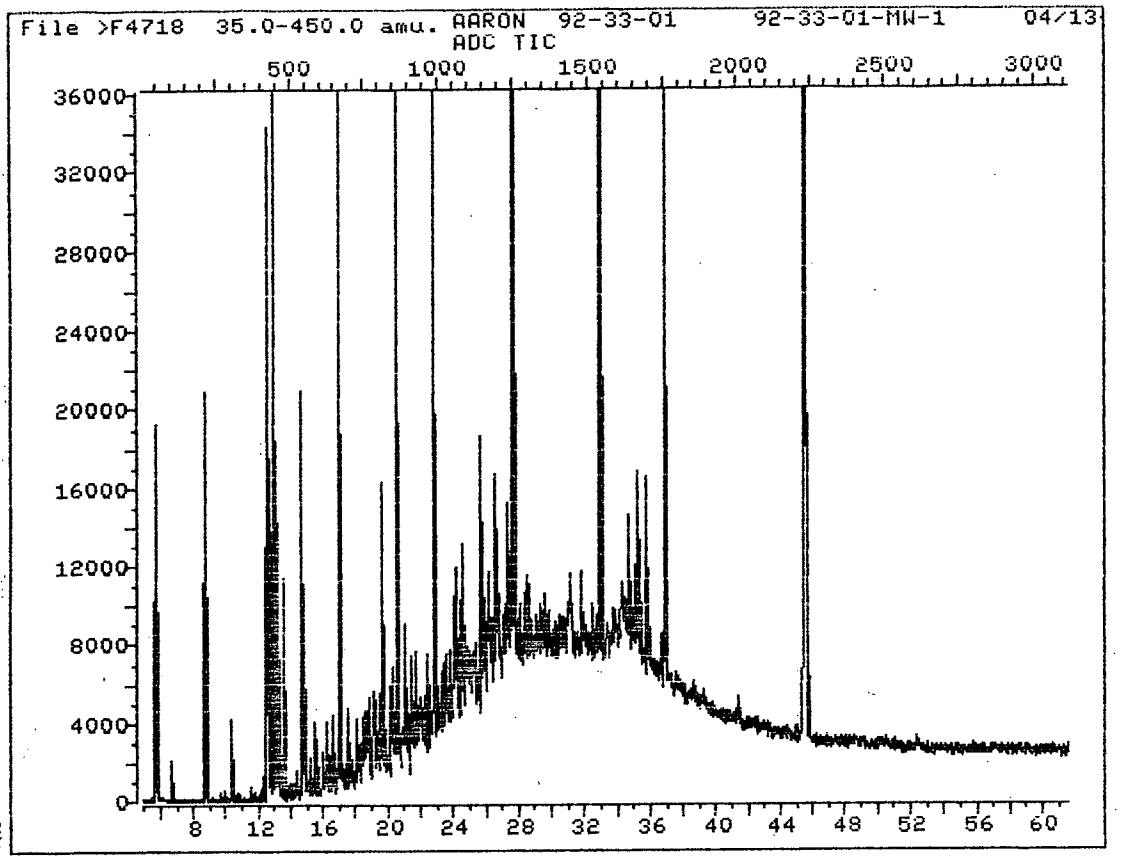

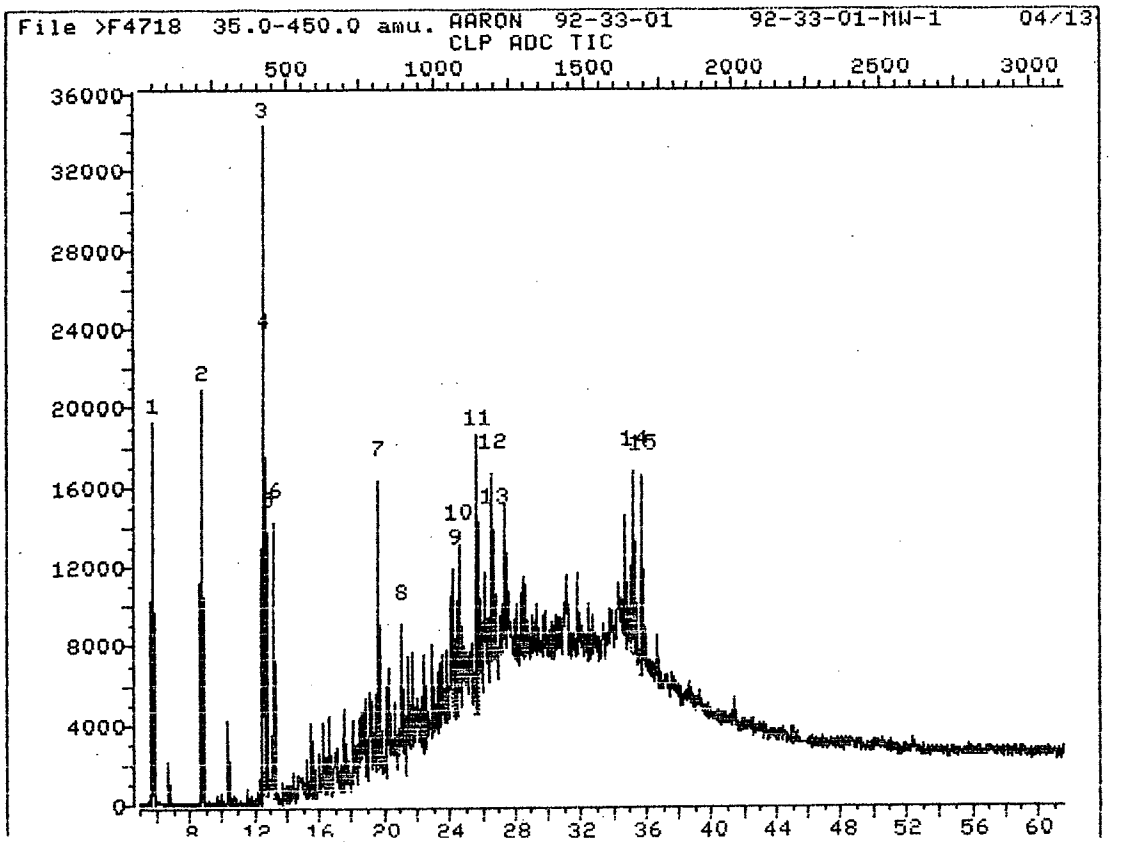

000161

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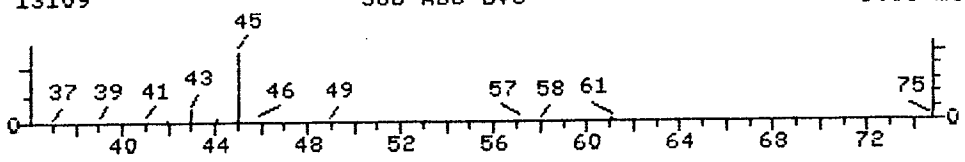
File >F4718 AARON 92-33-01 92-33-01-MW-1 04/13-13-14 Scan 44
Bpk Ab 13109 SUB ADD DVC 5.68 min.



. Unknown #,1
Area = 63177.00 Tentative Concentration is 34.00

Sample file: >F4718 Spectrum #: 44

No data base entries were retrieved.

1,2-Propanediol 57556

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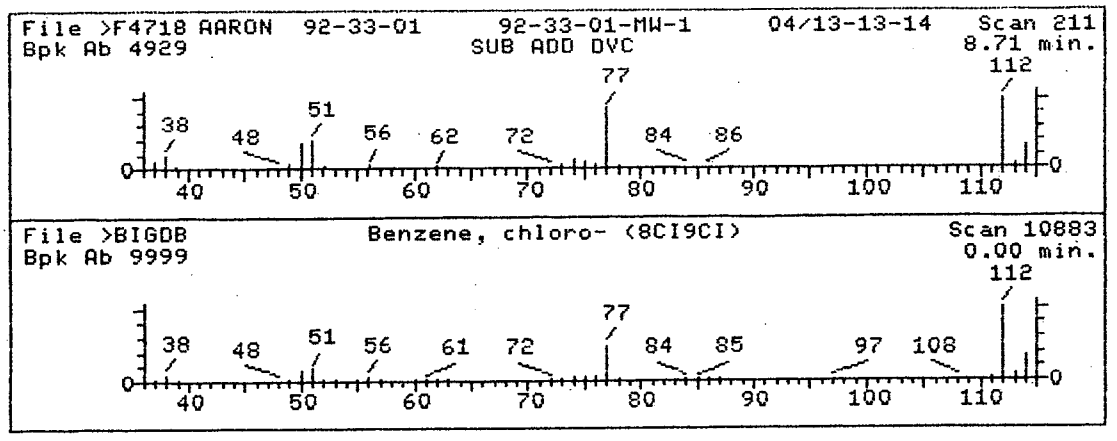

. Unknown #,2
Area = 48365.00 Tentative Concentration is 26.00

1. Benzene, chloro- (8CI9CI) 112 C6H5Cl

Sample file: >F4718 Spectrum #: 211
Search speed: 1 Tilting option: N No. of ion ranges searched: 40

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	59*	108907	10883	"BIGDB	45	49	0	0	92	40	21	53

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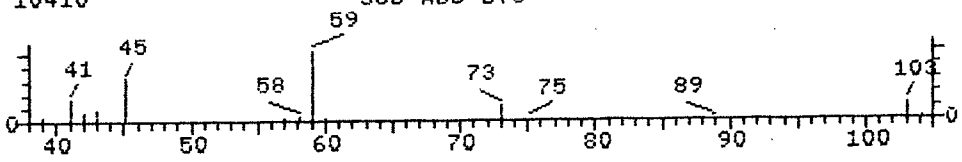
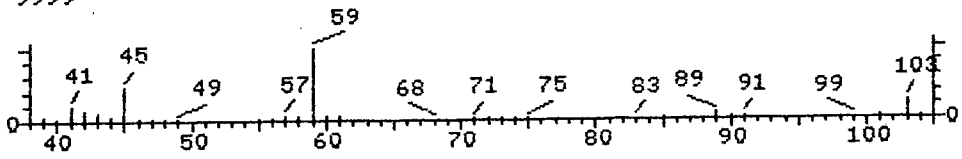
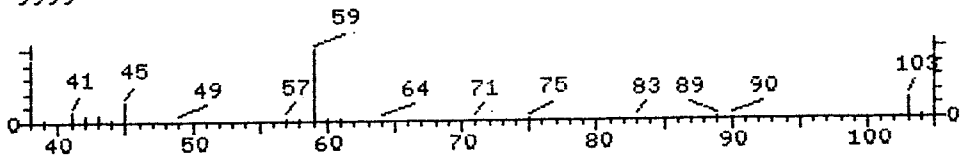
File >F4718 AARON 92-33-01 92-33-01-MW-1 04/13-13-14 Scan 414
Bpk Ab 10410 SUB ADD DVC 12.40 min.



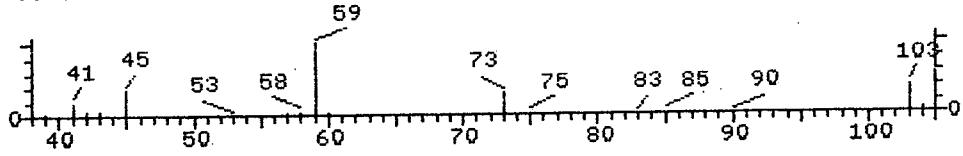
File >BIGDB 2-Propanol, 1,1'-oxybis- (9CI) Scan 1708
Bpk Ab 9999 0.00 min.



File >BIGDB 1-Propanol, 2-(2-hydroxypropoxy)- (8CI9CI) Scan 1706
Bpk Ab 9999 0.00 min.



File >BIGDB 2-Propanol, 1-(2-methoxy-1-methylethoxy)- (8CI9CI Scan 1724
Bpk Ab 9999 0.00 min.



Unknown #,3
Area = 79641.00 Tentative Concentration is 43.00

1.	2-Propanol, 1,1'-oxybis- (9CI)	134 C6H14O3
2.	1-Propanol, 2-(2-hydroxypropoxy)- (8CI9CI)	134 C6H14O3
3.	2-Propanol, 1-(2-methoxy-1-methylethoxy)- (8CI9CI)	148 C7H16O3
4.	2-Propanol, 1-ethoxy- (8CI9CI)	104 C5H12O2
5.	Formamide, N-methyl- (8CI9CI)	59 C2H5NO
6.	1-Propanol, 2-ethoxy- (8CI9CI)	104 C5H12O2

unknown

Sample file: >F4718 Spectrum #: 414
Search speed: 1 Tilting option: N No. of ion ranges searched: 42

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	60	110985	1708	"BIGDB	51	46	2	0	82	12	30	1
2.	37	106627	1706	"BIGDB	37	49	1	0	85	27	14	1
3.	30	20324327	1724	"BIGDB	40	53	1	0	61	35	12	15
4.	26*	1569024	1596	"BIGDB	24	70	2	0	61	45	8	14
5.	25*	123397	1582	"BIGDB	21	44	0	0	84	50	7	1
6.	20*	19089475	1611	"BIGDB	24	73	1	0	59	53	5	1

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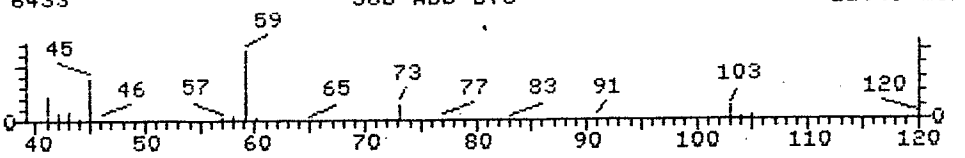
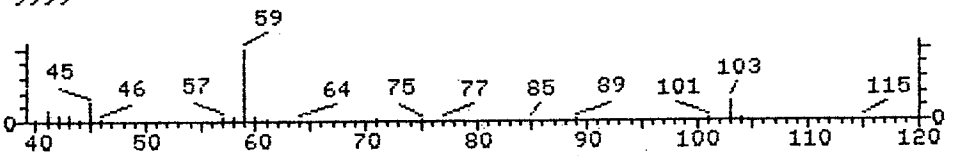
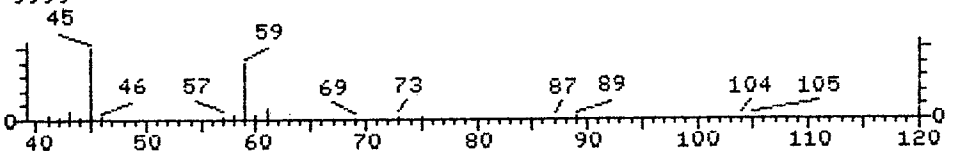
File >F4718 AARON 92-33-01 92-33-01-MW-1 04/13-13-14 Scan 419
Bpk Ab 6433 SUB ADD DVC 12.49 min.



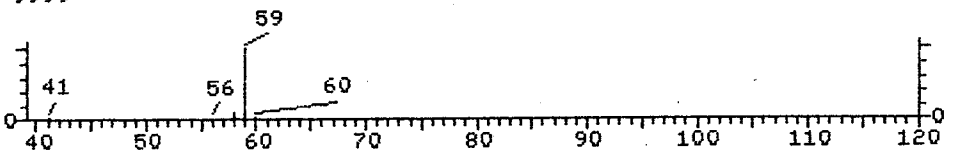
File >BIGDB 1-Propanol, 2-(2-hydroxypropoxy)- (8CI9CI) Scan 1706
Bpk Ab 9999 0.00 min.



File >BIGDB 2-Propanol, 1-ethoxy- (8CI9CI) Scan 1596
Bpk Ab 9999 0.00 min.



File >BIGDB Formamide, N-methyl- (8CI9CI) Scan 1582
Bpk Ab 9999 0.00 min.



Unknown #,4
Area = 63529.00 Tentative Concentration is 35.00

1. 1-Propanol, 2-(2-hydroxypropoxy)- (8CI9CI) 134 C6H14O3
2. 2-Propanol, 1-ethoxy- (8CI9CI) 104 C5H12O2
3. Formamide, N-methyl- (8CI9CI) 59 C2H5NO
4. Propane, 2-ethoxy- (9CI) 88 C5H12O

unknown

Sample file: >F4718 Spectrum #: 419
Search speed: 1 Tilting option: N No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	29	106627	1706	"BIGDB	37	49	2	0	69	33	12	12
2.	25*	1569024	1596	"BIGDB	24	70	2	0	60	47	7	14
3.	20*	123397	1582	"BIGDB	21	44	0	0	88	51	5	15
4.	11	625547	4370	"BIGDB	35	48	2	0	60	63	2	12

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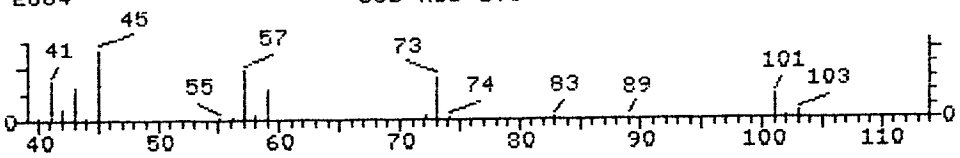
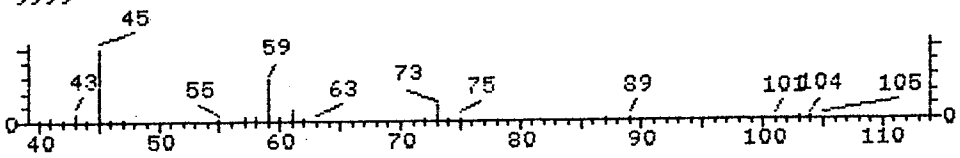
File >F4718 AARON 92-33-01 92-33-01-MW-1 04/13-13-14 Scan 433
Bpk Ab 2664 SUB ADD DVC 12.74 min.



File >BIGDB 1-Propanol, 2-ethoxy- (8CI9CI) Scan 1611
Bpk Ab 9999 0.00 min.



. Unknown #,5
Area = 34524.00 Tentative Concentration is 19.00

1. 1-Propanol, 2-ethoxy- (8CI9CI) 104 C5H12O2

Sample file: >F4718 Spectrum #: 433
Search speed: 1 Tilting option: N No. of ion ranges searched: 4

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	26*	19089475	1611	"BIGDB	22	75	3	0	78	36	10	1

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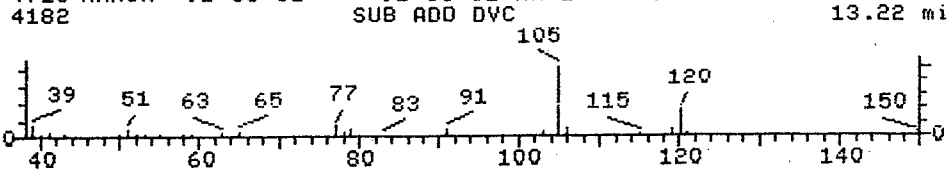
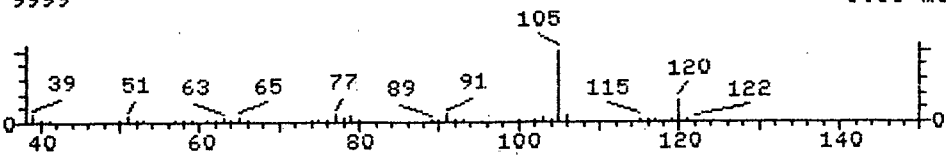
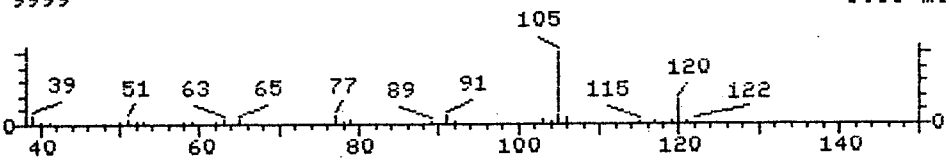
File >F4718 AARON 92-33-01 92-33-01-MW-1 04/13-13-14 Scan 459
Bpk Ab 4182 SUB ADD DVC 13.22 min.



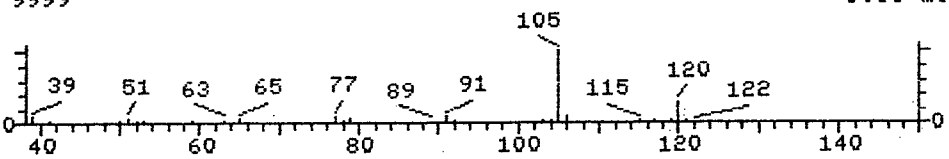
File >BIGDB Benzene, 1-ethyl-2-methyl- (9CI) Scan 12266
Bpk Ab 9999 0.00 min.



File >BIGDB Benzene, 1-ethyl-3-methyl- (9CI) Scan 12267
Bpk Ab 9999 0.00 min.



File >BIGDB Benzene, 1-ethyl-4-methyl- (9CI) Scan 12268
Bpk Ab 9999 0.00 min.



. Unknown #,6
Area = 35139.00 Tentative Concentration is 19.00

1.	Benzene, 1-ethyl-2-methyl- (9CI)	120	C9H12
2.	Benzene, 1-ethyl-3-methyl- (9CI)	120	C9H12
3.	Benzene, 1-ethyl-4-methyl- (9CI)	120	C9H12
4.	Benzene, (1-methylethyl)- (9CI)	120	C9H12
5.	Benzene, 1,2,3-trimethyl- (8CI9CI)	120	C9H12
6.	Benzene, 1,1'-(1-methyl-1,2-ethanediyl)bis- (9CI)	196	C15H16
7.	Benzene, 1,2,4-trimethyl- (8CI9CI)	120	C9H12

Sample file: >F4718 Spectrum #: 459
Search speed: 1 Tilting option: N No. of ion ranges searched: 42

000157

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	84*	611143	12266	"BIGDB	70	15	2	0	100	8	55	61
2.	84*	620144	12267	"BIGDB	70	17	2	0	100	7	55	61
3.	83*	622968	12268	"BIGDB	63	22	2	0	100	8	54	50
4.	76*	98828	12259	"BIGDB	57	30	1	0	83	12	40	55
5.	72*	526738	12280	"BIGDB	75	25	1	0	64	33	32	73
6.	45	5814857	9857	"BIGDB	57	42	2	0	96	22	17	16
7.	42*	95636	12273	"BIGDB	48	47	1	0	52	40	17	31

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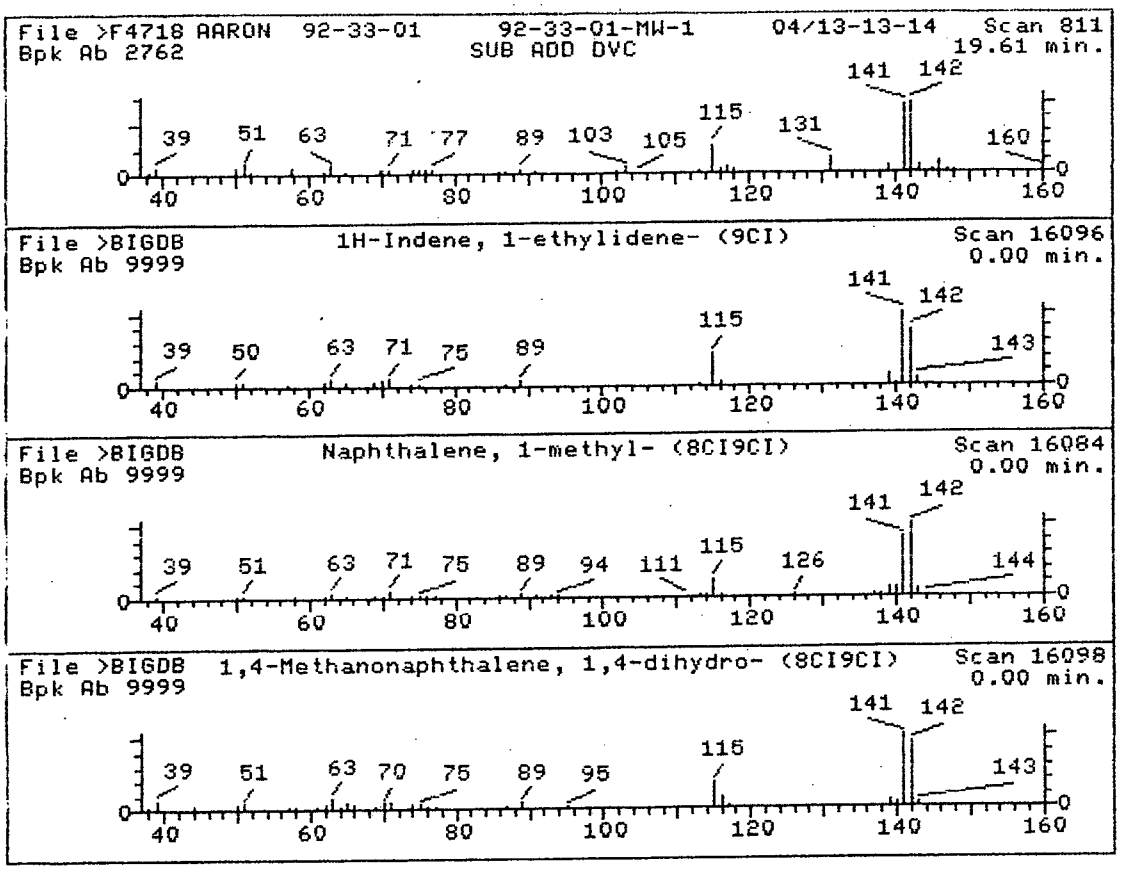

Unknown #,7
Area = 51300.00 Tentative Concentration is 16.00

1. 1H-Indene, 1-ethylidene- (9CI)	142	C11H10
2. ✗Naphthalene, 1-methyl- (8CI9CI)	142	C11H10
3. 1,4-Methanonaphthalene, 1,4-dihydro- (8CI9CI)	142	C11H10
4. Naphthalene, 2-methyl- (8CI9CI)	142	C11H10
5. Benzeneacetonitrile, 4-cyano- (9CI)	142	C9H6N2
6. Benzeneacetonitrile, 2-cyano- (9CI)	142	C9H6N2
7. 2(1H)-Pyrimidinone, 3,4-dihydro-1-methyl-4-thioxo- (9CI)	142	C5H6N2OS

Sample file: >F4718 Spectrum #: 811
Search speed: 1 Tilting option: N No. of ion ranges searched: 41

000168

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	80*	2471832	16096	"BIGDB	82	18	1	0	79	29	37	78
2.	73*	90120	16084	"BIGDB	62	38	1	0	89	25	32	6[illegible]
3.	67*	4453901	16098	"BIGDB	52	50	2	0	79	15	34	2[illegible]
4.	64*	91576	16085	"BIGDB	57	41	1	0	90	24	28	4[illegible]
5.	31*	876313	16090	"BIGDB	48	51	2	0	99	44	12	2[illegible]
6.	15*	3759282	16097	"BIGDB	36	73	3	0	48	59	3	1[illegible]
7.	11*	35455868	16144	"BIGDB	25	69	3	0	100	65	2	1[illegible]

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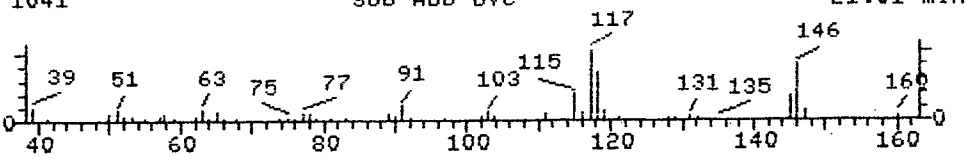
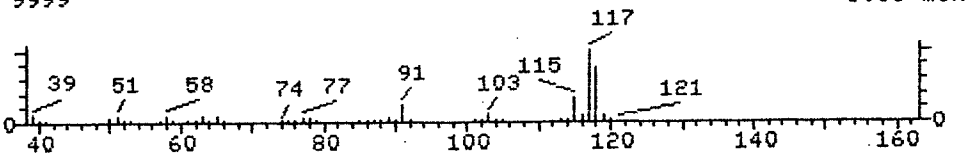
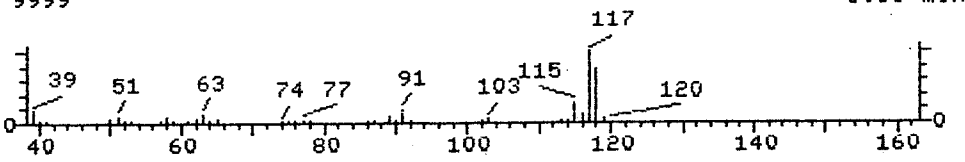
File >F4718 AARON 92-33-01 92-33-01-MW-1 04/13-13-14 Scan 888
Bpk Ab 1041 SUB ADD DVC 21.01 min.



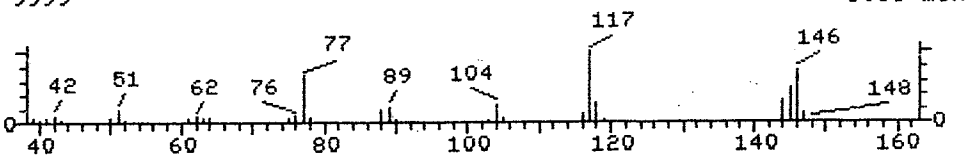
File >BIGDB Benzene, 1-ethenyl-2-methyl- (9CI) Scan 11981
Bpk Ab 9999 0.00 min.



File >BIGDB 1H-Indene, 2,3-dihydro- (9CI) Scan 11979
Bpk Ab 9999 0.00 min.



File >BIGDB 1H-Imidazole, 4,5-dihydro-2-phenyl- (9CI) Scan 16643
Bpk Ab 9999 0.00 min.



Unknown #,8
Area = 32538.00 Tentative Concentration is 7.00

1.	Benzene, 1-ethenyl-2-methyl- (9CI)	118 C9H10
2.	1H-Indene, 2,3-dihydro- (9CI)	118 C9H10
3.	1H-Imidazole, 4,5-dihydro-2-phenyl- (9CI)	146 C9H10N2
4.	Benzene, cyclopropyl- (8CI9CI)	118 C9H10
5.	Benzene, 2-propenyl- (9CI)	118 C9H10
6.	Benzeneacetaldehyde, .alpha.-ethylidene- (9CI)	146 C10H10O
7.	Benzene, cyclopentyl- (8CI9CI)	146 C11H14

unknown

Sample file: >F4718 Spectrum #: 888
Search speed: 1 Tilting option: N No. of ion ranges searched: 42

000169

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	56*	611154	11981	"BIGDB	54	39	0	0	88	47	14	66
2.	56*	496117	11979	"BIGDB	51	51	0	0	90	43	18	61
3.	52*	936492	16643	"BIGDB	27	97	3	0	100	20	20	13
4.	52*	873494	11986	"BIGDB	73	37	2	0	95	45	17	55
5.	47*	300572	11978	"BIGDB	57	40	1	0	95	45	16	46
6.	44*	4411896	16658	"BIGDB	52	61	2	0	74	32	16	27
7.	42*	700889	16638	"BIGDB	45	71	3	0	100	25	17	13

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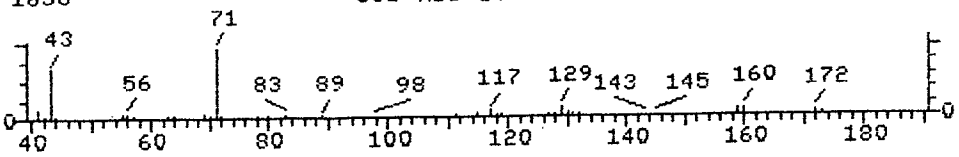
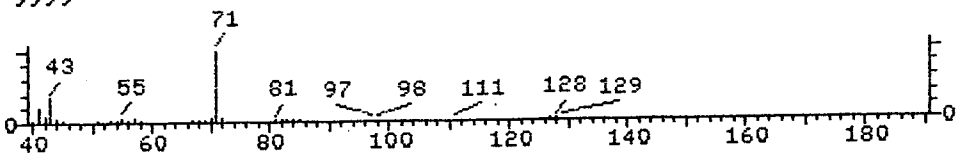
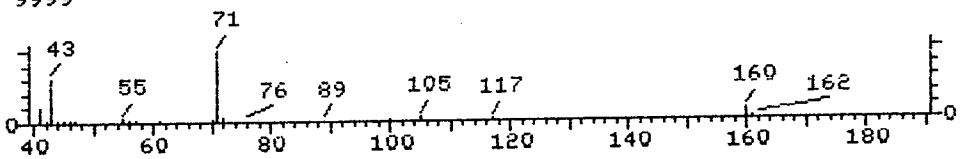
File >F4718 AARON 92-33-01 92-33-01-MW-1 04/13-13-14 Scan 1064
Bpk Ab 1858 SUB ADD DVC 24.22 min.



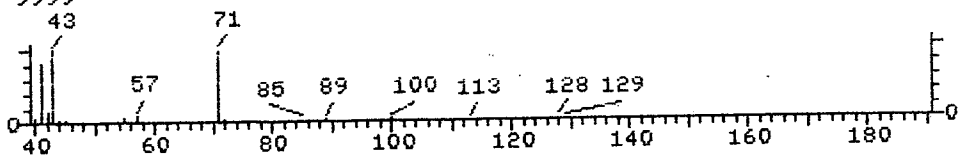
File >BIGDB Furan, 2-butyltetrahydro- (8CI9CI) Scan 3884
Bpk Ab 9999 0.00 min.



File >BIGDB Butanethioic acid, S-butyl ester (9CI) Scan 4027
Bpk Ab 9999 0.00 min.



File >BIGDB Butanoic acid, 2-propenyl ester (9CI) Scan 3886
Bpk Ab 9999 0.00 min.



Unknown #,9
Area = 27208.00 Tentative Concentration is 5.00

1.	Furan, 2-butyltetrahydro- (8CI9CI)	128	C8H16O
2.	Butanethioic acid, S-butyl ester (9CI)	160	C8H16OS
3.	Butanoic acid, 2-propenyl ester (9CI)	128	C7H12O2
4.	Ethane, isocyanato- (9CI)	71	C3H5NO
5.	Butanethioic acid, S-(1,1-dimethylethyl) ester (9CI)	160	C8H16OS

unknown

Sample file: >F4718 Spectrum #: 1064
Search speed: 1 Tilting option: N No. of ion ranges searched: 43

000170

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	40*	1004291	3884	"BIGDB	45	31	1	0	70	40	14	27
2.	32*	2432522	4027	"BIGDB	31	53	2	0	71	34	12	1
3.	28*	2051787	3886	"BIGDB	35	51	3	0	70	40	10	1
4.	26*	109900	3880	"BIGDB	24	49	2	0	129	41	8	14
5.	11*	6330434	18753	"BIGDB	27	60	2	0	54	63	2	1

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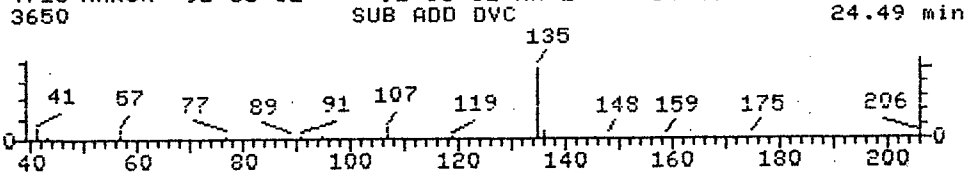
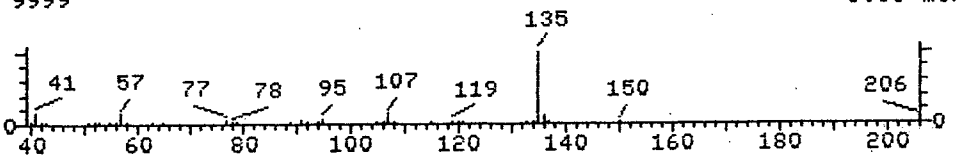
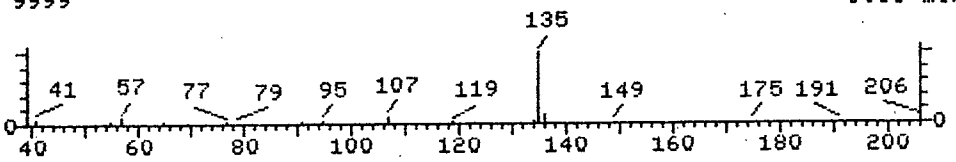
File >F4718 AARON 92-33-01 92-33-01-MW-1 04/13-13-14 Scan 1079
Bpk Ab 3650 SUB ADD DVC 24.49 min.



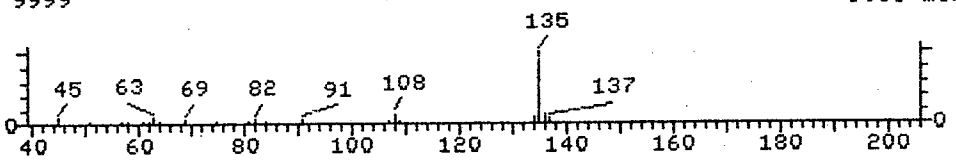
File >BIGDB Phenol, 4-(1,1,3,3-tetramethylbutyl)- (9CI) Scan 14777
Bpk Ab 9999 0.00 min.



File >BIGDB Phenol, 4-(2,2,3,3-tetramethylbutyl)- (9CI) Scan 14779
Bpk Ab 9999 0.00 min.



File >BIGDB Thieno[2,3-c]pyridine (8CI9CI) Scan 14711
Bpk Ab 9999 0.00 min.



. Unknown #,10
Area = 27641.00 Tentative Concentration is 6.00

1. Phenol, 4-(1,1,3,3-tetramethylbutyl)- (9CI) 206 C14H22O
2. Phenol, 4-(2,2,3,3-tetramethylbutyl)- (9CI) 206 C14H22O
3. Thieno[2,3-c]pyridine (8CI9CI) 135 C7H5NS

Sample file: >F4718 Spectrum #: 1079
Search speed: 1 Tilting option: N No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	70	140669	14777	"BIGDB	61	43	2	0	87	10	42	15
2.	70	54932784	14779	"BIGDB	53	38	2	0	92	10	42	18
3.	52*	272128	14711	"BIGDB	21	68	2	0	68	19	20	13

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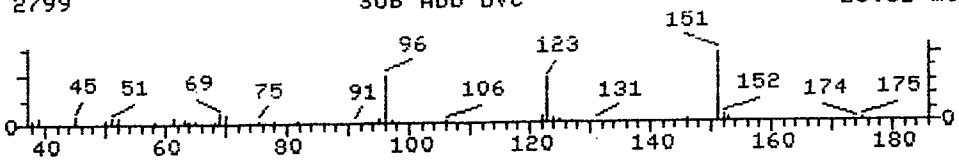
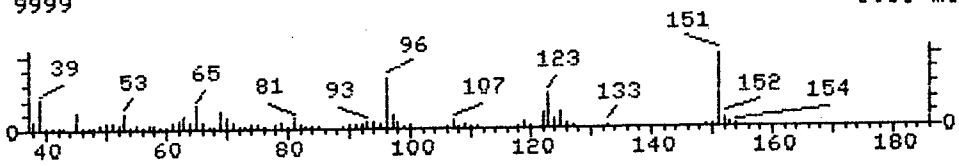
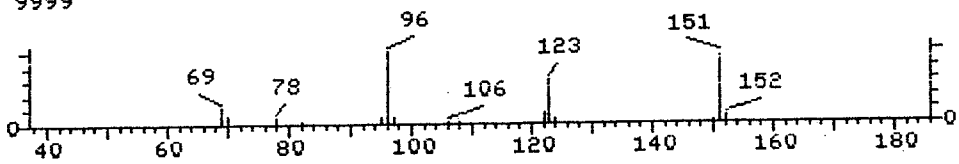
File >F4718 AARON 92-33-01 92-33-01-MW-1 04/13-13-14 Scan 1141
Bpk Ab 2799 SUB ADD DVC 25.62 min.



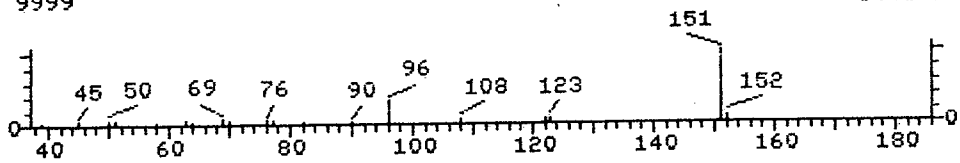
File >BIGDB Thiocyanic acid, 4-hydroxyphenyl ester (9CI) Scan 17480
Bpk Ab 9999 0.00 min.



File >BIGDB 2(3H)-Benzothiazolone (9CI) Scan 17447
Bpk Ab 9999 0.00 min.



File >BIGDB 1,2-Benzisothiazol-3(2H)-one (9CI) Scan 17452
Bpk Ab 9999 0.00 min.



. Unknown #,11
Area = 68595.00 Tentative Concentration is 12.00

1.	Thiocyanic acid, 4-hydroxyphenyl ester (9CI)	151 C7H5NOS
2.	2(3H)-Benzothiazolone (9CI)	151 C7H5NOS
3.	1,2-Benzisothiazol-3(2H)-one (9CI)	151 C7H5NOS
4.	2(3H)-Benzoxazolethione (9CI)	151 C7H5NOS
5.	Benzaldehyde, 3-methoxy-, oxime (9CI)	151 C8H9NO2
6.	Pyridine, 2,3,5,6-tetrafluoro- (8CI9CI)	151 C5HF4N
7.	2-Thiopheneacetonitrile (8CI9CI)	123 C6H5NS

unknown

Sample file: >F4718 Spectrum #: 1141
Search speed: 1 Tilting option: N No. of ion ranges searched: 41

000172

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	70*	3774525	17480	"BIGDB	28	98	3	0	99	10	42	[illegible]
2.	62*	934349	17447	"BIGDB	62	39	2	0	66	30	25	40
3.	32*	2634335	17452	"BIGDB	36	54	2	0	100	40	10	18
4.	25*	2382969	17478	"BIGDB	22	74	2	0	100	46	7	[illegible]
5.	20*	38489804	17470	"BIGDB	21	55	2	0	92	55	5	[illegible]
6.	20*	2875185	17453	"BIGDB	25	66	2	0	100	53	5	12
7.	15*	20893305	12670	"BIGDB	28	78	3	0	71	60	3	[illegible]

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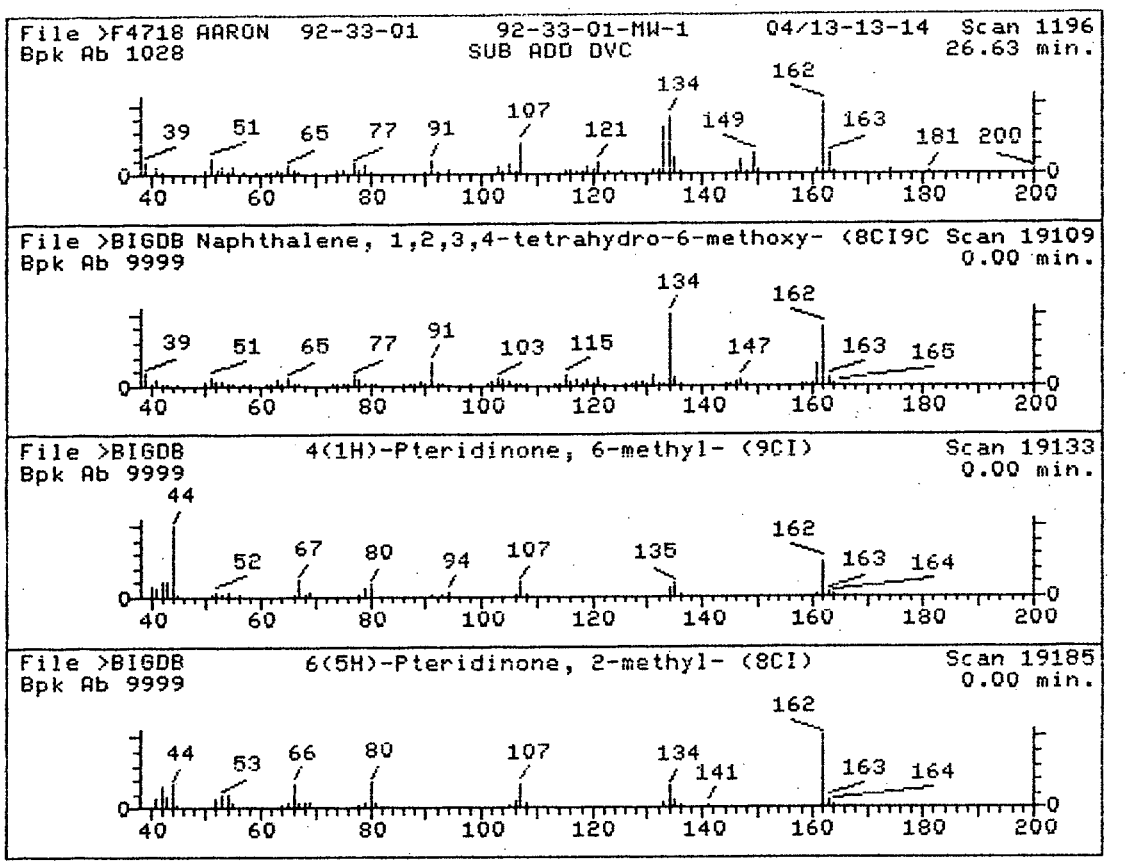

. Unknown #,12
Area = 33303.00 Tentative Concentration is 6.00

1.	Naphthalene, 1,2,3,4-tetrahydro-6-methoxy- (8CI9CI)	162	C11H14O
2.	4(1H)-Pteridinone, 6-methyl- (9CI)	162	C7H6N4O
3.	6(5H)-Pteridinone, 2-methyl- (8CI)	162	C7H6N4O
4.	Benzaldehyde, ethyl- (9CI)	134	C9H10O
5.	6(5H)-Pteridinone, 4-methyl- (8CI)	162	C7H6N4O
6.	3(2H)-Benzofuranone, 4,7-dimethyl- (8CI9CI)	162	C10H10O2
7.	Benzaldehyde, 2,5-dimethyl- (8CI9CI)	134	C9H10O

Sample file: >F4718 Spectrum #: 1196
Search speed: 1 Tilting option: N No. of ion ranges searched: 42

000173

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	26*	1730489	19109	"BIGDB	32	80	2	0	81	45	8	14
2.	25*	16041240	19133	"BIGDB	31	74	3	0	199	45	8	13
3.	25*	16041251	19185	"BIGDB	23	94	2	0	100	47	7	13
4.	21*	53951501	14536	"BIGDB	54	52	2	0	66	60	5	31
5.	20*	16041284	19134	"BIGDB	36	74	2	0	100	55	5	14
6.	20*	20895458	19147	"BIGDB	39	78	3	0	90	55	5	13
7.	18*	5779942	14514	"BIGDB	52	52	2	0	64	59	4	27

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SECTION 2.0

GC/MS TUNING AND MASS CALIBRATION

CALIBRATION STANDARD QUANT REPORT/ CHROMATOGRAMS

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5B

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

Lab Name: ECRA LABORATORIES, INC.

Lab File ID: >F4695 DFTPP Injection Date: 4/07/92

Instrument ID: HPMSD(F) DFTPP Injection Time: 4/07/92 8:31

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	49.9
68	Less than 2.0% of mass 69	0.0 0.0)1
69	Mass 69 relative abundance	51.
70	Less than 2.0% of mass 69	0.0 0.0)1
127	40.0 - 60.0% of mass 198	42.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.
199	5.0 - 9.0% of mass 198	8.7
275	10.0 - 30.0% of mass 198	21.7
365	Greater than 1.00% of mass 198	1.65
441	Present, but less than mass 443	11.2
442	Greater than 40.0% of mass 198	55.7
443	17.0 - 23.0% of mass 442	11.9 21.3)2

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

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	N/A	ABN STD 80 PPB	>F4696	4/07/92	9:01
02	N/A	ABN STD 20 PPB	>F4697	4/07/92	10:14
03	N/A	ABN STD 160PPB	>F4698	4/07/92	11:23
04	N/A	ABN STD 50 PPB	>F4699	4/07/92	12:34
05	N/A	ABN STD 120PPB	>F4700	4/07/92	13:52
06	N/A	ABN STD 160PPB	>F4701	4/07/92	15:16
07	N/A	METHOD BLANK	>F4702	4/07/92	16:39
08	N/A	92-009-A01-1	>F4703	4/07/92	17:53
09	N/A	92-009-SAND-MS	>F4704	4/07/92	19:07
10	N/A	92-009-SAND-MSD	>F4705	4/07/92	20:21
11					
12					
13					
14					
15					

FORM V SV 1/87 Rev.

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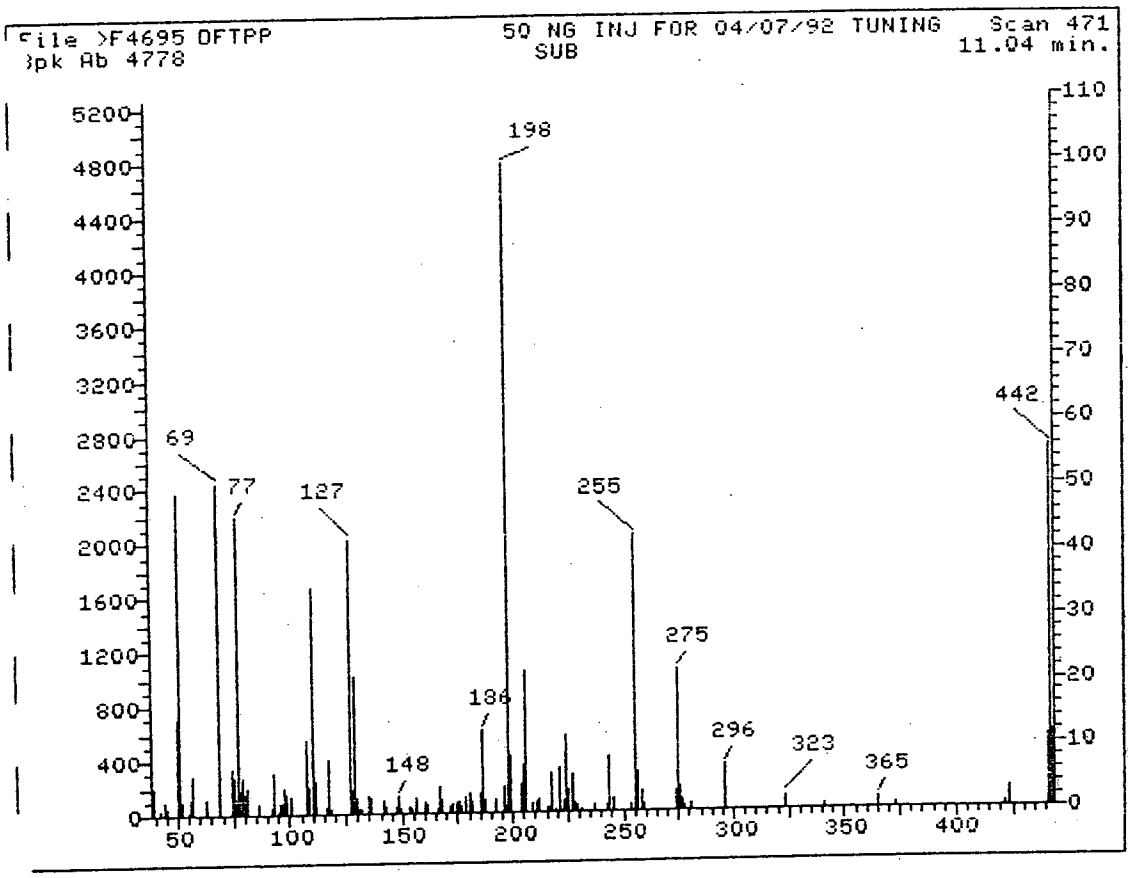

GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
51	30-60% of mass 198	49.85	49.85	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	51.19	51.19	Ok
70	Less than 2% of mass 69	0.00	0.00	Ok
127	40-60% of mass 198	42.49	42.49	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	8.69	8.69	Ok
275	10-30% of mass 198	21.75	21.75	Ok
365	Greater than 1% of mass 198	1.65	1.65	Ok
441	0-100% of mass 443	11.22	94.37	Ok
442	Greater than 40% of mass 198	55.73	55.73	Ok
443	17-23% of mass 442	11.89	21.33	Ok

Injection Date: 04/07/92
Injection Time: 08:31
Data File: >F4695
Scan: 471

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>F4695 DFTPP 50 NG INJ FOR 04/07/92 TUNING
471 SUB NRM

File: >F4695 Scan #: 471 Retn. time: 11.04

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
37.90	2.009	92.95	6.404	147.05	1.151	192.15	1.925	244.00	8.414
38.10	2.009	95.15	.356	147.95	2.616	196.05	3.997	245.10	2.072
39.00	3.977	95.95	1.800	148.55	1.402	196.65	1.172	252.90	1.088
42.70	.753	97.05	1.800	149.25	.335	198.05	100.000	255.00	42.633
44.10	2.177	98.05	4.081	149.45	.858	199.05	8.686	256.00	5.944
44.80	1.151	98.85	3.202	152.95	1.172	204.05	4.395	258.00	3.160
50.00	14.881	101.05	2.658	153.95	.816	205.15	7.514	258.70	.879
51.00	49.853	107.05	11.344	155.95	2.407	206.05	21.808	273.30	.921
52.10	2.114	108.05	4.060	160.05	1.570	209.05	1.486	274.00	2.972
55.00	.419	110.05	34.868	160.85	1.381	210.65	1.842	275.10	21.745
56.00	2.449	110.85	5.128	161.05	1.465	211.15	1.905	276.00	3.851
57.10	6.007	115.85	1.046	165.95	.795	215.75	.753	277.00	1.570
63.10	2.323	116.95	8.476	167.05	4.123	215.95	.691	278.10	.544
69.00	51.193	117.95	.607	167.85	1.360	216.85	4.458	281.00	1.046
74.10	7.116	126.95	42.486	168.15	1.905	217.05	5.965	296.10	6.969
74.80	5.609	127.85	2.993	172.05	1.067	219.55	.481	323.10	2.198
75.05	5.735	128.15	3.767	172.95	1.298	221.15	6.865	341.30	.733
76.05	2.428	129.05	21.180	174.05	1.591	222.95	1.842	365.10	1.653
76.95	45.982	129.85	2.239	175.15	1.570	224.10	11.888	372.80	.586
78.05	3.893	130.75	.607	176.95	1.026	225.10	3.537	421.75	.712
79.05	5.588	131.85	.586	178.85	2.428	227.00	5.756	423.05	3.181
80.05	2.909	134.25	1.088	180.15	2.951	228.00	1.528	441.05	11.218
80.85	4.186	134.95	2.595	181.15	1.653	228.90	1.193	442.05	55.735
85.95	1.758	136.05	2.281	185.25	3.056	231.00	.523	443.05	11.888
91.65	1.151	141.05	2.135	186.05	12.725	236.80	.900	444.05	1.444
92.35	1.088	142.75	.879	187.15	1.967	242.80	.921		

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NJDEP LAB CERT. I.D. NO. 14580
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FAX: (201) 361-1021

5B

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

Lab Name: ECRA LABORATORIES, INC.

ab File ID: >F4706 DFTPP Injection Date: 4/13/92

nstrument ID: HPMSD(F) DFTPP Injection Time: 4/13/92 10:46

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30.0 - 60.0% of mass 198	49.0	
68	Less than 2.0% of mass 69	0.0	0.0)1
69	Mass 69 relative abundance	49.	
70	Less than 2.0% of mass 69	0.0	0.0)1
127	40.0 - 60.0% of mass 198	41.3	
197	Less than 1.0% of mass 198	.3	
198	Base Peak, 100% relative abundance	100.	
199	5.0 - 9.0% of mass 198	6.5	
275	10.0 - 30.0% of mass 198	22.7	
365	Greater than 1.00% of mass 198	2.27	
441	Present, but less than mass 443	9.3	
442	Greater than 40.0% of mass 198	51.6	
443	17.0 - 23.0% of mass 442	9.3	18.1)2

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

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	N/A	ABN STD 80 PP	>F4707	4/13/92	11:10
02	N/A	METHOD BLANK	>F4708	4/13/92	12:46
03	N/A	92-19-01-EFFLUENT	>F4709	4/13/92	14:00
04	N/A	92-19-01-EFFLUENT DIL 1/100	>F4710	4/13/92	15:13
05	N/A	92-19-01-DI-MS	>F4711	4/13/92	16:25
06	N/A	92-19-01-DI-MSD	>F4712	4/13/92	17:38
07	N/A	92-19-01-EFFLUENT	>F4713	4/13/92	18:51
08					
09					
10					
11					
12					
13					
14					
15					

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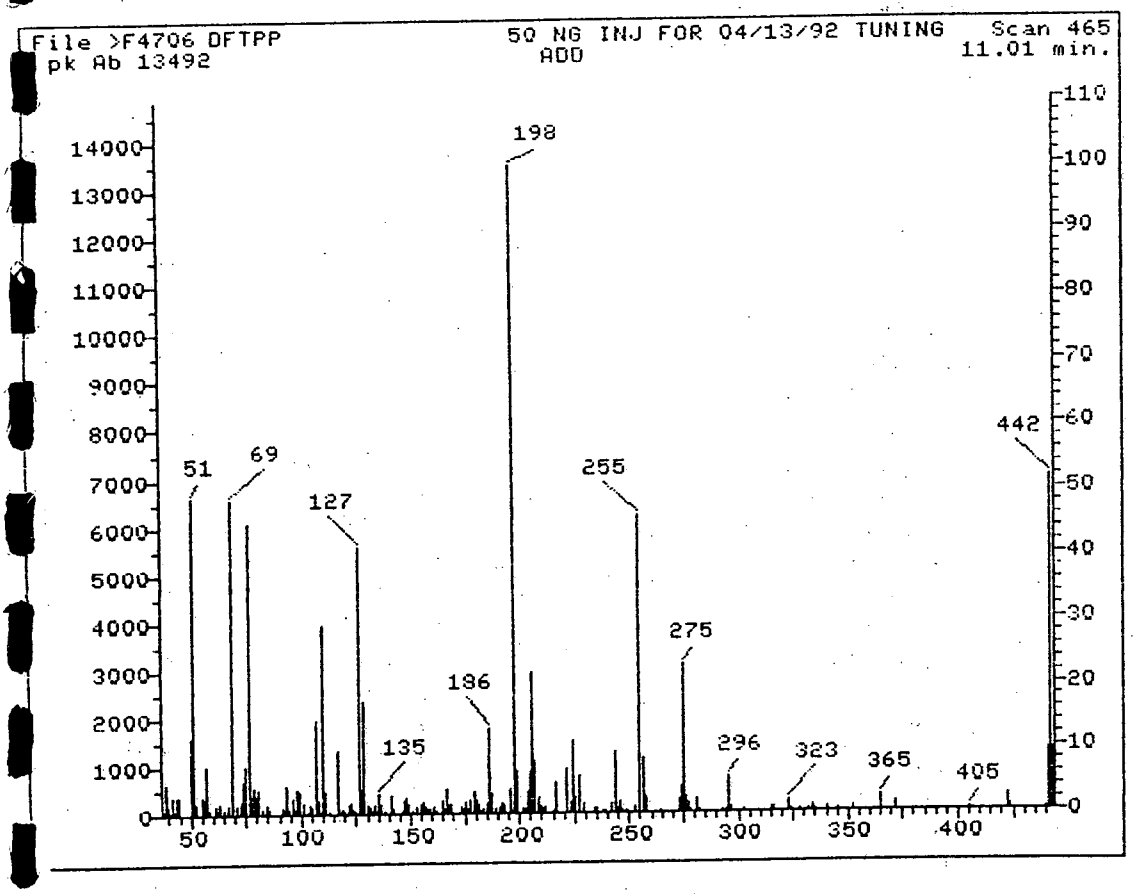

GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
51	30-60% of mass 198	49.01	49.01	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	48.65	48.65	Ok
70	Less than 2% of mass 69	0.00	0.00	Ok
127	40-60% of mass 198	41.31	41.31	Ok
197	Less than 1% of mass 198	.26	.26	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.49	6.49	Ok
275	10-30% of mass 198	22.74	22.74	Ok
365	Greater than 1% of mass 198	2.27	2.27	Ok
441	0-100% of mass 443	9.32	99.84	Ok
442	Greater than 40% of mass 198	51.65	51.65	Ok
443	17-23% of mass 442	9.33	18.07	Ok

Injection Date: 04/13/92
Injection Time: 10:46
Data File: >F4706
Scan: 465

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>F4706 DFTPP 50 NG INJ FOR 04/13/92 TUNING
465 ADD NRM

File: >F4706 Scan #: 465 Retn. time: 11.01

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
36.20	.230	91.15	.964	142.15	.704	190.75	.452	256.00	8.568
37.00	.282	91.95	.697	142.35	.726	191.05	.800	256.80	.408
37.40	.334	92.95	4.291	146.35	.274	191.35	.897	257.90	2.379
37.80	.667	94.75	.771	147.05	2.127	191.95	1.779	263.80	.208
38.10	.630	96.05	2.335	147.95	2.483	192.95	1.245	273.10	1.934
38.60	.430	96.85	.556	148.95	1.505	196.05	3.632	274.10	4.099
39.00	4.573	97.95	3.743	150.95	.341	197.05	.259	274.40	.578
39.70	1.386	99.05	3.432	151.95	.156	198.05	100.000	275.10	22.739
40.10	.252	101.05	1.712	152.45	.415	199.05	6.485	276.10	2.527
41.10	2.854	102.75	.415	153.05	1.067	201.35	.623	277.10	1.445
42.50	.823	104.05	1.290	154.95	1.275	203.05	.660	277.90	.289
43.20	2.772	104.75	.919	156.05	1.808	204.15	3.350	281.10	2.090
44.00	2.794	107.05	14.423	156.95	.956	204.45	.296	282.00	.430
50.00	11.889	107.95	2.216	158.05	.571	205.05	6.582	292.90	.371
51.00	49.014	108.75	.267	159.15	.771	205.15	.341	295.00	.259
51.80	1.771	109.95	29.084	160.95	1.201	206.05	21.865	296.00	5.403
54.90	2.661	110.45	.267	162.05	.296	207.05	8.101	296.90	.571
56.00	2.438	110.95	3.358	163.05	.178	208.15	2.476	302.20	.237
57.00	7.449	112.75	.252	164.95	2.068	209.25	1.090	302.80	.534
57.90	.571	112.95	.460	165.85	.726	210.05	.660	303.90	.200
60.90	1.379	116.95	9.880	166.15	.897	210.55	.830	314.70	.630
61.10	.712	118.15	.289	167.05	3.736	211.05	.993	316.10	.586
61.80	.749	118.55	.282	167.85	1.312	215.05	.519	316.30	.571
62.30	.341	118.85	.578	168.15	1.475	216.85	4.781	323.10	1.638
62.90	1.623	119.85	.482	173.05	.882	221.05	6.908	324.20	.393
63.20	1.556	121.95	1.371	174.15	.615	223.05	1.771	327.80	.319
64.90	.608	123.05	1.727	175.05	1.594	224.10	11.155	331.80	.289
65.20	.556	124.05	.697	175.85	.460	225.10	2.453	334.10	.971
66.80	1.216	124.75	.474	176.35	.674	227.00	5.707	335.00	.289
69.00	48.651	126.95	41.306	177.05	1.927	228.90	1.334	340.90	.660
71.10	1.393	127.95	3.824	179.05	3.335	233.80	.608	345.20	.215
72.40	.786	128.95	17.507	180.05	1.905	234.90	.630	351.90	.726
73.00	2.023	130.05	1.267	180.95	1.260	238.00	.341	365.10	2.268
74.00	5.151	130.95	.978	182.15	.378	239.30	.289	372.20	1.386
75.00	7.560	131.95	.489	182.45	.385	242.00	1.356	405.15	.252
76.95	45.042	133.05	1.260	183.15	.378	244.00	9.369	422.95	2.535
77.95	2.831	134.05	.371	183.45	.563	245.10	.726	423.85	.637
78.85	4.017	134.45	.170	185.05	1.601	246.00	1.727	439.65	.489
79.85	2.653	134.95	2.920	186.15	13.060	246.60	.222	439.95	.408
81.05	3.698	135.85	1.230	187.05	2.928	246.90	.252	441.15	9.317
82.15	.422	137.85	.415	187.35	.200	248.90	.393	442.05	51.645
82.75	.726	141.05	2.698	188.75	.556	252.90	1.090	443.05	9.331
84.85	1.445	141.85	.674	189.25	.645	255.00	45.938	444.15	1.312
85.55	.719								

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5B

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

Lab Name: ECRA LABORATORIES, INC.

Lab File ID: >F4714 DFTPP Injection Date: 4/15/92

Instrument ID: HPMSD(F) DFTPP Injection Time: 4/15/92 9:17

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	57.6
68	Less than 2.0% of mass 69	.1 .2)1
69	Mass 69 relative abundance	53.
70	Less than 2.0% of mass 69	.2 .4)1
127	40.0 - 60.0% of mass 198	40.1
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.
199	5.0 - 9.0% of mass 198	6.5
275	10.0 - 30.0% of mass 198	22.4
365	Greater than 1.00% of mass 198	2.42
441	Present, but less than mass 443	11.0
442	Greater than 40.0% of mass 198	61.1
443	17.0 - 23.0% of mass 442	11.2 18.4)2

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

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	N/A	BN STD 80 PPB	>F4715	4/15/92	9:41
02	N/A	METHOD BLANK	>F4716	4/15/92	11:34
03	N/A	92-33-01-F. B	>F4717	4/15/92	12:47
04	N/A	92-33-01-MW-1	>F4718	4/15/92	13:59
05	N/A	92-33-01-MW-2	>F4719	4/15/92	15:11
06	N/A	92-33-01-DI-MS	>F4720	4/15/92	16:23
07	N/A	92-33-01-DI-MSD	>F4721	4/15/92	17:37
08					
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15					

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>F4714 DFTPP 50 NG INJ FOR 04/15/92
468 ADD NRM

000133

File: >F4714 Scan #: 468 Retn. time: 11.03

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
37.10	.459	97.05	.445	150.65	.318	201.35	.154	265.60	.132
37.80	1.203	98.05	4.768	151.05	.186	203.15	1.144	265.90	.123
39.00	6.339	99.05	3.369	151.45	.363	204.05	3.519	271.10	.109
40.90	1.085	100.25	.645	153.05	1.081	205.05	5.916	272.20	.681
41.70	.091	100.95	1.621	154.05	.717	206.05	22.902	273.00	1.925
42.80	1.176	103.05	1.162	155.25	1.085	207.05	5.512	274.10	5.203
43.80	.490	103.75	.722	155.95	2.279	207.85	.736	274.20	2.066
45.00	.268	104.25	1.067	156.75	.150	208.05	.908	275.10	22.398
47.70	.163	104.75	1.267	157.35	.486	208.75	.377	276.10	3.651
48.30	.204	106.05	.577	157.55	.518	209.15	.404	277.00	1.771
49.00	.300	106.95	13.817	159.05	.390	210.45	.254	277.70	.450
50.00	16.364	107.95	2.361	159.75	.731	210.85	.440	281.10	1.562
51.00	57.646	108.85	.481	160.15	.654	211.15	.531	283.00	.381
52.10	3.319	109.95	25.913	160.95	.776	211.35	.454	291.80	.132
55.00	1.657	111.05	4.359	164.95	1.044	215.95	.450	292.60	.173
56.00	1.989	111.85	.495	166.35	.717	217.05	4.790	292.90	.222
57.00	5.040	116.05	1.426	167.05	5.190	217.95	.913	294.70	.322
59.90	.136	116.95	12.609	168.05	2.066	220.05	.222	296.10	5.135
60.90	.981	117.95	.318	168.15	.663	221.15	7.188	303.00	1.476
62.10	.645	121.15	.740	168.85	.745	221.75	.790	313.90	.522
63.10	2.139	121.85	1.058	169.75	.227	223.05	.999	314.20	.173
64.10	.363	122.85	1.721	170.55	.104	223.35	.963	315.00	.295
64.30	.354	124.05	.472	171.55	.277	224.00	10.856	323.20	2.357
64.90	1.094	124.85	.726	171.85	.163	225.10	2.752	327.00	.304
66.30	.177	125.05	.400	173.15	.586	226.00	.717	327.80	.150
67.00	.758	126.95	40.133	174.05	1.013	227.10	4.422	332.20	.422
67.70	.118	127.85	3.755	174.95	1.566	228.10	.672	333.00	.213
68.90	52.833	128.95	18.689	175.75	.713	229.10	.200	334.20	1.049
69.90	.227	129.85	2.166	175.95	.786	229.90	.150	335.10	.204
71.80	.127	130.95	.704	176.85	1.921	233.90	.150	341.10	.191
73.10	.772	132.15	.331	177.05	.804	234.90	.354	345.70	.177
73.80	1.530	132.95	.858	177.65	.213	235.10	.563	346.10	.259
74.10	3.641	133.55	.259	178.95	4.046	235.80	.213	352.10	.704
75.00	7.782	134.05	.799	180.15	3.083	236.00	.241	353.80	.322
75.95	1.648	135.05	2.947	180.85	1.230	236.80	.254	355.20	.304
77.05	47.121	135.95	1.049	184.55	.599	237.10	.268	365.00	2.416
77.95	3.351	136.85	1.058	185.15	2.815	240.20	.372	372.10	1.308
78.85	3.178	137.25	.509	185.95	12.001	242.20	.531	401.95	.627
79.85	3.206	141.05	2.302	187.05	3.878	243.10	1.394	402.85	.549
80.95	3.601	141.55	.245	188.15	.627	244.10	8.754	420.95	.259
81.95	1.235	142.05	.527	188.05	.372	245.30	1.162	421.65	.100
83.05	1.053	142.95	.381	189.05	.618	246.00	2.021	422.15	.277
84.95	.726	145.95	.450	191.05	1.158	248.00	.241	423.15	3.405
85.85	.504	146.15	.440	192.05	1.276	249.10	.209	424.05	.604
89.95	.163	146.45	.413	193.05	.908	252.90	.204	439.45	.272
90.25	.204	147.05	1.798	194.55	.241	253.60	.150	440.25	.495
90.85	.985	147.85	2.574	194.95	.436	255.00	50.527	441.15	11.024
91.35	.536	148.15	1.058	195.95	4.627	256.00	6.838	442.05	61.061
91.85	.831	148.85	.899	198.05	100.000	257.10	.531	443.15	11.220
92.95	5.004	149.95	.286	199.05	6.457	258.00	3.228	444.05	.835
[illegible]	[illegible]	150.35	.173	200.25	.404	265.00	1.585	444.15	.409

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Initial Calibration Data
HSL Compounds

Case No:

Instrument ID: MSD-2

Contractor: ECRA LABS

Calibration Date: 04/07/92

Contract No:

Minimum $\overline{RF}$ for SPCC is .05 Maximum % RSD for CCC is 30%

Compound	>F4697 RF 20.00	>F4699 RF 50.00	>F4696 RF 80.00	>F4700 RF 120.00	>F4701 RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC	
N-NITROSODIMETHYLAMINE	.42962	.56042	.54394	.55963	.56613	.450	.53195	10.864			
BIS(2-CHLOROETHYL)ETHER	.88689	.92857	.85056	.86226	.81440	.940	.86854	4.896			
1,3-DICHLOROBENZENE	.97903	.87530	.83052	.75167	.72447	.993	.83220	12.241			
1,4-DICHLOROBENZENE	.97366	.87789	.85208	.73251	.70786	1.004	.82880	13.194	*		
1,2-DICHLOROBENZENE	1.03827	.90410	.88080	.77124	.73735	1.049	.86635	13.764			
BIS(2-CHLOROISOPROPYL)ETHER	2.78257	2.06658	2.52145	2.28992	1.75950	1.068	2.28400	17.339			
N-NITROSO-DI-N-PROPYLAMINE	.94705	.91857	.85852	.83320	.80525	1.101	.87252	6.767		**	
HEXACHLOROETHANE	.42975	.41167	.42028	.36161	.34192	1.124	.39305	9.885			
NITROBENZENE-D5(SURROGATE)	.43862	.42086	.43892	.41593	.42654	.866	.42818	2.424			(Conc=50.0,50.0,50.0,50.0
NITROBENZENE	.42221	.42658	.42720	.40690	.40429	.870	.41744	2.639			
ISOPHORONE	.95443	.92108	.92751	.89418	.90755	.912	.92095	2.464			
BIS(2-CHLOROETHOXY)METHANE	.47703	.51323	.46990	.48446	.46611	.950	.48214	3.887			
1,2,4-TRICHLOROBENZENE	.34279	.33423	.31700	.28802	.29233	.991	.31487	7.759			
NAPHTHALENE	1.02300	1.00856	.98211	.88592	.85777	1.005	.95147	7.863			
HEXACHLOROBUTADIENE	.19172	.18855	.18386	.17644	.17141	1.037	.18240	4.611	*		
HEXACHLOROCYCLOPENTADIENE	.06240	.15393	.18597	.20859	.19894	.878	.16197	36.651		**	
2-FLUOROBIPHENYL(SURROGATE)	1.27093	1.19996	1.20982	1.23609	1.16241	.899	1.21584	3.338			(Conc=50.0,50.0,50.0,50.0
2-CHLORONAPHTHALENE	1.19940	1.13455	1.07222	.95980	.88046	.916	1.04929	12.320			
DIMETHYLPHTHALATE	1.52314	1.52117	1.36314	1.37093	1.27253	.960	1.41018	7.750			
ACENAPHTHYLENE	2.16715	1.97416	1.82479	1.66718	1.51438	.978	1.82953	13.952			
2,6-DINITROTOLUENE	.24024	.24974	.24442	.22839	.22410	.972	.23738	4.555			
ACENAPHTHENE	1.14875	1.15119	1.04491	.98133	.82346	1.005	1.02993	13.210	*		
2,4-DINITROTOLUENE	.55340	.60011	.59395	.57642	.54143	1.029	.57306	4.420			
DIETHYLPHTHALATE	1.90412	1.83251	1.60603	1.55249	1.42989	1.062	1.66501	11.886			
4-CHLOROPHENYL-PHENYLETHER	.84780	.80121	.70330	.65838	.57892	1.075	.71792	15.080			
FLUORENE	1.60499	1.48876	1.31750	1.19074	1.11041	1.078	1.34248	15.257			
N-NITROSODIPHENYLAMINE	.42838	.43315	.39311	.35884	.33183	.899	.38906	11.273	*		
4-BROMOPHENYL-PHENYLETHER	.22404	.22784	.20631	.18165	.17400	.943	.20277	11.997			
HEXACHLOROBENZENE	.27838	.26060	.24024	.23024	.22164	.964	.24622	9.387			
PHENANTHRENE	1.18463	1.08931	.99525	.82902	.78894	1.003	.97743	17.220			

RF - Response Factor (Subscript is amount in UG/L)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

000185

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NJDEP LAB CERT. I.D. NO. 14580
273 FRANKLIN ROAD
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FAX: (201) 361-1021

Initial Calibration Data
HSL Compounds

Case No:

Instrument ID: MSD-2

Contractor: ECRA LABS

Calibration Date: 04/07/92

Contract No:

Minimum $\overline{RF}$ for SPCC is .05 Maximum % RSD for CCC is 30%

Laboratory ID:	>F4697	>F4699	>F4696	>F4700	>F4701						
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC	
ANTHRACENE	1.24283	1.11274	1.00186	.86043	.78067	1.009	.99971	18.665			
DI-N-BUTYLPHTHALATE	1.80324	1.64593	1.45644	1.23200	1.12482	1.067	1.45248	19.364			
FLUORANTHENE	1.84451	1.56921	1.41987	1.21550	1.10513	1.147	1.43084	20.461	*		
BENZIDINE	.54838	.41072	.32674	.20140	.20212	.869	.33787	43.599			
PYRENE	1.34281	1.26626	1.11571	.96931	.87046	.882	1.11291	17.732			
TERPHENYL-D14(SURROGATE)	.82171	.84066	.85984	.83949	.80679	.892	.83370	2.424			(Conc=50.0,50.0,50.0,50.0
BUTYLBENZYLPHTHALATE	.73927	.72315	.65332	.57458	.51784	.935	.64163	14.813			
3,3'-DICHLOROBENZIDINE	.42154	.37794	.36811	.30932	.29080	.991	.35354	15.049			
BENZO(A)ANTHRACENE	1.25686	1.24113	1.14537	1.04099	.95818	.998	1.12851	11.392			
BIS(2-ETHYLHEXYL)PHTHALATE	1.07088	1.00326	.85588	.69601	.58853	.993	.84291	24.032			
CHRYSENE	1.14707	1.13795	1.04793	.93400	.86273	1.003	1.02594	12.212			
DI-N-OCTYLPHTHALATE	1.62692	1.83300	1.52354	1.57165	1.34569	.871	1.58016	11.159	*		
BENZO(B)FLUORANTHENE	1.10932	1.40944	1.34549	1.50337	1.30940	.939	1.33540	10.954			
BENZO(K)FLUORANTHENE	1.04876	1.12780	.88362	.80545	.65125	.943	.90338	21.080			
BENZO(A)PYRENE	1.04632	1.24906	1.12970	1.16914	1.02727	.991	1.12430	8.091	*		
INDENO(1,2,3-CD)PYRENE	1.14623	1.30653	1.11273	1.04145	.87933	1.232	1.09726	14.195			
DIBENZO(A,H)ANTHRACENE	.85703	.98561	.82239	.81165	.67801	1.235	.83094	13.243			
BENZO(G,H,I)PERYLENE	1.01187	1.12473	.94380	.88494	.69930	1.301	.93293	16.950			

RF - Response Factor (Subscript is amount in UG/L)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

000186

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Initial Calibration Data
HSL Compounds

Case No:

Instrument ID: CALAWX-MSD2

Contractor: ECRA LABS

Calibration Date: 04/07/92

Contract No:

Minimum $\overline{RF}$ for SPCC is .05 Maximum % RSD for CCC is 30%

Laboratory ID:	>F4697	>F4699	>F4696	>F4700	>F4701						
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC	
2-FLUOROPHENOL (SURROGATE)	.67955	.62019	.58335	.61380	.58367	.720	.61611	6.376			(Conc=100.0,100.0,100.0,1
PHENOL-D5(SUROGATE STD.)	1.08076	1.03225	.98319	.97762	.95290	.917	1.00534	5.077			(Conc=100.0,100.0,100.0,1
PHENOL	1.15845	1.06301	1.02785	.96378	.94983	.921	1.03258	8.156	*		
2-CHLOROPHENOL	.86710	.80569	.76873	.72938	.67725	.958	.76963	9.405			
2-NITROPHENOL	.20281	.21182	.19941	.19117	.18753	.930	.19855	4.849	*		
2,4-DIMETHYLPHENOL	.40837	.38924	.37169	.34598	.33794	.933	.37064	7.921			
2,4-DICHLOROPHENOL	.29549	.29195	.30414	.28482	.27452	.974	.29018	3.853	*		
4-CHLORO-3-METHYLPHENOL	.41868	.40838	.40966	.37747	.37294	1.103	.39743	5.217	*		
2,4,6-TRICHLOROPHENOL	.38712	.38349	.35769	.34534	.30692	.888	.35611	9.152	*		
2,4-DINITROPHENOL	-	.12656	.15508	.18412	.19196	1.007	.16443	18.133		**	
4-NITROPHENOL	.24644	.28013	.32517	.30501	.29761	1.014	.29087	10.187		**	
2,4,6-TRIBROMOPHENOL(SURROG.)	.25811	.24927	.23783	.25317	.23884	1.115	.24745	3.594			(Conc=100.0,100.0,100.0,1
4,6-DINITRO-2-METHYLPHENOL	.10795	.14747	.15238	.14716	.13508	.897	.13800	13.023			
PENTACHLOROPHENOL	.09469	.12076	.13589	.13108	.13206	.983	.12290	13.615	*		

RF - Response Factor (Subscript is amount in UG/L)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

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QUANT REPORT

Operator ID: JEAN
Output File: ^F4697::QT
Data File: >F4697::F2
Name: ABN STD 20 PPB
Misc: INJ FOR 04/07/92 TUNING

Quant Rev: 6
Quant Time: 920407 11:18
Injected at: 920407 10:14
Dilution Factor: 1.00000

ID File: PPS2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270 000188
Last Calibration: 920313 16:17

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*1,4-DICHLOROBENZENE-D4	12.92	442	19075	50.00	UG/KG	94
2)	2-FLUOROPHENOL (SURROGATE)	9.30	243	25925	105.15	UG/KG	68
3)	PHENOL-D5(SUROGATE STD.)	11.84	383	41231	108.25	UG/KG	93
4)	PHENOL	11.88	385	8839	22.32	UG/KG	94
5)	2-CHLOROPHENOL	12.37	412	6616	21.70	UG/KG	85
6)	*NAPHTHALENE-D8	16.95	664	60154	50.00	UG/KG	92
7)	2-NITROPHENOL	15.75	598	4880	19.76	UG/KG	92
8)	2,4-DIMETHYLPHENOL	15.80	601	9826	21.59	UG/KG	94
9)	2,4-DICHLOROPHENOL	16.49	639	7110	20.03	UG/KG	86
10)	4-CHLORO-3-METHYLPHENOL	18.71	761	10074	20.61	UG/KG	93
11)	*ACENAPHTHENE-D10	22.79	986	42790	50.00	UG/KG	93
12)	2,4,6-TRICHLOROPHENOL	20.23	845	6626	20.86	UG/KG	92
14)	4-NITROPHENOL	23.08	1002	4218	14.74	UG/KG	70
15)	2,4,6-TRIBROMOPHENOL(SURROG.)	25.41	1130	22089	125.69	UG/KG	95
16)	*PHENANTHRENE-D10	27.70	1256	99772	50.00	UG/KG	87
17)	4,6-DINITRO-2-METHYLPHENOL	24.81	1097	4308	14.16	UG/KG	57
18)	PENTACHLOROPHENOL	27.23	1230	3779	14.09	UG/KG	81
19)	*1,4-DICHLOROBENZENE-D4	12.92	442	19075	50.00	UG/KG	98
20)	N-NITROSODIMETHYLAMINE	5.80	50	3278	16.26	UG/KG	100
21)	BIS(2-CHLOROETHYL)ETHER	12.14	399	6767	19.97	UG/KG	86
22)	1,3-DICHLOROBENZENE	12.83	437	7470	23.57	UG/KG	92
23)	1,4-DICHLOROBENZENE	12.97	445	7429	23.99	UG/KG	97
24)	1,2-DICHLOROBENZENE	13.55	477	7922	24.30	UG/KG	92
25)	BIS(2-CHLOROISOPROPYL)ETHER	13.81	491	21231	28.21	UG/KG	100
26)	N-NITROSO-DI-N-PROPYLAMINE	14.21	513	7226	21.44	UG/KG	90
27)	HEXACHLOROETHANE	14.53	531	3279	22.16	UG/KG	94
28)	*NAPHTHALENE-D8	16.95	664	60154	50.00	UG/KG	98
29)	NITROBENZENE-D5(SURROGATE)	14.68	539	26385	49.18	UG/KG	95
30)	NITROBENZENE	14.73	542	10159	20.71	UG/KG	86
31)	ISOPHORONE	15.44	581	22965	21.11	UG/KG	93
32)	BIS(2-CHLOROETHOXY)METHANE	16.09	617	11478	19.45	UG/KG	92
33)	1,2,4-TRICHLOROBENZENE	16.80	656	8248	21.82	UG/KG	97
34)	NAPHTHALENE	17.02	668	24615	21.92	UG/KG	98
35)	HEXACHLOROBUTADIENE	17.58	699	4613	21.79	UG/KG	94
36)	*ACENAPHTHENE-D10	22.79	986	42790	50.00	UG/KG	96
37)	HEXACHLOROCYCLOPENTADIENE	20.00	832	1068	7.56	UG/KG	78
38)	2-FLUOROBIPHENYL(SURROGATE)	20.49	859	54383	51.82	UG/KG	92
39)	2-CHLORONAPHTHALENE	20.87	880	20529	22.27	UG/KG	93
40)	DIMETHYLPHTHALATE	21.87	935	26070	20.93	UG/KG	94
41)	ACENAPHTHYLENE	22.29	958	37093	23.90	UG/KG	97
42)	2,6-DINITROTOLUENE	22.12	949	4112	20.90	UG/KG	83
43)	ACENAPHTHENE	22.88	991	19662	22.60	UG/KG	91
44)	2,4-DINITROTOLUENE	23.43	1021	9472	19.51	UG/KG	96

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	Compound	R.T.	Scan#	Area	Conc	Units	q
45)	DIETHYLPHTHALATE	24.19	1063	32591	24.11	UG/KG	92
46)	4-CHLOROPHENYL-PHENYLETHER	24.48	1079	14511	26.09	UG/KG	75
47)	FLUORENE	24.56	1083	27471	25.74	UG/KG	97
48)	*PHENANTHRENE-D10	27.70	1256	99772	50.00	UG/KG	87
49)	N-NITROSODIPHENYLAMINE	24.88	1101	17096	19.16	UG/KG	96
50)	4-BROMOPHENYL-PHENYLETHER	26.10	1168	8941	23.31	UG/KG	93
51)	HEXACHLOROBENZENE	26.68	1200	11110	24.57	UG/KG	80
52)	PHENANTHRENE	27.77	1260	47277	24.21	UG/KG	97
53)	ANTHRACENE	27.92	1268	49600	25.22	UG/KG	98
54)	DI-N-BUTYLPHTHALATE	29.53	1357	71965	24.69	UG/KG	99
55)	FLUORANTHENE	31.75	1479	73612	27.38	UG/KG	85
56)	*CHRYSENE-D12	36.85	1760	141613	50.00	UG/KG	93
57)	BENZIDINE	32.04	1495	31063M	27.15	UG/KG	97
58)	PYRENE	32.51	1521	76064	22.76	UG/KG	84
59)	TERPHENYL-D14(SURROGATE)	32.91	1543	116365	49.38	UG/KG	93
60)	BUTYLBENZYLPHTHALATE	34.47	1629	41876	20.62	UG/KG	98
61)	3,3'-DICHLOROBENZIDINE	36.52	1742	23878	20.81	UG/KG	97
62)	BENZO(A)ANTHRACENE	36.76	1755	71195	21.49	UG/KG	98
63)	BIS(2-ETHYLHEXYL)PHTHALATE	36.62	1747	60660	23.42	UG/KG	96
64)	CHRYSENE	36.96	1766	64976	22.33	UG/KG	98
65)	*PERYLENE-D12	45.50	2236	174382	50.00	UG/KG	98
66)	DI-N-OCTYLPHTHALATE	39.58	1910	113482	17.86	UG/KG	100
67)	BENZO(B)FLUORANTHENE	42.65	2079	77378M	15.63	UG/KG	95
68)	BENZO(K)FLUORANTHENE	42.81	2088	73154	23.53	UG/KG	95
69)	BENZO(A)PYRENE	45.01	2209	72984	17.96	UG/KG	98
70)	INDENO(1,2,3-CD)PYRENE	55.91	2809	79953	23.30	UG/KG	92
71)	DIBENZO(A,H)ANTHRACENE	55.99	2813	59780	22.25	UG/KG	81
72)	BENZO(G,H,I)PERYLENE	59.00	2979	70581	24.65	UG/KG	98

* Compound is ISTD

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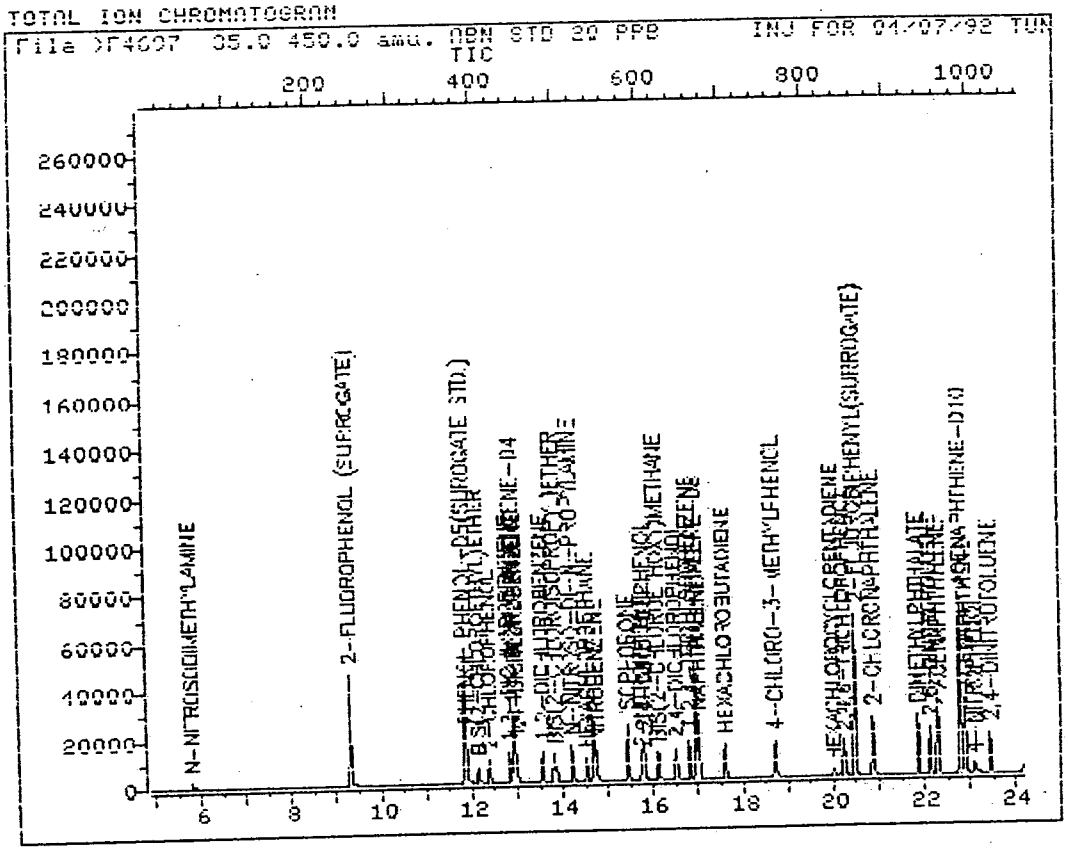

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Name: ABN STD 20 PPB
Misc: INJ FOR 04/07/92 TUNING

Quant Output File: ^F4697::QT

Id File: PPS2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270
Last Calibration: 920313 16:17

Operator ID: JEAN
Quant Time: 920407 11:18
Injected at: 920407 10:14

TIC page 1 of 3

ENVIRONMENTAL
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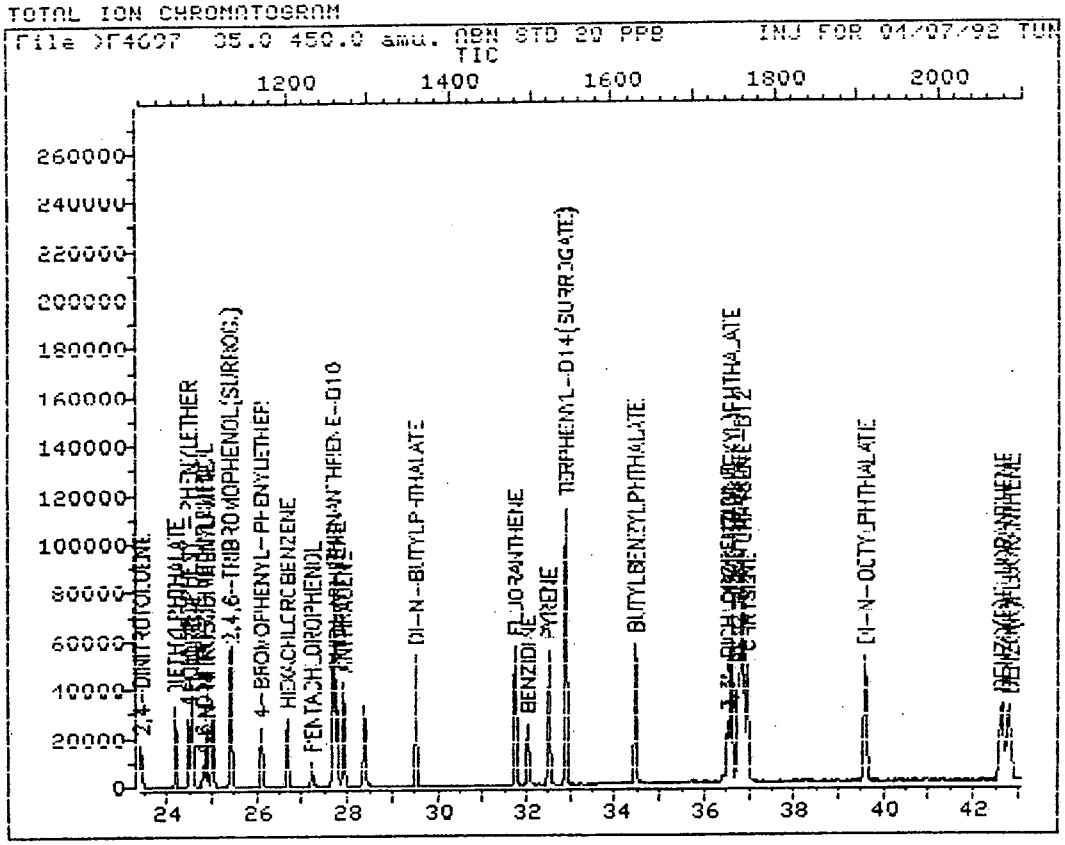
TOTAL ION CHROMATOGRAM



Data File: >F4697::F2 Quant Output File: ^F4697::QT
Name: ABN STD 20 PPB
Misc: INJ FOR 04/07/92 TUNING

Id File: PPS2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270
Last Calibration: 920313 16:17

Operator ID: JEAN
Quant Time: 920407 11:18
Injected at: 920407 10:14

TIC page 2 of 3

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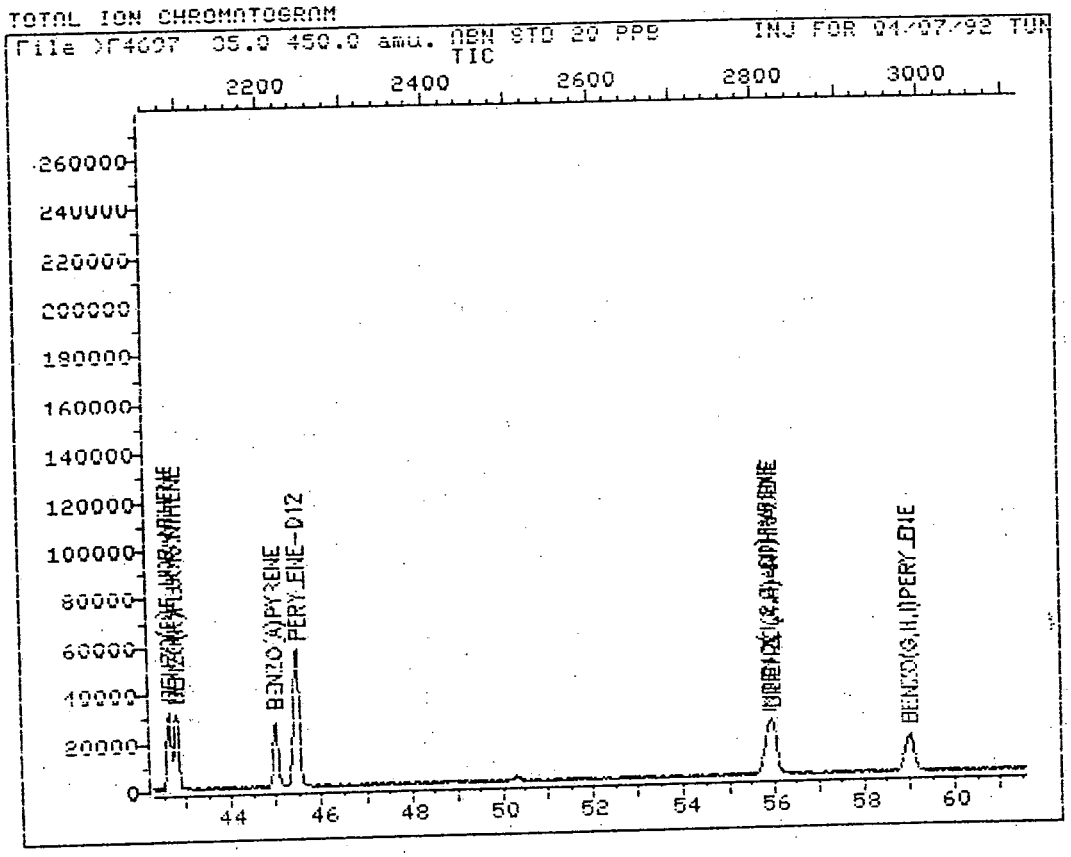
PHONE: (201) 361-4252
FAX: (201) 361-1021

TOTAL ION CHROMATOGRAM



Data File: >F4697::F2
Name: ABN STD 20 PPB
Misc: INJ FOR 04/07/92 TUNING

Quant Output File: ^F4697::QT

Id File: PPS2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270
Last Calibration: 920313 16:17

Operator ID: JEAN
Quant Time: 920407 11:18
Injected at: 920407 10:14

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QUANT REPORT

Operator ID: JEAN
Output File: ^F4699::QT
Data File: >F4699::F2
Name: ABN STD 50 PPB
Misc: INJ FOR 04/07/92 TUNING

Quant Rev: 6
Quant Time: 920407 13:43
Injected at: 920407 12:34
Dilution Factor: 1.00000

ID File: PPS2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270
Last Calibration: 920313 16:17

0 0193

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*1,4-DICHLOROBENZENE-D4	12.93	442	23504	50.00	UG/KG	94
2)	2-FLUOROPHENOL (SURROGATE)	9.31	243	29154	95.96	UG/KG	56
3)	PHENOL-D5(SUROGATE STD.)	11.86	383	48524	103.39	UG/KG	91
4)	PHENOL	11.89	385	24985	51.21	UG/KG	89
5)	2-CHLOROPHENOL	12.38	412	18937	50.42	UG/KG	99
6)	*NAPHTHALENE-D8	16.96	664	65892	50.00	UG/KG	88
7)	2-NITROPHENOL	15.76	598	13957	51.61	UG/KG	97
8)	2,4-DIMETHYLPHENOL	15.80	600	25648	51.45	UG/KG	94
9)	2,4-DICHLOROPHENOL	16.51	639	19237	49.48	UG/KG	92
10)	4-CHLORO-3-METHYLPHENOL	18.70	760	26909	50.26	UG/KG	86
11)	*ACENAPHTHENE-D10	22.79	985	46325	50.00	UG/KG	93
12)	2,4,6-TRICHLOROPHENOL	20.25	845	17765	51.66	UG/KG	94
13)	2,4-DINITROPHENOL	22.95	994	5863M	41.22	UG/KG	
14)	4-NITROPHENOL	23.10	1002	12977	41.88	UG/KG	74
15)	2,4,6-TRIBROMOPHENOL(SURROG.)	25.42	1130	23095	121.38	UG/KG	96
16)	*PHENANTHRENE-D10	27.69	1255	108465	50.00	UG/KG	92
17)	4,6-DINITRO-2-METHYLPHENOL	24.82	1097	15995	48.36	UG/KG	71
18)	PENTACHLOROPHENOL	27.24	1230	13098	44.91	UG/KG	80
19)	*1,4-DICHLOROBENZENE-D4	12.93	442	23504	50.00	UG/KG	97
20)	N-NITROSODIMETHYLAMINE	5.81	50	13172	53.03	UG/KG	100
21)	BIS(2-CHLOROETHYL)ETHER	12.15	399	21825	52.27	UG/KG	90
22)	1,3-DICHLOROBENZENE	12.84	437	20573	52.69	UG/KG	98
23)	1,4-DICHLOROBENZENE	12.98	445	20634	54.08	UG/KG	98
24)	1,2-DICHLOROBENZENE	13.55	476	21250	52.90	UG/KG	94
25)	BIS(2-CHLOROISOPROPYL)ETHER	13.80	490	48573	52.37	UG/KG	100
26)	N-NITROSO-DI-N-PROPYLAMINE	14.22	513	21590	51.98	UG/KG	92
27)	HEXACHLOROETHANE	14.53	530	9676	53.06	UG/KG	95
28)	*NAPHTHALENE-D8	16.96	664	65892	50.00	UG/KG	98
29)	NITROBENZENE-D5(SURROGATE)	14.67	538	27731	47.19	UG/KG	96
30)	NITROBENZENE	14.74	542	28108	52.31	UG/KG	84
31)	ISOPHORONE	15.45	581	60692	50.93	UG/KG	93
32)	BIS(2-CHLOROETHOXY)METHANE	16.11	617	33818	52.31	UG/KG	92
33)	1,2,4-TRICHLOROBENZENE	16.81	656	22023	53.20	UG/KG	97
34)	NAPHTHALENE	17.03	668	66456	54.04	UG/KG	99
35)	HEXACHLOROBUTADIENE	17.58	698	12424	53.58	UG/KG	98
36)	*ACENAPHTHENE-D10	22.79	985	46325	50.00	UG/KG	96
37)	HEXACHLOROCYCLOPENTADIENE	20.01	832	7131	46.62	UG/KG	74
38)	2-FLUOROBIPHENYL(SURROGATE)	20.48	858	55588	48.93	UG/KG	90
39)	2-CHLORONAPHTHALENE	20.88	880	52558	52.65	UG/KG	94
40)	DIMETHYLPHTHALATE	21.88	935	70468	52.26	UG/KG	94
41)	ACENAPHTHYLENE	22.30	958	91453	54.44	UG/KG	98
42)	2,6-DINITROTOLUENE	22.13	949	11569	54.32	UG/KG	82
43)	ACENAPHTHENE	22.90	991	53329	56.63	UG/KG	90

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PHONE: (201) 361-4252
FAX: (201) 361-1021

	Compound	R.T.	Scan#	Area	Conc	Units	q
44)	2,4-DINITROTOLUENE	23.44	1021	27800	52.90	UG/KG	94
45)	DIETHYLPHTHALATE	24.21	1063	84891	58.01	UG/KG	93
46)	4-CHLOROPHENYL-PHENYLETHER	24.50	1079	37116	61.63	UG/KG	83
47)	FLUORENE	24.57	1083	68967	59.70	UG/KG	93
48)	*PHENANTHRENE-D10	27.69	1255	108465	50.00	UG/KG	92
49)	N-NITROSODIPHENYLAMINE	24.90	1101	46982	48.43	UG/KG	93
50)	4-BROMOPHENYL-PHENYLETHER	26.11	1168	24713	59.26	UG/KG	91
51)	HEXACHLOROBENZENE	26.68	1199	28266	57.49	UG/KG	90
52)	PHENANTHRENE	27.79	1260	118152	55.65	UG/KG	97
53)	ANTHRACENE	27.93	1268	120693	56.45	UG/KG	97
54)	DI-N-BUTYLPHTHALATE	29.55	1357	178526	56.34	UG/KG	98
55)	FLUORANTHENE	31.76	1479	170204	58.24	UG/KG	86
56)	*CHRYSENE-D12	36.87	1760	134784	50.00	UG/KG	96
57)	BENZIDINE	32.05	1495	55359	50.83	UG/KG	97
58)	PYRENE	32.54	1522	170672	53.65	UG/KG	88
59)	TERPHENYL-D14(SURROGATE)	32.91	1542	113307	50.52	UG/KG	94
60)	BUTYLBENZYLPHTHALATE	34.49	1629	97469	50.42	UG/KG	96
61)	3,3'-DICHLOROBENZIDINE	36.56	1743	50940	46.64	UG/KG	88
62)	BENZO(A)ANTHRACENE	36.80	1756	167285	53.05	UG/KG	97
63)	BIS(2-ETHYLHEXYL)PHTHALATE	36.63	1747	135223	54.86	UG/KG	95
64)	CHRYSENE	37.00	1767	153377	55.38	UG/KG	95
65)	*PERYLENE-D12	45.50	2235	146867	50.00	UG/KG	98
66)	DI-N-OCTYLPHTHALATE	39.62	1911	269207	50.30	UG/KG	100
67)	BENZO(B)FLUORANTHENE	42.69	2080	207000M	49.65	UG/KG	98
68)	BENZO(K)FLUORANTHENE	42.87	2090	165637	63.26	UG/KG	98
69)	BENZO(A)PYRENE	45.09	2212	183445	53.60	UG/KG	95
70)	INDENO(1,2,3-CD)PYRENE	55.97	2811	191886M	66.40	UG/KG	
71)	DIBENZO(A,H)ANTHRACENE	56.15	2821	144753	63.97	UG/KG	83
72)	BENZO(G,H,I)PERYLENE	59.17	2987	165185M	68.49	UG/KG	97

* Compound is ISTD

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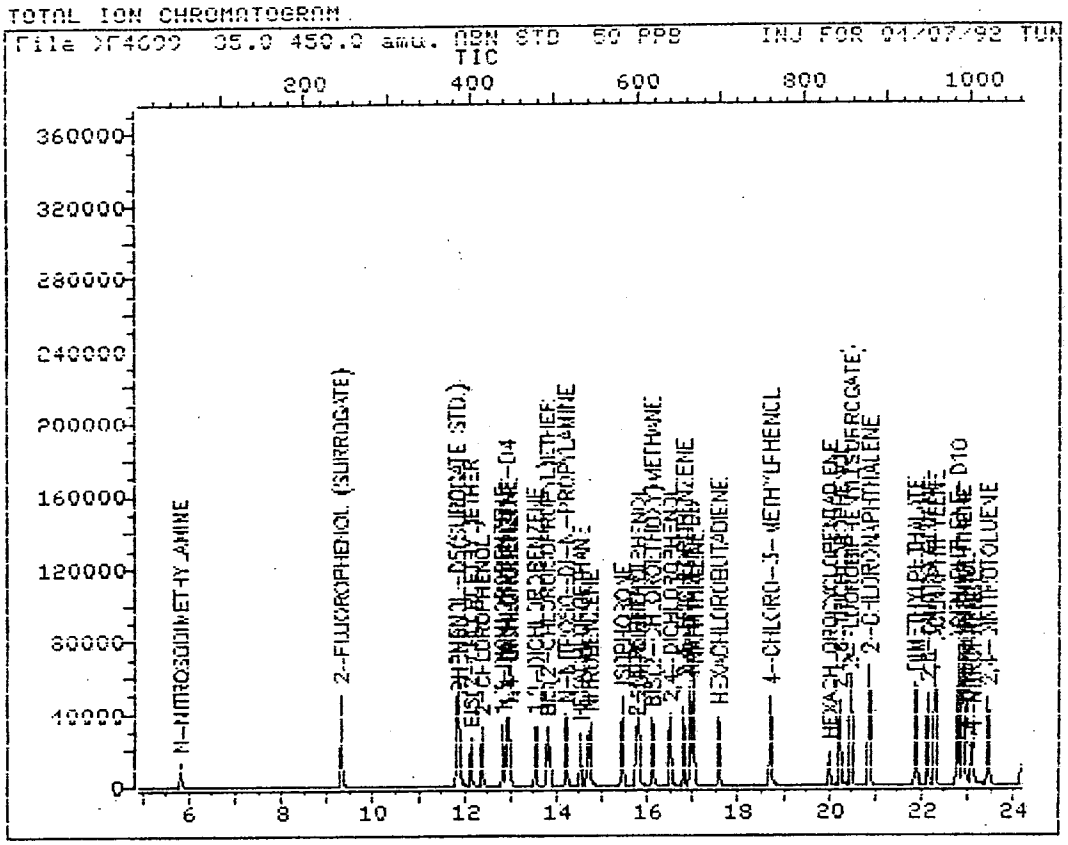

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Misc: INJ FOR 04/07/92 TUNING

Id File: PPS2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270
Last Calibration: 920313 16:17

Operator ID: JEAN
Quant Time: 920407 13:43
Injected at: 920407 12:34

TIC page 1 of 3

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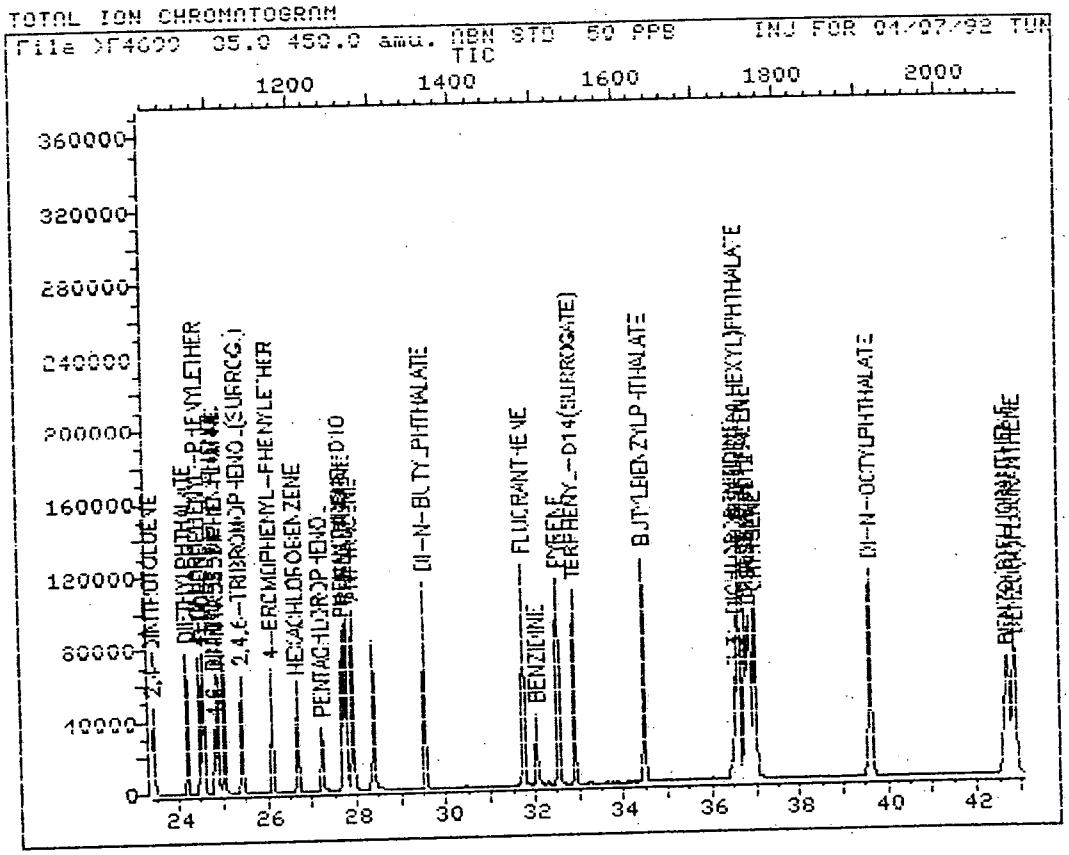

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Misc: INJ FOR 04/07/92 TUNING

Quant Output File: ^F4699::QT

Id File: PPS2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270
Last Calibration: 920313 16:17

Operator ID: JEAN
Quant Time: 920407 13:43
Injected at: 920407 12:34

TIC page 2 of 3

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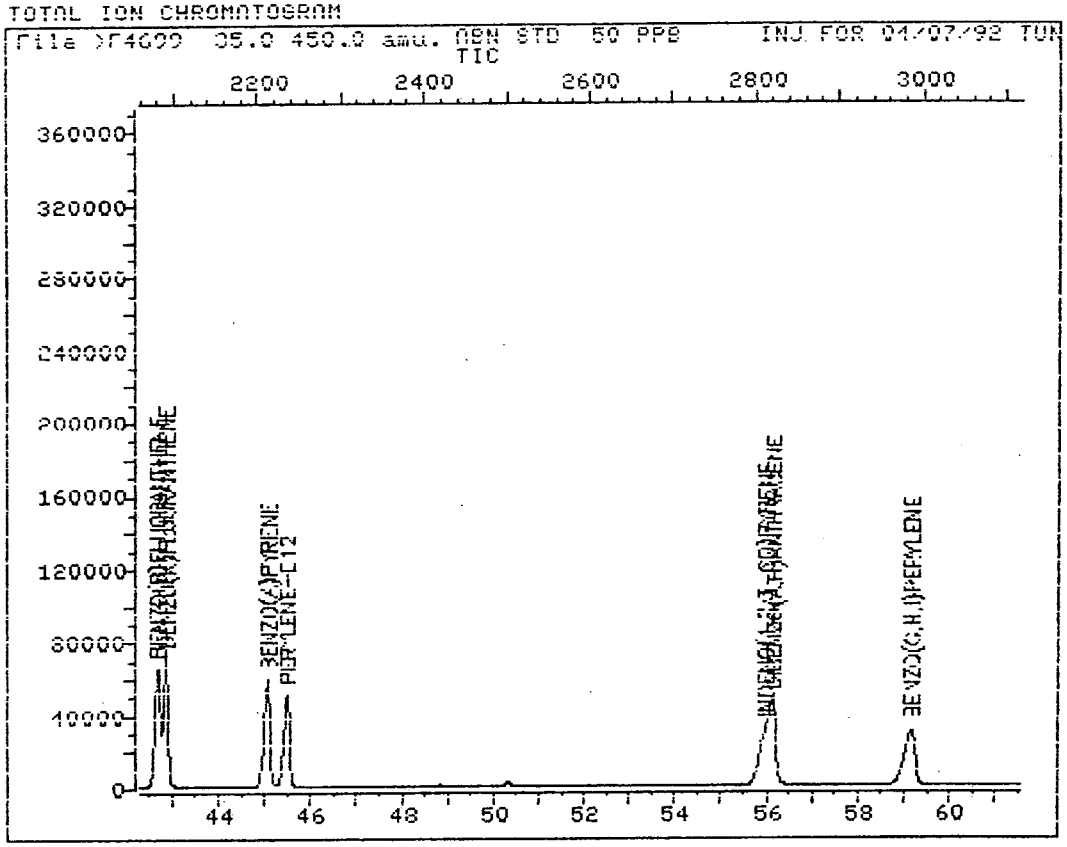

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Misc: INJ FOR 04/07/92 TUNING

Id File: PPS2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270
Last Calibration: 920313 16:17

Operator ID: JEAN
Quant Time: 920407 13:43
Injected at: 920407 12:34

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QUANT REPORT

ator ID: JEAN
put File: ^F4696::QT
File: >F4696::F2
: ABN STD 80 PPB
C: INJ FOR 04/07/92 TUNING

Quant Rev: 6
Quant Time: 920407 10:07
Injected at: 920407 09:01
Dilution Factor: 1.00000

000138

ile: PPS2::SC
e: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270
t Calibration: 920313 16:17

Compound	R.T.	Scan#	Area	Conc	Units	q
*1,4-DICHLOROBENZENE-D4	12.95	443	21829	50.00	UG/KG	90
2-FLUOROPHENOL (SURROGATE)	9.33	244	25468M	90.26	UG/KG	82
PHENOL-D5(SUROGATE STD.)	11.87	384	42924	98.47	UG/KG	93
PHENOL	11.93	387	35899	79.23	UG/KG	94
2-CHLOROPHENOL	12.40	413	26849	76.96	UG/KG	90
*NAPHTHALENE-D8	16.98	665	60008	50.00	UG/KG	93
2-NITROPHENOL	15.78	599	19146	77.73	UG/KG	95
2,4-DIMETHYLPHENOL	15.83	602	35687	78.61	UG/KG	93
2,4-DICHLOROPHENOL	16.52	640	29201	82.48	UG/KG	86
4-CHLORO-3-METHYLPHENOL	18.72	761	39333	80.66	UG/KG	84
*ACENAPHTHENE-D10	22.81	986	45368	50.00	UG/KG	99
2,4,6-TRICHLOROPHENOL	20.26	846	25964	77.10	UG/KG	89
2,4-DINITROPHENOL	22.97	995	11257M	80.81	UG/KG	
4-NITROPHENOL	23.12	1003	23604	77.78	UG/KG	80
2,4,6-TRIBROMOPHENOL(SURROG.)	25.44	1131	21580	115.81	UG/KG	97
*PHENANTHRENE-D10	27.71	1256	105305	50.00	UG/KG	89
4,6-DINITRO-2-METHYLPHENOL	24.84	1098	25674	79.95	UG/KG	84
PENTACHLOROPHENOL	27.26	1231	22896	80.86	UG/KG	77
*1,4-DICHLOROBENZENE-D4	12.95	443	21829	50.00	UG/KG	94
N-NITROSODIMETHYLAMINE	5.83	51	18998	82.35	UG/KG	100
BIS(2-CHLOROETHYL)ETHER	12.18	401	29707	76.61	UG/KG	85
1,3-DICHLOROBENZENE	12.85	438	29007	79.99	UG/KG	98
1,4-DICHLOROBENZENE	13.00	446	29760	83.98	UG/KG	98
1,2-DICHLOROBENZENE	13.58	478	30763	82.46	UG/KG	93
BIS(2-CHLOROISOPROPYL)ETHER	13.83	492	88065	102.24	UG/KG	100
N-NITROSO-DI-N-PROPYLAMINE	14.25	515	29985	77.73	UG/KG	92
HEXACHLOROETHANE	14.54	531	14679	86.67	UG/KG	99
*NAPHTHALENE-D8	16.98	665	60008	50.00	UG/KG	97
NITROBENZENE-D5(SURROGATE)	14.71	540	26339	49.22	UG/KG	93
NITROBENZENE	14.76	543	41017	83.81	UG/KG	86
ISOPHORONE	15.49	583	89053	82.05	UG/KG	92
BIS(2-CHLOROETHOXY)METHANE	16.14	619	45116	76.63	UG/KG	91
1,2,4-TRICHLOROBENZENE	16.83	657	30436	80.73	UG/KG	95
NAPHTHALENE	17.05	669	94295	84.19	UG/KG	99
HEXACHLOROBUTADIENE	17.61	700	17653	83.59	UG/KG	97
*ACENAPHTHENE-D10	22.81	986	45368	50.00	UG/KG	97
HEXACHLOROCYCLOPENTADIENE	20.03	833	13499	90.12	UG/KG	76
2-FLUOROBIPHENYL(SURROGATE)	20.52	860	54887	49.33	UG/KG	89
2-CHLORONAPHTHALENE	20.90	881	77831	79.62	UG/KG	96
DIMETHYLPHTHALATE	21.92	937	98949	74.92	UG/KG	94
ACENAPHTHYLENE	22.32	959	132459	80.51	UG/KG	99
2,6-DINITROTOLUENE	22.17	951	17742	85.06	UG/KG	88
ACENAPHTHENE	22.92	992	75849	82.24	UG/KG	89

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	Compound	R.T.	Scan#	Area	Conc	Units	q
44)	2,4-DINITROTOLUENE	23.48	1023	43114	83.77	UG/KG	98
45)	DIETHYLPHTHALATE	24.22	1064	116580	81.34	UG/KG	95
46)	4-CHLOROPHENYL-PHENYLETHER	24.52	1080	51052	86.56	UG/KG	82
47)	FLUORENE	24.61	1085	95636	84.53	UG/KG	96
48)	*PHENANTHRENE-D10	27.71	1256	105305	50.00	UG/KG	89
49)	N-NITROSODIPHENYLAMINE	24.92	1102	66234	70.32	UG/KG	93
50)	4-BROMOPHENYL-PHENYLETHER	26.13	1169	34760	85.85	UG/KG	91
51)	HEXACHLOROBENZENE	26.71	1201	40478	84.80	UG/KG	77
52)	PHENANTHRENE	27.80	1261	167687	81.36	UG/KG	96
53)	ANTHRACENE	27.95	1269	168802	81.32	UG/KG	99
54)	DI-N-BUTYLPHTHALATE	29.57	1358	245392	79.76	UG/KG	98
55)	FLUORANTHENE	31.78	1480	239231	84.32	UG/KG	85
56)	*CHRYSENE-D12	36.89	1761	137593	50.00	UG/KG	93
57)	BENZIDINE	32.06	1495	71932	64.70	UG/KG	96
58)	PYRENE	32.55	1522	245623	75.63	UG/KG	89
59)	TERPHENYL-D14(SURROGATE)	32.93	1543	118308	51.68	UG/KG	91
60)	BUTYLBENZYLPHTHALATE	34.51	1630	143828	72.88	UG/KG	99
61)	3,3'-DICHLOROBENZIDINE	36.58	1744	81039	72.68	UG/KG	98
62)	BENZO(A)ANTHRACENE	36.82	1757	252152	78.33	UG/KG	97
63)	BIS(2-ETHYLHEXYL)PHTHALATE	36.66	1748	188420	74.88	UG/KG	93
64)	CHRYSENE	37.02	1768	230701	81.61	UG/KG	96
65)	*PERYLENE-D12	45.53	2236	162737	50.00	UG/KG	93
66)	DI-N-OCTYLPHTHALATE	39.66	1913	396698	66.90	UG/KG	100
67)	BENZO(B)FLUORANTHENE	42.77	2084	350337	75.84	UG/KG	98
68)	BENZO(K)FLUORANTHENE	42.93	2093	230077	79.30	UG/KG	96
69)	BENZO(A)PYRENE	45.13	2214	294151	77.56	UG/KG	97
70)	INDENO(1,2,3-CD)PYRENE	56.07	2816	289733M	90.48	UG/KG	
71)	DIBENZO(A,H)ANTHRACENE	56.27	2827	214132	85.40	UG/KG	86
72)	BENZO(G,H,I)PERYLENE	59.23	2990	245746	91.96	UG/KG	98

* Compound is ISTD

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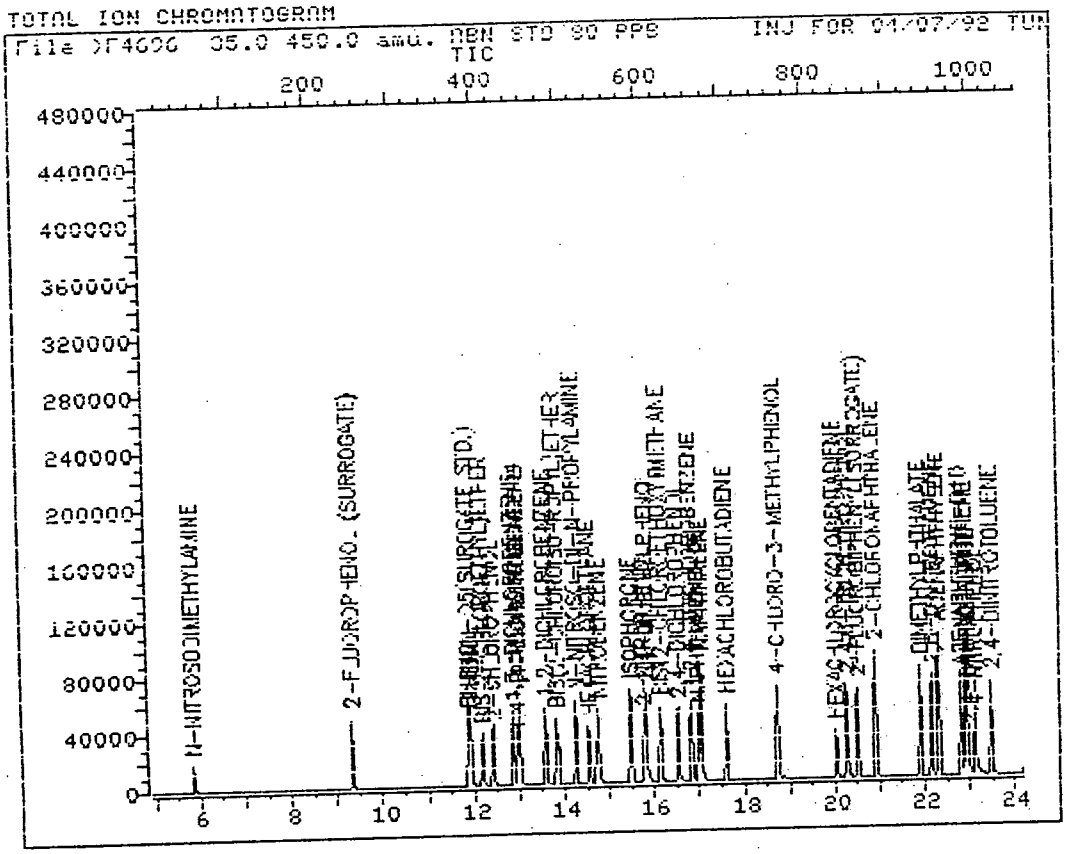

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Misc: INJ FOR 04/07/92 TUNING

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Id File: PPS2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270
Last Calibration: 920313 16:17

Operator ID: JEAN
Quant Time: 920407 10:07
Injected at: 920407 09:01

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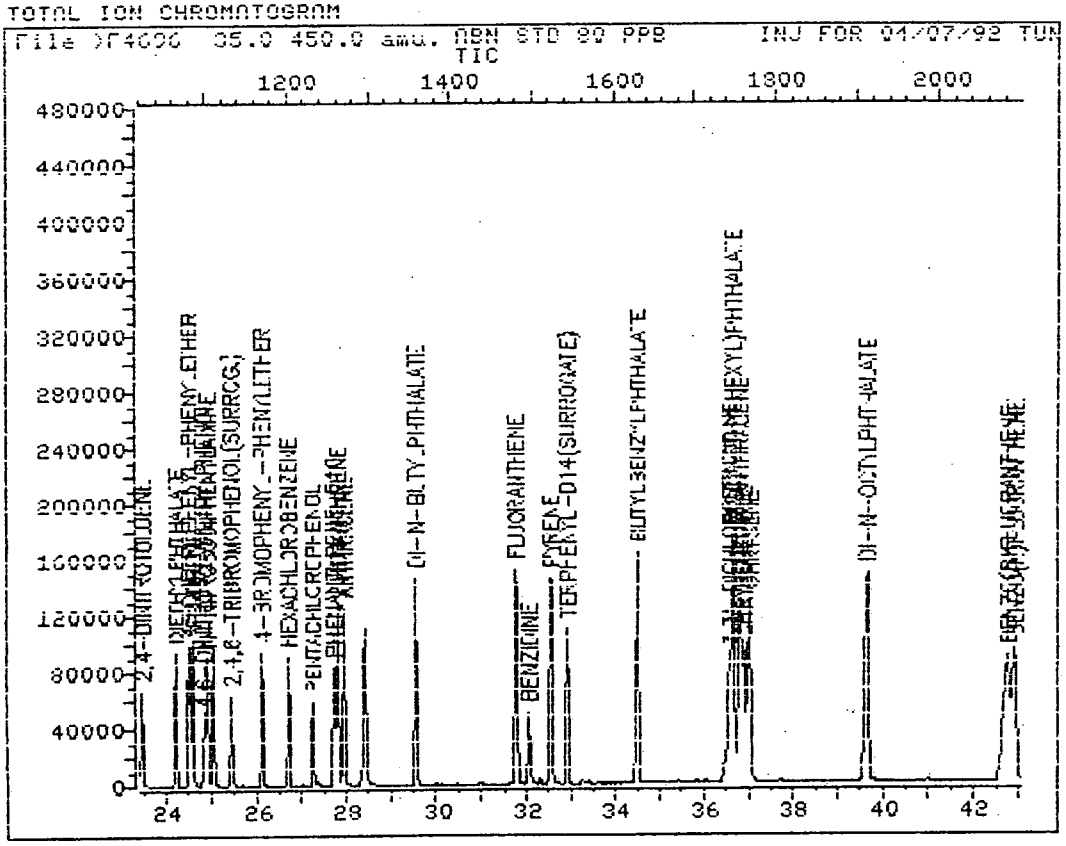

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Misc: INJ FOR 04/07/92 TUNING

Id File: PPS2::SC
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Last Calibration: 920313 16:17

Operator ID: JEAN
Quant Time: 920407 10:07
Injected at: 920407 09:01

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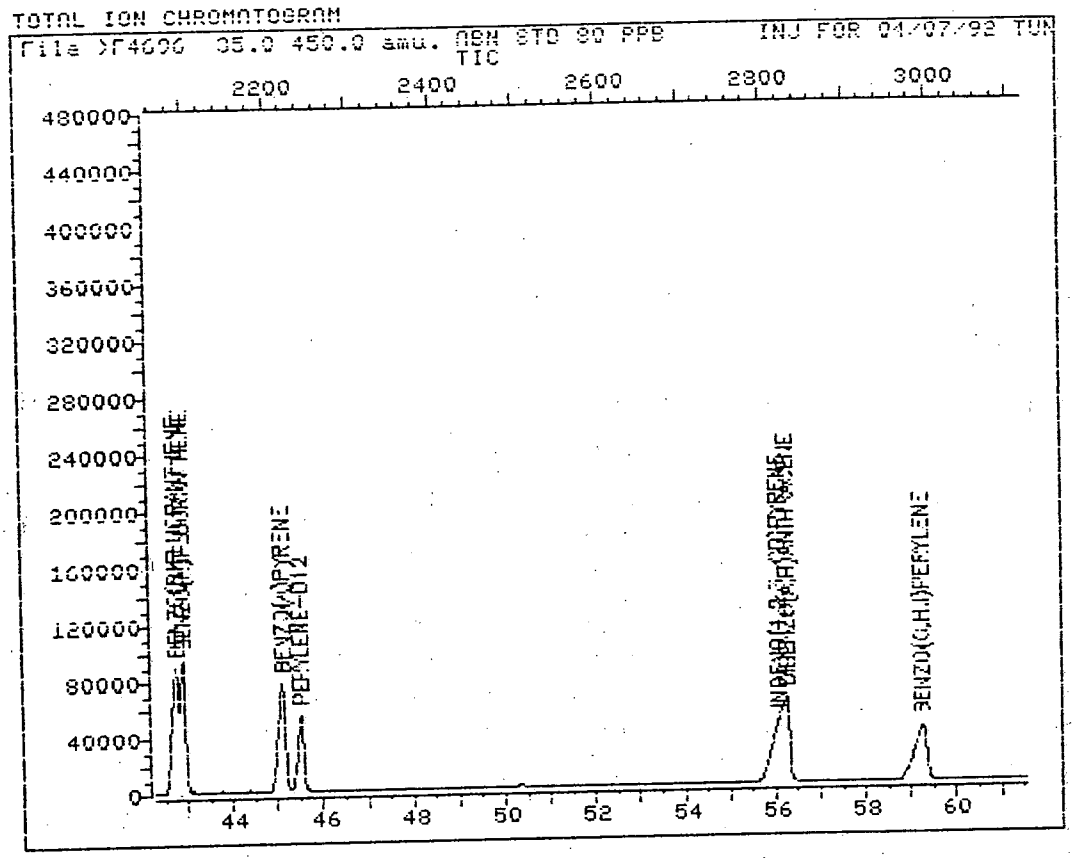

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Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270
Last Calibration: 920313 16:17

Operator ID: JEAN
Quant Time: 920407 10:07
Injected at: 920407 09:01

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QUANT REPORT

Operator ID: JOHN
Output File: ^F4700::QT
Data File: >F4700::F2
Name: ABN STD 120 PPB
Misc: INJ FOR 04/07/92 TUNING

Quant Rev: 6
Quant Time: 920407 14:55
Injected at: 920407 13:52
Dilution Factor: 1.00000

ID File: PPS2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270
Last Calibration: 920313 16:17

000203

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*1,4-DICHLOROBENZENE-D4	12.93	442	25048	50.00	UG/KG	95
2)	2-FLUOROPHENOL (SURROGATE)	9.31	243	30749	94.97	UG/KG	59
3)	PHENOL-D5(SUROGATE STD.)	11.87	384	48975	97.92	UG/KG	93
4)	PHENOL	11.91	386	57938	111.43	UG/KG	88
5)	2-CHLOROPHENOL	12.40	413	43847	109.54	UG/KG	94
6)	*NAPHTHALENE-D8	16.96	664	66174	50.00	UG/KG	93
7)	2-NITROPHENOL	15.78	599	30361	111.78	UG/KG	96
8)	2,4-DIMETHYLPHENOL	15.83	602	54947	109.76	UG/KG	94
9)	2,4-DICHLOROPHENOL	16.53	640	45234	115.85	UG/KG	89
10)	4-CHLORO-3-METHYLPHENOL	18.72	761	59949	111.49	UG/KG	91
11)	*ACENAPHTHENE-D10	22.81	986	47677M	50.00	UG/KG	93
12)	2,4,6-TRICHLOROPHENOL	20.27	846	39516	111.66	UG/KG	94
13)	2,4-DINITROPHENOL	22.97	995	21068M	143.92	UG/KG	
14)	4-NITROPHENOL	23.12	1003	34901	109.44	UG/KG	81
15)	2,4,6-TRIBROMOPHENOL(SURROG.)	25.43	1130	24141	123.28	UG/KG	98
16)	*PHENANTHRENE-D10	27.70	1255	114662	50.00	UG/KG	93
17)	4,6-DINITRO-2-METHYLPHENOL	24.87	1099	40496	115.82	UG/KG	58
18)	PENTACHLOROPHENOL	27.25	1230	36073	117.00	UG/KG	73
19)	*1,4-DICHLOROBENZENE-D4	12.93	442	25048	50.00	UG/KG	97
20)	N-NITROSODIMETHYLAMINE	5.83	51	33642	127.09	UG/KG	100
21)	BIS(2-CHLOROETHYL)ETHER	12.17	400	51835	116.50	UG/KG	93
22)	1,3-DICHLOROBENZENE	12.84	437	45187	108.59	UG/KG	95
23)	1,4-DICHLOROBENZENE	12.98	445	44035	108.30	UG/KG	96
24)	1,2-DICHLOROBENZENE	13.56	477	46363	108.30	UG/KG	97
25)	BIS(2-CHLOROISOPROPYL)ETHER	13.82	491	137659	139.28	UG/KG	100
26)	N-NITROSO-DI-N-PROPYLAMINE	14.25	515	50088	113.16	UG/KG	92
27)	HEXACHLOROETHANE	14.54	531	21738	111.85	UG/KG	92
28)	*NAPHTHALENE-D8	16.96	664	66174	50.00	UG/KG	97
29)	NITROBENZENE-D5(SURROGATE)	14.69	539	27524	46.64	UG/KG	95
30)	NITROBENZENE	14.76	543	64623	119.74	UG/KG	85
31)	ISOPHORONE	15.51	584	142011	118.65	UG/KG	90
32)	BIS(2-CHLOROETHOXY)METHANE	16.13	618	76940	118.51	UG/KG	92
33)	1,2,4-TRICHLOROBENZENE	16.82	656	45742	110.03	UG/KG	94
34)	NAPHTHALENE	17.05	669	140699	113.92	UG/KG	99
35)	HEXACHLOROBUTADIENE	17.60	699	28022	120.33	UG/KG	97
36)	*ACENAPHTHENE-D10	22.81	986	47567M	50.00	UG/KG	90
37)	HEXACHLOROCYCLOPENTADIENE	20.01	832	23813	151.63	UG/KG	79
38)	2-FLUOROBIPHENYL(SURROGATE)	20.50	859	58797M	50.40	UG/KG	90
39)	2-CHLORONAPHTHALENE	20.90	881	109571	106.90	UG/KG	95
40)	DIMETHYLPHTHALATE	21.92	937	156507	113.03	UG/KG	94
41)	ACENAPHTHYLENE	22.32	959	190326	110.33	UG/KG	98
42)	2,6-DINITROTOLUENE	22.17	951	26073	119.22	UG/KG	85
43)	ACENAPHTHENE	22.92	992	112029	115.86	UG/KG	91

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PHONE: (201) 361-4252
FAX: (201) 361-1021

	Compound	R.T.	Scan#	Area	Conc	Units	q
44)	2,4-DINITROTOLUENE	23.48	1023	65804	121.95	UG/KG	97
45)	DIETHYLPHTHALATE	24.25	1065	177233	117.95	UG/KG	93
46)	4-CHLOROPHENYL-PHENYLETHER	24.52	1080	75161	121.55	UG/KG	80
47)	FLUORENE	24.59	1084	135936	114.59	UG/KG	98
48)	*PHENANTHRENE-D10	27.70	1255	114662	50.00	UG/KG	93
49)	N-NITROSODIPHENYLAMINE	24.92	1102	98749	96.29	UG/KG	95
50)	4-BROMOPHENYL-PHENYLETHER	26.12	1168	49989	113.39	UG/KG	93
51)	HEXACHLOROBENZENE	26.70	1200	63359	121.90	UG/KG	89
52)	PHENANTHRENE	27.81	1261	228138	101.66	UG/KG	94
53)	ANTHRACENE	27.96	1269	236780	104.76	UG/KG	98
54)	DI-N-BUTYLPHTHALATE	29.55	1357	339033	101.21	UG/KG	99
55)	FLUORANTHENE	31.79	1480	334493	108.27	UG/KG	87
56)	*CHRYSENE-D12	36.92	1762	142718	50.00	UG/KG	96
57)	BENZIDINE	32.06	1495	68984	59.82	UG/KG	96
58)	PYRENE	32.57	1523	332011	98.56	UG/KG	89
59)	TERPHENYL-D14(SURROGATE)	32.92	1542	119811	50.45	UG/KG	93
60)	BUTYLBENZYLPHTHALATE	34.52	1630	196808	96.15	UG/KG	97
61)	3,3'-DICHLOROBENZIDINE	36.59	1744	105950	91.61	UG/KG	99
62)	BENZO(A)ANTHRACENE	36.84	1758	356562	106.79	UG/KG	97
63)	BIS(2-ETHYLHEXYL)PHTHALATE	36.66	1748	238400	91.34	UG/KG	96
64)	CHRYSENE	37.03	1768	319917	109.10	UG/KG	97
65)	*PERYLENE-D12	45.50	2234	151009M	50.00	UG/KG	96
66)	DI-N-OCTYLPHTHALATE	39.66	1913	569601	103.52	UG/KG	100
67)	BENZO(B)FLUORANTHENE	42.81	2086	544855	127.11	UG/KG	97
68)	BENZO(K)FLUORANTHENE	42.97	2095	291911	108.43	UG/KG	99
69)	BENZO(A)PYRENE	45.17	2216	423720	120.41	UG/KG	98
70)	INDENO(1,2,3-CD)PYRENE	56.16	2821	377445M	127.03	UG/KG	
71)	DIBENZO(A,H)ANTHRACENE	56.33	2830	294159	126.42	UG/KG	89
72)	BENZO(G,H,I)PERYLENE	59.33	2995	320722M	129.34	UG/KG	

* Compound is ISTD

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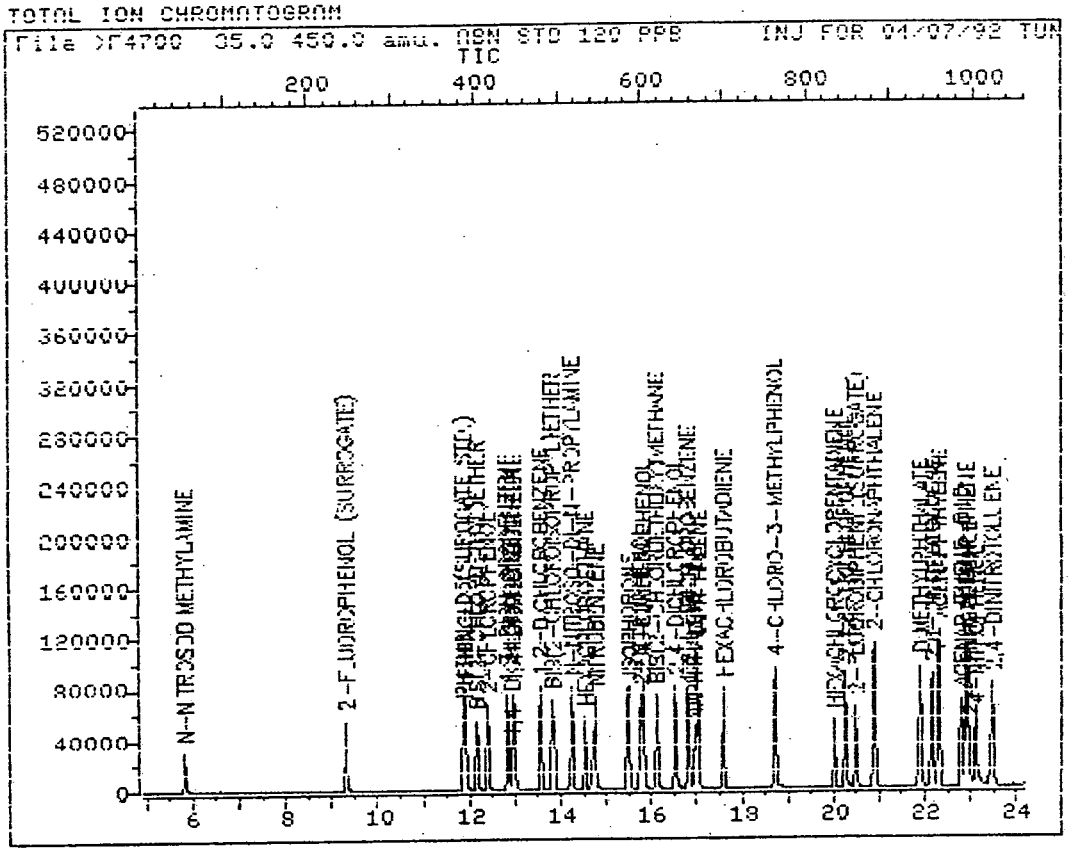

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Misc: INJ FOR 04/07/92 TUNING

Id File: PPS2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270
Last Calibration: 920313 16:17

Operator ID: JOHN
Quant Time: 920407 14:55
Injected at: 920407 13:52

TIC page 1 of 3

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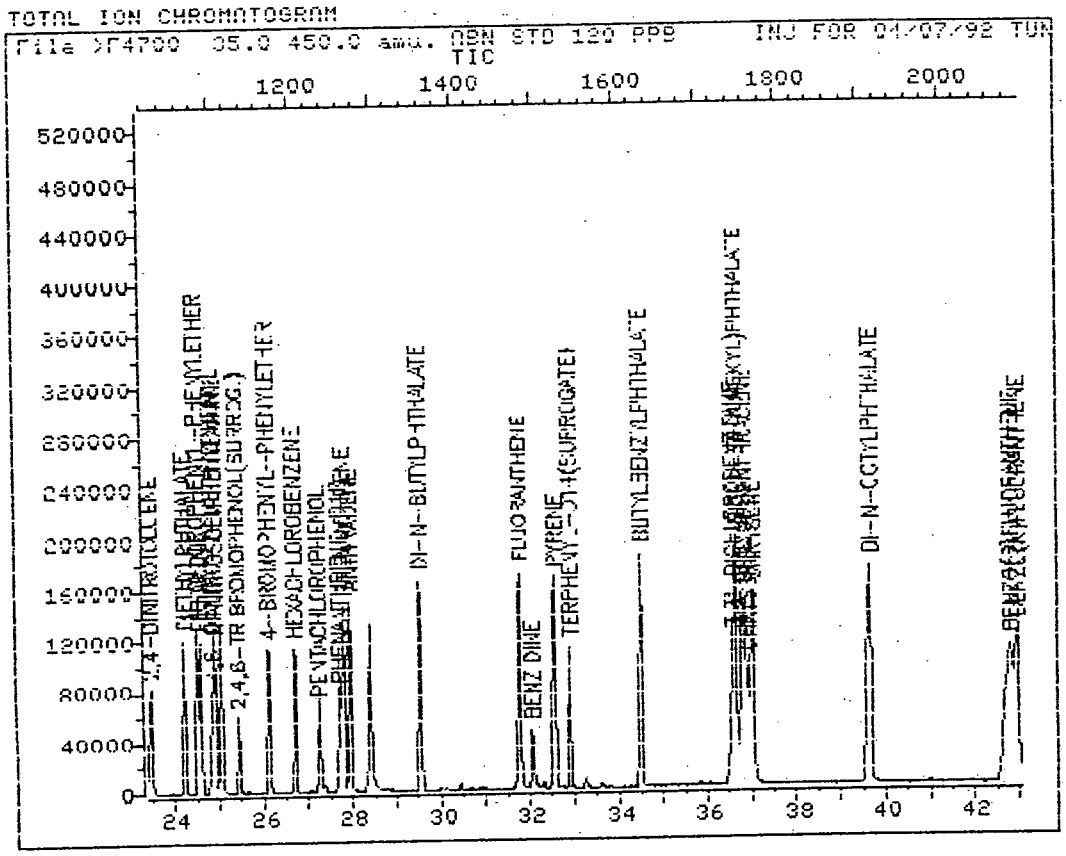

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Name: ABN STD 120 PPB
Misc: INJ FOR 04/07/92 TUNING

Id File: PPS2::SC
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Last Calibration: 920313 16:17

Operator ID: JOHN
Quant Time: 920407 14:55
Injected at: 920407 13:52

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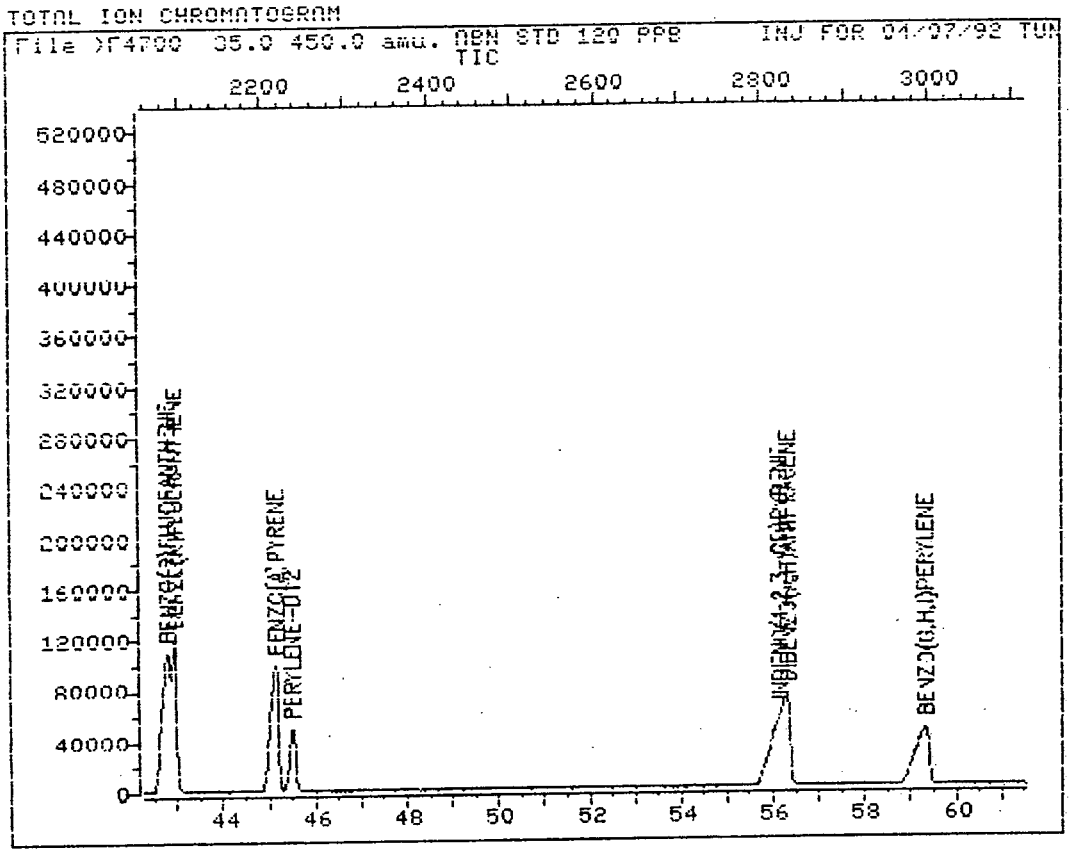

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Misc: INJ FOR 04/07/92 TUNING

Id File: PPS2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270
Last Calibration: 920313 16:17

Operator ID: JOHN
Quant Time: 920407 14:55
Injected at: 920407 13:52

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QUANT REPORT

Operator ID: JEAN
Output File: ^F4701::QT
Data File: >F4701::F2
Name: ABN STD 160 PPB
Misc: INJ FOR 04/07/92 TUNING

Quant Rev: 6
Quant Time: 920407 16:19
Injected at: 920407 15:16
Dilution Factor: 1.00000

ID File: PPS2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270
Last Calibration: 920313 16:17

000208

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*1,4-DICHLOROBENZENE-D4	12.95	442	22941	50.00	UG/KG	97
2)	2-FLUOROPHENOL (SURROGATE)	9.32	242	26780M	90.31	UG/KG	91
3)	PHENOL-D5(SUROGATE STD.)	11.88	383	43721	95.44	UG/KG	93
4)	PHENOL	11.93	386	69728	146.43	UG/KG	89
5)	2-CHLOROPHENOL	12.40	412	49718	135.61	UG/KG	93
6)	*NAPHTHALENE-D8	16.98	664	58388	50.00	UG/KG	87
7)	2-NITROPHENOL	15.78	598	35039	146.21	UG/KG	94
8)	2,4-DIMETHYLPHENOL	15.85	602	63142	142.94	UG/KG	98
9)	2,4-DICHLOROPHENOL	16.54	640	51292	148.89	UG/KG	90
10)	4-CHLORO-3-METHYLPHENOL	18.72	760	69680	146.86	UG/KG	85
11)	*ACENAPHTHENE-D10	22.81	985	45503	50.00	UG/KG	86
12)	2,4,6-TRICHLOROPHENOL	20.27	845	44691	132.32	UG/KG	89
13)	2,4-DINITROPHENOL	22.99	995	27951	200.06	UG/KG	71
14)	4-NITROPHENOL	23.16	1004	43335	142.38	UG/KG	71
15)	2,4,6-TRIBROMOPHENOL(SURROG.)	25.45	1130	21736	116.30	UG/KG	90
16)	*PHENANTHRENE-D10	27.72	1255	105367	50.00	UG/KG	87
17)	4,6-DINITRO-2-METHYLPHENOL	24.88	1099	45544M	141.75	UG/KG	69
18)	PENTACHLOROPHENOL	27.27	1230	44526	157.15	UG/KG	74
19)	*1,4-DICHLOROBENZENE-D4	12.95	442	22941	50.00	UG/KG	95
20)	N-NITROSODIMETHYLAMINE	5.83	50	41560	171.42	UG/KG	100
21)	BIS(2-CHLOROETHYL)ETHER	12.18	400	59786	146.71	UG/KG	84
22)	1,3-DICHLOROBENZENE	12.84	436	53184	139.55	UG/KG	94
23)	1,4-DICHLOROBENZENE	13.00	445	51965	139.54	UG/KG	97
24)	1,2-DICHLOROBENZENE	13.57	476	54130	138.05	UG/KG	94
25)	BIS(2-CHLOROISOPROPYL)ETHER	13.82	490	129167	142.69	UG/KG	100
26)	N-NITROSO-DI-N-PROPYLAMINE	14.27	515	59114	145.82	UG/KG	90
27)	HEXACHLOROETHANE	14.55	530	25101	141.02	UG/KG	96
28)	*NAPHTHALENE-D8	16.98	664	58388	50.00	UG/KG	99
29)	NITROBENZENE-D5(SURROGATE)	14.69	538	24905	47.83	UG/KG	94
30)	NITROBENZENE	14.76	542	75539	158.64	UG/KG	87
31)	ISOPHORONE	15.51	583	169569	160.57	UG/KG	91
32)	BIS(2-CHLOROETHOXY)METHANE	16.14	618	87089	152.03	UG/KG	91
33)	1,2,4-TRICHLOROBENZENE	16.84	656	54620	148.90	UG/KG	95
34)	NAPHTHALENE	17.05	668	160268	147.06	UG/KG	98
35)	HEXACHLOROBUTADIENE	17.60	698	32027	155.86	UG/KG	95
36)	*ACENAPHTHENE-D10	22.81	985	45503	50.00	UG/KG	89
37)	HEXACHLOROCYCLOPENTADIENE	20.03	832	28967	192.82	UG/KG	76
38)	2-FLUOROBIPHENYL(SURROGATE)	20.50	858	52893	47.40	UG/KG	93
39)	2-CHLORONAPHTHALENE	20.90	880	128204	130.76	UG/KG	94
40)	DIMETHYLPHTHALATE	21.92	936	185292	139.88	UG/KG	94
41)	ACENAPHTHYLENE	22.32	958	220508	133.62	UG/KG	99
42)	2,6-DINITROTOLUENE	22.19	951	32631	155.98	UG/KG	86
43)	ACENAPHTHENE	22.94	992	119903	129.62	UG/KG	91

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	Compound	R.T.	Scan#	Area	Conc	Units	q
44)	2,4-DINITROTOLUENE	23.50	1023	78837	152.73	UG/KG	95
45)	DIETHYLPHTHALATE	24.27	1065	208205	144.85	UG/KG	94
46)	4-CHLOROPHENYL-PHENYLETHER	24.54	1080	84297	142.50	UG/KG	85
47)	FLUORENE	24.61	1084	161687	142.49	UG/KG	91
48)	*PHENANTHRENE-D10	27.72	1255	105367	50.00	UG/KG	87
49)	N-NITROSODIPHENYLAMINE	24.94	1102	111885	118.72	UG/KG	95
50)	4-BROMOPHENYL-PHENYLETHER	26.14	1168	58668	144.82	UG/KG	88
51)	HEXACHLOROBENZENE	26.72	1200	74730	156.47	UG/KG	88
52)	PHENANTHRENE	27.81	1260	266012	128.99	UG/KG	96
53)	ANTHRACENE	27.96	1268	263223	126.73	UG/KG	98
54)	DI-N-BUTYLPHTHALATE	29.58	1357	379260	123.20	UG/KG	99
55)	FLUORANTHENE	31.81	1480	372621	131.25	UG/KG	90
56)	*CHRYSENE-D12	36.92	1761	134476	50.00	UG/KG	95
57)	BENZIDINE	32.06	1494	86975M	80.04	UG/KG	97
58)	PYRENE	32.57	1522	374580	118.01	UG/KG	90
59)	TERPHENYL-D14(SURROGATE)	32.92	1541	108494	48.49	UG/KG	93
60)	BUTYLBENZYLPHTHALATE	34.52	1629	222837	115.54	UG/KG	96
61)	3,3'-DICHLOROBENZIDINE	36.61	1744	125136	114.83	UG/KG	97
62)	BENZO(A)ANTHRACENE	36.85	1757	412326	131.06	UG/KG	96
63)	BIS(2-ETHYLHEXYL)PHTHALATE	36.68	1748	253259	102.98	UG/KG	98
64)	CHRYSENE	37.05	1768	371253	134.37	UG/KG	97
65)	*PERYLENE-D12	45.52	2234	148872	50.00	UG/KG	94
66)	DI-N-OCTYLPHTHALATE	39.67	1912	641075	118.18	UG/KG	100
67)	BENZO(B)FLUORANTHENE	42.85	2087	623784M	147.61	UG/KG	98
68)	BENZO(K)FLUORANTHENE	42.98	2094	310247M	116.89	UG/KG	98
69)	BENZO(A)PYRENE	45.19	2216	489383	141.06	UG/KG	97
70)	INDENO(1,2,3-CD)PYRENE	56.15	2819	418905M	143.01	UG/KG	
71)	DIBENZO(A,H)ANTHRACENE	56.33	2829	322998M	140.81	UG/KG	75
72)	BENZO(G,H,I)PERYLENE	59.35	2995	333140M	136.27	UG/KG	64

* Compound is ISTD

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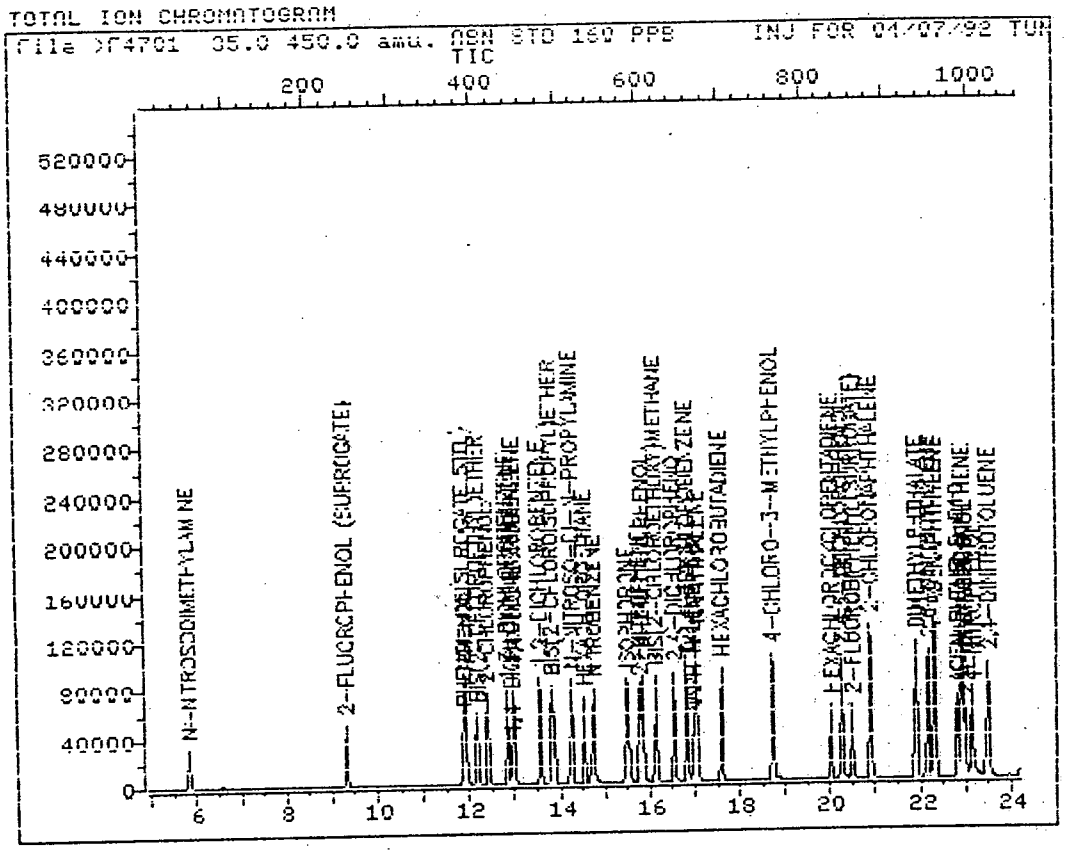

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Misc: INJ FOR 04/07/92 TUNING

Id File: PPS2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270
Last Calibration: 920313 16:17

Operator ID: JEAN
Quant Time: 920407 16:19
Injected at: 920407 15:16

TIC page 1 of 3

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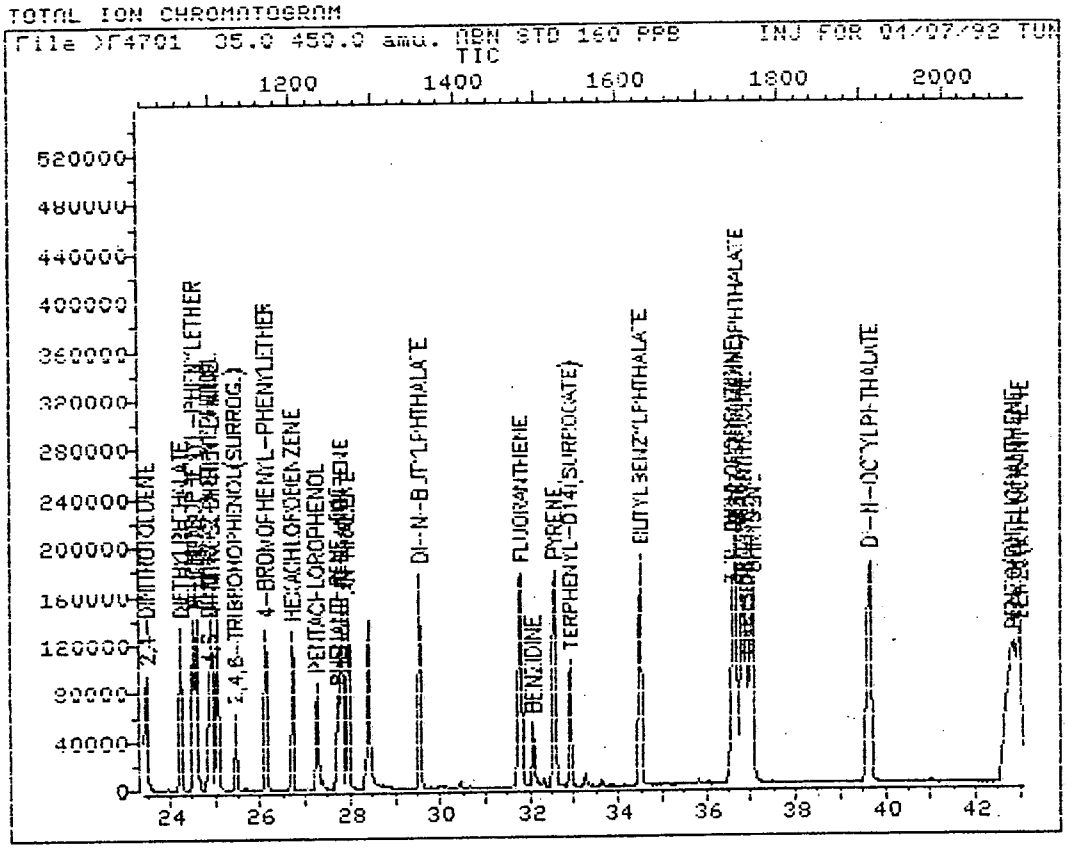

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Misc: INJ FOR 04/07/92 TUNING

Id File: PPS2::SC
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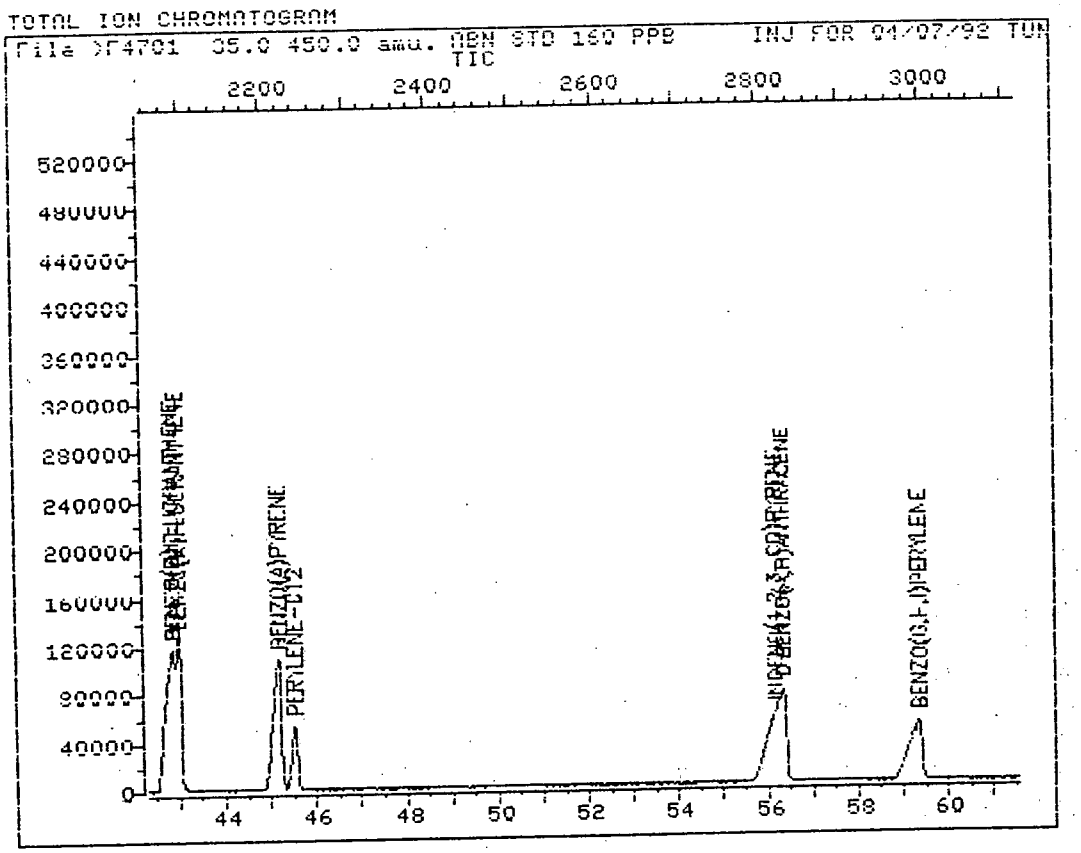

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Continuing Calibration Check
HSL Compounds

Case No:

Calibration Date: 04/13/92

Contractor: ECRA LABS

Time: 11:10

Contract No:

Laboratory ID: >F4707

Instrument ID: MSD-2

Initial Calibration Date: 04/07/92

Minimum $\overline{RF}$ for SPCC is .05 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
N-NITROSODIMETHYLAMINE	.53195	.52996	.37			
BIS(2-CHLOROETHYL)ETHER	.86854	.84264	2.98			
1,3-DICHLOROBENZENE	.83220	.84853	1.96			
1,4-DICHLOROBENZENE	.82880	.86545	4.42	*		
1,2-DICHLOROBENZENE	.86635	.85595	1.20			
BIS(2-CHLOROISOPROPYL)ETHER	2.28400	1.80642	20.91			
N-NITROSO-DI-N-PROPYLAMINE	.87252	.88911	1.90		**	
HEXACHLOROETHANE	.39305	.41449	5.45			
NITROBENZENE-D5(SURROGATE)	.42818	.44181	3.18			(Conc=50.00)
NITROBENZENE	.41744	.41685	.14			
ISOPHORONE	.92095	.91712	.42			
BIS(2-CHLOROETHOXY)METHANE	.48214	.47849	.76			
1,2,4-TRICHLOROBENZENE	.31487	.33261	5.63			
NAPHTHALENE	.95147	.98129	3.13			
HEXACHLOROBUTADIENE	.18240	.20095	10.17	*		
HEXACHLOROCYCLOPENTADIENE	.16197	.16678	2.97		**	
2-FLUOROBIPHENYL(SURROGATE)	1.21584	1.23816	1.84			(Conc=50.00)
2-CHLORONAPHTHALENE	1.04929	1.08790	3.68			
DIMETHYLPHTHALATE	1.41018	1.49062	5.70			
ACENAPHTHYLENE	1.82953	1.84787	1.00			
2,6-DINITROTOLUENE	.23738	.23676	.26			
ACENAPHTHENE	1.02993	1.06156	3.07	*		
2,4-DINITROTOLUENE	.57306	.61337	7.03			
DIETHYLPHTHALATE	1.66501	1.71272	2.87			
4-CHLOROPHENYL-PHENYLETHER	.71792	.75722	5.47			
FLUORENE	1.34248	1.42213	5.93			
N-NITROSODIPHENYLAMINE	.38906	.39418	1.32	*		
4-BROMOPHENYL-PHENYLETHER	.20277	.19257	5.03			
HEXACHLOROBENZENE	.24622	.23146	6.00			
PHENANTHRENE	.97743	.99485	1.78			
ANTHRACENE	.99971	.97847	2.12			
DI-N-BUTYLPHTHALATE	1.45248	1.40835	3.04			

000213

RF - Response Factor from daily standard file at 80.00 UG/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

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PHONE: (201) 361-4252
FAX: (201) 361-1021

Continuing Calibration Check
HSL Compounds

Case No:

Calibration Date: 04/13/92

Contractor: ECRA LABS

Time: 11:10

Contract No:

Laboratory ID: >F4707

Instrument ID: MSD-2

Initial Calibration Date: 04/07/92

Minimum $\overline{RF}$ for SPCC is .05 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
FLUORANTHENE	1.43084	1.44819	1.21	*		
BENZIDINE	.33787	.23336	30.93			
PYRENE	1.11291	1.12112	.74			
TERPHENYL-D14(SURROGATE)	.83370	.83318	.06			(Conc=50.00)
BUTYLBENZYLPHTHALATE	.64163	.63047	1.74			
3,3'-DICHLOROBENZIDINE	.35354	.35241	.32			
BENZO(A)ANTHRACENE	1.12851	1.16222	2.99			
BIS(2-ETHYLHEXYL)PHTHALATE	.84291	.82350	2.30			
CHRYSENE	1.02594	1.03470	.85			
DI-N-OCTYLPHTHALATE	1.58016	1.68994	6.95	*		
BENZO(B)FLUORANTHENE	1.33540	1.44401	8.13			
BENZO(K)FLUORANTHENE	.90338	.70498	21.96			
BENZO(A)PYRENE	1.12430	1.14510	1.85	*		
INDENO(1,2,3-CD)PYRENE	1.09726	.95389	13.07			
DIBENZO(A,H)ANTHRACENE	.83094	.73652	11.36			
BENZO(G,H,I)PERYLENE	.93293	.78309	16.06			

000214

RF - Response Factor from daily standard file at 80.00 UG/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

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Continuing Calibration Check
HSL Compounds

Case No:

Calibration Date: 04/13/92

Contractor: ECRA LABS

Time: 11:10

Contract No:

Laboratory ID: >F4707

Instrument ID: CALAWX-MSD2

Initial Calibration Date: 04/07/92

Minimum $\overline{RF}$ for SPCC is .05 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
2-FLUOROPHENOL (SURROGATE)	.61611	.55736	9.54			(Conc=100.00)
PHENOL-D5(SUROGATE STD.)	1.00534	.98588	1.94			(Conc=100.00)
PHENOL	1.03258	1.03002	.25	*		
2-CHLOROPHENOL	.76963	.75444	1.97			
2-NITROPHENOL	.19855	.20599	3.75	*		
2,4-DIMETHYLPHENOL	.37064	.37597	1.44			
2,4-DICHLOROPHENOL	.29018	.30677	5.72	*		
4-CHLORO-3-METHYLPHENOL	.39743	.41840	5.28	*		
2,4,6-TRICHLOROPHENOL	.35611	.38203	7.28	*		
2,4-DINITROPHENOL	.16443	.12396	24.61		**	
4-NITROPHENOL	.29087	.28557	1.82		**	
2,4,6-TRIBROMOPHENOL(SURROG.)	.24745	.22255	10.06			(Conc=100.00)
4,6-DINITRO-2-METHYLPHENOL	.13800	.13530	1.96			
PENTACHLOROPHENOL	.12290	.10297	16.21	*		

000215

RF - Response Factor from daily standard file at 80.00 UG/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

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QUANT REPORT

Operator ID: JEAN
Output File: ^F4707::QT
Data File: >F4707::F1
Name: ABN STD 80 PPB
Misc: INJ FOR 04/13/92 TUNING

Quant Rev: 6
Quant Time: 920413 12:17
Injected at: 920413 11:10
Dilution Factor: 1.00000

ID File: PPW2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 625
Last Calibration: 920407 16:48

000216

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*1,4-DICHLOROBENZENE-D4	12.91	441	19019	50.00	UG/L	93
2)	2-FLUOROPHENOL (SURROGATE)	9.30	242	21201	90.46	UG/L	52
3)	PHENOL-D5(SUROGATE STD.)	11.86	383	37501	98.06	UG/L	94
4)	PHENOL	11.89	385	31344	79.80	UG/L	93
5)	2-CHLOROPHENOL	12.36	411	22958	78.42	UG/L	95
6)	*NAPHTHALENE-D8	16.94	663	51975	50.00	UG/L	91
7)	2-NITROPHENOL	15.74	597	17130	83.00	UG/L	96
8)	2,4-DIMETHYLPHENOL	15.80	600	31266	81.15	UG/L	95
9)	2,4-DICHLOROPHENOL	16.49	638	25511	84.57	UG/L	86
10)	4-CHLORO-3-METHYLPHENOL	18.68	759	34794	84.22	UG/L	86
11)	*ACENAPHTHENE-D10	22.77	984	40481	50.00	UG/L	92
12)	2,4,6-TRICHLOROPHENOL	20.23	844	24744	85.82	UG/L	94
13)	2,4-DINITROPHENOL	22.93	993	8029M	60.31	UG/L	
14)	4-NITROPHENOL	23.10	1002	18496	78.54	UG/L	74
15)	2,4,6-TRIBROMOPHENOL(SURROG.)	25.39	1128	18018	89.94	UG/L	92
16)	*PHENANTHRENE-D10	27.66	1253	101199M	50.00	UG/L	89
17)	4,6-DINITRO-2-METHYLPHENOL	24.81	1096	21908	78.43	UG/L	85
18)	PENTACHLOROPHENOL	27.20	1228	16673	67.03	UG/L	76
19)	*1,4-DICHLOROBENZENE-D4	12.91	441	19019	50.00	UG/L	95
20)	N-NITROSODIMETHYLAMINE	5.79	49	16127	79.70	UG/L	100
21)	BIS(2-CHLOROETHYL)ETHER	12.13	398	25642	77.62	UG/L	90
22)	1,3-DICHLOROBENZENE	12.80	435	25821	81.57	UG/L	93
23)	1,4-DICHLOROBENZENE	12.96	444	26336	83.54	UG/L	96
24)	1,2-DICHLOROBENZENE	13.53	475	26047	79.04	UG/L	98
25)	BIS(2-CHLOROISOPROPYL)ETHER	13.78	489	54970	63.27	UG/L	100
26)	N-NITROSO-DI-N-PROPYLAMINE	14.22	513	27056	81.52	UG/L	91
27)	HEXACHLOROETHANE	14.51	529	12613	84.36	UG/L	98
28)	*NAPHTHALENE-D8	16.94	663	51952	50.00	UG/L	97
29)	NITROBENZENE-D5(SURROGATE)	14.65	537	22953	51.59	UG/L	97
30)	NITROBENZENE	14.73	541	34650	79.89	UG/L	85
31)	ISOPHORONE	15.45	581	76234	79.67	UG/L	93
32)	BIS(2-CHLOROETHOXY)METHANE	16.09	616	39774	79.39	UG/L	90
33)	1,2,4-TRICHLOROBENZENE	16.80	655	27648	84.51	UG/L	96
34)	NAPHTHALENE	17.01	667	81568	82.51	UG/L	98
35)	HEXACHLOROBUTADIENE	17.56	697	16704	88.14	UG/L	94
36)	*ACENAPHTHENE-D10	22.77	984	40481	50.00	UG/L	95
37)	HEXACHLOROCYCLOPENTADIENE	19.97	830	10802	82.38	UG/L	83
38)	2-FLUOROBIPHENYL(SURROGATE)	20.46	857	50122	50.92	UG/L	92
39)	2-CHLORONAPHTHALENE	20.86	879	70463	82.94	UG/L	94
40)	DIMETHYLPHTHALATE	21.86	934	96547	84.56	UG/L	94
41)	ACENAPHTHYLENE	22.26	956	119686	80.80	UG/L	97
42)	2,6-DINITROTOLUENE	22.14	949	15335	79.79	UG/L	91
	[illegible]	22.88	990	68757	82.46	UG/L	90

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	Compound	R.T.	Scan#	Area	Conc	Units	q
44)	2,4-DINITROTOLUENE	23.43	1020	39728	85.63	UG/L	88
45)	DIETHYLPHTHALATE	24.19	1062	110932	82.29	UG/L	95
46)	4-CHLOROPHENYL-PHENYLETHER	24.48	1078	49045	84.38	UG/L	86
47)	FLUORENE	24.55	1082	92111	84.75	UG/L	94
48)	*PHENANTHRENE-D10	27.66	1253	100747	50.00	UG/L	99
49)	N-NITROSODIPHENYLAMINE	24.88	1100	63540	81.05	UG/L	92
50)	4-BROMOPHENYL-PHENYLETHER	26.08	1166	31041	75.98	UG/L	92
51)	HEXACHLOROBENZENE	26.66	1198	37310	75.20	UG/L	85
52)	PHENANTHRENE	27.75	1258	160365	81.43	UG/L	96
53)	ANTHRACENE	27.91	1267	157725	78.30	UG/L	99
54)	DI-N-BUTYLPHTHALATE	29.51	1355	227019	77.57	UG/L	99
55)	FLUORANTHENE	31.73	1477	233442	80.97	UG/L	92
56)	*CHRYSENE-D12	36.84	1758	130551	50.00	UG/L	96
57)	BENZIDINE	32.02	1493	48744M	55.25	UG/L	96
58)	PYRENE	32.51	1520	234182	80.59	UG/L	88
59)	TERPHENYL-D14(SURROGATE)	32.87	1540	108773	49.97	UG/L	94
60)	BUTYLBENZYLPHTHALATE	34.45	1627	131694	78.61	UG/L	94
61)	3,3'-DICHLOROBENZIDINE	36.53	1741	73613	79.75	UG/L	98
62)	BENZO(A)ANTHRACENE	36.75	1753	242767	82.39	UG/L	97
63)	BIS(2-ETHYLHEXYL)PHTHALATE	36.60	1745	172014	78.16	UG/L	95
64)	CHRYSENE	36.97	1765	216130	80.68	UG/L	99
65)	*PERYLENE-D12	45.40	2229	138141	50.00	UG/L	96
66)	DI-N-OCTYLPHTHALATE	39.57	1908	373519	85.56	UG/L	100
67)	BENZO(B)FLUORANTHENE	42.65	2078	319163	86.51	UG/L	98
68)	BENZO(K)FLUORANTHENE	42.82	2087	155818	62.43	UG/L	99
69)	BENZO(A)PYRENE	45.02	2208	253096	81.48	UG/L	97
70)	INDENO(1,2,3-CD)PYRENE	55.85	2804	210834M	69.55	UG/L	
71)	DIBENZO(A,H)ANTHRACENE	56.05	2815	162789	70.91	UG/L	85
72)	BENZO(G,H,I)PERYLENE	59.01	2978	173082	67.15	UG/L	96

* Compound is ISTD

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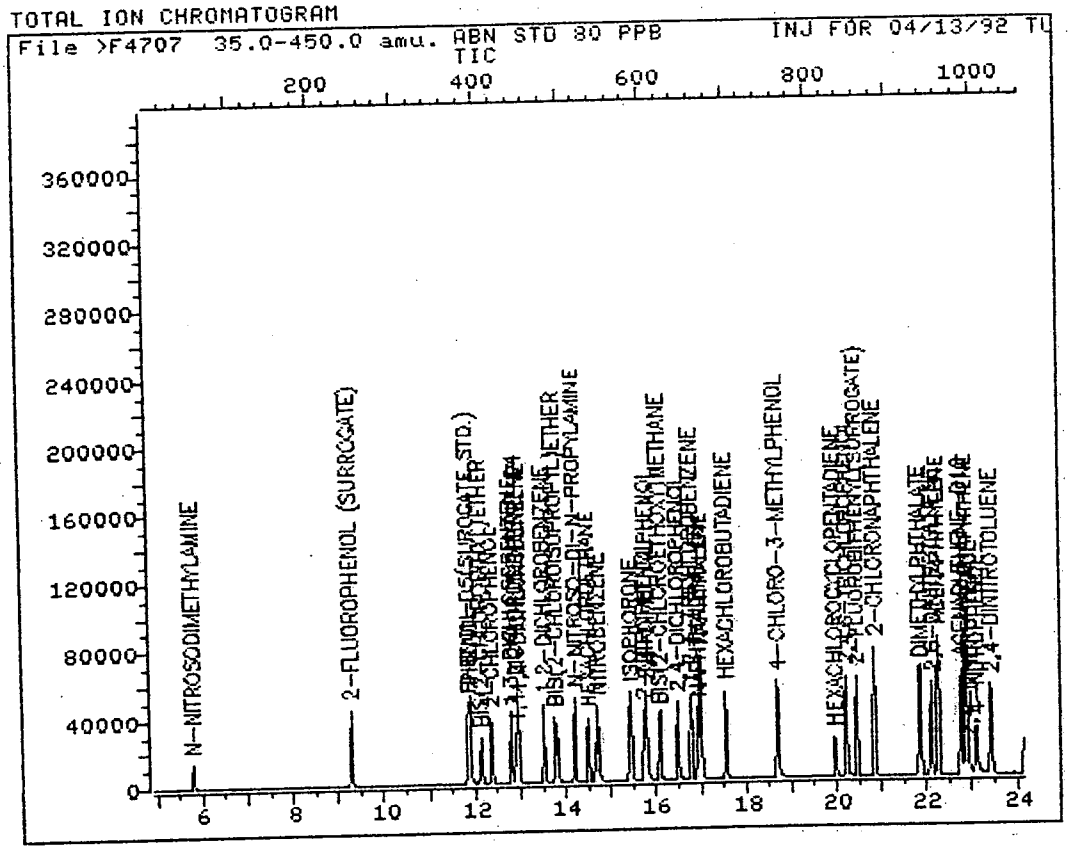

Data File: >F4707::F1 Quant Output File: ^F4707::QT
Name: ABN STD 80 PPB
Misc: INJ FOR 04/13/92 TUNING

Id File: PPW2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 625
Last Calibration: 920407 16:48

Operator ID: JEAN
Quant Time: 920413 12:17
Injected at: 920413 11:10

TIC page 1 of 3

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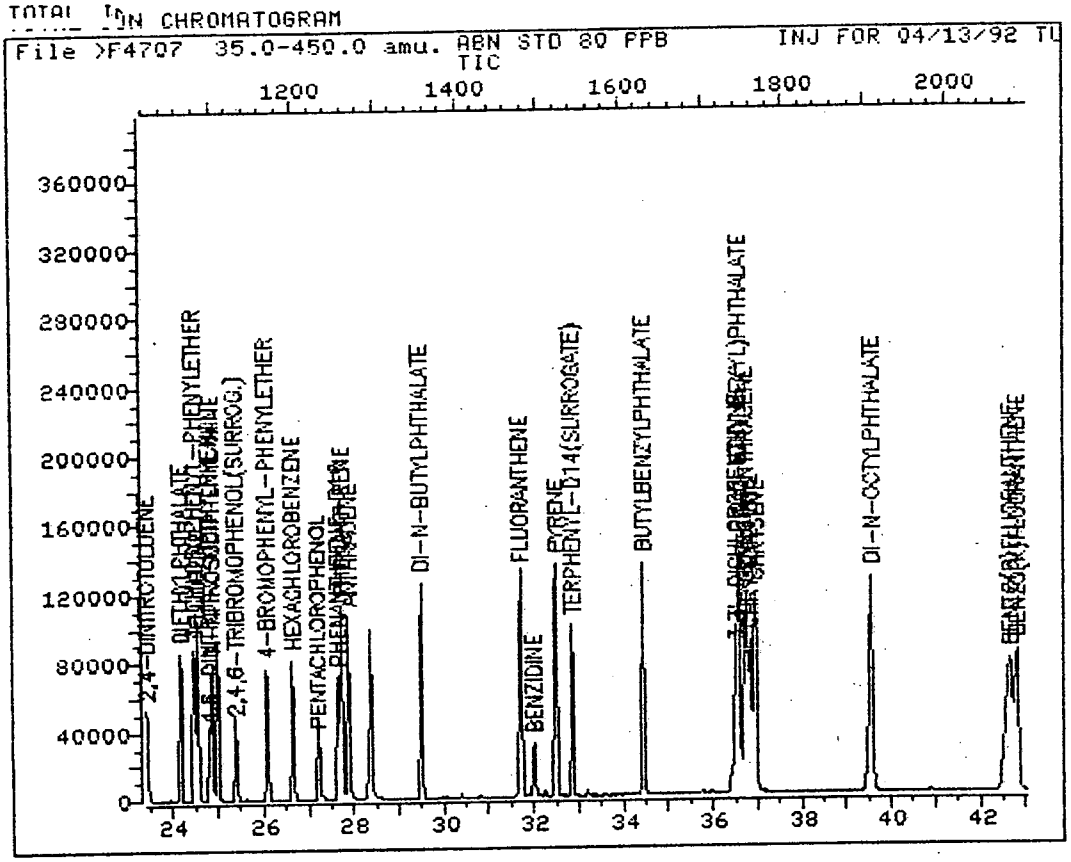

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Name: ABN STD 80 PPB
Misc: INJ FOR 04/13/92 TUNING

Id File: PPW2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 625
Last Calibration: 920407 16:48

Operator ID: JEAN
Quant Time: 920413 12:17
Injected at: 920413 11:10

TIC page 2 of 3

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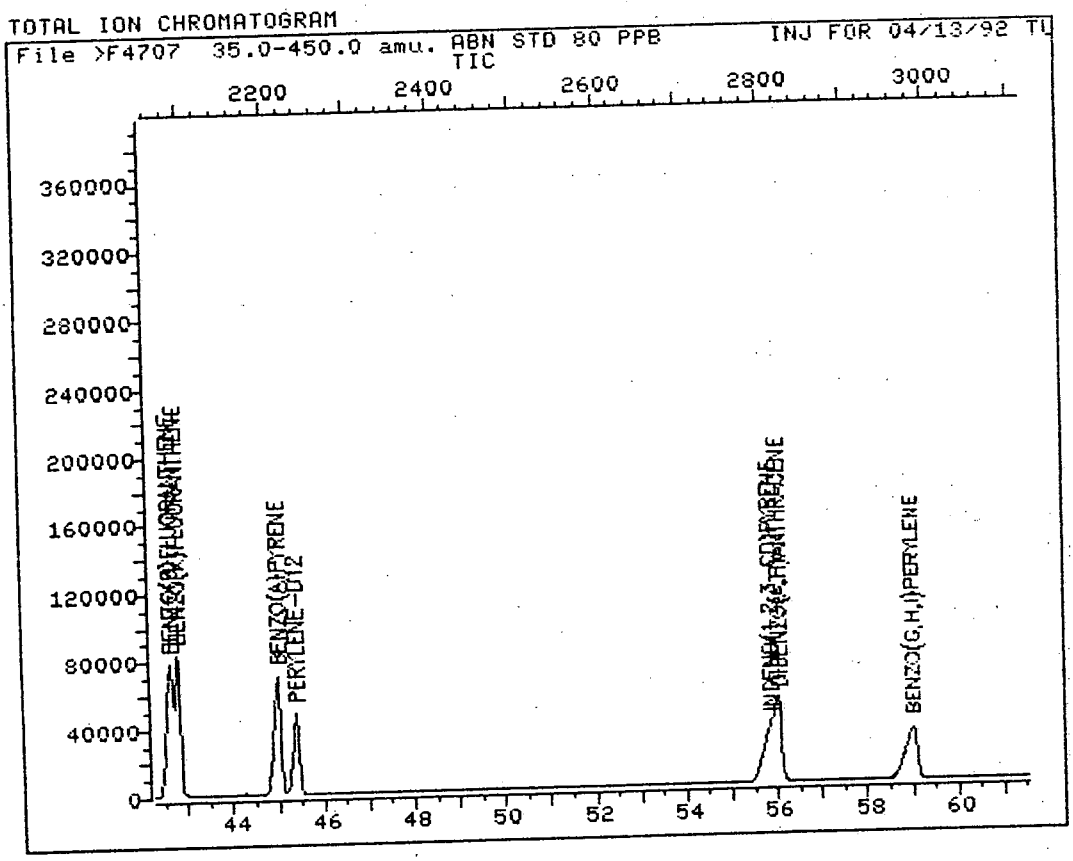

Data File: >F4707::F1
Name: ABN STD 80 PPB
Misc: INJ FOR 04/13/92 TUNING

Quant Output File: ^F4707::QT

Id File: PPW2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 625
Last Calibration: 920407 16:48

Operator ID: JEAN
Quant Time: 920413 12:17
Injected at: 920413 11:10

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Continuing Calibration Check
HSL Compounds

Case No:

Calibration Date: 04/15/92

Contractor: ECRA LABS

Time: 09:41

Contract No:

Laboratory ID: >F4715

Instrument ID: MSD-2

Initial Calibration Date: 04/07/92

Minimum $\overline{RF}$ for SPCC is .05 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
N-NITROSODIMETHYLAMINE	.53195	.59066	11.04			
BIS(2-CHLOROETHYL)ETHER	.86854	.82244	5.31			
1,3-DICHLOROBENZENE	.83220	.84768	1.86			
1,4-DICHLOROBENZENE	.82880	.87866	6.02	*		
1,2-DICHLOROBENZENE	.86635	.88767	2.46			
BIS(2-CHLOROISOPROPYL)ETHER	2.28400	2.12530	6.95			
N-NITROSO-DI-N-PROPYLAMINE	.87252	.93603	7.28		**	
HEXACHLOROETHANE	.39305	.41524	5.65			
NITROBENZENE-D5(SURROGATE)	.42818	.44041	2.86			(Conc=50.00)
NITROBENZENE	.41744	.43815	4.96			
ISOPHORONE	.92095	.96192	4.45			
BIS(2-CHLOROETHOXY)METHANE	.48214	.46763	3.01			
1,2,4-TRICHLOROBENZENE	.31487	.33774	7.26			
NAPHTHALENE	.95147	1.00830	5.97			
HEXACHLOROBUTADIENE	.18240	.19527	7.06	*		
HEXACHLOROCYCLOPENTADIENE	.16197	.13975	13.72		**	
2-FLUOROBIPHENYL(SURROGATE)	1.21584	1.26058	3.68			(Conc=50.00)
2-CHLORONAPHTHALENE	1.04929	1.06329	1.33			
DIMETHYLPHTHALATE	1.41018	1.49110	5.74			
ACENAPHTHYLENE	1.82953	1.91426	4.63			
2,6-DINITROTOLUENE	.23738	.24933	5.04			
ACENAPHTHENE	1.02993	1.10955	7.73	*		
2,4-DINITROTOLUENE	.57306	.60957	6.37			
DIETHYLPHTHALATE	1.66501	1.78571	7.25			
4-CHLOROPHENYL-PHENYLETHER	.71792	.77039	7.31			
FLUORENE	1.34248	1.42377	6.05			
N-NITROSODIPHENYLAMINE	.38906	.40415	3.88	*		
4-BROMOPHENYL-PHENYLETHER	.20277	.19702	2.84			
HEXACHLOROBENZENE	.24622	.22638	8.06			
PHENANTHRENE	.97743	1.00187	2.50			
ANTHRACENE	.99971	1.02493	2.52			
DI-N-BUTYLPHTHALATE	1.45248	1.47043	1.24			

RF - Response Factor from daily standard file at 80.00 UG/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

000221

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FAX: (201) 361-1021

Continuing Calibration Check
HSL Compounds

Case No:

Calibration Date: 04/15/92

Contractor: ECRA LABS

Time: 09:41

Contract No:

Laboratory ID: >F4715

Instrument ID: MSD-2

Initial Calibration Date: 04/07/92

Minimum $\overline{RF}$ for SPCC is .05 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
FLUORANTHENE	1.43084	1.52977	6.91	*		
BENZIDINE	.33787	.28513	15.61			
PYRENE	1.11291	1.14997	3.33			
TERPHENYL-D14(SURROGATE)	.83370	.86413	3.65			(Conc=50.00)
BUTYLBENZYLPHTHALATE	.64163	.63997	.26			
3,3'-DICHLOROBENZIDINE	.35354	.34245	3.14			
BENZO(A)ANTHRACENE	1.12851	1.16395	3.14			
BIS(2-ETHYLHEXYL)PHTHALATE	.84291	.84479	.22			
CHRYSENE	1.02594	1.03282	.67			
DI-N-OCTYLPHTHALATE	1.58016	1.56620	.88	*		
BENZO(B)FLUORANTHENE	1.33540	1.38789	3.93			
BENZO(K)FLUORANTHENE	.90338	.89825	.57			
BENZO(A)PYRENE	1.12430	1.12912	.43	*		
INDENO(1,2,3-CD)PYRENE	1.09726	1.06152	3.26			
DIBENZO(A,H)ANTHRACENE	.83094	.79145	4.75			
BENZO(G,H,I)PERYLENE	.93293	.88404	5.24			

RF - Response Factor from daily standard file at 80.00 UG/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

000222

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QUANT REPORT

Operator ID: JEAN
Output File: ^F4715::QT
Data File: >F4715::F1
Name: BN STD 80 PPB
Misc: INJ FOR 04/15/92

Quant Rev: 6
Quant Time: 920415 10:45
Injected at: 920415 09:41
Dilution Factor: 1.00000

ID File: BNS2::E1
Title: BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270
Last Calibration: 920407 16:38

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*1,4-DICHLOROBENZENE-D4	12.92	445	13596	50.00	UG/KG	94
2)	N-NITROSODIMETHYLAMINE	5.82	54	12849	88.83	UG/KG	100
3)	BIS(2-CHLOROETHYL)ETHER	12.15	403	17891	75.75	UG/KG	76
4)	1,3-DICHLOROBENZENE	12.83	440	18440	81.49	UG/KG	97
5)	1,4-DICHLOROBENZENE	12.97	448	19114	84.81	UG/KG	94
6)	1,2-DICHLOROBENZENE	13.55	480	19310	81.97	UG/KG	92
7)	BIS(2-CHLOROISOPROPYL)ETHER	13.81	494	46233	74.44	UG/KG	100
8)	N-NITROSO-DI-N-PROPYLAMINE	14.22	517	20362	85.82	UG/KG	89
9)	HEXACHLOROETHANE	14.52	533	9033	84.52	UG/KG	95
10)	*NAPHTHALENE-D8	16.95	667	38648	50.00	UG/KG	98
11)	NITROBENZENE-D5(SURROGATE)	14.68	542	17021	51.43	UG/KG	91
12)	NITROBENZENE	14.73	545	27094	83.97	UG/KG	81
13)	ISOPHORONE	15.46	585	59482	83.56	UG/KG	90
14)	BIS(2-CHLOROETHOXY)METHANE	16.11	621	28917	77.59	UG/KG	91
15)	1,2,4-TRICHLOROBENZENE	16.80	659	20885	85.81	UG/KG	98
16)	NAPHTHALENE	17.02	671	62350	84.78	UG/KG	98
17)	HEXACHLOROBUTADIENE	17.57	701	12075	85.65	UG/KG	93
18)	*ACENAPHTHENE-D10	22.78	988	31346	50.00	UG/KG	88
19)	HEXACHLOROCYCLOPENTADIENE	20.00	835	7009	69.03	UG/KG	80
20)	2-FLUOROBIPHENYL(SURROGATE)	20.49	862	39514	51.84	UG/KG	93
21)	2-CHLORONAPHTHALENE	20.87	883	53328	81.07	UG/KG	98
22)	DIMETHYLPHTHALATE	21.89	939	74784	84.59	UG/KG	94
23)	ACENAPHTHYLENE	22.29	961	96007	83.70	UG/KG	99
24)	2,6-DINITROTOLUENE	22.14	953	12505	84.03	UG/KG	85
25)	ACENAPHTHENE	22.89	994	55648	86.18	UG/KG	93
26)	2,4-DINITROTOLUENE	23.45	1025	30572	85.10	UG/KG	97
27)	DIETHYLPHTHALATE	24.21	1067	89560	85.80	UG/KG	93
28)	4-CHLOROPHENYL-PHENYLETHER	24.49	1082	38638	85.85	UG/KG	82
29)	FLUORENE	24.58	1087	71407	84.84	UG/KG	98
30)	*PHENANTHRENE-D10	27.68	1258	79974	50.00	UG/KG	96
31)	N-NITROSODIPHENYLAMINE	24.89	1104	51714	83.10	UG/KG	93
32)	4-BROMOPHENYL-PHENYLETHER	26.10	1171	25210	77.73	UG/KG	93
33)	HEXACHLOROBENZENE	26.68	1203	28967	73.55	UG/KG	70
34)	PHENANTHRENE	27.78	1263	128198	82.00	UG/KG	95
35)	ANTHRACENE	27.92	1271	131149	82.02	UG/KG	99
36)	DI-N-BUTYLPHTHALATE	29.54	1360	188154	80.99	UG/KG	99
37)	FLUORANTHENE	31.75	1482	195747	85.53	UG/KG	91
38)	*CHRYSENE-D12	36.86	1763	106238	50.00	UG/KG	95
39)	BENZIDINE	32.04	1498	48466	67.51	UG/KG	94
40)	PYRENE	32.53	1525	195473	82.66	UG/KG	87
41)	TERPHENYL-D14(SURROGATE)	32.90	1545	91803	51.82	UG/KG	94
42)	BUTYLBENZYLPHTHALATE	34.48	1632	108783	79.79	UG/KG	94
43)	3,3'-DICHLOROBENZIDINE	36.55	1746	58210	77.49	UG/KG	98

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FAX: (201) 361-1021

	Compound	R.T.	Scan#	Area	Conc	Units	q
44)	BENZO(A)ANTHRACENE	36.77	1758	197849	82.51	UG/KG	96
45)	BIS(2-ETHYLHEXYL)PHTHALATE	36.63	1750	143598	80.18	UG/KG	98
46)	CHRYSENE	36.99	1770	175560	80.54	UG/KG	95
47)	*PERYLENE-D12	45.45	2235	120757	50.00	UG/KG	99
48)	DI-N-OCTYLPHTHALATE	39.59	1913	302608	79.29	UG/KG	100
49)	BENZO(B)FLUORANTHENE	42.69	2083	268155	83.14	UG/KG	97
50)	BENZO(K)FLUORANTHENE	42.87	2093	173552	79.55	UG/KG	98
51)	BENZO(A)PYRENE	45.05	2213	218159	80.34	UG/KG	93
52)	INDENO(1,2,3-CD)PYRENE	55.96	2813	205098M	77.39	UG/KG	
53)	DIBENZO(A,H)ANTHRACENE	56.12	2822	152917	76.20	UG/KG	86
54)	BENZO(G,H,I)PERYLENE	59.14	2988	170807	75.81	UG/KG	97

* Compound is ISTD

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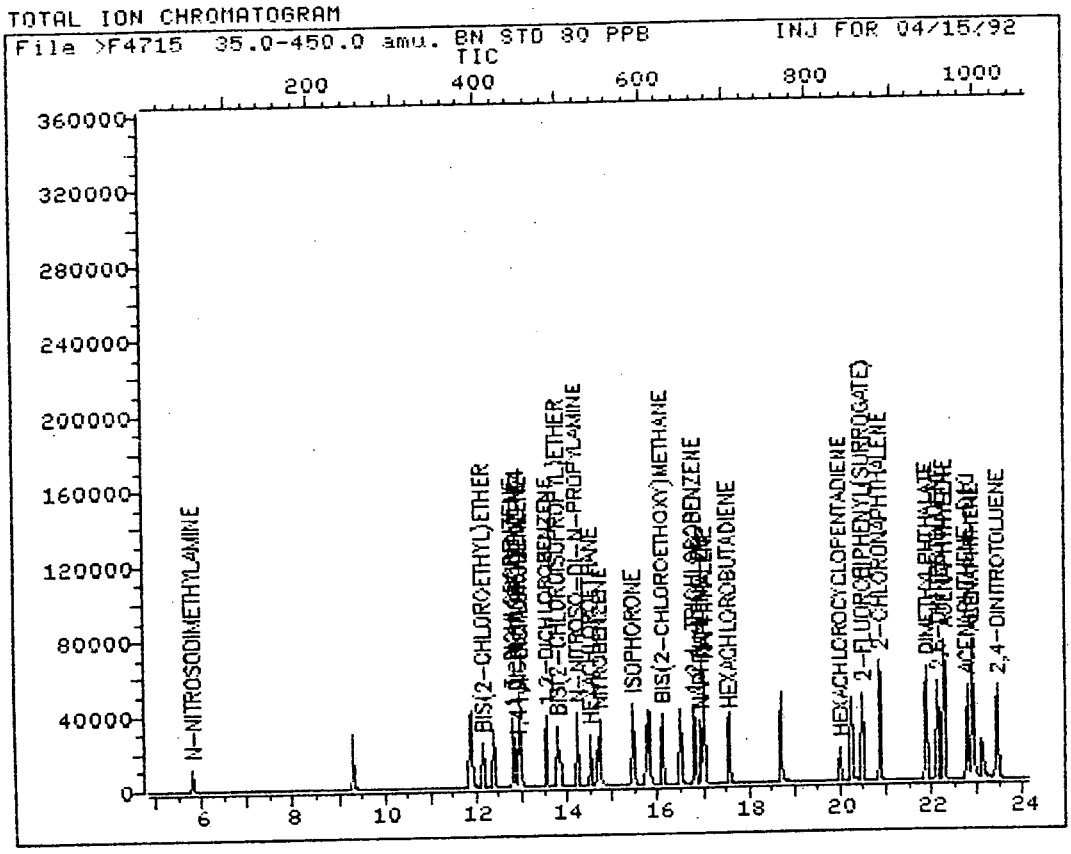
TOTAL ION CHROMATOGRAM



Data File: >F4715::F1
Name: BN STD 80 PPB
Misc: INJ FOR 04/15/92

Quant Output File: ^F4715::QT

Id File: BNS2::E1
Title: BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270
Last Calibration: 920407 16:38

Operator ID: JEAN
Quant Time: 920415 10:45
Injected at: 920415 09:41

TIC page 1 of 3

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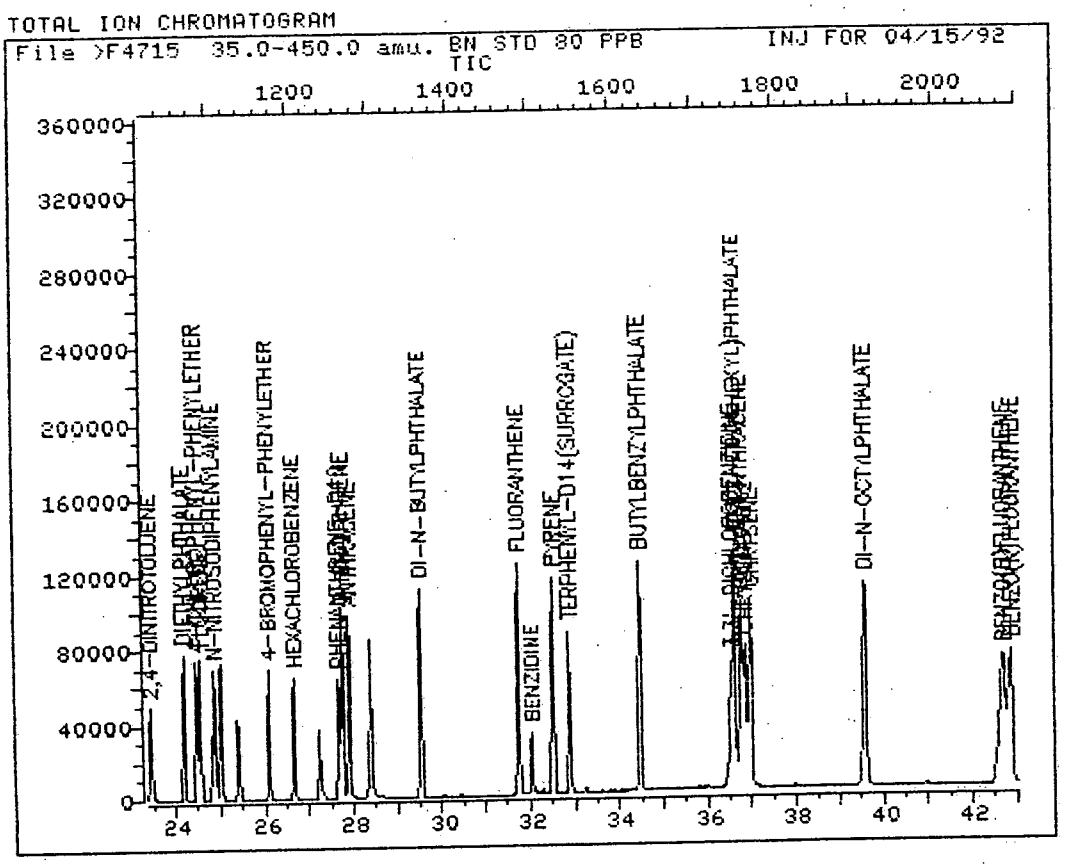
TOTAL ION CHROMATOGRAM



Data File: >F4715::F1
Name: BN STD 80 PPB
Misc: INJ FOR 04/15/92

Quant Output File: ^F4715::QT

Id File: BNS2::E1
Title: BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270
Last Calibration: 920407 16:38

Operator ID: JEAN
Quant Time: 920415 10:45
Injected at: 920415 09:41

TIC page 2 of 3

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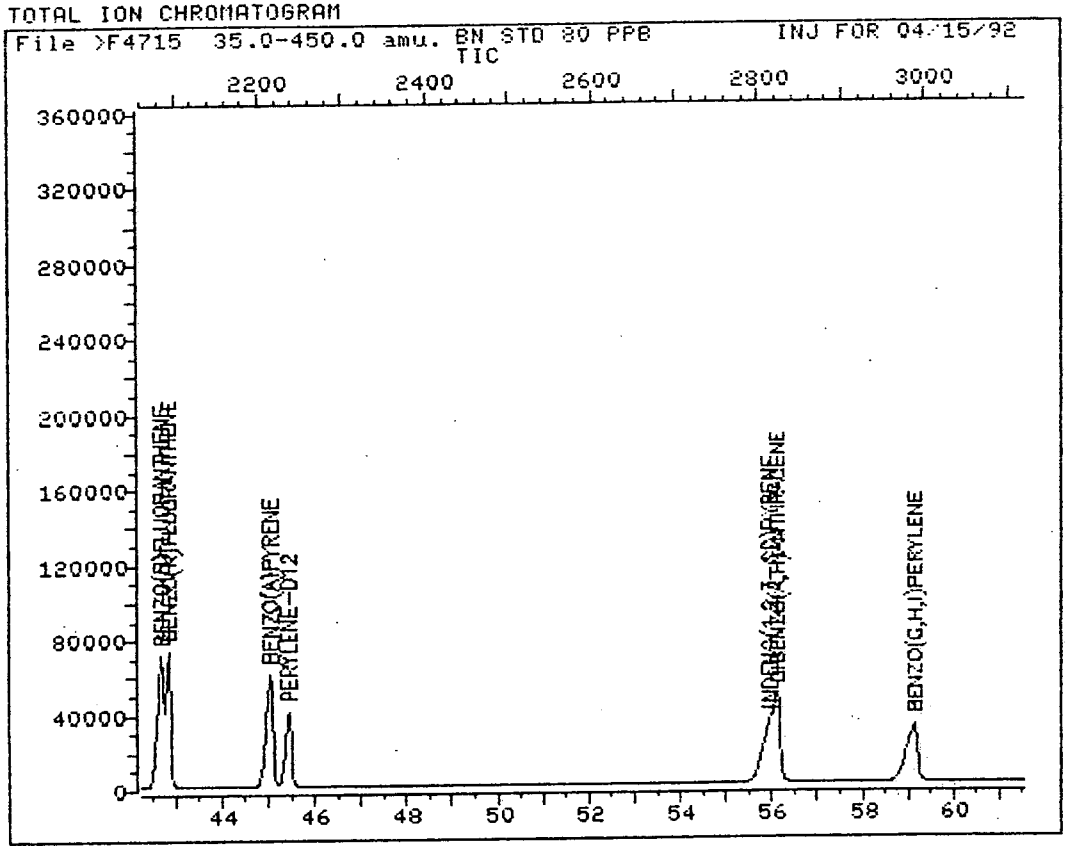
TOTAL ION CHROMATOGRAM



Data File: >F4715::F1 Quant Output File: ^F4715::QT
Name: BN STD 80 PPB
Misc: INJ FOR 04/15/92

Id File: BNS2::E1
Title: BASE NEUTRAL EXTRACTABLES BY EPA METHOD 8270
Last Calibration: 920407 16:38

Operator ID: JEAN
Quant Time: 920415 10:45
Injected at: 920415 09:41

TIC page 3 of 3

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SECTION 3.0

QA/QC DATA SUMMARY

TARGETED COMPOUND LIST
SURROGATE RECOVERY RESULTS
METHOD BLANK RESULTS
MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

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TARGET COMPOUND LIST (TCL) AND CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)*

		Practical Quantitation Limits **	
		Ground Water	Low Soil/Sediment(b)
Semivolatiles	CAS Number	ug/L	ug/Kg
Phenol	108-95-2	10	330
bis(2-Chloroethyl)ether	111-44-4	10	330
2-Chlorophenol	95-57-8	10	330
1,3-Dichlorobenzene	541-73-1	10	330
1,4-Dichlorobenzene	106-46-7	10	330
2-Chloronaphthalene	91-58-7	10	330
1,2-Dichlorobenzene	95-50-1	10	330
Benzidine	92-87-5	80	2600
bis(2-Chloroisopropyl)ether	39638-32-9	10	330
N-Nitrosodimethylamine	62-75-9	10	330
N-Nitrosodi-N-propylamine	621-64-7	10	330
Hexachloroethane	67-72-1	10	330
Nitrobenzene	98-95-3	10	330
Isophorone	78-59-1	10	330
2-Nitrophenol	88-75-5	10	330
2,4-Dimethylphenol	105-67-9	10	330
1,2 Diphenylhydrazine	-------	10	330
bis(2-Chloroethoxy)methane	111-91-1	10	330
2,4-Dichlorophenol	120-83-2	10	330
1,2,4-Trichlorobenzene	120-82-1	10	330
Naphthalene	91-20-3	10	330
Hexachlorobutadiene	87-68-3	10	330
4-Chloro-3-methylphenol	59-50-7	10	330
Hexachlorocyclopentadiene	77-47-4	10	330
2,4,6-Trichlorophenol	88-06-2	10	330

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TARGET COMPOUND LIST (TCL) AND CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)*

		Practical Quantitative Limits**	
		Ground Water	Low Soil/Sediment(b)
Semivolatiles	CAS Number	ug/L	ug/Kg
Dimethylphthalate	131-11-3	10	330
Acenaphthylene	208-96-8	10	330
Acenaphthene	83-32-9	10	330
2,4-Dinitrophenol	51-28-5	50	1600
4-Nitrophenol	100-02-7	50	1600
2,4-Dinitrotoluene	121-14-2	10	330
2,6-Dinitrotoluene	606-20-2	10	330
Diethylphthalate	84-66-2	10	330
4-Chlorophenylphenylether	7005-72-3	10	330
Fluorene	86-73-7	10	330
4,6-Dinitro-2-methylphenol	534-52-1	50	1600
N-Nitrosodiphenylamine	86-30-6	10	330
4-Bromophneylphenylether	101-55-3	10	330
Hexachlorobenzene	118-74-1	10	330
Pentachlorophenol	87-86-5	50	1600
Phenathrene	85-01-8	10	330
Anthracene	120-12-7	10	330
Di-n-butylphthalate	84-74-2	10	330
Fluoranthene	206-44-0	10	330
Pyrene	129-00-0	10	330
Butylbenzylphthalate	85-68-7	10	330
3,3-Dichlorobenzidine	91-94-1	20	660
Benzo(a)anthracene	56-55-3	10	330
bis(2-ethylhexyl)phthalate	117-81-7	10	330

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TARGET COMPOUND LIST (TCL) AND CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)*

		Practical Quantitation Limits**	
		Ground Water	Low Soil/Sediment(b)
Semivolatiles	CAS Number	ug/L	ug/Kg
Chrysene	218-01-9	10	330
Di-n-octylphthalate	117-84-0	10	330
Benzo(b)fluoranthene	205-99-2	10	330
Benzo(k)fluoranthene	207-08-9	10	330
Benzo(a)pyrene	50-32-8	10	330
Indeno(1,2,3-cd)pyrene	193-39-5	10	330
Dibenzo(a,h)anthracene	53-70-3	10	330
Benzo(g,h,i)perylene	191-24-2	10	330

(b) Medium soil/sediment contract required Quantitation Limits (CRQL) for Semi-Volatile TCL Compounds are 60 times the individual Low Soil/Sediment CRQL.

* Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

** Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on dry weight basis as required by the contract, will be higher.

FOOTNOTE: Chart is taken from USEPA Contract Laboratory Program Manual, Attachment C , TCL and CRQL lists, October, 1986.

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ECRA LABORATORIES, INC.

SURROGATE PERCENT RECOVERY SUMMARY

CLIENT: AARON ENVIRONMENTAL PROJECT NUMBER: 92-33-01
LOW: X

SAMPLE ID NO.	MATRIX	FILE ID	NITROBENZENE-D5	2-FLUORO-BIPHENYL	TERPHENYL-D14
01: METHOD BLANK	WATER	F4716	63	69	68
02: MATRIX SPIKE	WATER	F4711	46	52	106
03: MATRIX SPIKE DUP	WATER	F4712	61	63	92
04: MATRIX SPIKE	WATER	F4720	64	71	69
05: 92-33-01-MW-2	WATER	F4719	50	62	63
06: 92-33-01-F BLANK	WATER	F4717	62	78	77
07: 92-33-01-MW-1	WATER	F4718	60	66	62
08:					
09:					
10:					
11:					
12:					
13:					
14:					
15:					
16:					
17:					
18:					
19:					
SOIL QA/QC LIMITS			(23-120)	(30-115)	(18-137)
WATER QA/QC LIMITS			(35-114)	(43-116)	(33-141)

NO.: 0 OUT OF: 21 ; OUTSIDE OF QC LIMITS

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET-(PAGE 1 OF 2)

:CRA LABORATORIES, INC.

:ABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: .

SAMPLE ID #: METHOD BLANK

LAB ID #:N/A

DATA FILE: >F4716::F1

DILUTION FACTOR: 1.00000

EXTRACTION:SEPF

METHOD DETECTION LIMIT: 10 UG/L

DATE SAMPLED:N/A

DATE RECEIVED:N/A

DATE EXTRACTED:04/14/92

DATE ANALYZED: 4/15/92 11:34

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
111-44-4	bis(2-Chloroethyl)Ether	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
62-75-9	N-Nitrosodimethylamine	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	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
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
87-68-3	Hexachlorobutadiene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
91-58-7	2-Chloronaphthalene	10.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
83-32-9	Acenaphthene	10.	U
92-87-5	Benzidine	80.	U
121-14-2	2,4-Dinitrotoluene	10.	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET-(PAGE 2 OF 2)

ECRA LABORATORIES, INC.

LABORATORY REPORT-BASE NEUTRAL EXTRACTABLES-EPA METHOD 625

CLIENT NAME: .

SAMPLE ID #: METHOD BLANK

LAB ID #:N/A

DATA FILE: >F4716::F1

DILUTION FACTOR: 1.00000

EXTRACTION:SEPF

METHOD DETECTION LIMIT: 10 UG/L

DATE SAMPLED:N/A

DATE RECEIVED:N/A

DATE EXTRACTED:04/14/92

DATE ANALYZED: 4/15/92 11:34

MATRIX:WATER

CAS NO.	COMPOUND	CONCENTRATION UG/L	Q
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	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	20.	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-octylphthalate	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	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from Diphenylamine

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ab Name: ECRA LABORATORIES, INC.

ient Name: .

MPLE ID #: METHOD BLANK LAB ID # N/A

ata File: >F4716

traction: SEPF

PA METHOD #625

lution Factor: 1.00000

oncentration Units: UG/L

UMBER OF TIC'S DETECTED: 2

* COMMON LABORATORY CONTAMINANT
** ALSO FOUND IN METHOD BLANK
*** MANUALLY INTEGRATED AND SEARCHED

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	57556	1,2-Propanediol	5.69	20.	*
2.		Unknown	13.11	34.	
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					

R = Not reviewed FORM I SV-TIC 1/87 Rev.

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QUANT REPORT

Operator ID: JEAN
Output File: ^F4716::QT
Data File: >F4716::F1
Name: .
Misc: METHOD BLANK WATER 04/14/92

Quant Rev: 6
Quant Time: 920415 12:41
Injected at: 920415 11:34
Dilution Factor: 1.00000

BTL# 1

ID File: BNW2::M1
Title: BASE NEUTRAL EXTRACTABLES BY EPA METHOD 625
Last Calibration: 920407 16:47

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*1,4-DICHLOROBENZENE-D4	12.95	442	17838	50.00	UG/L	96
10)	*NAPHTHALENE-D8	16.98	664	65596	50.00	UG/L	98
11)	NITROBENZENE-D5(SURROGATE)	14.71	539	17789	31.67	UG/L 63	88
18)	*ACENAPHTHENE-D10	22.82	986	53090	50.00	UG/L	90
20)	2-FLUOROBIPHENYL(SURROGATE)	20.52	859	44758	34.67	UG/L 69	93
30)	*PHENANTHRENE-D10	27.72	1256	128734	50.00	UG/L	92
38)	*CHRYSENE-D12	36.88	1760	212366	50.00	UG/L	96
41)	TERPHENYL-D14(SURROGATE)	32.93	1543	121127	34.21	UG/L 68	94
47)	*PERYLENE-D12	45.55	2237	203208	50.00	UG/L	94

* Compound is ISTD

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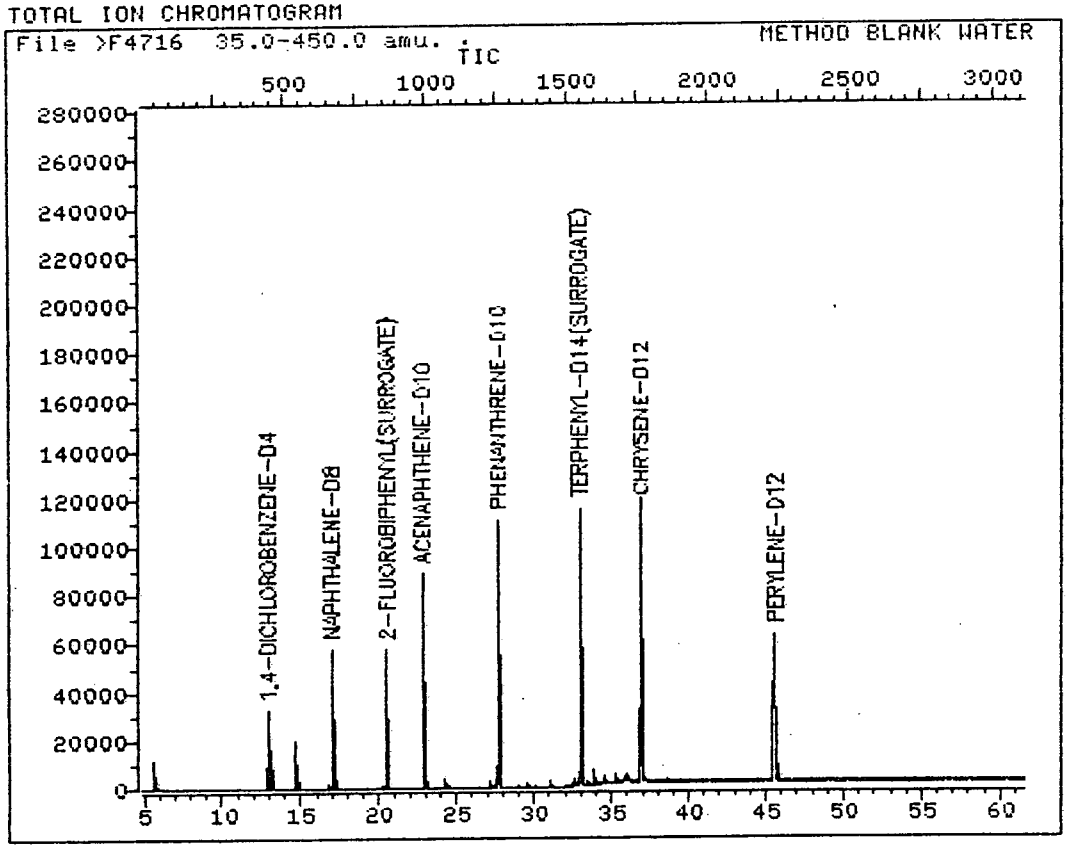
TOTAL ION CHROMATOGRAM



Data File: >F4716::F1 Quant Output File: ^F4716::QT
Name: .
Misc: METHOD BLANK WATER 04/14/92 BTL# 1

Id File: BNW2::M1
Title: BASE NEUTRAL EXTRACTABLES BY EPA METHOD 625
Last Calibration: 920407 16:47

Operator ID: JEAN
Quant Time: 920415 12:41
Injected at: 920415 11:34

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FAX: (201) 361-1021

MS data file header from : >F4716

Sample: . Operator: JEAN MS 4/15/92 11:34
Misc : METHOD BLANK WATER 04/14/92 BTL# 1
Sys. #: 2 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: PRIORF Tuning file: MTF001 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 290 Transfer line temp. : 240

Chromatographic temperatures :	50.	300.	301.	301.	0.
Chromatographic times, min. :	3.0	20.0	20.0	10.0	0.0
Chromatographic rate, deg/min:	8.0	1.0	.2	1.0	0.0

METHOD BLANK WATER 04/14/92

>F4716 .
35.01 450.0 CLP ADC TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 15 Bunching: 1
Dnslope: 0.00 Results File IF4716 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	5.69	39	42	50	11527	33062	32307	59.25	14.327
2	13.11	448	451	466	16499	54525	54525	100.00	24.179
3	~~16.69~~	~~646~~	~~648~~	~~660~~	~~1889~~	~~13252~~	~~13252~~	~~24.30~~	~~5.877~~
4	~~22.93~~	~~989~~	~~992~~	~~996~~	~~5074~~	~~11919~~	~~11919~~	~~21.86~~	~~5.286~~
5	~~24.24~~	~~1061~~	~~1064~~	~~1067~~	~~3283~~	~~7624~~	~~7624~~	~~13.98~~	~~3.381~~
6	~~27.10~~	~~1218~~	~~1222~~	~~1226~~	~~2725~~	~~8957~~	~~8957~~	~~16.43~~	~~3.972~~
7	~~27.87~~	~~1262~~	~~1264~~	~~1275~~	~~1188~~	~~5854~~	~~5854~~	~~10.74~~	~~2.596~~
8	~~31.06~~	~~1437~~	~~1440~~	~~1444~~	~~2612~~	~~8467~~	~~6918~~	~~12.69~~	~~3.068~~
9	~~32.52~~	~~1516~~	~~1520~~	~~1527~~	~~3029~~	~~15914~~	~~10506~~	~~19.27~~	~~4.659~~
10	~~33.86~~	~~1589~~	~~1594~~	~~1597~~	~~5950~~	~~26406~~	~~16274~~	~~29.85~~	~~7.217~~
11	~~34.53~~	~~1628~~	~~1631~~	~~1634~~	~~3032~~	~~10969~~	~~8216~~	~~15.07~~	~~3.643~~
12	~~35.22~~	~~1667~~	~~1669~~	~~1673~~	~~3488~~	~~23753~~	~~10973~~	~~20.12~~	~~4.866~~
13	~~35.70~~	~~1692~~	~~1695~~	~~1701~~	~~2726~~	~~31638~~	~~9612~~	~~17.63~~	~~4.262~~
14	~~35.90~~	~~1701~~	~~1706~~	~~1713~~	~~3333~~	~~53741~~	~~22828~~	~~41.87~~	~~10.123~~
15	~~38.57~~	~~1850~~	~~1853~~	~~1858~~	~~1448~~	~~24541~~	~~5737~~	~~10.52~~	~~2.544~~

Sum of corrected areas: 225502.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	81126.	12.95	4.94 - 14.96
2	50.0	152694.	16.98	14.96 - 19.90
3	50.0	258205.	22.82	19.90 - 25.27
4	50.0	363636.	27.72	25.27 - 32.30
5	50.0	598213.	36.88	32.30 - 41.21
6	50.0	579820.	45.55	41.21 - 61.54

Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 1.00 Amount Used (AU) = 1.00

000238

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

Conc Int Std .

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$$\text{Unknown Concentration} = \frac{\text{Area Unk} * \text{Correction Factor}}{\text{Area Int Std}}$$

5:07 PM WED., 15 APR., 1992

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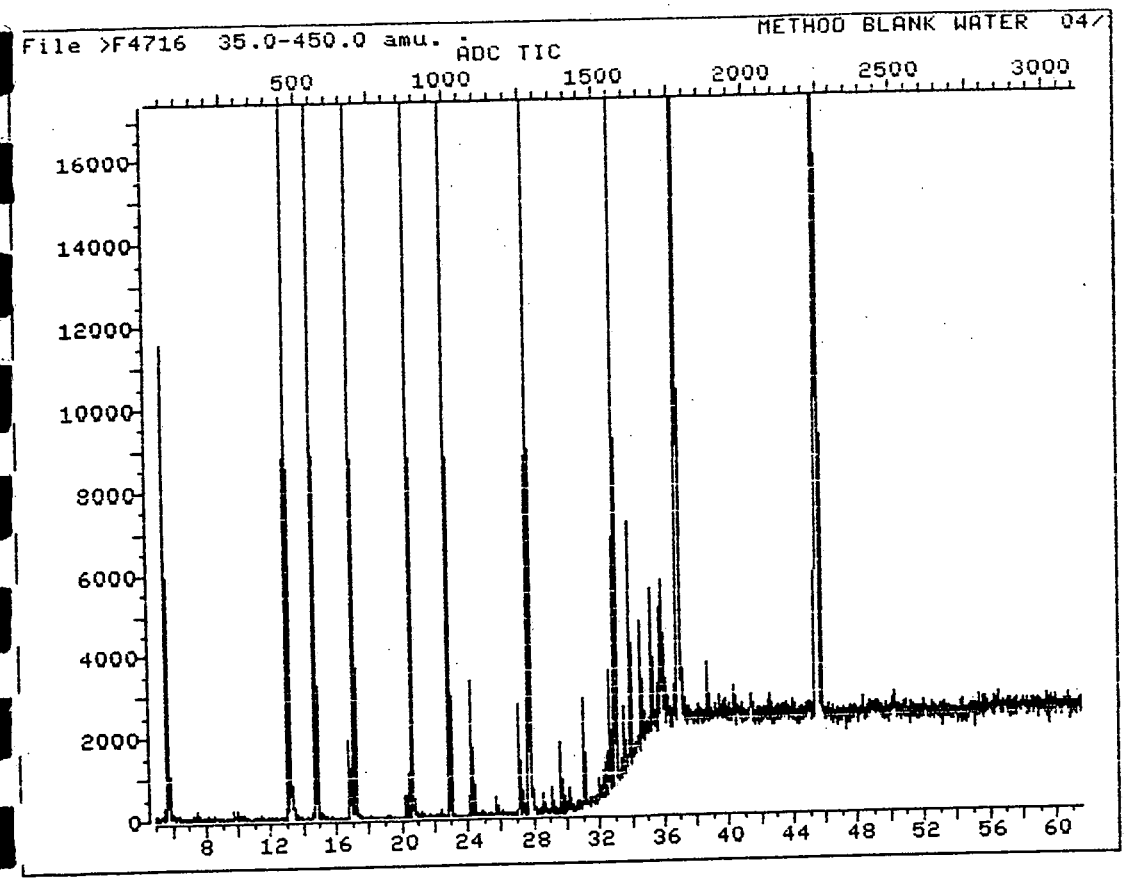

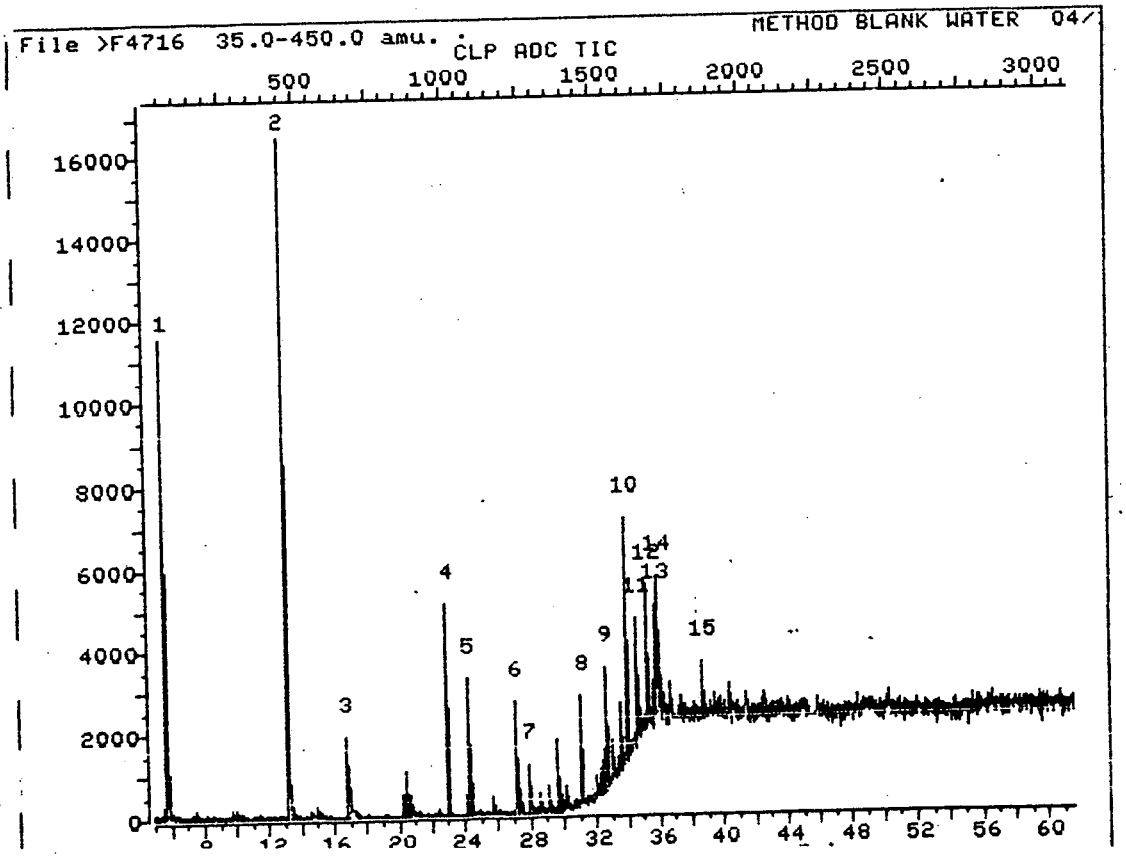

000240

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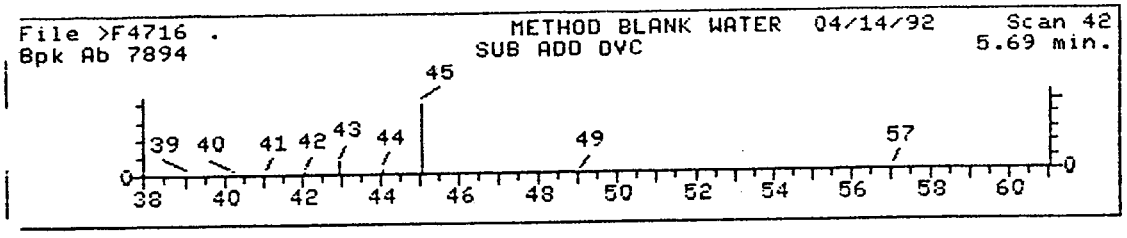

Unknown #,1
Area = 32307.00 Tentative Concentration is 20.00

Sample file: >F4716 Spectrum #: 42

No data base entries were retrieved.

1,2-Propanedial S 7556

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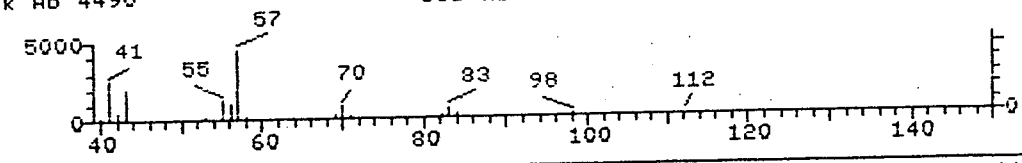
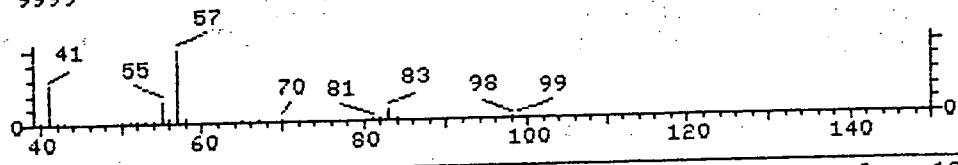
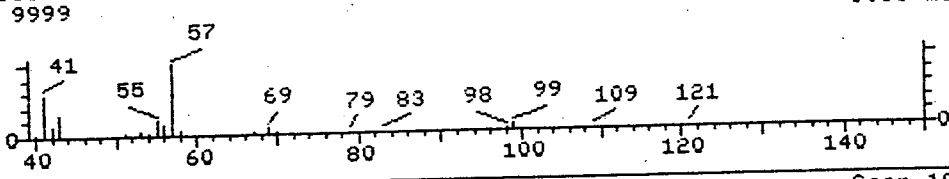
File >F4716 METHOD BLANK WATER 04/14/92 Scan 451
Bpk Ab 4490 SUB ADD DVC 13.11 min.



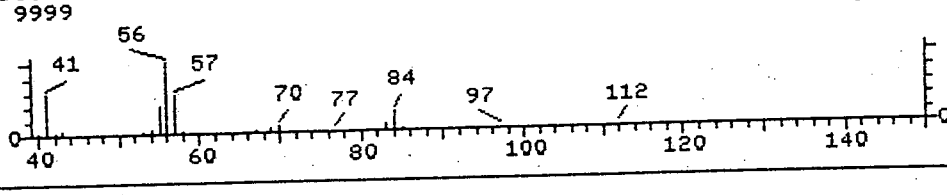
File >BIGDB 1-Pentene, 4,4-dimethyl- (8CI9CI) Scan 1183
Bpk Ab 9999 0.00 min.



File >BIGDB Heptane, 2-bromo- (8CI9CI) Scan 1201
Bpk Ab 9999 0.00 min.



File >BIGDB 1-Hexene, 3,4-dimethyl- (8CI9CI) Scan 1002
Bpk Ab 9999 0.00 min.



Unknown #,2
Area = 54525.00 Tentative Concentration is 34.00

1. 1-Pentene, 4,4-dimethyl- (8CI9CI)	98	C7H14
2. Heptane, 2-bromo- (8CI9CI)	178	C7H15Br
3. 1-Hexene, 3,4-dimethyl- (8CI9CI)	112	C8H16
4. 1-Heptene, 3-methyl- (8CI9CI)	112	C8H16
5. Pentane, 2,4-dimethyl-2-nitro- (8CI)	145	C7H15NO2
6. 1-Hexene, 4-methyl- (8CI9CI)	98	C7H14

Unknown Alkane

Sample file: >F4716 Spectrum #: 451
Search speed: 1 Tilting option: N No. of ion ranges searched: 46

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	71*	762629	1183	"BIGDB	46	30	0	0	71	26	29	66
2.	39	1974045	1201	"BIGDB	45	39	1	0	70	29	14	16
3.	15*	16745941	1002	"BIGDB	21	69	2	0	71	59	3	13
4.	12*	4810097	3544	"BIGDB	46	35	0	0	27	70	3	60
5.	11	597455	1064	"BIGDB	34	46	1	0	19	63	2	12
6.	11*	3769231	1052	"BIGDB	27	66	1	0	52	61	2	15

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WATER SPIKE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

LAB I.D. #: N/A UNITS: ug/L
LOW-LEVEL: ____ SAMPLE ID NO: 92-19-01-DI H20
EXTRACTION DATE: 4/10/92 ANALYZED: 4/13/92
CONT: _____

COMPOUND	CONC. SPIKE ADDED	SAMPLE RESULT	CONC. MS	PERCENT RECOVERY	CONC. MSD	PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
VOA									
1,1 DICHLORO-ETHENE:								14	61-145
TRICHLOROETHENE:								14	71-120
CHLOROBENZENE:								13	75-130
TOLUENE:								13	76-125
BENZENE**:								11	76-127
B/N									
1,2,4-TRICHLORO-BENZENE*:	50	U	20.4	41	23.7	47	15	28	39--98
ACENAPHTHENE:	50	U	27.5	55	33.2	66	19	31	46-118
2,4 DINITRO--TOLUENE:	50	U	35.6	71	38.0	76	6.5	38	24--96
PYRENE:	50	U	55.1	110	50.4	101	8.9	31	26-127
N NITROSODI-n-PROPYLAMINE:	50	U	31.6	63	36.7	73	15	38	41-118
1,4-DICHLORO-BENZENE:	50	U	18.7	37	20.2	40	7.7	28	36--97
ACID									
PENTACHLOROPHENOL:	100	U	82.8	83	91.1	91	9.5	50	9--103
PHENOL*:	100	U	31.3	31	40.4	40	25	42	12--89
2 CHLOROPHENOL:	100	U	56.4	56	72.9	73	26	40	27-123
4 CHLORO 3 METHYL-PHENOL:	100	U	67.6	68	86.0	86	24	42	23--97
4 NITROPHENOL:	100	U	30.1	30	31.3	31	3.9	50	10--80
PEST									
LINDANE:								15	56-123
HEPTACHLOR:								20	40-131
ALDRIN:								22	40-120
DIELDRIN:								18	52-128
ENDRIN:								21	58-121
4,4 DDT:								27	38-127

RPD

VOA'S: ____ OUT OF: ____ OUTSIDE QC LIMITS
A/E'S: 0 OUT+OF: 5 OUTSIDE QC LIMITS
B/N'S: 0 OUT^OF: 6 OUTSIDE QC LIMITS
PEST : ____ OUT~OF: ____ OUTSIDE QC LIMITS

RECOVERY

VOA*: ____ OUT-OF: ____ OUTSIDE QC LIMIT
A/E*: 0 OUT|OF: 10 OUTSIDE QC LIMI
B/N*: 0 OUT=OF: 12 OUTSIDE QC LIMI
PEST: ____ OUT"OF: ____ OUTSIDE QC LIMIT

COMMENTS: NONE.

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QUANT REPORT

Operator ID: JEAN
Output File: ^F4711::QT
Data File: >F4711::F1
Name: MATRIX SPIKE WATER
Misc: 92-19-01-DI

Quant Rev: 6
Quant Time: 920413 17:30
Injected at: 920413 16:25
Dilution Factor: 1.00000

04/10/92

BTL# 4

ID File: PPW2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 625
Last Calibration: 920407 16:48

	Compound	R.T.	Scan#	Area	Conc	Units		q
1)	*1,4-DICHLOROBENZENE-D4	12.91	442	22517	50.00	UG/L		90
2)	2-FLUOROPHENOL (SURROGATE)	9.30	243	9641	34.75	UG/L	35	69
3)	PHENOL-D5(SUROGATE STD.)	11.84	383	13283	29.34	UG/L	29	96
4)	PHENOL	11.88	385	14571	31.33	UG/L		94
5)	2-CHLOROPHENOL	12.37	412	19562	56.44	UG/L		91
6)	*NAPHTHALENE-D8	16.93	663	70105	50.00	UG/L		92
10)	4-CHLORO-3-METHYLPHENOL	18.69	760	37664	67.59	UG/L		83
11)	*ACENAPHTHENE-D10	22.76	984	54424	50.00	UG/L		85
14)	4-NITROPHENOL	23.07	1001	9519	30.07	UG/L		79
15)	2,4,6-TRIBROMOPHENOL(SURROG.)	25.38	1128	17372	64.50	UG/L	65	93
16)	*PHENANTHRENE-D10	27.67	1254	122562M	50.00	UG/L		87
18)	PENTACHLOROPHENOL	27.22	1229	24931	82.76	UG/L		77
19)	*1,4-DICHLOROBENZENE-D4	12.91	442	22517	50.00	UG/L		93
23)	1,4-DICHLOROBENZENE	12.95	444	6975	18.69	UG/L		94
26)	N-NITROSO-DI-N-PROPYLAMINE	14.20	513	12434	31.64	UG/L		88
28)	*NAPHTHALENE-D8	16.93	663	70105	50.00	UG/L		98
29)	NITROBENZENE-D5(SURROGATE)	14.66	538	13824	23.03	UG/L	46	93
33)	1,2,4-TRICHLOROBENZENE	16.78	655	8986	20.35	UG/L		94
36)	*ACENAPHTHENE-D10	22.76	984	54424	50.00	UG/L		89
38)	2-FLUOROBIPHENYL(SURROGATE)	20.46	857	34408	26.00	UG/L	52	91
43)	ACENAPHTHENE	22.87	990	30770	27.45	UG/L		88
44)	2,4-DINITROTOLUENE	23.42	1020	22190	35.57	UG/L		92
48)	*PHENANTHRENE-D10	27.67	1254	122257	50.00	UG/L		96
56)	*CHRYSENE-D12	36.81	1757	137286	50.00	UG/L		96
58)	PYRENE	32.50	1520	168246	55.06	UG/L		90
59)	TERPHENYL-D14(SURROGATE)	32.88	1541	121338	53.01	UG/L	106	96
65)	*PERYLENE-D12	45.39	2229	165696	50.00	UG/L		98

* Compound is ISTD

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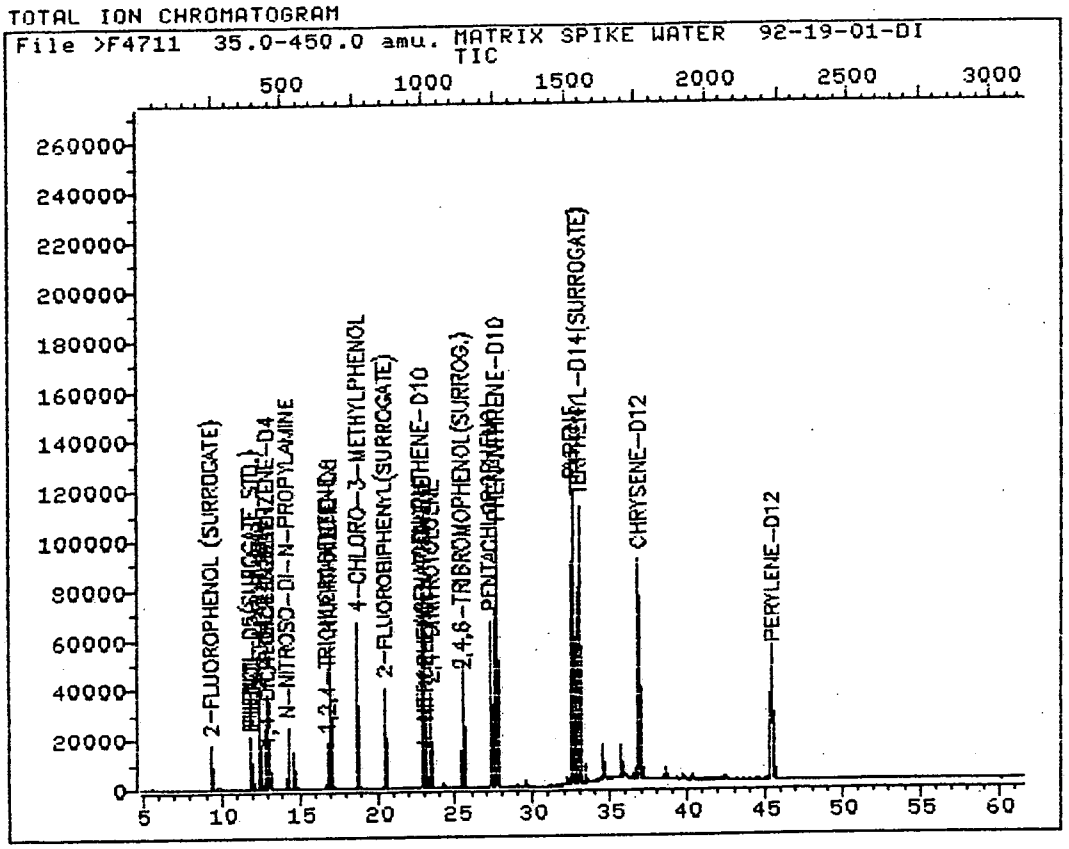
TOTAL ION CHROMATOGRAM



Data File: >F4711::F1 Quant Output File: ^F4711::QT
Name: MATRIX SPIKE WATER
Misc: 92-19-01-DI 04/10/92 BTL# 4

Id File: PPW2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 625
Last Calibration: 920407 16:48

Operator ID: JEAN
Quant Time: 920413 17:30
Injected at: 920413 16:25

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QUANT REPORT

Operator ID: JEAN
Output File: ^F4712::QT
Data File: >F4712::F1
Name: MATRIX SPK DUP WATER
Misc: 92-19-01-DI 04/10/92

Quant Rev: 6
Quant Time: 920413 18:43
Injected at: 920413 17:38
Dilution Factor: 1.00000

BTL# 5

ID File: PPW2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 625
Last Calibration: 920407 16:48

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*1,4-DICHLOROBENZENE-D4	12.89	440	21840	50.00	UG/L	87
2)	2-FLUOROPHENOL (SURROGATE)	9.30	242	13284	49.36	UG/L 49	64
3)	PHENOL-D5(SUROGATE STD.)	11.82	381	16713	38.06	UG/L 38	93
4)	PHENOL	11.86	383	18222	40.40	UG/L	90
5)	2-CHLOROPHENOL	12.36	411	24491	72.85	UG/L	98
6)	*NAPHTHALENE-D8	16.92	662	64928	50.00	UG/L	91
10)	4-CHLORO-3-METHYLPHENOL	18.68	759	44381	86.00	UG/L	84
11)	*ACENAPHTHENE-D10	22.75	983	50431	50.00	UG/L	89
14)	4-NITROPHENOL	23.08	1001	9185	31.31	UG/L	78
15)	2,4,6-TRIBROMOPHENOL(SURROG.)	25.38	1128	19089	76.48	UG/L 76	95
16)	*PHENANTHRENE-D10	27.65	1253	117150M	50.00	UG/L	83
18)	PENTACHLOROPHENOL	27.20	1228	26222M	91.07	UG/L	86
19)	*1,4-DICHLOROBENZENE-D4	12.89	440	21840	50.00	UG/L	93
23)	1,4-DICHLOROBENZENE	12.95	443	7329	20.24	UG/L	95
26)	N-NITROSO-DI-N-PROPYLAMINE	14.20	512	13967	36.65	UG/L	84
28)	*NAPHTHALENE-D8	16.92	662	64928	50.00	UG/L	97
29)	NITROBENZENE-D5(SURROGATE)	14.65	537	16921	30.43	UG/L 61	92
33)	1,2,4-TRICHLOROBENZENE	16.78	654	9677	23.67	UG/L	96
36)	*ACENAPHTHENE-D10	22.75	983	50431	50.00	UG/L	92
38)	2-FLUOROBIPHENYL(SURROGATE)	20.44	856	38686	31.55	UG/L 63	91
43)	ACENAPHTHENE	22.86	989	34517	33.23	UG/L	89
44)	2,4-DINITROTOLUENE	23.40	1019	21973	38.02	UG/L	87
48)	*PHENANTHRENE-D10	27.65	1253	117185	50.00	UG/L	98
56)	*CHRYSENE-D12	36.81	1757	141631	50.00	UG/L	93
58)	PYRENE	32.48	1519	158732	50.35	UG/L	89
59)	TERPHENYL-D14(SURROGATE)	32.86	1540	108441	45.92	UG/L 92	96
65)	*PERYLENE-D12	45.37	2228	152678	50.00	UG/L	92

* Compound is ISTD

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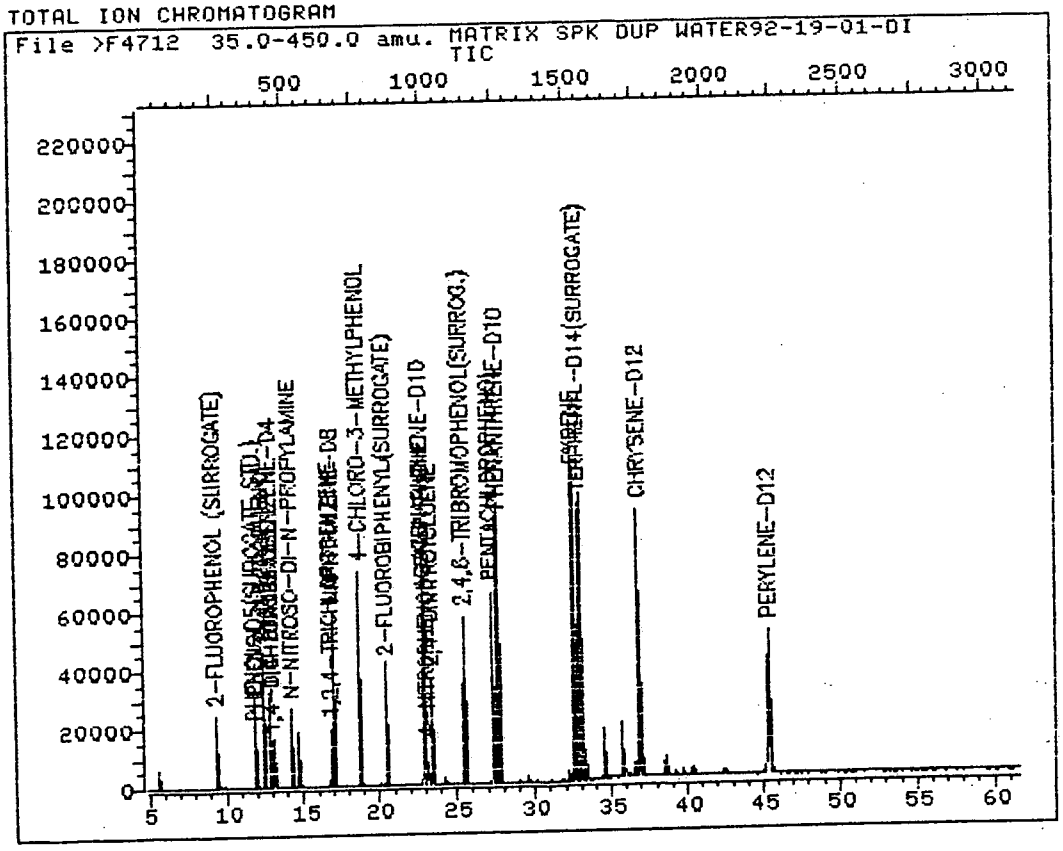
TOTAL ION CHROMATOGRAM



Data File: >F4712::F1 Quant Output File: ^F4712::QT
Name: MATRIX SPK DUP WATER
Misc: 92-19-01-DI 04/10/92 BTL# 5

Id File: PPW2::SC
Title: ACID AND BASE NEUTRAL EXTRACTABLES BY EPA METHOD 625
Last Calibration: 920407 16:48

Operator ID: JEAN
Quant Time: 920413 18:43
Injected at: 920413 17:38

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WATER SPIKE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

LAB I.D. #: N/A UNITS: ug/L
LOW-LEVEL: ____ SAMPLE ID NO: 92-33-01-DI H20
EXTRACTION DATE: 4/14/92 ANALYZED: 4/15/92
CONT: ____

COMPOUND	CONC. SPIKE ADDED	SAMPLE RESULT	CONC. MS	PERCENT RECOVERY	CONC. MSD	PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
VOA									
1,1 DICHLORO-ETHENE:								14	61-145
TRICHLOROETHENE:								14	71-120
CHLOROBENZENE:								13	75-130
TOLUENE:								13	76-125
BENZENE**:								11	76-127
B/N									
1,2,4-TRICHLORO-BENZENE*:	50	U	42.5	85				28	39--98
ACENAPHTHENE:	50	U	41.2	82				31	46-118
2,4 DINITRO--TOLUENE:	50	U	41.2	82				38	24--96
PYRENE:	50	U	42.4	85				31	26-127
N NITROSODI-n-PROPYLAMINE:	50	U	44.3	89				38	41-118
1,4-DICHLORO-BENZENE:	50	U	39.2	78				28	36--97
ACID									
PENTACHLOROPHENOL:								50	9--103
PHENOL*:								42	12--89
2 CHLOROPHENOL:								40	27-123
4 CHLORO 3 METHYL-PHENOL:								42	23--97
4 NITROPHENOL:								50	10--80
PEST									
LINDANE:								15	56-123
HEPTACHLOR:								20	40-131
ALDRIN:								22	40-120
DIELDRIN:								18	52-128
ENDRIN:								21	58-121
4,4 DDT:								27	38-127

RPD
VOA'S: ____ OUT OF: ____ OUTSIDE QC LIMITS
A/E'S: ____ OUT+OF: ____ OUTSIDE QC LIMITS
B/N'S: ____ OUT^OF: ____ OUTSIDE QC LIMITS
PEST : ____ OUT~OF: ____ OUTSIDE QC LIMITS

RECOVERY
VOA*: ____ OUT-OF: ____ OUTSIDE QC LIMIT
A/E*: ____ OUT|OF: ____ OUTSIDE QC LIMIT
B/N*: 0 OUT=OF: 5 OUTSIDE QC LIMIT
PEST: ____ OUT"OF: ____ OUTSIDE QC LIMIT

COMMENTS: NONE.

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QUANT REPORT

Operator ID: JEAN
Output File: ^F4720::QT
Data File: >F4720::F1
Name: MATRIX SPIKE WATER
Misc: 92-33-01-DI 04/14/92

Quant Rev: 6
Quant Time: 920415 17:29
Injected at: 920415 16:23
Dilution Factor: 1.00000

BTL# 5

ID File: BNW2::M1
Title: BASE NEUTRAL EXTRACTABLES BY EPA METHOD 625
Last Calibration: 920407 16:47

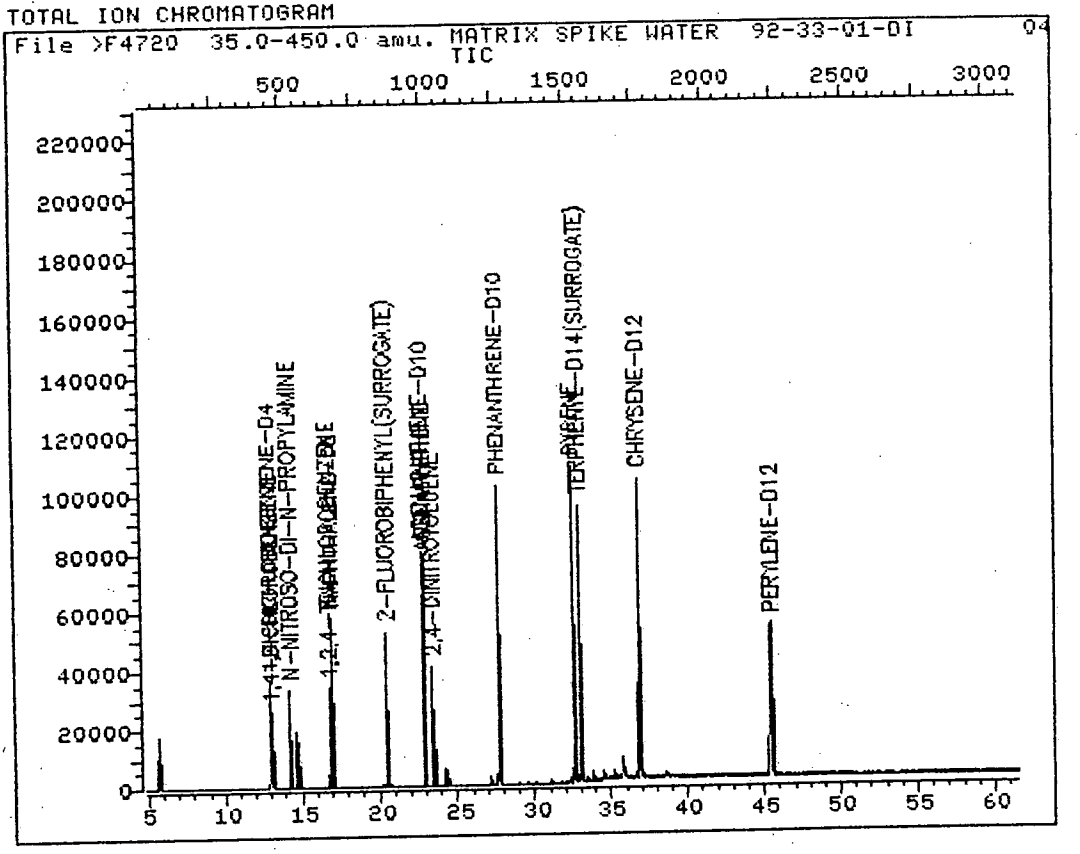
	Compound	R.T.	Scan#	Area	Conc	Units		q
1)	*1,4-DICHLOROBENZENE-D4	12.92	443	21182	50.00	UG/L		95
5)	1,4-DICHLOROBENZENE	12.97	446	13758	39.18	UG/L		98
8)	N-NITROSO-DI-N-PROPYLAMINE	14.21	514	16384	44.33	UG/L		93
10)	*NAPHTHALENE-D8	16.95	665	64063	50.00	UG/L		98
11)	NITROBENZENE-D5(SURROGATE)	14.66	539	17651	32.17	UG/L	64	95
15)	1,2,4-TRICHLOROBENZENE	16.80	657	17146	42.50	UG/L		94
18)	*ACENAPHTHENE-D10	22.78	986	51373	50.00	UG/L		98
20)	2-FLUOROBIPHENYL(SURROGATE)	20.47	859	44501	35.62	UG/L	71	93
25)	ACENAPHTHENE	22.89	992	43544	41.15	UG/L		89
26)	2,4-DINITROTOLUENE	23.43	1022	24271	41.22	UG/L		92
30)	*PHENANTHRENE-D10	27.68	1256	119745	50.00	UG/L		97
38)	*CHRYSENE-D12	36.84	1760	170207	50.00	UG/L		97
40)	PYRENE	32.51	1522	160630	42.40	UG/L		89
41)	TERPHENYL-D14(SURROGATE)	32.89	1543	97231	34.26	UG/L	69	95
47)	*PERYLENE-D12	45.43	2233	157875	50.00	UG/L		92

* Compound is ISTD

ENVIRONMENTAL
CONSULTANTS
RESEARCH
ANALYTICAL
LABORATORIES INC.

NJDEP LAB CERT. I.D. NO. 14580
273 FRANKLIN ROAD
RANDOLPH, N.J. 07869
PHONE: (201) 361-4252
FAX: (201) 361-1021

TOTAL ION CHROMATOGRAM



Data File: >F4720::F1 Quant Output File: ^F4720::QT
Name: MATRIX SPIKE WATER
Misc: 92-33-01-DI 04/14/92 BTL# 5

Id File: BNW2::M1
Title: BASE NEUTRAL EXTRACTABLES BY EPA METHOD 625
Last Calibration: 920407 16:47

Operator ID: JEAN
Quant Time: 920415 17:29
Injected at: 920415 16:23

ATTACHMENT M

UST Closure Report dated October 17, 1992

By Aaron Environmental Specialists

AARON ENVIRONMENTAL SPECIALISTS

835 South Main Street • Waterbury, Connecticut 06706
Telephone (203) 753-2554
Fax (203) 753-0512

RECEIVED
OCT 12 1992
PROPERTIES

UNDERGROUND STORAGE TANK CLOSURE PROJECT APRIL 1992

Roadway Express, Inc.
650 Commercial Avenue
Carlstadt, New Jersey

Facility UST Registration #0006013

prepared for:

Mr. Ram Vijayvargiya, P.E.
Roadway Services, Inc.
1077 Gorge Boulevard
Akron, Ohio 44309
(216) 384-2324

October 7, 1992

AARON Environmental Specialists
-Consulting Engineers-

Daniel R. Kogut, P.E.
Environmental Manager

Richard J. Vocke
Project Manager

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B Laboratory Results & Chain of Custody
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b. Additional Soil Analysis, VOA+15, B/N+15, PCB's & Metals
C Permits
D Liquid Waste Disposal Manifests (copies)

ENCLOSURE

Photographic Documentation

Purpose

The purpose of this report is to provide information regarding the closure of one bare steel underground storage tank at the site.

Environmental Reporting

The State of New Jersey environmental regulations concerning the Closures of Underground Storage Tanks are clear on reporting requirements; At any time during the closure that a discharge is discovered, the person (including the consultant or contractor) discovering this discharge is required to report this fact to the Environmental Action Hot Line, (609) 292-7172.

PREFACE

This report has been prepared for the sole use of the Customer of AARON Environmental Specialists. Use of this report by any person or entity other than the Customer is not authorized without the written consent of AARON Environmental Specialists. Conclusions listed in this document have been based on information provided in part by the Customer, the Customer's agents or third parties including but not limited to state and local authorities. Pursuant to this, the accuracy of said information is not guaranteed by AARON Environmental Specialists.

Information regarding the sampling and testing for the presence of hazardous materials may also be included in the scope of this report. AARON makes no warranties regarding the presence of compounds other than those tested.

The field observations and research reported herein are considered sufficient in detail and scope to form a reasonable basis for a Underground Storage Tank Closure for this property. The findings and conclusions presented herein have been promulgated in accordance with general environmental engineering practices, for the site described.

These environmental methods have been developed to provide the client with information regarding apparent indications of existing or potential environmental conditions relating to the subject tank closure, and are limited to the information available at the time of the site work and research.

General

This report presents the finding and conclusions of a Underground Storage Tank Closure Project for the Roadway Express, Inc. facility, 650 Commercial Avenue, Carlstadt, New Jersey.

Authorization

Authorization to perform this work was given by Mr. Ram Vijayvargiya of Roadway Services, Inc., Akron, Ohio.

INTRODUCTION

AARON Environmental Specialists was contracted by Mr. Ram Vijayvargiya of Roadway Services to document the proper closure of one 1,000 gallon bare steel underground storage tank (UST) and complete the required site assessment at their freight transfer facility, 650 Commercial Avenue in Carlstadt, New Jersey.

Contractors providing services were as follows ...

- AARON Environmental Specialists
  Project Documentation, Site Assessment
  NJ DEPE Cert. #0600392

- Environmental Products & Services, Inc.
  Linden, NJ
  Permitting, Project Management, Tank Decommissioning & Waste Disposal Services

- NYTEST Environmental Inc.
  Port Washington, NY
  Soil Analysis
  NJ DEPE Cert. #73469

Richard Vocke was the Project Manager from AARON Environmental Specialists. Scott Turner was the Operations Manager from Environmental Products & Services, Inc. The report that follows documents the procedures used in completing the tank closure project.

1.0 SUMMARY

1.1 On March 18, 1992 Roadway Express, Inc. received a Closure Approval permit from the New Jersey Department of Environmental Protection (NJ DEP). The closure approval number as issued by the NJ DEP was TMS C-92-0768. The permit approved the underground storage tank closure to be carried out as prescribed in a Closure Plan Application dated December 20, 1991 prepared by Environmental Products & Services (EP&S). In addition a construction permit was procured on April 20, 1992 from the Carlstadt Building Department. The Carlstadt Fire Department (Bureau of Fire Safety) was also notified of the project in advance.

2.0 CLOSURE PROCEDURES

2.1 All known underground utilities were marked out prior to site work by the excavation contractor (EP&S). The tank was temporarily out of service prior to this closure project. Contents included waste oil and water.

2.2 Tank closure field work began on April 20, 1992. Remaining tank contents were pumped out using a vacuum truck. The overburden material was excavated and an attempt made to expose the tank top. Due to a large quantity of ground water within the excavation, the excavation equipment (backhoe) was unable to uncover the tank.

2.3 During the initial excavation activities, petroleum contaminated soil was identified around the tank fill pipe and along the tank top. Excavated soils were stockpiled on site and encased in six mil polyethylene sheeting. A "release" was reported to the New Jersey Department of Environmental Protection on April 20, 1992 by EP&S. The following case number was issued, #92-04-21-1136.

2.4 Field work resumed on April 23, 1992. EP&S delivered to the site, a tanker trailer to store ground water from site de-watering operations. The excavation was de-watered and excavation to the tank top continued. The tank top was uncovered eight feet below the pavement grade. Approximately three feet below the tank top elevation a concrete anchor pad was encountered. The tank was apparently set into the pad upon

installation and the size and weight of the pad severely restricted the removal efforts.

EP&S contacted the NJ DEPE Bureau of Underground Storage Tanks (BUST) and following a brief conversation describing the above circumstances, was given verbal approval to clean and abandon the UST in place.

The tank was peeled open and the contents (mostly ground water) were emptied to the vacuum truck. The tank piping was drained and removed within the excavation. Product piping between the tank excavation and the building was drained and permanently sealed. The tank was completely opened over its length and power washed from above. Once clean the tank interior was inspected. No perforations were identified, however significant internal corrosion was observed. Based on a visual inspection of the tank and associated piping, it appeared that the tank fill pipe have been modified in the past and physically bolted to the tank top then patched with a fiberglass resin. The dimensions of the tank were recorded and it was determined to be a 550 gallon tank and not a 1,000 gallon as originally registered. Mr. Robert Moore of the Carlstadt Fire Department (Bureau of Fire Safety) inspected the tank after it was cleaned. Both he and the town construction official gave their verbal approval to permanently abandon the tank in place.

2.5 Waste product and site ground water was collected in a tanker trailer on site during the project activities. Upon the completion of site work, the liquid waste was manifested and transported to Environmental Waste Resources, in Waterbury, Connecticut for disposal, refer to Section IV for manifest copies.

2.6 The excavation walls were visually inspected. The excavation (to a depth of two feet below the tank top) was screened with a Photoionization Detector (PID, Photovac MicroTip Model HL-2000, 10.6 eV; units reported in ppm, v/v as isobutylene; calibrated daily as per manufacturers instructions using 100 ppm isobutylene). All readings recorded were below 5 ppm (parts per million). Soil samples were collected using dedicated 5 oz. stainless steel scoops, three from the excavation bottom (10 ft. below grade) and one from beneath the piping run (1 ft. below grade, see attached

assessment drawing). Soil samples were placed in a cooler, maintained at 4 degrees C and transported to a NJ certified laboratory for analysis. Duplicate soil samples were collected and analyzed using a jar headspace procedure and a Photoionization Detector (refer to Appendix A for results). Contaminated soils beyond the limits of excavation required to expose the tanks upper half did not appear to exist. Following the collection of samples, the excavation and UST were backfilled with clean sand material obtained off site.

2.7 Stockpiled contaminated soil at the site totaled approximately 50-60 cubic yards upon project completion.

2.8 Soil samples collected during the site assessment phase of the tank closure were analyzed as follows: The four samples were analyzed for Total Petroleum Hydrocarbons by EPA Method 418.1. Two samples with the highest TPHC results were further analyzed for Volatile Organic Compounds by EPA Method 624+15, Semi Volatile Organic Compounds by EPA Method 625+15, PCB's and Metals.

3.0 CONCLUSIONS

3.1 The tank closure was completed as prescribed in the closure plan for this site dated December 20, 1991.

3.2 Field observations during the tank removal along with laboratory analysis, have confirmed a petroleum release at the site. The tank grave was cleared of residual contamination by soil excavation. This was confirmed by field observations measurements. Petroleum contaminated soil excavated during the tank closure is currently stockpiled at the site.

3.3 The modifications to the tank fill pipe may have attributed to a release of petroleum in the tank area. Apparently high ground water in the area (over the tank top) may have prevented any widespread contamination.

3.4 Four (tank grave) soil samples were analyzed for Total Petroleum Hydrocarbons. Results were as follows:

Sample ID	Concentration (ppm)	EPA Method
North	447	418.1
South	208	418.1
East	346	418.1
Pipe - 1	460	418.1

3.4 Additional analysis as required identified the following compounds above detection levels:

Sample ID	Contaminant Identified	Conc. (ppb)	EPA Method
North	2-Propanone	6.0 ppb	624
North	bis(2-Ethylhexyl)Phthalate	1,600 ppb	625
Pipe - 1	bis(2-Ethylhexyl)Phthalate	2,000 ppb	625

3.5 The tank closure completed by AARON Environmental Specialists and Environmental Products & Services on the tank noted in this report is consistent with the applicable sections of 40 CFR Part 280, Subparts E, F, G, and the requirements of the New Jersey Department of Environmental Protection.

3.6 Based on the confirmation of a release at this site, a Discharge Investigation & Corrective Action Report (DICAR) will be required.

4.0 RECOMMENDATIONS

4.1 AARON Environmental Specialists recommends a copy of this report be kept on file by the owner and a copy be forwarded to the New Jersey

Department of Environmental Protection along with the Site Assessment Summary form, enclosed. This is a UST Closure requirement of the NJ DEP.

4.2 Field observations and laboratory data indicate the presence of a limited release from waste oil UST system to the environment. As required, a discharge investigation "DICAR" must be completed. The DICAR report should be submitted to the NJ DEP no later than 120 days following notification to the Department of a release. The DICAR will address the possible impact of a release from the UST system on the site shallow ground water, as well as the risks associated with any ground water contamination identified.

4.3 Contaminated soils which were stockpiled on the site during the closure project, should be classified and disposed of off site according to applicable regulations.

4.4 As part of the discharge investigation (DICAR), additional recommendations may be made.

4.5 AARON reserves the right to alter these conclusions and recommendations should additional lab analysis or hydrogeological data become available.

STATE CONTACTS:

Ms. Diane Pupa
New Jersey Department of
Environmental Protection
Bureau of Underground Storage Tanks
401 East State Street
Trenton, NJ 08625
(609) 984-3156

LOCAL CONTACT:

Mr. Robert Moore
Bureau of Fire Safety
Carlstadt Fire Department
500 Madison Street
Carlstadt, NJ 07072
201-460-3942

PROJECT LIMITATIONS

All work product and reports provided by AARON Environmental Specialists (AARON) in connection with the performance of Underground Storage Tank Projects are subject to the following limitations:

1. The observations described in the report were made under the conditions stated therein. The conclusions presented in the report were based solely upon the services described therein, and not on scientific tasks or procedures beyond the scope of described services or the time and budgetary constraints imposed by the client.

2. In preparing this report, AARON has relied on certain information provided by State and Local Officials and information and representations made by other parties referenced therein, and on information contained in the files of State and/or Local Agencies made available to AARON at the time of the writing. To the extent that such files are missing, incomplete or not provided to AARON, AARON is not responsible. Although there may have been some degree of overlap in the information provided by these various sources, AARON did not attempt to independently verify the accuracy or completeness of all information reviewed during the course of this project.

3. If the conclusions and recommendations contained in this project report are based in part upon data obtained from a limited number of soil samples obtained from widely spaced subsurface explorations; then the nature and extent of variations between these explorations may not become evident until further exploration. If variations or other latent conditions then appear evident, it will be necessary to reevaluate the conclusions and recommendations of this report.

4. Except as noted within the text of the report, no quantitative laboratory testing was performed as part of the project. Where such analysis have been conducted by an outside laboratory, AARON has relied upon the data provided, and has not conducted an independent evaluation of the reliability of the test data.

5. Chemical analysis may have been performed for specific parameters during the course of this project, as described in the text. However, it should be noted that additional chemical constituents not searched for during the current project may be present in soil and/or groundwater at the site.

6. If the conclusions and recommendations contained in this report are based, in part, upon various types of chemical data; then the conclusions and recommendations are contingent upon the validity of such data. The data has been reviewed and interpretations made in this report. If indicated within the report, some of this data may be preliminary "screening" level data and should be confirmed with quantitative analysis if more specific information is necessary. Moreover, if should be noted that variations in the types and concentrations of contaminants and variations in their flow paths may occur due to seasonal water table fluctuations, past disposal practices, the passage of time, and other factors. Should additional chemical data become available in the future, this data should be reviewed by AARON and the conclusions and recommendations represented herein modified accordingly.

7. It is recommended that AARON be retained to provide further hydrogeologic and engineering services during the construction and/or implementation of any remedial measures recommended in this report. This is to allow AARON to observe compliance with the concepts and recommendations contained herein, and to allow the development of changes to the remedial program in the event that subsurface conditions or other conditions differ from those anticipated.

8. The installation of test borings, in substitution for tank removal, cannot be used as conclusive evidence to determine the environmental quality of the soils and groundwater. It should be noted that AARON can draw no conclusions concerning the presence of soil or groundwater contamination, unless the tanks are removed and soil samples are collected and analyzed for the appropriate parameters.

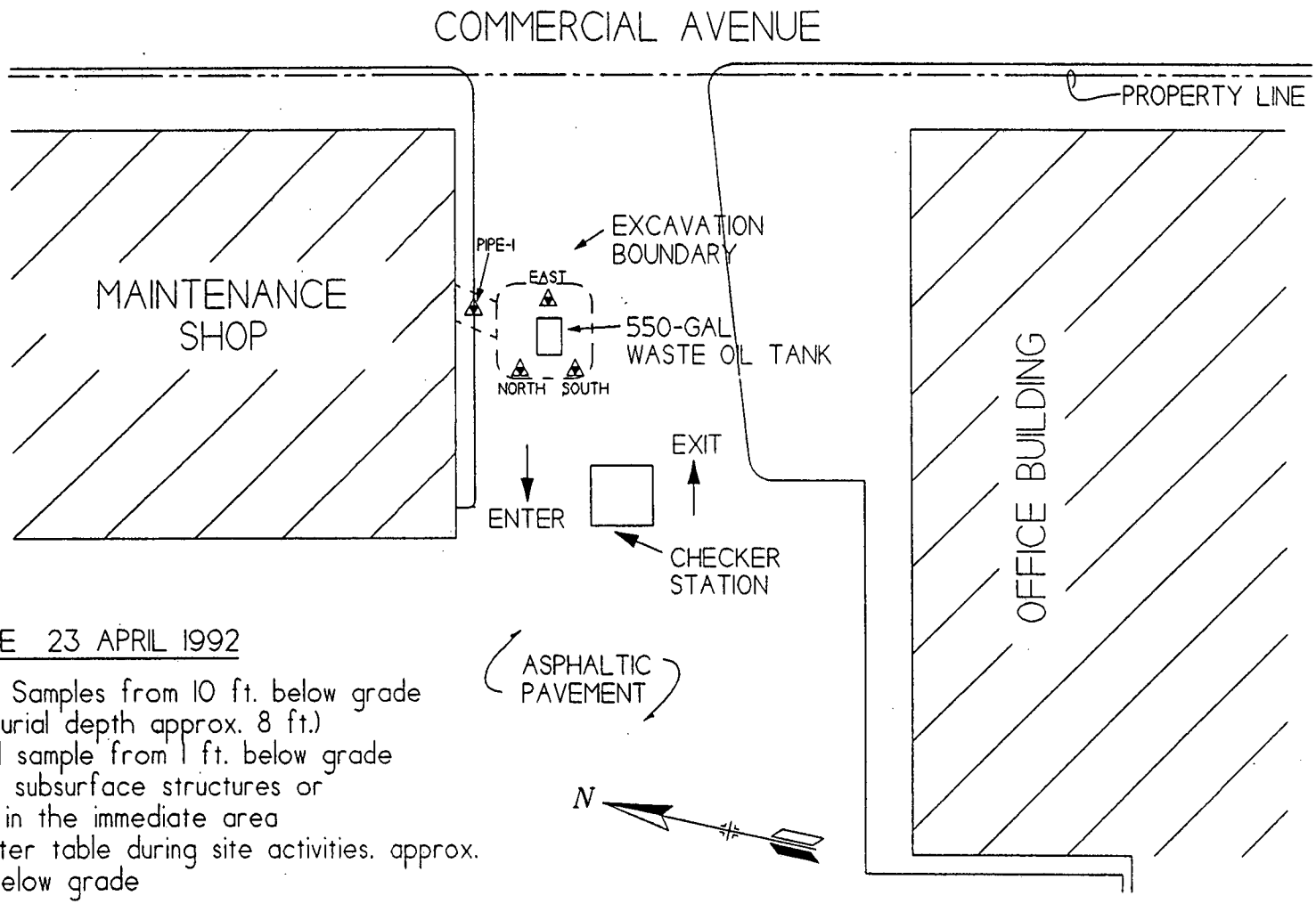
9. Plot plans, sketches, and other illustrative materials in this report are included to assist the reader in visualizing the site and are not necessarily drawn to scale.

10. No definitive conclusion can be drawn concerning the environmental quality of soils or groundwater at this site without the implementation of a detailed hydrogeologic investigation and sampling program.

FIGURES

FIGURE 1

Drawing #1 — General Site Map / Site Assessment Map



UST CLOSURE 23 APRIL 1992

1. Tank Soil Samples from 10 ft. below grade (UST burial depth approx. 8 ft.)
2. Piping soil sample from 1 ft. below grade
3. No known subsurface structures or utilities in the immediate area
4. Static water table during site activities. approx. 18 in. below grade

FIGURE No. 1	DRAWING NAME CRLST-1a	PROJECT No. 51129	ROADWAY EXPRESS, INC. 650 COMMERCIAL AVE. CARLSTADT, NEW JERSEY
			SITE ASSESSMENT MAP

DESIGNED BY: DRAWN BY: JIL
CHECKED BY: RJV SCALE: NONE
REVIEWED BY: DRK 11 JUNE 1992

SOIL SAMPLE LOCATION
FACILITY UST REG. NO. 0006013
TMS NO. C-92-0768

REV NO.	DESCRIPTION	BY	DATE
01	REVISION 1	JIL	10/08/92

AARON
835 SO. MAIN ST.
WATERBURY, CT
(203) 753-2554
AARON ENVIRONMENTAL SPECIALISTS

APPENDICES

APPENDIX A

Field Data, QA/QC Checklist

ROADWAY EXPRESS, INC.
650 COMMERCIAL AVENUE
CARLSTADT, NEW JERSEY

Underground Storage Tank Closure, TMS C-92-0768
Site Assessment Table 1

April 23, 1992

Sample	I.D.	depth	PID Analysis	Lab Analysis
#1	North	10 ft.	< 5.0 ppm	EPA 418.1 EPA 624/625+15 PCB's, Metals
2	South	10 ft.	< 5.0 ppm	EPA 418.1
3	East	10 ft.	< 5.0 ppm	EPA 418.1
4	Pipe	1 ft.	< 5.0 ppm	EPA 418.1 EPA 624/625+15 PCB's, Metals

PID Analysis: By Jar Headspace Procedure, Photovac MicroTip HL-2000, 10.6eV, reported in ppm, v/v as isobutylene.

(Jar Headspace Procedure Attached)

QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

A. **Checklist** which **must be attached** to the Summary

The following information must be reported in the **Closure Plan Implementation Summary** for all laboratory analyses performed in compliance with the site assessment requirement:

✓ 1. Name and address of the facility.

✓ 2. Underground Storage Tank (UST) owner name and address.

✓ 3. UST registration number.

✓ 4. Name of the laboratory performing the sample analysis.

✓ 5. NJDEP certification number assigned to the laboratory pursuant to N.J.A.C. 7:18.

✓ 6. Laboratory sample identification number.

✓ 7. Customer sample identification number corresponding to the laboratory sample identification number.

✓ 8. Sample location (also on the site diagram).

✓ 9. Matrix of the sample analyzed (*i.e.*, water or sediments; including soil, sediment, and sludges). All sediment results must be reported on a dry weight basis.

✓ 10. The reference for the method used (*e.g.*, EPA method 625, 40 CFR Part 136).

✓ 11. The signature of the person completing the report form.

✓ 12. The dates the laboratory report was prepared, as well as the dates the samples were collected, submitted and analyzed.

✓ 13. A list of all parameters (constituents and conditions) for which the analyses were performed.

✓ 14. Sample results and corresponding units for each parameter.

TECHNICAL GUIDANCE DOCUMENT:
Interim Closure Requirements for Underground Storage Tank Sytems, September 1990
Bureau of Underground Storage Tanks, Division of Water Resources, NJ Department of Environmental Protection

APPENDIX B

Laboratory Results & Chain of Custody

Excavation Soil Analysis (TPHC)
Additional Analysis (VOA+15, B/N+15, PCB's, Metals)

TOTAL ANALYTICAL SERVICES FOR A SAFE ENVIRONMENT

nytest environmental inc.

Project No.: 9218981
Log in No. : 12289
P.O. No. : Pending
Date :April 30, 1992

ANALYTICAL DATA REPORT
PACKAGE FOR

Aaron Environmental

937 South Main St.

Plantsville, CT 06479

ATTN: Rich Vocke
REF: Roadway/Carlstadt, Project #51129

LABORATORY NUMBER	SAMPLE IDENTIFICATION	TYPE OF SAMPLE

SEE NEXT PAGE

WE CERTIFY THAT THIS REPORT IS A TRUE REPORT OF RESULTS OBTAINED FROM OUR TESTS OF THIS MATERIAL.

RESPECTFULLY SUBMITTED,
NYTEST ENVIRONMENTAL INC.

DOUGLAS SHEELEY
LABORATORY DIRECTOR

PARAG K. SHAH, Ph. D.
ORGANIC LAB. MANAGER
mar

Report on sample(s) furnished by client applies to sample(s). Report on sample(s) obtained by us applies only to lot sampled. Information contained herein is not to be used for reproduction except by special permission. Sample(s) will be retained for thirty days maximum after date of report unless specifically requested otherwise by client. In the event that there are portions or parts of sample(s) remaining after Nytest has completed the required tests, Nytest shall have the option of returning such sample(s) to the client at the client's expense.

box 1518 □ 60 seaview blvd., port washington, ny 11050 □ (516) 625-5500

Table of Contents

Log in No.: 12289

	Page
I. Sample Analysis Request Form	NA
II. Chain of Custody	1
III. Laboratory Deliverable Checklist	NA
IV. Laboratory Chronicle	2
V. Non Conformance Summary (Case Narrative)	3
VI. Methodology Summary	4 - 7
VII. Data Reporting Comment Page	8
VIII. Sample Results	9
IX. Quality Assurance Summary (Including Initial and Continuing Calibration Time and Date)	10

TOTAL ANALYTICAL SERVICES FOR A SAFE ENVIRONMENT

nytest environmental inc

CHAIN OF CUSTODY RECORD

Page 1 of 1

SHIP TO: Nytest Environmental Inc.
60 Seaview Blvd.
Port Washington, NY 11050
(516) 625-5500
Attn. K VASILIK

REPORT TO: Client Name Aaron Environmental
Address 937 S. Main St
Plantsville, CT 06479
Phone (203) 628-9858
Attn. R. VOCKE

Project No.	Project Name	Date Shipped	Carrier
51129	Roadway / Carlstadt		
Sampler: (Signature)	**Analytical Protocol**	**Air Bill No.**	**Cooler No.**
	NJ BUST Tier II		

Sample I.D.	Date/Time Sampled		Sample Description	No. Of Containers	ANALYSIS REQUESTED
North Side	4-23	4pm	Side wall grab	1	TPHC by EPA Method 418.1 *
South Side	4-23	4pm	"	1	TPHC by EPA Method 418.1 *
East Side	4-23	4pm	"	1	TPHC by EPA Method 418.1 *
Pipe #1	4-23	4pm	Bottom grab	1	TPHC by EPA Method 418.1 *
North Side	4-23	4pm		2	40mls (see Comments below)
South Side	4-23	4pm		2	
East Side	4-23	4pm		2	
Pipe #1	4-23	4pm		2	

Relinquished by (Signature)	Date / Time	Rec'd. By (Signature)	Date / Time
Print Name Rich Vocke	4-24 8AM	Print Name	
Relinquished by (Signature)	Date / Time	Rec'd by (Signature)	Date / Time
Print Name		Print Name	
Relinquished by (Signature)	Date / Time	Received for Laboratory by (Signature) Patrick Alvarez	Date / Time 4/24 1500
Print Name		Print Name PATRICK ALVAREZ	

Special Instructions/Comments * if TPHC results are above detection levels, Then 2 samples w/ highest TPHC must be analyzed for VOA +15 B/N +15, PCB's & metals.

** 48 hr turnaround on TPHC **

00001

Laboratory Chronicle

Log In No.: 12289

Client Name: Aaron Environmental
Date Received: 4/24/92
Sample ID: As per chain of custody

Organics Extraction:

1. Acids _____
2. Base/Neutrals _____
3. Pesticides/PCBs _____
4. Dioxin _____

Analysis:

1. Volatiles _____
2. Acids _____
3. Base/Neutrals _____
4. Pesticides/PCBs _____
5. Dioxin _____

Section Supervisor
Review & Approval _____

Inorganics:

1. Metals _____
2. Cyanides _____
3. Phenols _____

Other Analysis: Extraction - 4/27/92
TPHC Analysis - 4/27/92

_____

_____

_____

Section Supervisor
Review & Approval pcm

Quality Control Supervisor
Review & Approval DM

If fractions are re-extracted and re-analyzed include dates for both.

nytest environmental inc.

NON-CONFORMANCE SUMMARY
(Case Narrative)

Log In No: 12289

Samples were analyzed as per required protocols, no problems were encountered.

nytest environmental inc.

METHODOLOGY SUMMARY

AQUEOUS METHODOLOGIES:	REF 1	REF 2	REF 3
BNA, Pesticides/PCB's Extraction		3510	
AA/ICP Sample Preparation	200.7		
Furnace Sample Preparation	200.0		
Mercury Sample Preparation	245.1		
Hexavalent Chromium Sample Preparation	218.5		
Clean-Up		3610/3640	
Organochlorine Pesticides and PCB's by Gas Chromatography			608
Herbicides by Gas Chromatography			362
Purgeable Organics by GC/MS			624
Base/Neutral, Acids by GC/MS			625
2,3,7,8-TCDD by GC/MS			613/625
BTEX			602

NON-AQUEOUS METHODOLOGIES:	
BNA, Pesticides/PCB's Extraction	3550
AA/ICP Sample Preparation	3050
Furnace Sample Preparation	3020/3030/3050
Mercury Sample Preparation	7471
Clean-Up	3610/3640

Gas Chromatography/Mass Spectrometry:	
Purgeable Organics	8240
Base/Neutral and Acid Extractables	8270
Organophosphorous Pesticides	8140
Organochlorine Pesticides and PCB's by Gas Chromatography	8080
BTEX	8020

nytest environmental inc.

METHODOLOGY SUMMARY

INDUCTIVELY COUPLED PLASMA (ICP):	REFERENCE 1	REFERENCE 2
Aluminum	200.7	6010
Antimony	200.7	6010
Barium	200.7	6010
Beryllium	200.7	6010
Cadmium	200.7	6010
Calcium	200.7	6010
Chromium	200.7	6010
Cobalt	200.7	6010
Copper	200.7	6010
Iron	200.7	6010
Lead	200.7	6010
Magnesium	200.7	6010
Manganese	200.7	6010
Molybdenum	200.7	6010
Nickel	200.7	6010
Potassium	200.7	6010
Silver	200.7	6010
Sodium	200.7	6010
Tin	200.7	6010
Titanium	200.7	6010
Vanadium	200.7	6010
Zinc	200.7	6010

FURNACE AA:		
Antimony	204.1	7041
Arsenic	206.2	7060
Lead	239.2	7421
Selenium	270.2	7740
Thallium	279.2	7841
Tin	282.2	
Vanadium	286.2	7911
Mercury	245.1	7470

nytest environmental inc.

METHODOLOGY SUMMARY

ADDITIONAL INORGANIC PARAMETERS:	REFERENCE 1	REFERENCE 2
Bromide	320.1	
Color	110.2	
Conductance	120.1	
Conductance		9050
Odor	140.1	
pH	150.1	
pH		9040
TDS	160.1	
TSS	160.2	
TS	160.3	
Hardness	130.1	
Temperature	170.1	
Turbidity	180.1	
Acidity	305.1	
Alkalinity	310.1	
Ammonia	350.2/350.3	
Chloride	325.3	
Chloride		9252
Residual Chlorine	330.2	
COD	410.3/410.4	
Cyanide	335.3	
Oil and Grease	413.1/413.2	
Oil and Grease		9070
Fluoride	340.2	
TKN	351.2	
NO2/NO3	353.2	
D.O.	360.2	
Petroleum Hydrocarbons (Reference 4)	418.1	
Phenol	420.2	
Phosphorous	365.1	
Silica	370.1	
Sulfate	375.2/375.4	
Sulfide	376.1	
Surfactants	425.1	
TOC	415.1	
TOX		9022

MISCELLANEOUS ANALYSIS:	
Extraction Procedure Toxicity	1310
Ignitability	1010
Corrosivity	1110
Reactivity	Chapter 8.3
Toxicity Characteristic Leaching Procedure (TCLP)	(Ref. 5)

nytest environmental inc.

METHODOLOGY SUMMARY

REFERENCES:

(1) USEPA-600/4-79-020, Methods for Chemical Analysis of Water and Waste
(2) USEPA SW 846, Test Methods for Evaluating Solid Waste, Third Edition
(3) Federal Register 40 CFR Part 136, Vol. 49, No. 209 Test Parameters for the Analysis of Pollutants
(4) as modified by NJDEP-BISE (for non-aqueous samples)
(5) Federal Register Vol. 51, No. 216 Friday, 11/7/86, pp. 40643-40652

DATA REPORTING COMMENT PAGE

QUALIFIERS:

U - Indicates compound was analyzed for but not detected. The number is the detection limit for the sample.

J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the reported detection limit but greater than zero.

B - This flag is used when the analyte is found in the method blank as well as in the sample.

T - This flag identifies all targeted compounds that were found above the method detection limits.

A - Aldol Condensation Product (formed from Acetone reacting with Methylene Chloride solvents used in the extraction of soil samples, not associated with sample constituents)

D - Diluted out

NA - Not applicable by contract

Data on soil samples are expressed on a dry weight basis.

All non-aqueous samples are reported on soil forms. This includes samples whose matrix is listed as miscellaneous.

The Initial and Continuing Calibration dates and times for the volatile fractions are listed on the BFB summary forms.

The Initial and Continuing Calibration dates and times for the semivolatile fractions are listed on the DFTPP summary forms.

SAMPLE SUFFIXES: RE - Re-analyzed sample
DL - Sample analyzed at a secondary dilution

METHOD BLANK NOMENCLATURE - FBLK##:

F - Fraction (V for Volatiles, S for Semivolatiles)
BLK - Indicates a blank
- Arbitrarily assigned number for that blank

GC/MS STANDARD NOMENCLATURE - FSTD###:

F - Fraction (V for Volatiles, S for Semivolatiles)
STD - Indicates a standard
- Concentration in ppb of Volatile standards, or amount injected in ng for Semivolatile standards

nytest environmental inc.

REPORT OF ANALYSIS

Log in No.: 12289

We find as follows:

Results in mg/kg (dry wt. basis):

Sample Identification	Parameter(s)
	Total Petroleum Hydrocarbons
1228901 NORTH	447
1228902 SOUTH	208
1228903 EAST	346
1228904 PIPE-1	460
Method Blank	<10
Method Detection Limit	10

nytest environmental inc.

QC / QA REPORT

Client: Aaron Environmental

Date Received: 4/24/92 Log In No.: 12289

Parameter(s)	Sample Result (ppm)	Duplic. Sample Value (ppm)	Percent RPD	Spike Added (ppm)	Amount of Spike Recovered (ppm)	Percent Recovery
TPHC	179	186	4	1377	1110	81

NC = Non-Calculable

TOTAL ANALYTICAL SERVICES FOR A SAFE ENVIRONMENT

nytest environmental inc.

Project No.: 9218981
Log in No. : 12313
P.O. No. : Pending
Date : May 25, 1992

ANALYTICAL DATA REPORT
PACKAGE FOR

Aaron Environmental

937 South Main St.

Plantsville, CT 06479

ATTN: R. Vocke
REF: Roadway/Carlstadt,Proj#51129
(add work to Login #12289)

LABORATORY NUMBER	SAMPLE IDENTIFICATION	TYPE OF SAMPLE

SEE NEXT PAGE

WE CERTIFY THAT THIS REPORT IS A TRUE REPORT OF RESULTS OBTAINED FROM OUR TESTS OF THIS MATERIAL.

RESPECTFULLY SUBMITTED,
NYTEST ENVIRONMENTAL INC.

DOUGLAS SHEELEY
LABORATORY DIRECTOR

PARAG K. SHAH, Ph. D.
ORGANIC LAB. MANAGER
lj

Report on sample(s) furnished by client applies to sample(s). Report on sample(s) obtained by us applies only to lot sampled. Information contained herein is not to be used for reproduction except by special permission. Sample(s) will be retained for thirty days maximum after date of report unless specifically requested otherwise by client. In the event that there are portions or parts of sample(s) remaining after Nytest has completed the required tests, Nytest shall have the option of returning such sample(s) to the client at the client's expense.

box 1518 □ 60 seaview blvd., port washington, ny 11050 □ (516) 625-5500

NYTEST ENVIRONMENTAL Inc.

LABORATORY NUMBER	SAMPLE IDENTIFICATION	TYPE OF SAMPLE
1231301	NORTH	Soil
1231302	PIPE-1	Soil

Table of Contents

Log in No.: 12313

	Page
I. Sample Analysis Request Form	NA
II. Chain of Custody	see Login# 12289
III. Laboratory Deliverable Checklist	1
IV. GC/MS Analysis Conformance/Non-Conformance Summary Format	2
V. Laboratory Chronicle	3
VI. Case Narrative	4
VII. Methodology Summary	5
VIII. Data Reporting Comment Page	6
IX. Sample Results	7 - 26
X. Quality Assurance Summary (Including Initial and Continuing Calibration Time and Date)	27 - 44

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Laboratory Deliverable
Check List

		Check if Complete
I.	Cover Page, Format, and Laboratory Certification (Include Cross Reference Table of Field I.D. # and Laboratory I.D. #)	✓
II.	Chain of Custody	✓
III.	Summary Sheets Listing Analytical Results Including QA Data Information	✓
IV.	Laboratory Chronicle and Methodology Summary including Sampling Holding Time Check	✓
V.	Initial Calibration and Continuing Calibration (Time & Date Summary)	✓
VI.	Tune Summary (MS)	✓
VII.	Blanks (Method, Field, Trip)	✓
VIII.	Surrogate Recovery Summary	✓
IX.	Non-Conformance Summary	✓

NG
Laboratory Manager

5/27/92
Date

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

		No	Yes
1.	GC/MS Tune Specifications		
	a. BFB passed	___	✓
	b. DFTPP passed	___	✓
2.	GC/MS Tuning Frequency - Performed every 12 hours	___	✓
3.	GC/MS Calibration - Initial Calibration performed within 30 days before sample analysis and continuing calibration performed within 24 hours before sample analysis	___	✓
4.	GC/MS Calibration Requirements		
	a. Calibration Check Compounds	___	✓
	b. System Performance Check Compounds	___	✓
5.	Blank Contamination - List compounds for each fraction		
	a. VOA Fraction ___		
	b. B/N Fraction Bis(2-Ethylhexyl) Phthalate, TIC'S		
	c. Acid Fraction ___		
6.	Surrogate Recoveries Meet Criteria (If not met; list those compounds and their recoveries which fall outside the acceptable range)	___	✓
	a. VOA Fraction ___		
	b. B/N Fraction ___		
	c. Acid Fraction ___		
7.	Extraction Holding Time Met	___	✓
	Comments: ___		
8.	Analysis Holding Time Met	___	✓
	Comments: ___		

Additional Comments: ___

0000002

Laboratory Manager DLG Date: 5/27/92

nytest environmental inc.

Laboratory Chronicle

Client Name: Aaron Environmental

Log In No.: 12313

Date Received: 4/28/92

Sample ID: As per chain of custody

Organics Extraction:

1. Acids 4/30/92
2. Base/Neutrals 4/30/92
3. Pesticides/PCBs
4. Dioxin

Analysis:

1. Volatiles 5/7/92
2. Acids
3. Base/Neutrals 5/9/92, 5/11/92
4. Pesticides/PCBs 5/21/92
5. Dioxin

Section Supervisor Review & Approval

Inorganics:

1. Metals Mercury Digestion: 5/14/92 Analysis: 5/14/92
2. Cyanides Digestion: 5/4/92 Analysis: 5/5/92
3. Phenols

Other Analysis:

Section Supervisor Review & Approval

Quality Control Supervisor Review & Approval

If fractions are re-extracted and re-analyzed include dates for both.

nytest environmental inc.

NON-CONFORMANCE SUMMARY
(Case Narrative)

Log In No: 12313

Volatile Fraction

Surrogates
All surrogate recoveries fell within QC limits.

Method Blank
No compounds were found.

Samples
Samples were analyzed as per required protocols, no problems were encountered.

Semivolatile Fraction

Surrogates
All surrogate recoveries fell within QC limits.

Method Blank
Bis(2-Ethylhexyl)Phthalate was found at a concentration less than the detection limit. Two TIC's were also found.

Samples
Samples were analyzed as per required protocols, no problems were encountered.

PCB Fraction

Surrogates
All surrogate recoveries fell within QC limits.

Method Blank
No compounds were found.

Samples
Samples were analyzed as per required protocols, no problems were encountered.

nytest environmental inc.

ECRA METHODOLOGY SUMMARY

SAMPLE PREP

AQUEOUS:	REF 1	REF 2	REF 3	REF 5
BNA, Pesticides/PCB's Extraction				Sec. D
AA/ICP Sample Preparation	200.7			
Furnace Sample Preparation	200.0			
Mercury Sample Preparation	245.1			
NON-AQUEOUS:				
BNA, Pesticides/PCB's Extraction				Sec. D
Clean-Up for Base Neutrals		3650/3611		
GPC Clean-Up		3640		

ANALYTICAL PROTOCOL

Purgeable Organics (GC/MS)				Sec. D
BNA (GC/MS)				Sec. D
Pesticides/PCB's (GC)		8080	608	
Metals by Inductively Coupled Plasma (ICP)	200.7	6010		
Arsenic	204.1	7060		
Selenium	270.2	7740		
Thallium	279.2	7841		
Mercury	245.1	7470		
Cyanide	335.3			
Petroleum Hydrocarbons (Ref 4)	418.1			
Phenol	420.2			

REFERENCES:

(1) USEPA-600/4-79-020, Methods for Chemical Analysis of Water and Waste

(2) USEPA SW 846, Test Methods for Evaluating Solid Waste, Third Edition

(3) Federal Register 40 CFR Part 136, Vol. 49, No. 209, Test Parameters for the Analysis of Pollutants

(4) as modified by NJDEP-BISE (for non-aqueous samples)

(5) USEPA Contract Laboratory Program IFB WA-87K236, Statement of Work for Organic Analysis, Multi-Media, Multi-Concentration, 2/88

1 B-T

NYTEST ENVIRONMENTAL INC.

TCL SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX: SOIL
CONC. LEVEL: LOW
EXTRACTION DATE: 4/30/92
ANALYSIS DATE: 5/11/92

SAMPLE ID: NORTH
LAB ID: 1231301
DIL FACTOR: 1.00
% MOISTURE: 18

CMPD #	CAS Number	BASE NEUTRAL COMPOUNDS	UG/KG (DRY BASIS)
1	111-44-4	bis(2-Chloroethyl)ether	400.0 U.
2	541-73-1	1,3-Dichlorobenzene	400.0 U.
3	106-46-7	1,4-Dichlorobenzene	400.0 U.
4	95-50-1	1,2-Dichlorobenzene	400.0 U.
5	108-60-1	bis(2-chloroisopropyl)ether	400.0 U.
6	621-64-7	N-Nitroso-Di-n-Propylamine	400.0 U.
7	67-72-1	Hexachloroethane	400.0 U.
8	98-95-3	Nitrobenzene	400.0 U.
9	78-59-1	Isophorone	400.0 U.
10	111-91-1	bis(2-chloroethoxy)Methane	400.0 U.
11	120-82-1	1,2,4-Trichlorobenzene	400.0 U.
12	106-47-8	4-Chloroaniline	400.0 U.
13	87-68-3	Hexachlorobutadiene	400.0 U.
14	91-57-6	2-Methylnaphthalene	400.0 U.
15	77-47-4	Hexachlorocyclopentadiene	400.0 U.
16	91-58-7	2-Chloronaphthalene	400.0 U.
17	88-74-4	2-Nitroaniline	2010.0 U.
18	131-11-3	Dimethyl Phthalate	400.0 U.
19	99-09-2	3-Nitroaniline	2010.0 U.
20	132-64-9	Dibenzofuran	400.0 U.
21	121-14-2	2,4-Dinitrotoluene	400.0 U.
22	606-20-2	2,6-Dinitrotoluene	400.0 U.
23	84-66-2	Diethylphthalate	400.0 U.
24	7005-72-3	4-Chlorophenyl-phenylether	400.0 U.
25	100-01-6	4-Nitroaniline	2010.0 U.
26	86-30-6	N-Nitrosodiphenylamine	400.0 U.
27	101-55-3	4-Bromophenyl-phenylether	400.0 U.
28	118-74-1	Hexachlorobenzene	400.0 U.
29	84-74-2	Di-n-Butylphthalate	78.0 J.
30	85-68-7	Butylbenzylphthalate	400.0 U.
31	91-94-1	3,3'-Dichlorobenzidine	800.0 U.
32	117-81-7	bis(2-Ethylhexyl)Phthalate	1600.0 T.
33	117-84-0	Di-n-Octyl Phthalate	400.0 U.
34			
35			
36			
37			
38			
39			
40			
41			

CMPD #	CAS Number	BASE NEUTRAL/PAH COMPOUNDS	UG/KG (DRY BASIS)
42	91-20-3	Naphthalene	400.0 U.
43	208-96-8	Acenaphthylene	400.0 U.
44	83-32-9	Acenaphthene	400.0 U.
45	86-73-7	Fluorene	400.0 U.
46	85-01-8	Phenanthrene	400.0 U.
47	120-12-7	Anthracene	400.0 U.
48	206-44-0	Fluoranthene	400.0 U.
49	129-00-0	Pyrene	400.0 U.
50	56-55-3	Benzo(a)Anthracene	400.0 U.
51	218-01-9	Chrysene	400.0 U.
52	205-99-2	Benzo(b)Fluoranthene	400.0 U.
53	207-08-9	Benzo(k)Fluoranthene	400.0 U.
54	50-32-8	Benzo(a)Pyrene	400.0 U.
55	193-39-5	Indeno(1,2,3-cd)Pyrene	400.0 U.
56	53-70-3	Dibenz(a,h)Anthracene	400.0 U.
57	191-24-2	Benzo(g,h,i)Perylene	400.0 U.
58			
59			
60			
		ACID COMPOUNDS	
61	108-95-2	Phenol	NA
62	95-57-8	2-Chlorophenol	NA
63	100-51-6	Benzyl Alcohol	NA
64	95-48-7	2-Methylphenol	NA
65	106-44-5	4-Methylphenol	NA
66	88-75-5	2-Nitrophenol	NA
67	105-67-9	2,4-Dimethylphenol	NA
68	65-85-0	Benzoic Acid	NA
69	120-83-2	2,4-Dichlorophenol	NA
70	59-50-7	4-Chloro-3-Methylphenol	NA
71	88-06-2	2,4,6-Trichlorophenol	NA
72	95-95-4	2,4,5-Trichlorophenol	NA
73	51-28-5	2,4-Dinitrophenol	NA
74	100-02-7	4-Nitrophenol	NA
75	534-52-1	4,6-Dinitro-2-Methylphenol	NA
76	87-86-5	Pentachlorophenol	NA
77			
78			
79			
80			

1C

NYTEST ENVIRONMENTAL INC.

TENTATIVELY IDENTIFIED ORGANICS COMPOUND

SAMPLE ID: NORTH

OF TIC FOUND: 0

LAB ID: 1231301

MATRIX: SOIL

FRACTION: VOA

CAS Number	Compound Name	RT	Estimated Concentration UG/KG (DRY WT)
1	NO COMPOUNDS FOUND		
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
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27			
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29			
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1C

NYTEST ENVIRONMENTAL INC.

TENTATIVELY IDENTIFIED ORGANICS COMPOUND

SAMPLE ID: NORTH

OF TIC FOUND: 15

LAB ID: 1231301

MATRIX: SOIL

FRACTION: BN

CAS Number	Compound Name	RT	Estimated Concentration UG/KG (DRY WT)
1	UNKNOWN	5.48	11000 JAB
2	UNKNOWN	11.03	120 J
3	UNKNOWN	11.53	200 J
4	UNKNOWN	17.63	4400 JB
5	UNKNOWN	18.73	82 J
6	UNKNOWN ALKANE	20.86	83 J
7	UNKNOWN	21.96	91 J
8	UNKNOWN	23.62	110 J
9	UNKNOWN	23.70	380 J
10	UNKNOWN ALKANE	23.78	150 J
11	UNKNOWN	24.68	120 J
12	UNKNOWN	25.49	380 J
13	UNKNOWN	25.56	100 J
14	UNKNOWN	26.39	150 J
15	UNKNOWN	26.63	96 J
16			
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1 D-T

NYTEST ENVIRONMENTAL INC.

TCL PESTICIDE/PCB ORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX:	SOIL	SAMPLE ID:	NORTH
CONC. LEVEL:	LOW	LAB SAMPLE ID:	1231301
EXTRACTION DATE:	4/30/92	DIL FACTOR:	1.00
ANALYSIS DATE:	5/21/92	% MOISTURE:	18

CMPD #	CAS Number	PESTICIDE/PCB COMPOUND	UG/KG (DRY BASIS)
1	319-84-6	Alpha-BHC	NA
2	319-85-7	Beta-BHC	NA
3	319-86-8	Delta-BHC	NA
4	58-89-9	Gamma-BHC(Lindane)	NA
5	76-44-8	Heptachlor	NA
6	309-00-2	Aldrin	NA
7	1024-57-3	Heptachlor Epoxide	NA
8	959-98-8	Endosulfan I	NA
9	60-57-1	Dieldrin	NA
10	72-55-9	4,4'-DDE	NA
11	70-20-8	Endrin	NA
12	33213-65-9	Endosulfan II	NA
13	72-54-8	4,4-DDD	NA
14	1031-07-8	Endosulfan Sulfate	NA
15	50-29-3	4,4'-DDT	NA
16	53494-70-5	Endrin Ketone	NA
17	72-43-5	Methoxychlor	NA
18	57-74-9	Chlordane	NA
19	8001-35-2	Toxaphene	NA
20	12674-11-2	Aroclor-1016	98.000 U.
21	11104-28-2	Aroclor-1221	98.000 U.
22	11141-16-5	Aroclor-1232	98.000 U.
23	53469-21-9	Aroclor-1242	98.000 U.
24	12672-29-6	Aroclor-1248	98.000 U.
25	11097-69-1	Aroclor-1254	200.000 U.
26	11096-82-5	Aroclor-1260	200.000 U.

1 E

NYTEST ENVIRONMENTAL INC.

INORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX: SOIL

SAMPLE ID: NORTH

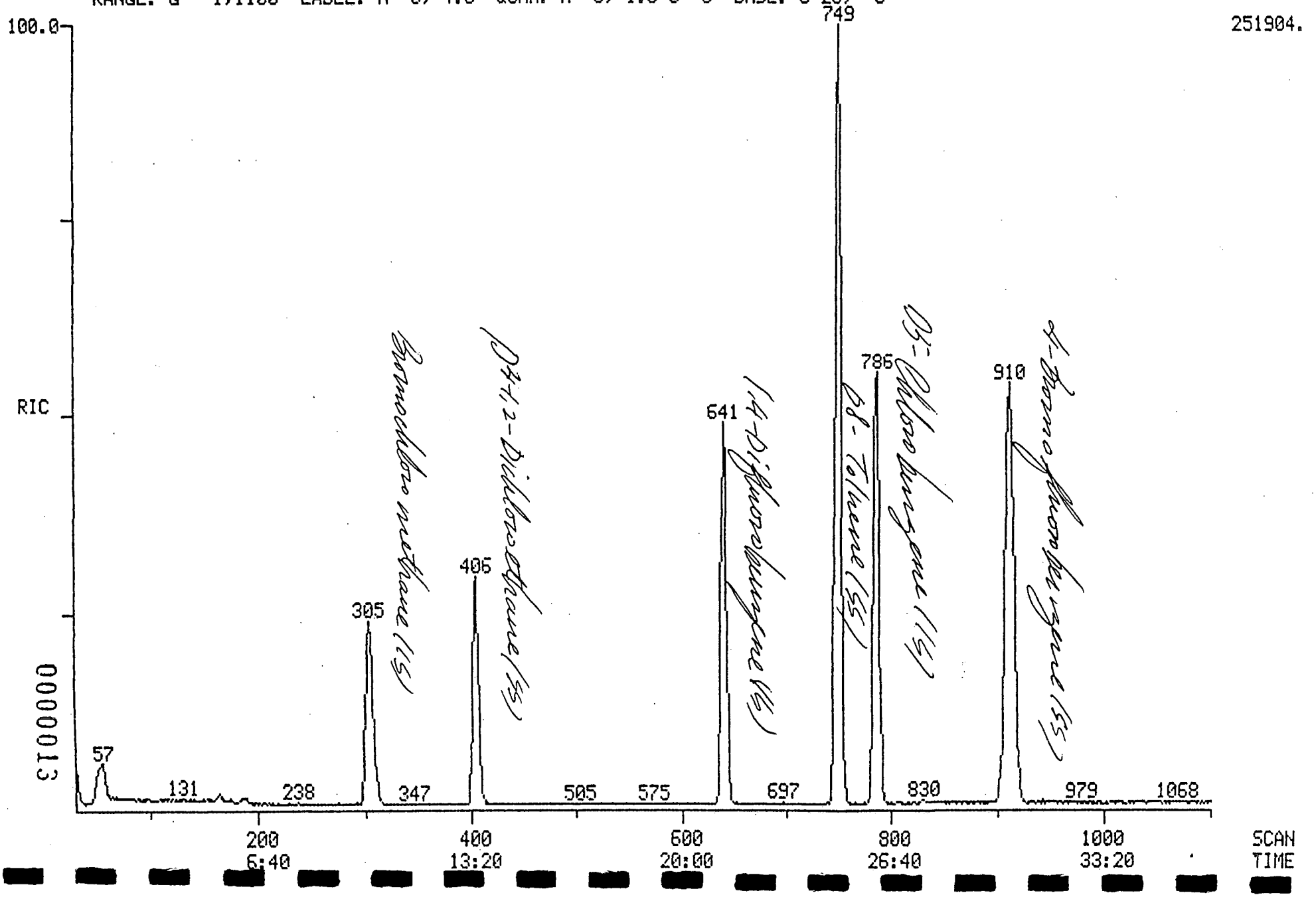
LAB ID: 1231301

CMPD #	CAS Number	INORGANIC PARAMETERS	PPM (DRY BASIS)
1	7440-36-0	Antimony	25.60 T.
2	7440-38-2	Arsenic	2.00 U.
3	7440-41-7	Beryllium	1.000 U.
4	7440-43-9	Cadmium	1.000 U.
5	7440-47-3	Chromium	13.60 T.
6	7550-50-8	Copper	18.700 T.
7	7439-92-1	Lead	9.02 T.
8	7439-97-6	Mercury	0.1530 T.
9	7440-02-0	Nickel	12.50 T.
10	7782-49-2	Selenium	1.000 U.
11	7440-22-4	Silver	5.00 U.
12	7440-28-0	Thallium	1.00 U.
13	7440-66-6	Zinc	29.30 T.
14			
15			
16			
17			
18			
19			
20			

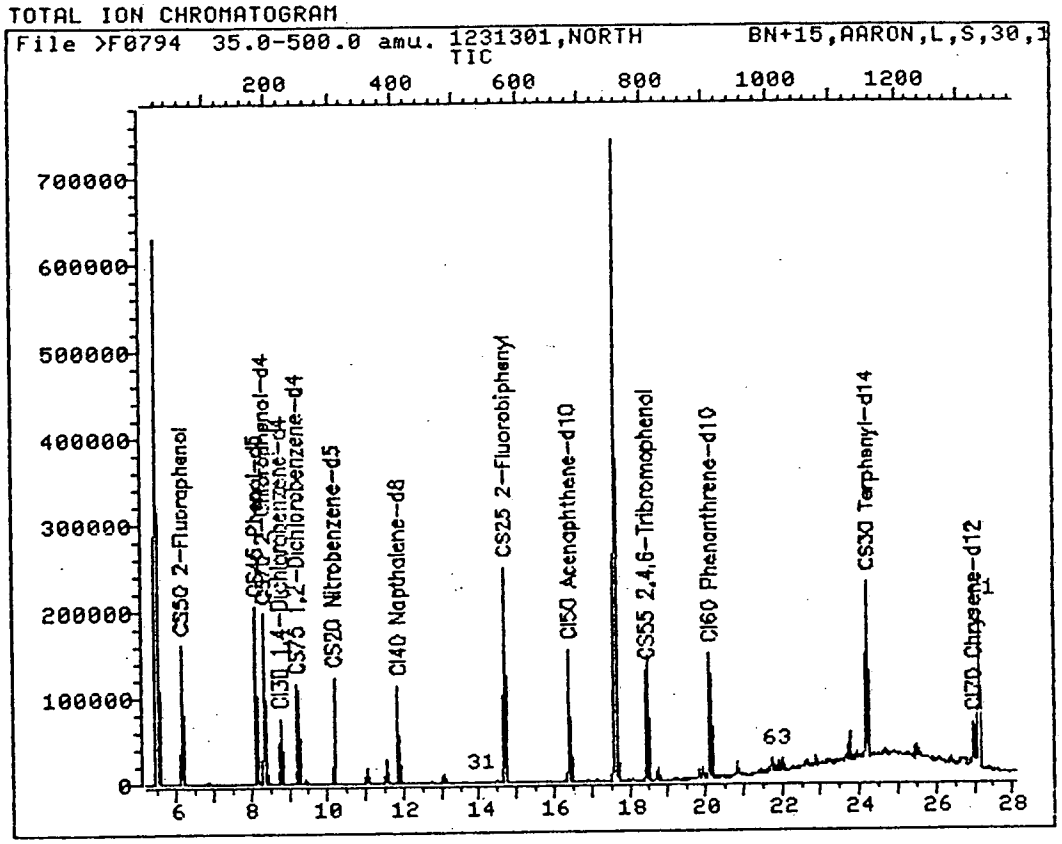
RIC
05/07/92 14:05:00
SAMPLE: AARON, NORTH/12313-01, REC'D 04/28/92
CONDS.: 5G/5MLS, INST.E
RANGE: G 1,1100 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

DATA: E5702 #1
CALI: E5702 #2

SCANS 30 TO 1100



TOTAL ION CHROMATOGRAM



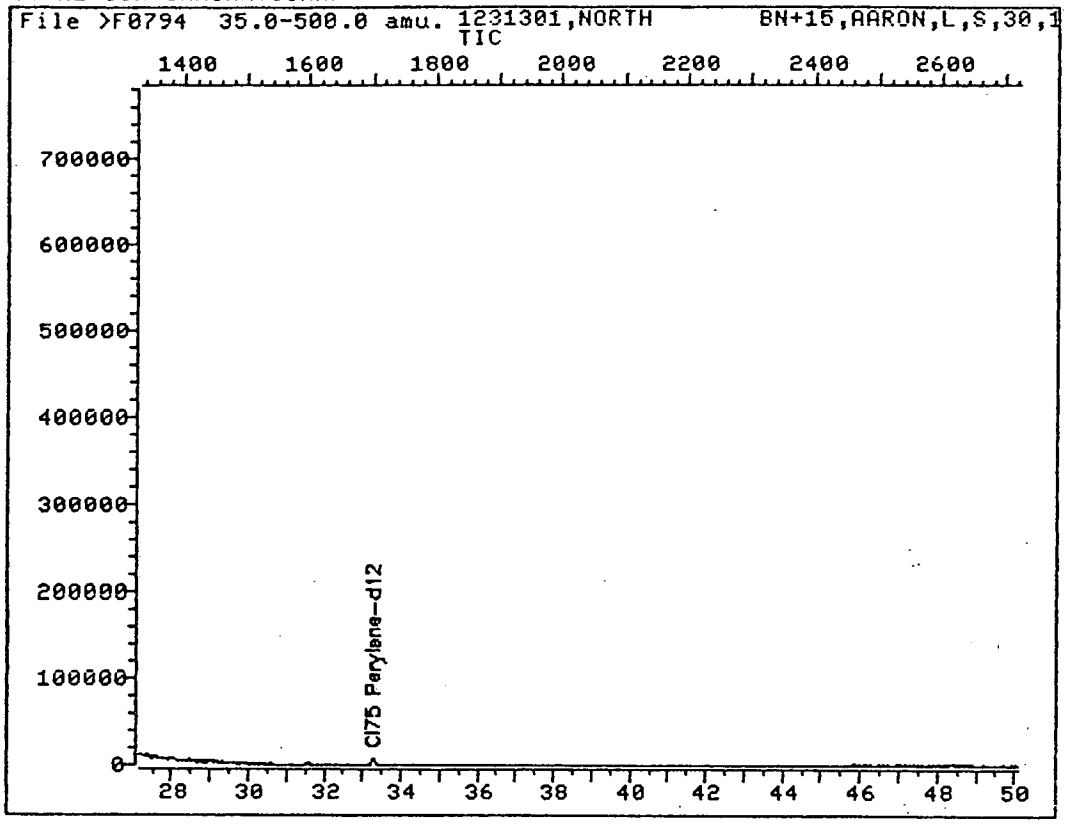
Data File: >F0794::D2 Quant Output File: ^F0794::QT
Name: 1231301,NORTH
Misc: BN+15,AARON,L,S,30,1,,%18,R04/28,E04/30,INST:HPF,ecra BTL#34

Id File: CLPNEW::AQ
Title: ACID,BASE & NEUTRALS CLP COMPOUNDS
Last Calibration: 920511 12:02

Operator ID: NYTEST2
Quant Time: 920511 18:36
Injected at: 920511 17:43

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >F0794::D2 Quant Output File: ^F0794::QT
Name: 1231301,NORTH
Misc: BN+15,AARON,L,S,30,1,,%18,R04/28,E04/30,INST:HPF,ecra BTL#34

Id File: CLPNEW::AQ
Title: ACID,BASE & NEUTRALS CLP COMPOUNDS
Last Calibration: 920511 12:02

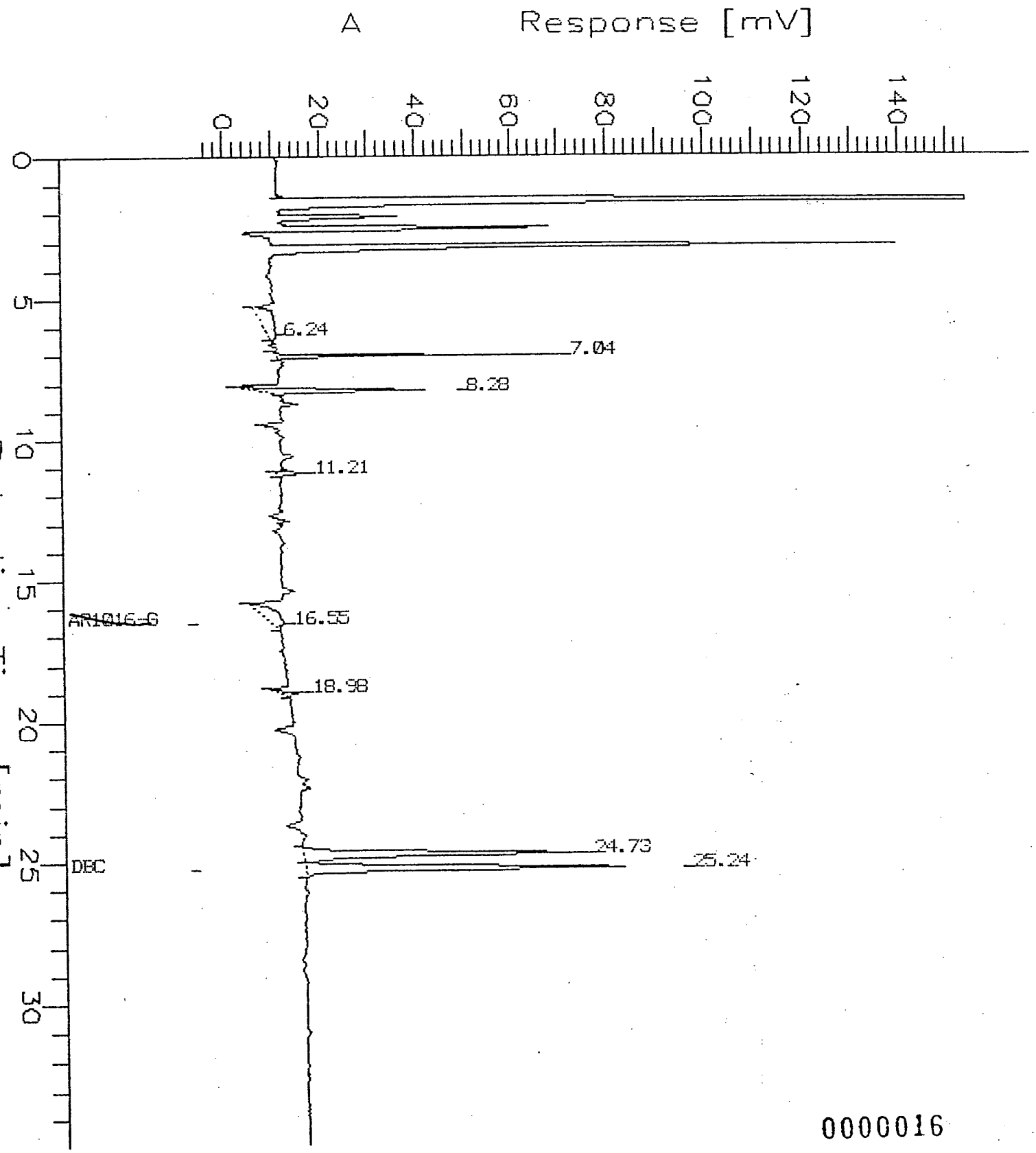
Operator ID: NYTEST2
Quant Time: 920511 18:36
Injected at: 920511 17:43

TIC page 2 of 2

PEIA DB1701 (PRIMARY)

Sample Name : 12313
ileName : c:\2700\data1\187a042.raw
..ethod : pel.ins
Start Time : 0.00 min End Time : 35.00 min
cale Factor: -1 Plot Offset: -6 mV

Sample #: 01
Date : 5/22/92 10:52 AM
Time of Injection: 5/21/92 11:54 AM
Low Point : -5.83 mV High Point : 154.17 mV
Plot Scale: 160 mV



0000016

1 A-T

NYTEST ENVIRONMENTAL INC.

TCL VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX: SOIL
CONC. LEVEL: LOW
ANALYSIS DATE: 5/7/92

SAMPLE ID: PIPE-1
LAB ID: 1231302
DIL FACTOR: 1.00
% MOISTURE: 16

CMPD #	CAS Number	VOLATILE COMPOUNDS	UG/KG (DRY BASIS)
1	74-87-3	Chloromethane	12.0 U.
2	74-83-9	Bromomethane	12.0 U.
3	75-01-4	Vinyl Chloride	12.0 U.
4	75-00-3	Chloroethane	12.0 U.
5	75-09-2	Methylene Chloride	6.0 U.
6	67-64-1	2-Propanone	12.0 U.
7	75-15-0	Carbon disulfide	6.0 U.
8	75-35-4	1,1-Dichloroethene	6.0 U.
9	75-34-3	1,1-Dichloroethane	6.0 U.
10	540-59-0	1,2-Dichloroethene (total)	6.0 U.
11	67-66-3	Chloroform	6.0 U.
12	107-06-2	1,2-Dichloroethane	6.0 U.
13	78-93-3	2-Butanone	12.0 U.
14	71-55-6	1,1,1-Trichloroethane	6.0 U.
15	56-23-5	Carbon Tetrachloride	6.0 U.
16	108-05-4	Vinyl Acetate	12.0 U.
17	75-27-4	Bromodichloromethane	6.0 U.
18	78-87-5	1,2-Dichloropropane	6.0 U.
19	10061-01-5	cis-1,3-Dichloropropene	6.0 U.
20	79-01-6	Trichloroethene	6.0 U.
21	124-48-1	Dibromochloromethane	6.0 U.
22	79-00-5	1,1,2-Trichloroethane	6.0 U.
23	71-43-2	Benzene	6.0 U.
24	10061-02-6	Trans-1,3-Dichloropropene	6.0 U.
25	75-25-2	Bromoform	6.0 U.
26	108-10-1	4-Methyl-2-Pentanone	12.0 U.
27	591-78-6	2-Hexanone	12.0 U.
28	127-18-4	Tetrachloroethene	6.0 U.
29	79-34-5	1,1,2,2-Tetrachloroethane	6.0 U.
30	108-88-3	Toluene	6.0 U.
31	108-90-7	Chlorobenzene	6.0 U.
32	100-41-4	Ethylbenzene	6.0 U.
33	100-42-5	Styrene	6.0 U.
34	1330-20-7	Xylene (total)	6.0 U.
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1 B-T

NYTEST ENVIRONMENTAL INC.

TCL SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX: SOIL
CONC. LEVEL: LOW
EXTRACTION DATE: 4/30/92
ANALYSIS DATE: 5/11/92

SAMPLE ID: PIPE-1
LAB ID: 1231302
DIL FACTOR: 1.00
% MOISTURE: 16

CMPD #	CAS Number	BASE NEUTRAL COMPOUNDS	UG/KG (DRY BASIS)
1	111-44-4	bis(2-Chloroethyl)ether	390.0 U.
2	541-73-1	1,3-Dichlorobenzene	390.0 U.
3	106-46-7	1,4-Dichlorobenzene	390.0 U.
4	95-50-1	1,2-Dichlorobenzene	390.0 U.
5	108-60-1	bis(2-chloroisopropyl)ether	390.0 U.
6	621-64-7	N-Nitroso-Di-n-Propylamine	390.0 U.
7	67-72-1	Hexachloroethane	390.0 U.
8	98-95-3	Nitrobenzene	390.0 U.
9	78-59-1	Isophorone	390.0 U.
10	111-91-1	bis(2-chloroethoxy)Methane	390.0 U.
11	120-82-1	1,2,4-Trichlorobenzene	390.0 U.
12	106-47-8	4-Chloroaniline	390.0 U.
13	87-68-3	Hexachlorobutadiene	390.0 U.
14	91-57-6	2-Methylnaphthalene	390.0 U.
15	77-47-4	Hexachlorocyclopentadiene	390.0 U.
16	91-58-7	2-Chloronaphthalene	390.0 U.
17	88-74-4	2-Nitroaniline	1960.0 U.
18	131-11-3	Dimethyl Phthalate	390.0 U.
19	99-09-2	3-Nitroaniline	1960.0 U.
20	132-64-9	Dibenzofuran	390.0 U.
21	121-14-2	2,4-Dinitrotoluene	390.0 U.
22	606-20-2	2,6-Dinitrotoluene	390.0 U.
23	84-66-2	Diethylphthalate	390.0 U.
24	7005-72-3	4-Chlorophenyl-phenylether	390.0 U.
25	100-01-6	4-Nitroaniline	1960.0 U.
26	86-30-6	N-Nitrosodiphenylamine	390.0 U.
27	101-55-3	4-Bromophenyl-phenylether	390.0 U.
28	118-74-1	Hexachlorobenzene	390.0 U.
29	84-74-2	Di-n-Butylphthalate	64.0 J.
30	85-68-7	Butylbenzylphthalate	390.0 U.
31	91-94-1	3,3'-Dichlorobenzidine	790.0 U.
32	117-81-7	bis(2-Ethylhexyl)Phthalate	2000.0 TB
33	117-84-0	Di-n-Octyl Phthalate	390.0 U.
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CMPD #	CAS Number	BASE NEUTRAL/PAH COMPOUNDS	UG/KG (DRY BASIS)
42	91-20-3	Naphthalene	390.0 U.
43	208-96-8	Acenaphthylene	390.0 U.
44	83-32-9	Acenaphthene	390.0 U.
45	86-73-7	Fluorene	390.0 U.
46	85-01-8	Phenanthrene	22.0 J.
47	120-12-7	Anthracene	390.0 U.
48	206-44-0	Fluoranthene	39.0 J.
49	129-00-0	Pyrene	35.0 J.
50	56-55-3	Benzo(a)Anthracene	390.0 U.
51	218-01-9	Chrysene	390.0 U.
52	205-99-2	Benzo(b)Fluoranthene	390.0 U.
53	207-08-9	Benzo(k)Fluoranthene	390.0 U.
54	50-32-8	Benzo(a)Pyrene	390.0 U.
55	193-39-5	Indeno(1,2,3-cd)Pyrene	390.0 U.
56	53-70-3	Dibenz(a,h)Anthracene	390.0 U.
57	191-24-2	Benzo(g,h,i)Perylene	390.0 U.
58			
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		ACID COMPOUNDS	
61	108-95-2	Phenol	NA
62	95-57-8	2-Chlorophenol	NA
63	100-51-6	Benzyl Alcohol	NA
64	95-48-7	2-Methylphenol	NA
65	106-44-5	4-Methylphenol	NA
66	88-75-5	2-Nitrophenol	NA
67	105-67-9	2,4-Dimethylphenol	NA
68	65-85-0	Benzoic Acid	NA
69	120-83-2	2,4-Dichlorophenol	NA
70	59-50-7	4-Chloro-3-Methylphenol	NA
71	88-06-2	2,4,6-Trichlorophenol	NA
72	95-95-4	2,4,5-Trichlorophenol	NA
73	51-28-5	2,4-Dinitrophenol	NA
74	100-02-7	4-Nitrophenol	NA
75	534-52-1	4,6-Dinitro-2-Methylphenol	NA
76	87-86-5	Pentachlorophenol	NA
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1C

NYTEST ENVIRONMENTAL INC.

TENTATIVELY IDENTIFIED ORGANICS COMPOUND

SAMPLE ID: PIPE-1

OF TIC FOUND: 0

LAB ID: 1231302

MATRIX: SOIL

FRACTION: VOA

CAS Number	Compound Name	RT	Estimated Concentration UG/KG (DRY WT)
1	NO COMPOUNDS FOUND		
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NYTEST ENVIRONMENTAL INC.

TENTATIVELY IDENTIFIED ORGANICS COMPOUND

SAMPLE ID: PIPE-1

OF TIC FOUND: 10

LAB ID: 1231302

MATRIX: SOIL

FRACTION: BN

CAS Number	Compound Name	RT	Estimated Concentration UG/KG (DRY WT)
1	UNKNOWN	5.46	9400 JAB
2	UNKNOWN	11.57	170 J
3	UNKNOWN ALKANE	17.47	85 J
4	UNKNOWN	17.58	730 JB
5	UNKNOWN ALKANE	18.05	98 J
6	UNKNOWN ALKANE	18.71	100 J
7	UNKNOWN	24.68	120 J
8	UNKNOWN	25.20	92 J
9	UNKNOWN	25.44	92 J
10	UNKNOWN	31.62	390 J
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1 D-T

NYTEST ENVIRONMENTAL INC.

TCL PESTICIDE/PCB ORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX:	SOIL	SAMPLE ID:	PIPE-1
CONC. LEVEL:	LOW	LAB SAMPLE ID:	1231302
EXTRACTION DATE:	4/30/92	DIL FACTOR:	1.00
ANALYSIS DATE:	5/21/92	% MOISTURE:	16

CMPD #	CAS Number	PESTICIDE/PCB COMPOUND	UG/KG (DRY BASIS)
1	319-84-6	Alpha-BHC	NA
2	319-85-7	Beta-BHC	NA
3	319-86-8	Delta-BHC	NA
4	58-89-9	Gamma-BHC(Lindane)	NA
5	76-44-8	Heptachlor	NA
6	309-00-2	Aldrin	NA
7	1024-57-3	Heptachlor Epoxide	NA
8	959-98-8	Endosulfan I	NA
9	60-57-1	Dieldrin	NA
10	72-55-9	4,4'-DDE	NA
11	70-20-8	Endrin	NA
12	33213-65-9	Endosulfan II	NA
13	72-54-8	4,4-DDD	NA
14	1031-07-8	Endosulfan Sulfate	NA
15	50-29-3	4,4'-DDT	NA
16	53494-70-5	Endrin Ketone	NA
17	72-43-5	Methoxychlor	NA
18	57-74-9	Chlordane	NA
19	8001-35-2	Toxaphene	NA
20	12674-11-2	Aroclor-1016	95.000 U.
21	11104-28-2	Aroclor-1221	95.000 U.
22	11141-16-5	Aroclor-1232	95.000 U.
23	53469-21-9	Aroclor-1242	95.000 U.
24	12672-29-6	Aroclor-1248	95.000 U.
25	11097-69-1	Aroclor-1254	190.000 U.
26	11096-82-5	Aroclor-1260	190.000 U.

1 E

NYTEST ENVIRONMENTAL INC.

INORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX: SOIL

SAMPLE ID: PIPE-1
LAB ID: 1231302

CMPD #	CAS Number	INORGANIC PARAMETERS	PPM (DRY BASIS)
1	7440-36-0	Antimony	74.80 T.
2	7440-38-2	Arsenic	4.00 T.
3	7440-41-7	Beryllium	1.000 U.
4	7440-43-9	Cadmium	1.000 U.
5	7440-47-3	Chromium	26.80 T.
6	7550-50-8	Copper	31.000 T.
7	7439-92-1	Lead	23.30 T.
8	7439-97-6	Mercury	0.1000 U.
9	7440-02-0	Nickel	30.80 T.
10	7782-49-2	Selenium	1.000 U.
11	7440-22-4	Silver	5.00 U.
12	7440-28-0	Thallium	1.00 U.
13	7440-66-6	Zinc	104.00 T.
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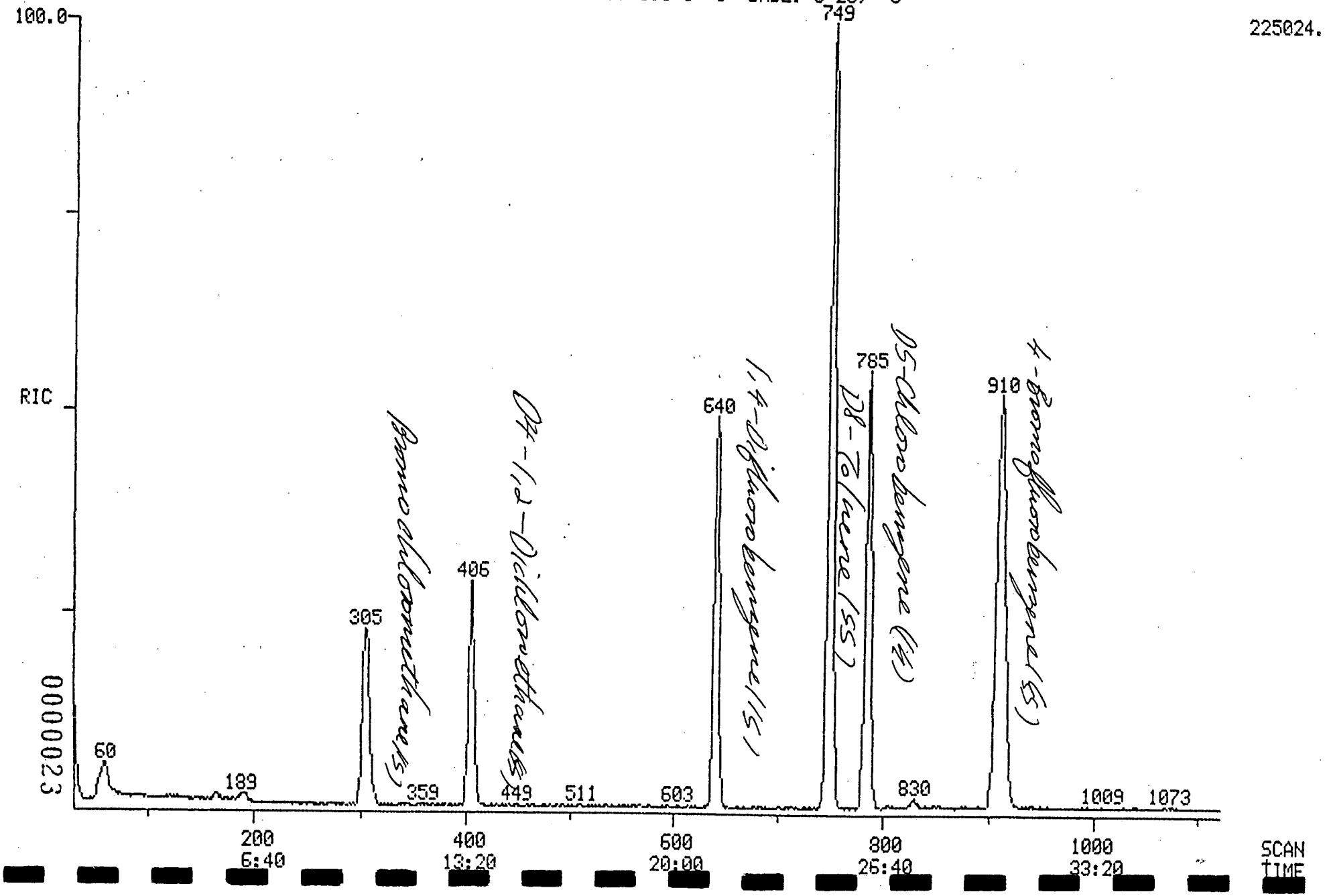
RIC
05/07/92 14:51:00
SAMPLE: AARON, PIPE-1/12313-02, REC'D 04/28/92
CONDS.: 5G/5MLS, INST.E
RANGE: G 1,1120 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

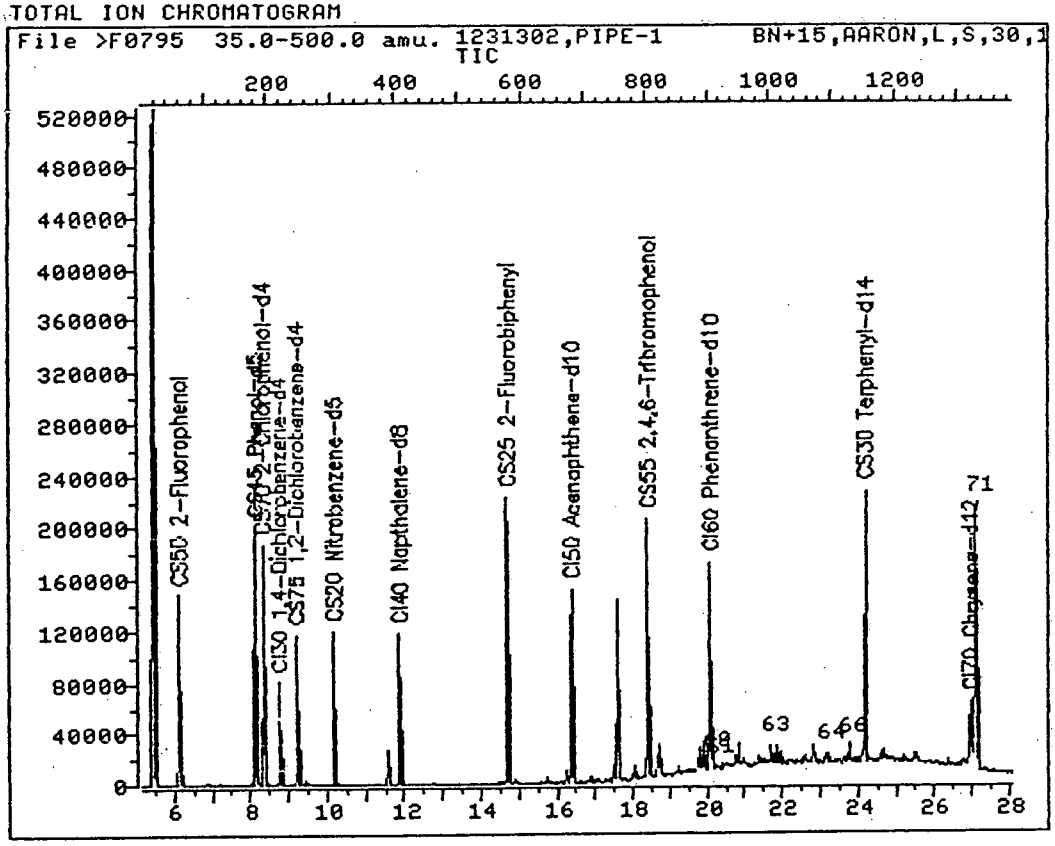
DATA: E5703 #910
CALI: E5703 #2

SCANS 30 TO 1120



0000023

TOTAL ION CHROMATOGRAM



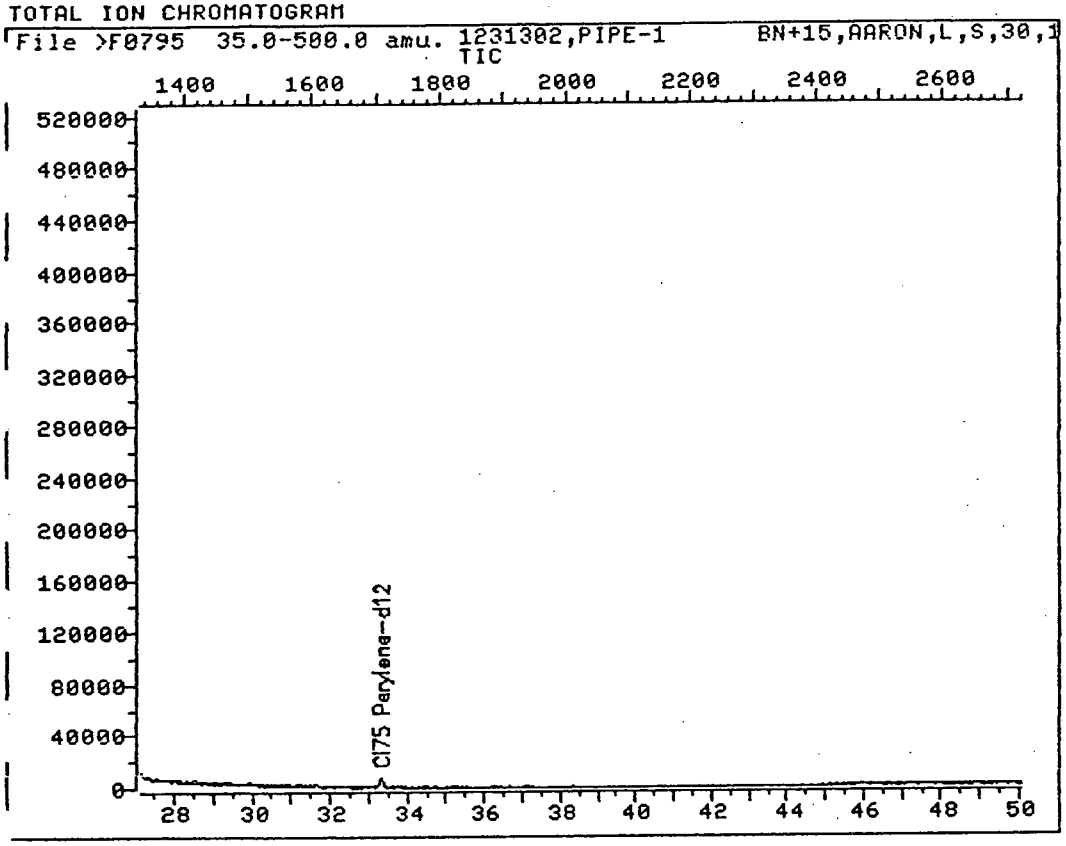
Data File: >F0795::D2 Quant Output File: ^F0795::QT
Name: 1231302,PIPE-1
Misc: BN+15,AARON,L,S,30,1,,%16,R04/28,E04/30,INST:HPF,ecra BTL#35

Id File: CLPNEW::AQ
Title: ACID,BASE & NEUTRALS CLP COMPOUNDS
Last Calibration: 920511 12:02

Operator ID: NYTEST2
Quant Time: 920511 19:38
Injected at: 920511 18:45

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >F0795::D2 Quant Output File: ^F0795::QT
Name: 1231302,PIPE-1
Misc: BN+15,AARON,L,S,30,1,,%16,R04/28,E04/30,INST:HPF,ecra BTL#35

Id File: CLPNEW::AQ
Title: ACID,BASE & NEUTRALS CLP COMPOUNDS
Last Calibration: 920511 12:02

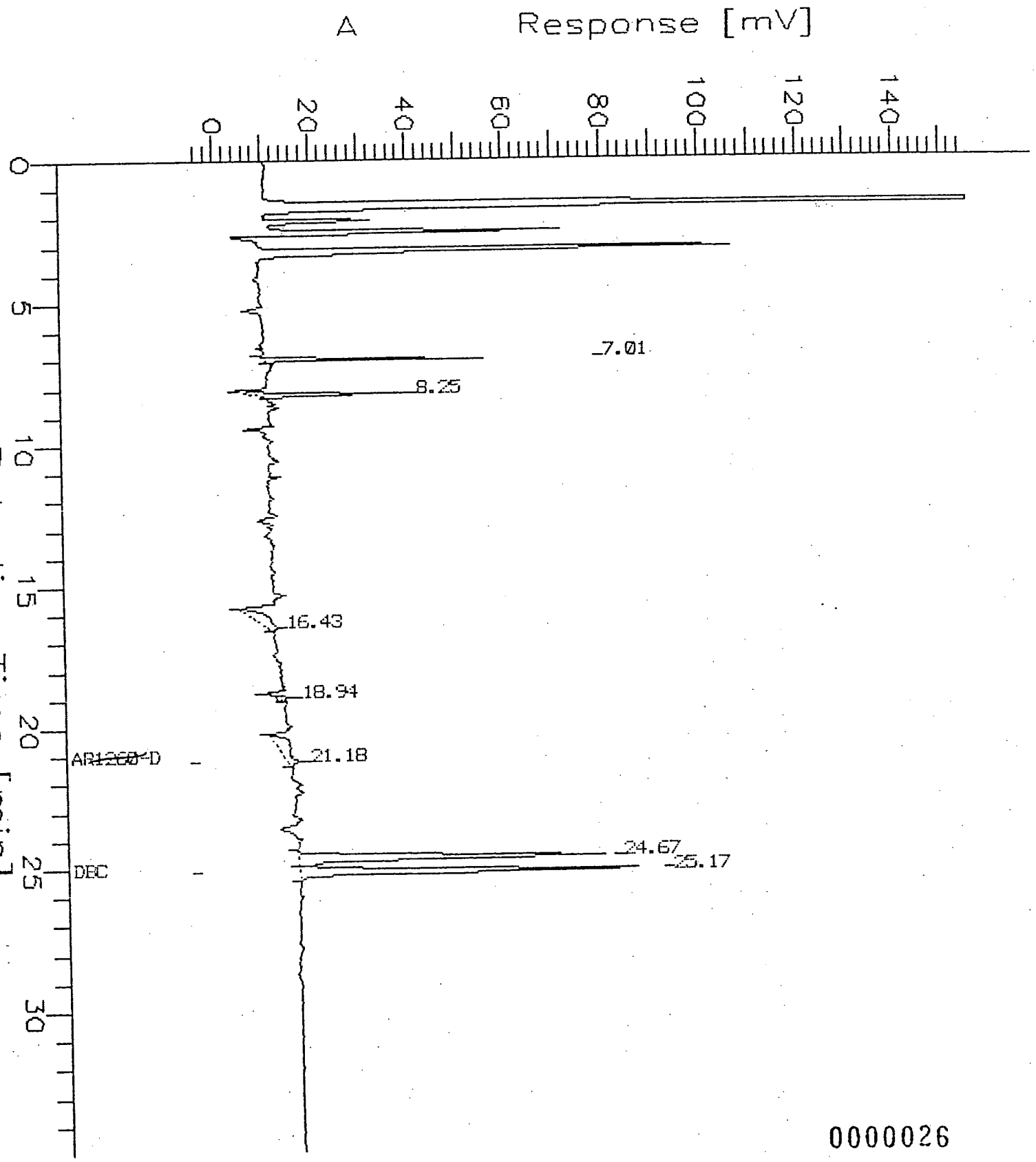
Operator ID: NYTEST2
Quant Time: 920511 19:38
Injected at: 920511 18:45

TIC page 2 of 2

PEIA DB1701 (PRIMARY)

Sample Name : 12313
leName : c:\2700\data1\187a043.raw
ethod : pel.ins
Start Time : 0.00 min End Time : 35.00 min
ale Factor: -1 Plot Offset: -4 mV

Sample #: 02 Page 1 of 1
Date : 5/22/92 10:53 AM
Time of Injection: 5/21/92 12:36 PM
Low Point : -4.44 mV High Point : 155.56 mV
Plot Scale: 160 mV



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1 A-T

NYTEST ENVIRONMENTAL INC.

TCL VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX: SOIL
CONC. LEVEL: LOW
ANALYSIS DATE: 5/7/92

SAMPLE ID: VBLKE89
LAB ID: E5700
DIL FACTOR: 1.00
% MOISTURE: NA

CMPD #	CAS Number	VOLATILE COMPOUNDS	UG/KG (DRY BASIS)
1	74-87-3	Chloromethane	10.0 U.
2	74-83-9	Bromomethane	10.0 U.
3	75-01-4	Vinyl Chloride	10.0 U.
4	75-00-3	Chloroethane	10.0 U.
5	75-09-2	Methylene Chloride	5.0 U.
6	67-64-1	2-Propanone	10.0 U.
7	75-15-0	Carbon disulfide	5.0 U.
8	75-35-4	1,1-Dichloroethene	5.0 U.
9	75-34-3	1,1-Dichloroethane	5.0 U.
10	540-59-0	1,2-Dichloroethene (total)	5.0 U.
11	67-66-3	Chloroform	5.0 U.
12	107-06-2	1,2-Dichloroethane	5.0 U.
13	78-93-3	2-Butanone	10.0 U.
14	71-55-6	1,1,1-Trichloroethane	5.0 U.
15	56-23-5	Carbon Tetrachloride	5.0 U.
16	108-05-4	Vinyl Acetate	10.0 U.
17	75-27-4	Bromodichloromethane	5.0 U.
18	78-87-5	1,2-Dichloropropane	5.0 U.
19	10061-01-5	cis-1,3-Dichloropropene	5.0 U.
20	79-01-6	Trichloroethene	5.0 U.
21	124-48-1	Dibromochloromethane	5.0 U.
22	79-00-5	1,1,2-Trichloroethane	5.0 U.
23	71-43-2	Benzene	5.0 U.
24	10061-02-6	Trans-1,3-Dichloropropene	5.0 U.
25	75-25-2	Bromoform	5.0 U.
26	108-10-1	4-Methyl-2-Pentanone	10.0 U.
27	591-78-6	2-Hexanone	10.0 U.
28	127-18-4	Tetrachloroethene	5.0 U.
29	79-34-5	1,1,2,2-Tetrachloroethane	5.0 U.
30	108-88-3	Toluene	5.0 U.
31	108-90-7	Chlorobenzene	5.0 U.
32	100-41-4	Ethylbenzene	5.0 U.
33	100-42-5	Styrene	5.0 U.
34	1330-20-7	Xylene (total)	5.0 U.
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NYTEST ENVIRONMENTAL INC.

TENTATIVELY IDENTIFIED ORGANICS COMPOUND

SAMPLE ID: VBLKE89

OF TIC FOUND: 0

LAB ID: E5700

MATRIX: SOIL

FRACTION: VOA

CAS Number	Compound Name	RT	Estimated Concentration UG/KG (DRY WT)
1	NO COMPOUNDS FOUND		
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1 B-T

NYTEST ENVIRONMENTAL INC.

TCL SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX: SOIL
CONC. LEVEL: LOW
EXTRACTION DATE: 4/30/92
ANALYSIS DATE: 5/9/92

SAMPLE ID: SBLKF1
LAB ID: F0776
DIL FACTOR: 1.00
% MOISTURE: NA

CMPD #	CAS Number	BASE NEUTRAL COMPOUNDS	UG/KG (DRY BASIS)
1	111-44-4	bis(2-Chloroethyl)ether	330.0 U.
2	541-73-1	1,3-Dichlorobenzene	330.0 U.
3	106-46-7	1,4-Dichlorobenzene	330.0 U.
4	95-50-1	1,2-Dichlorobenzene	330.0 U.
5	108-60-1	bis(2-chloroisopropyl)ether	330.0 U.
6	621-64-7	N-Nitroso-Di-n-Propylamine	330.0 U.
7	67-72-1	Hexachloroethane	330.0 U.
8	98-95-3	Nitrobenzene	330.0 U.
9	78-59-1	Isophorone	330.0 U.
10	111-91-1	bis(2-chloroethoxy)Methane	330.0 U.
11	120-82-1	1,2,4-Trichlorobenzene	330.0 U.
12	106-47-8	4-Chloroaniline	330.0 U.
13	87-68-3	Hexachlorobutadiene	330.0 U.
14	91-57-6	2-Methylnaphthalene	330.0 U.
15	77-47-4	Hexachlorocyclopentadiene	330.0 U.
16	91-58-7	2-Chloronaphthalene	330.0 U.
17	88-74-4	2-Nitroaniline	1650.0 U.
18	131-11-3	Dimethyl Phthalate	330.0 U.
19	99-09-2	3-Nitroaniline	1650.0 U.
20	132-64-9	Dibenzofuran	330.0 U.
21	121-14-2	2,4-Dinitrotoluene	330.0 U.
22	606-20-2	2,6-Dinitrotoluene	330.0 U.
23	84-66-2	Diethylphthalate	330.0 U.
24	7005-72-3	4-Chlorophenyl-phenylether	330.0 U.
25	100-01-6	4-Nitroaniline	1650.0 U.
26	86-30-6	N-Nitrosodiphenylamine	330.0 U.
27	101-55-3	4-Bromophenyl-phenylether	330.0 U.
28	118-74-1	Hexachlorobenzene	330.0 U.
29	84-74-2	Di-n-Butylphthalate	330.0 U.
30	85-68-7	Butylbenzylphthalate	330.0 U.
31	91-94-1	3,3'-Dichlorobenzidine	660.0 U.
32	117-81-7	bis(2-Ethylhexyl)Phthalate	150.0 J.
33	117-84-0	Di-n-Octyl Phthalate	330.0 U.
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CMPD #	CAS Number	BASE NEUTRAL/PAH COMPOUNDS	UG/KG (DRY BASIS)
42	91-20-3	Naphthalene	330.0 U.
43	208-96-8	Acenaphthylene	330.0 U.
44	83-32-9	Acenaphthene	330.0 U.
45	86-73-7	Fluorene	330.0 U.
46	85-01-8	Phenanthrene	330.0 U.
47	120-12-7	Anthracene	330.0 U.
48	206-44-0	Fluoranthene	330.0 U.
49	129-00-0	Pyrene	330.0 U.
50	56-55-3	Benzo(a)Anthracene	330.0 U.
51	218-01-9	Chrysene	330.0 U.
52	205-99-2	Benzo(b)Fluoranthene	330.0 U.
53	207-08-9	Benzo(k)Fluoranthene	330.0 U.
54	50-32-8	Benzo(a)Pyrene	330.0 U.
55	193-39-5	Indeno(1,2,3-cd)Pyrene	330.0 U.
56	53-70-3	Dibenz(a,h)Anthracene	330.0 U.
57	191-24-2	Benzo(g,h,i)Perylene	330.0 U.
58			
59			
60			
		ACID COMPOUNDS	
61	108-95-2	Phenol	NA
62	95-57-8	2-Chlorophenol	NA
63	100-51-6	Benzyl Alcohol	NA
64	95-48-7	2-Methylphenol	NA
65	106-44-5	4-Methylphenol	NA
66	88-75-5	2-Nitrophenol	NA
67	105-67-9	2,4-Dimethylphenol	NA
68	65-85-0	Benzoic Acid	NA
69	120-83-2	2,4-Dichlorophenol	NA
70	59-50-7	4-Chloro-3-Methylphenol	NA
71	88-06-2	2,4,6-Trichlorophenol	NA
72	95-95-4	2,4,5-Trichlorophenol	NA
73	51-28-5	2,4-Dinitrophenol	NA
74	100-02-7	4-Nitrophenol	NA
75	534-52-1	4,6-Dinitro-2-Methylphenol	NA
76	87-86-5	Pentachlorophenol	NA
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1C

NYTEST ENVIRONMENTAL INC.

TENTATIVELY IDENTIFIED ORGANICS COMPOUND

SAMPLE ID: SBLKF1

OF TIC FOUND: 2

LAB ID: F0776

MATRIX: SOIL

FRACTION: BN

CAS Number	Compound Name	RT	Estimated Concentration UG/KG (DRY WT)
1	UNKNOWN	5.53	7400 JA
2	UNKNOWN	17.59	180 J
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1 D-T

NYTEST ENVIRONMENTAL INC.

TCL PESTICIDE/PCB ORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX:	SOIL	SAMPLE ID:	PBLK
CONC. LEVEL:	LOW	LAB SAMPLE ID:	PBLK
EXTRACTION DATE:	4/30/92	DIL FACTOR:	1.00
ANALYSIS DATE:	5/21/92	% MOISTURE:	NA

CMPD #	CAS Number	PESTICIDE/PCB COMPOUND	UG/KG (DRY BASIS)
1	319-84-6	Alpha-BHC	NA
2	319-85-7	Beta-BHC	NA
3	319-86-8	Delta-BHC	NA
4	58-89-9	Gamma-BHC(Lindane)	NA
5	76-44-8	Heptachlor	NA
6	309-00-2	Aldrin	NA
7	1024-57-3	Heptachlor Epoxide	NA
8	959-98-8	Endosulfan I	NA
9	60-57-1	Dieldrin	NA
10	72-55-9	4,4'-DDE	NA
11	70-20-8	Endrin	NA
12	33213-65-9	Endosulfan II	NA
13	72-54-8	4,4-DDD	NA
14	1031-07-8	Endosulfan Sulfate	NA
15	50-29-3	4,4'-DDT	NA
16	53494-70-5	Endrin Ketone	NA
17	72-43-5	Methoxychlor	NA
18	57-74-9	Chlordane	NA
19	8001-35-2	Toxaphene	NA
20	12674-11-2	Aroclor-1016	80.000 U.
21	11104-28-2	Aroclor-1221	80.000 U.
22	11141-16-5	Aroclor-1232	80.000 U.
23	53469-21-9	Aroclor-1242	80.000 U.
24	12672-29-6	Aroclor-1248	80.000 U.
25	11097-69-1	Aroclor-1254	160.000 U.
26	11096-82-5	Aroclor-1260	160.000 U.

1 E

NYTEST ENVIRONMENTAL INC.

INORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX: SOIL

SAMPLE ID: METHOD BLANK
LAB ID: BLANK

CMPD #	CAS Number	INORGANIC PARAMETERS	PPM (DRY BASIS)
1	7440-36-0	Antimony	5.00 U.
2	7440-38-2	Arsenic	2.00 U.
3	7440-41-7	Beryllium	1.000 U.
4	7440-43-9	Cadmium	1.000 U.
5	7440-47-3	Chromium	5.00 U.
6	7550-50-8	Copper	5.000 U.
7	7439-92-1	Lead	5.00 U.
8	7439-97-6	Mercury	0.1000 U.
9	7440-02-0	Nickel	10.00 U.
10	7782-49-2	Selenium	1.000 U.
11	7440-22-4	Silver	5.00 U.
12	7440-28-0	Thallium	1.00 U.
13	7440-66-6	Zinc	5.00 U.
14			
15			
16			
17			
18			
19			
20			

2A - 3/90

NYTEST ENVIRONMENTAL INC.

VOLATILE SURROGATE RECOVERY

LOG IN #: 12313 PAGE #: 1

MATRIX: SOIL

	SAMPLE #	1,2-DICHLORO ETHANE-D4	TOLUENE -D8	BFB	VOAS OUT
		<<<<<<<<<<<<< VOLATILE		>>>>>>>>>>>	
01	VBLKE89	93 OK	98 OK	102 OK	0
02	NORTH	90 OK	96 OK	100 OK	0
03	PIPE-1	89 OK	98 OK	100 OK	0
04					
05					
06					
07					
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26					
27					
28					
29					
30					

	LIMITS
1,2-DICHLOROETHANE-D4	70 -121
TOLUENE- D8	84 -138
BFB	59 -113

* SURROGATES OUTSIDE QC LIMITS

2 B

NYTEST ENVIRONMENTAL INC.

SEMIVOLATILE SURROGATE RECOVERY

LOG IN #: 12313

PAGE #: 1

MATRIX: SOIL

		<<<<<<<<<<<<<< BASE NEUTRAL >>>>>>>>>>>			<<<<<<<<<<< ACID >>>>>>>>>>>>>>				
	SAMPLE #	NITRO-BENZENE-D5	FLUORO-BIPHENYL	TERPHENYL -D14	2-FLUORO-PHENOL	PHENOL -D5	2,4,6-TRI BROMOPHENOL	BN'S OUT	ACIDS OUT
01	SBLKF1	52 OK	53 OK	52 OK	NA	NA	NA	0	NA
02	NORTH	79 OK	79 OK	65 OK	NA	NA	NA	0	NA
03	PIPE-1	70 OK	71 OK	69 OK	NA	NA	NA	0	NA
04									
05									
06									
07									
08									
09									
10									
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25									
26									
27									
28									
29									
30									

	LIMITS
NITROBENZENE-D5	5 - 185
FLUOROBIPHENYL	10 - 125
TERPHENYL-D14	10 - 145
2-FLUOROPHENOL	10 - 121
PHENOL	20 - 113
2,4,6-TRIBROMOPHENOL	5 - 225

* SURROGATES OUTSIDE QC LIMITS

2 D CLP

NYTEST ENVIRONMENTAL INC.

PESTICIDE SURROGATE RECOVERY

LOG IN #: 12313 PAGE #: 1

MATRIX: SOIL

	SAMPLE #	<<<PESTICIDE>>> DBC PERCENT RECOVERY	PEST OUT
01	NORTH	110 OK	0
02	PIPE-1	105 OK	0
03	PBLK	122 OK	0
04			
05			
06			
07			
08			
09			
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11			
12			
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18			
19			
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29			
30			

	LIMITS
DBC	20 - 150

* SURROGATES OUTSIDE QC LIMITS

3A - 3/90

NYTEST ENVIRONMENTAL INC.

VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

LOGIN #: 12313 MATRIX: SOIL PAGE: 1

FRACTION	COMPOUND	CONC. SPIKE ADDED (ug)	SAMPLE RESULT	CONC. MS	% RECOVERY	CONC. MSD	% RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
	1,1-DICHLOROETHENE	50	0.00	26.09	52 *	27.19	54 *	4 OK	22	59 -172
SAMPLE #	TRICHLOROETHENE	50	0.00	34.62	69 OK	36.47	73 OK	5 OK	24	62 -137
	BENZENE	50	0.00	35.72	71 OK	37.04	74 OK	4 OK	21	66 -142
NYTEST #	TOLUENE	50	0.00	39.34	79 OK	41.44	83 OK	5 OK	21	59 -139
1235613	CHLOROBENZENE	50	0.00	37.21	74 OK	39.52	79 OK	6 OK	21	60 -133

OF % MS/MSD 2 OF 10

VOA OUT: ___

OF RPD 0 OF 5

VOA OUT: ___

3 B

NYTEST ENVIRONMENTAL INC.

SEMI-VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

LOGIN #: 12313 MATRIX: SOIL PAGE: 1

FRACTION	COMPOUND	CONC. SPIKE ADDED (ug)	SAMPLE RESULT	CONC. MS	% RECOVERY	CONC. MSD	% RECOVERY	RPD	QC LIMITS * RPD	QC LIMITS * RECOVERY
	1,4-DICHLOROBENZENE	50	0.00	35.74	71 OK	35.22	70 OK	1 OK	22	10 -145
SAMPLE #	N-NITROSO-DI-NPROPYLAMINE	50	0.00	18.80	38 OK	17.80	36 OK	5 OK	16	10 -135
	1,2,4-TRICHLOROBENZENE	50	0.00	38.74	77 OK	40.40	81 OK	4 OK	21	10 -155
NYTEST #	ACENAPHTHENE	50	1.88	39.20	75 OK	36.78	70 OK	7 OK	32	10 -180
1231604	2,4-DINITROTOLUENE	50	0.00	36.28	73 OK	31.10	62 OK	15 OK	37	25 -125
	PYRENE	50	6.25	43.16	74 OK	30.31	48 OK	42 *	36	10 -225
	PHENOL								21	10 -165
SAMPLE #	2-CHLOROPHENOL								23	10 -165
	4-CHLORO-3-METHYLPHENOL								24	10 -165
NYTEST #	4-NITROPHENOL								45	10 -185
	PENTACHLOROPHENOL								23	10 -155

OF % MS/MSD 0 OF 12

BN OUT: ___

OF RPD 1 OF 6

BN OUT: ___

30 - 3/90

NYTEST ENVIRONMENTAL INC.

PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

LOGIN #: 12313 MATRIX: SOIL PAGE: 1

FRACTION	COMPOUND	CONC. SPIKE ADDED (ug/kg)	SAMPLE RESULT	CONC. MS	% RECOVERY	CONC. MSD	% RECOVERY	RPD	QC LIMITS * RPD	QC LIMITS * RECOVERY
	LINDANE	26.67	0.00	24.54	92 OK	21.47	81 OK	13 OK	50.00	***-****
SAMPLE #	HEPTACHLOR	26.67	0.00	18.72	70 OK	21.70	81 OK	15 OK	31.00	***-****
	ALDRIN	26.67	0.00	20.66	77 OK	20.27	76 OK	2 OK	43.00	***-****
NYTEST #	DIELDRIN	66.67	0.00	49.09	74 OK	53.17	80 OK	8 OK	38.00	***-****
1231604	ENDRIN	66.67	0.00	25.59	38 *	31.14	47 OK	20 OK	45.00	***-****
	4,4'- DDT	66.67	0.00	48.23	72 OK	42.43	64 OK	13 OK	50.00	***-****

OF % MS/MSD 1 OF 12

PEST OUT: ___

OF RPD 0 OF 6

PEST OUT: ___

GC/MS TUNING AND MASS CALIBRATION
BROMOFLUOROBENZENE (BFB)

File ID: E5603

Date: 05/01/92
Time: 9:50:00

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8.0 - 40.0% of the base peak	20.6	
75	30.0 - 66.0% of the base peak	44.0	
95	Base peak, 100% relative abundance	100.00	
96	5.0 - 9.0% of the base peak	7.1	
173	Less than 2.0% of mass 174	0.0	0.0 *
174	50.0 - 120.0 % of mass 95	85.9	
175	4.0 - 9.0% of mass 174	6.2	7.2 *
176	93.0 - 101.0 % ofmass 174	83.9	97.7 *
177	5.0 - 9.0% of mass 176	5.4	6.4 **

* Value in parenthesis is % mass 174. ** Value in parenthesis is % mass 176.

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING STANDARDS, BLANKS AND SAMPLES.

SAMPLE ID	LAB ID	DATE OF ANALYSIS	TIME OF ANALYSIS
PERFORMANCE STD	E5603	05/01/92	09:50
VSTD010	E5604	05/01/92	10:17
VSTD020	E5606	05/01/92	11:51
VSTD050	E5608	05/01/92	13:26
VSTD100	E5609	05/01/92	14:27
VSTD200	E5610	05/01/92	15:17

GC/MS TUNING AND MASS CALIBRATION
BROMOFLUOROBENZENE (BFB)

File ID: E5697

Date: 5/7/92
Time: 9:14:00

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8.0 - 40.0% of the base peak	17.7	
75	30.0 - 66.0% of the base peak	40.9	
95	Base peak, 100% relative abundance	100.00	
96	5.0 - 9.0% of the base peak	7.5	
173	Less than 2.0% of mass 174	0.0	0.0 *
174	50.0 - 120.0 % of mass 95	92.2	
175	4.0 - 9.0% of mass 174	6.9	7.5 *
176	93.0 - 101.0 % ofmass 174	88.9	96.4 *
177	5.0 - 9.0% of mass 176	6.1	6.9 **

* Value in parenthesis is % mass 174. ** Value in parenthesis is % mass 176.

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING STANDARDS, BLANKS AND SAMPLES.

SAMPLE ID	LAB ID	DATE OF ANALYSIS	TIME OF ANALYSIS
PERFORMANCE STD	E5697	5/7/92	09:14
VSTD050	E5699	5/7/92	10:53
VBLKE89	E5700	5/7/92	12:20
NORTH	1231301	5/7/92	14:05
PIPE-1	1231302	5/7/92	14:51

GC/MS TUNING AND MASS CALIBRATION
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

File ID: F0640

Date: 4/27/92
Time: 9:54

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30.0 - 80.0% of mass 198	48.8	
68	Less than 2.0% of mass 69	0.6	1.1 *
69	Mass 69 relative abundance	54.0	
70	Less than 2.0% of mass 69	0.0	0.0 *
127	25.0 - 75.0% of mass 198	44.5	
197	Less than 1.0% of mass 198	0.3	
198	Base peak, 100% relative abundance	100.0	
199	5.0 - 9.0% of mass 198	6.7	
275	10.0 - 30.0% of mass 198	26.0	
365	Greater than 0.75% of mass 198	2.90	
441	Present, but less than mass 443	12.5	
442	40.0 - 110.0% of mass 198	77.1	
443	15.0 - 24.0% of mass 442	14.7	19.1 **

* Value is % mass 69. ** Value is % mass 442.

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING STANDARDS, BLANKS AND SAMPLES.

SAMPLE ID	LAB ID	DATE OF ANALYSIS	TIME OF ANALYSIS
PERFORMANCE STD	F0640	4/27/92	9:54
SSTD020	F0647	4/27/92	16:21
SSTD050	F0648	4/27/92	17:17
SSTD080	F0649	4/27/92	18:15
SSTD120	F0650	4/27/92	19:11
SSTD160	F0651	4/27/92	20:08

GC/MS TUNING AND MASS CALIBRATION
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

File ID: F0769

Date: 05/09/92
Time: 0:14

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30.0 - 80.0% of mass 198	51.6	
68	Less than 2.0% of mass 69	0.0	0.0 *
69	Mass 69 relative abundance	60.0	
70	Less than 2.0% of mass 69	0.0	0.0 *
127	25.0 - 75.0% of mass 198	49.4	
197	Less than 1.0% of mass 198	0.0	
198	Base peak, 100% relative abundance	100.0	
199	5.0 - 9.0% of mass 198	6.7	
275	10.0 - 30.0% of mass 198	21.8	
365	Greater than 0.75% of mass 198	2.63	
441	Present, but less than mass 443	10	
442	40.0 - 110.0% of mass 198	67.2	
443	15.0 - 24.0% of mass 442	12.5	18.6 **

* Value is % mass 69. ** Value is % mass 442.

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING STANDARDS, BLANKS AND SAMPLES.

SAMPLE ID	LAB ID	DATE OF ANALYSIS	TIME OF ANALYSIS
PERFORMANCE STD	F0769	05/09/92	00:14
SSTD050	F0770	05/09/92	00:35
SBLKF1	F0776	05/09/92	06:44

GC/MS TUNING AND MASS CALIBRATION
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

File ID: F0786

Date: 05/11/92
Time: 9:52

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30.0 - 80.0% of mass 198	50.9	
68	Less than 2.0% of mass 69	1.1	1.8 *
69	Mass 69 relative abundance	62.0	
70	Less than 2.0% of mass 69	0.0	0.0 *
127	25.0 - 75.0% of mass 198	44.0	
197	Less than 1.0% of mass 198	0.0	
198	Base peak, 100% relative abundance	100.0	
199	5.0 - 9.0% of mass 198	6.0	
275	10.0 - 30.0% of mass 198	23.4	
365	Greater than 0.75% of mass 198	2.45	
441	Present, but less than mass 443	11.2	
442	40.0 - 110.0% of mass 198	73.5	
443	15.0 - 24.0% of mass 442	13.7	18.6 **

* Value is % mass 69. ** Value is % mass 442.

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING STANDARDS, BLANKS AND SAMPLES.

SAMPLE ID	LAB ID	DATE OF ANALYSIS	TIME OF ANALYSIS
PERFORMANCE STD	F0786	05/11/92	9:52
SSTD050	F0787	05/11/92	10:31
NORTH	1231301	05/11/92	17:43
PIPE-1	1231302	05/11/92	18:45

ECRA STANDARDS DATE AND TIME SUMMARY

NITIAL CALIBRATION (with surrogate times)

INSTRUMENT PE1 SEQUENCE 187

dbc

File Name	Study Name	Sample Number	Date Of Injection	Time Of Injection	Ret. Time
187a005.rst			5/20/92	09:58 AM	25.19
a006.rst			5/20/92	10:40 AM	25.26
a007.rst			5/20/92	11:21 AM	25.20
187a008.rst			5/20/92	12:15 PM	25.17
187a009.rst			5/20/92	12:57 PM	25.19

APPENDIX C

Permits & Notifications

UNDERGROUND STORAGE TANK SYSTEM
CLOSURE APPROVAL

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF RESPONSIBLE PARTY SITE REMEDIATION
BUREAU OF UNDERGROUND STORAGE TANKS
CN-029, TRENTON, NJ 08625-0029

TMS # C-92-0768 UST # 0006013

Roadway Express Inc.
650 Commercial Avenue
Carlstadt, N.J. 07072
(Bergen County)

THE ABOVE LISTED FACILITY IS HEREBY GRANTED APPROVAL TO PERFORM THE FOLLOWING ACTIVITY IN ACCORDANCE WITH N.J.A.C. 7:14B-1 et seq.:

Removal of: 1 - 1000 Gallon waste oil U.S.T.
Site Assessment: 3 (Three) soil samples will be collected for the tank. Soil samples will be analyzed as per the updated site assessment requirements for waste oil.

ON-SITE MANAGER: Scott L. Turner TELEPHONE: (908) 486-8600

OWNER: Roadway Express Co. TELEPHONE: (201) 507-1982

EFFECTIVE DATE: 3/18/92

THIS FORM MUST BE DISPLAYED AT THE SITE DURING THE APPROVED ACTIVITY AND MUST BE MADE AVAILABLE FOR INSPECTION AT ALL TIMES.

Joseph A. Mello (for K.G.)
KENNETH GOLDSTEIN, P.E., CHIEF
BUREAU OF UNDERGROUND STORAGE TANKS

UST-011 GREEN- APPLICANT COPY- APPLICANT COPY- LCO COPY- TMS COPY- R&B

TECHNICAL SECTION

C I #
Permit # 92 - 101

IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANG-G CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

ock 126 Lot 74
ork Site Location 650 COMMERCIAL AVE.
CARLSTADT NJ
wner In Fee ROADWAY (SERVICES) EXPRESS
dress - SAME -
e. (201) 507 - 1982
ntractor ENVIRONMENTAL PRODUCTS & SERVICES
dress 1400 E. ELIZABETH AVE.
~~Carl~~ LINDEN NJ
e. (908) 486-8800
. No. or Bldrs. Reg. No:
deral Emp. No. ✓ or Social Security No. 152-64-1088

JOB SUMMARY (Office Use Only)

PLAN REVIEW	Date	Initial	INSPECTIONS Type:	Dates (Month/Day) Failure	Failure	Approval	Initial
] No Plans Req.			Footing				
] All			Foundation				
] Footing			Slab				
] Foundation			Frame				
] Frame			Insulation				
] Other			Finishes:				
Joint Plan Review Required:			Energy				
] Elec. [ ] Plumb. [ ] Fire			Mechanical				
IBCODE APPROVAL			TCO				
] CO [ ] CCO [ ] CA			Other				
Date:			Final				
Approved By:							

BUILDING CHARACTERISTICS

Group Present X Proposed
Str. Class Present X Proposed
of Stories
ight of Structure Ft.
a—Largest Floor Sq. Ft.
al Bldg. Area/All Floors Sq. Ft.
ume of Structure Cu. Ft.
al Land Area Disturbed Sq. Ft.

Est. Cost of Bldg. Work:
1. New Bldg. $
2. Alteration $
3. Total (1+2) $

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application.

Signature

D. TECHNICAL SITE DATA
DESCRIPTION OF WORK

TYPE OF WORK:
[ ] New Building
[ ] Addition
[ ] Alteration
[ ] Roofing
[ ] Siding
[ ] Other
[X] Demolition
[ ] Miscellaneous
[ ] Fence Height
[ ] Sign Sq. Ft.
[ ] Pool
[ ] Elevator
[ ] Asbestos Abatement
[ ] Other

(Office Use Only)
FEE
$

Paid [✓] Check # 3002 Administrative Surcharge $
Collected by: Minimum Fee $
TOTAL FEE $ 50 —

Receipt 3809

U.C.C. Form F-110A

1 White=Inspector Copy 2 Canary=Office Copy
3 Pink=Office Copy 4 Gold=Applicant Copy

CONSTRUCTION PERMIT

NEW JERSEY UNIFORM CONSTRUCTION CODE

Date Issued 4/20/92
Control #
Permit # 92-101

IDENTIFICATION Block 126 Lot 24

Work Site Location 650 COMMERCIAL AVE. CARLSTADT NJ

Owner in Fee ROADWAY EXPRESS
Address 650 COMMERCIAL AVE.

Tele. (201) 507 8882

Contractor ENVIRONMENTAL PRODUCTS & SERVICES
Address 1400 E. ELIZABETH AVE. LINDEN NJ
Tele. (908) 486-8600
Lic. No. or Bldrs. Reg. No. _____ Exp. Date _____
Federal Emp. No. _____
or Social Security No. 152-64-1058

's hereby granted permission to perform the following work:

[ ] BUILDING [ ] PLUMBING [X] OTHER DEMO
[ ] ELECTRICAL [ ] FIRE PROTECTION

DESCRIPTION OF WORK:

TANK PULL

UST C-92-0768

NOTE: If construction does not commence within one (1) year of date of issuance, or if construction ceases for a period of six (6) months, this permit is void.

Estimated Cost of Work $ 3500.—

Edward [illegible]
CONSTRUCTION OFFICIAL

PAYMENTS (Office Use Only)	
Building	
Plumbing	
Electrical	
Fire Protection	
Other	50 —
Other	
DCA Training Fee	
Cert. of Occ.	
Other	
Total	50 —
Check No.	202
Cash	Receipt 3809
Collected By:	[illegible]

(see reverse side)

U.C.C. Form F-170A

1 WHITE—INSPECTOR 2 CANARY—OFFICE 3 PINK—OFFICE 4 GOLD—APPLICANT

Date Issued 4-20-92
Control #
Permit # 92-101

CONSTRUCTION PERMIT NOTICE

Block 126 Lot 74

Work Site Location: 650 Commercial Ave

AUTHORIZED FOR:

- ☐ BUILDING
- ☐ ELECTRICAL
- ☐ PLUMBING
- ☐ FIRE PROTECTION
- ☒ OTHER Demo tank
  As per C-92-0766

This notice shall be posted conspicuously at the work site and shall remain so until issuance of a certificate.

U.C.C. Form F-180A

Environmental
PRODUCTS & SERVICES, INC.
1400 East Elizabeth Avenue Linden, NJ 07036
(908) 486-8600 FAX (908) 486-8662 (800) THE-TANK

April 24, 1992

State of New Jersey
Dept. of Environmental Protection and Energy
Division of Water Resources
CN 029
Trenton, NJ 08625-0029

ATTN: B.U.S.T.

RE: Roadway Express, Inc.
Carlstadt, NJ
U.S.T. #0006013
TMS #C-92-0768
1000 Gallon Waste Oil U.S.T.

Dear Sir:

On April 23, 1992 while excavating to remove the above referenced tank a minor release of free product was discovered. In turn the emergency B.U.S.T. number was contacted and the Case Number 92-4021-1136 was assigned.

In an attempt to expose the tank we encountered an excessive amount of groundwater. This groundwater, in conjunction with the tank's unusual burial depth of twelve (12) feet below grade, hampered our efforts to expose the tank. Eventually we discovered that the tank was actually a 550 gallon oval shaped tank placed into a very large (8' by 14' by an unknown depth) concrete vault that could not be moved by our equipment operator.

At this time we contacted your (609) 984-3156 number at 11:50 a.m. and spoke with a Ms. Diane Pupa and explained the circumstances to her. Her reply was that due to this tank's unique problems abandonment in place would be acceptable providing the tank was thoroughly cleaned in ground and inspected.

This cleaning was inspected by Mr. Robert Moore of the Carlstadt Bureau of Fire and Safety. He advised that the cleaning was acceptable. The hole has been backfilled and left unpaved (at the request and risk of the owner) awaiting the post-excavation analytical as prescribed by the Bureau. Thank you.

Very truly your,

ENVIRONMENTAL PRODUCTS & SERVICES, INC.

Scott L. Turner
Operations Manager/Incident Commander

/kwj
9018.03C.900
cc: M. Staiti

FACILITY REGISTRATION #0006013
SITE ASSESSMENT PLAN
PAGE 2

C. TWO (2) OF THE SAMPLES WILL BE TAKEN WITHIN ONE (1) FOOT OF EACH OTHER IN THE AREA OF THE HIGHEST HNu READINGS.

D. ALL SOIL SAMPLES WILL BE DISCRETE SAMPLES, TAKEN WITHIN A 6" VERTICAL INTERVAL.

E. SAMPLES WILL BE TAKEN WITH A STAINLESS STEEL TROWEL AND DECONTAMINATED WITH HEXANE BETWEEN BORINGS AND SAMPLES.

F. SAMPLES WILL BE SENT FOR ANALYSIS TO A CERTIFIED LABORATORY FOR ANALYSIS OF TOTAL PETROLEUM HYDROCARBONS, USING METHOD 418, AND PRIORITY POLLUTANTS + 40 FOLLOWING THE PARAMETERS SET FORTH ON PAGE 13 NOTE (2) & (3) OF THE INTERIM CLOSURE REQUIREMENTS.

IF ANY SOIL SAMPLE ANALYSES CONTAIN IN EXCESS OF 100 PPM OF TOTAL PETROLEUM HYDROCARBONS, A CLEANUP WILL BE CONDUCTED ACCORDING TO METHOD 3650 AND ANAYLSIS WILL BE TAKEN AS LISTED IN THE FLOWCHART OF APPENDIX 1.

IF THERE IS EVIDENCE OF CONTAMINATION, THE DEP HOTLINE WILL BE NOTIFIED.

IF THERE IS NO EVIDENCE OF CONTAMINATION, THE GUIDELINES SET FORTH IN THE MANAGEMENT OF EXCAVATED SOILS WILL BE FOLLOWED.

G. IF GROUND WATER IS ENCOUNTERED, NJ DEP WILL BE NOTIFIED TWO WEEKS PRIOR TO INSTALLATION, THE NECESSARY PERMITS WILL BE ACQUIRED AND GROUNDWATER MONITORING WELLS WILL BE INSTALLED, SAMPLED AND ANALYZED ACCORDING TO DEP REGULATIONS.

THE SITE ASSESSMENT FINDINGS WILL BE DOCUMENTED AND INCLUDED IN THE CLOSURE PLAN IMPLEMENTATION SUMMARY AND THE DEP HOTLINE WILL BE CALLED IF ANY EVIDENCE OF CONTAMINATION IS CONFIRMED BY THE ABOVE MENTIONED STEPS.

ROADWAY EXPRESS INC.
650 COMMERCIAL AVE.
CARLSSTADT, NJ 07072

FACILITY REGISTRATION #0006013

IMPLEMENTATION SCHEDULE:

THE ANTICIPATED DATE OF EXCAVATION OF THE TANKS AND RELATED PIPING IS 2 - 3 WEEKS AFTER B.U.S.T. APPROVAL OF DOCUMENTS, WILL VERBALLY ADVISE JOHN BLANKENSHIP OR BERGEN NORTHERN REGION.

THE EQUIPMENT THAT WILL BE USED TO PERFORM THE SCOPE OF WORK WILL BE:

1989 JOHN DEERE 510 BACKHOE
1988 FREIGHTLINER 16 YD DUMP TRUCK
1985 INTERNATIONAL TRACTOR AND LOWBOY
1991 FORD 800 VACUUM TRUCK 900 CFM 3500 GALLON CAPACITY
PRESSURE WASHER
TARGET SAW
EXPLOSION METER
PHOTOIONIZATION DETECTOR

APPENDIX D

Liquid Waste Disposal Manifests (copies)

EPHM-2 REV. 9/88

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Hazardous Waste MANIFEST PROGRAM, State Office Building
Hartford, CT 06106

Please type (or print) (Form designed for use on elite (12-pitch) typewriter.)

FOR STATE USE ONLY

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJD981561251 — Manifest Document No. 16684

2. Page 1 of 1

Information in the shaded areas is not required by Federal law, but may be required by State law.

3. Generator's Name and Mailing Address
Roadway Services, Inc.
1077 George Boulevard
Akron, Ohio 44309

4. Generator's Phone (216) 258-2571

A. State Manifest Document Number CT F 0016684

B. G.S.I. (Gen. Site Address) 650 Commercial Avenue, Carlstadt, NJ

5. Transporter 1 Company Name: Environmental Products & Services Inc

6. US EPA ID Number: NYD980761191

7. Transporter 2 Company Name

8. US EPA ID Number

C. S.T.I. (Trans. Lic. Plate #) NYPD4214

D. Tran. Phone (315) 471-0503

E. S.T.I. (Trans. Lic. Plate #)

F. Tran. Phone ( )

9. Designated Facility Name and Site Address
Environmental Waste Resources, Inc.
130 Freight Street
Waterbury, CT 06702

10. US EPA ID Number: CTD072138969

G. State Facility's ID (Not Required)

H. Facility's Phone 203-755-2783

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste Non RCRA Liquid, N.O.S. (Ground Water) Non Hazardous NONE	001	TT	1000	G	EPA NONE / STATE X721
b.					EPA / STATE
c.					EPA / STATE
d.					EPA / STATE

J. Additional Descriptions for Materials Listed Above
a. Ground water contaminated with waste oil. C804
b.
c.
d.

K. Handling Codes for Wastes Listed Above
a. Interim Final
b. Interim Final
c. Interim Final
d. Interim Final

15. Special Handling Instructions and Additional Information
EWR Approval # 34508 EPS PO # 90329 Emergency Phone 315-471-0503
EPS Job # 3CL1344
Point of Departure: Carlstadt, NJ

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, and all applicable State laws and regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR — Printed/Typed Name: PETER DELLA ROSA — Signature: [signature] — Month Day Year: 7/28/92

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: GREG FOSTER — Signature: [signature] — Month Day Year: 07 28 92

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

FACILITY

19. Discrepancy Indication Space

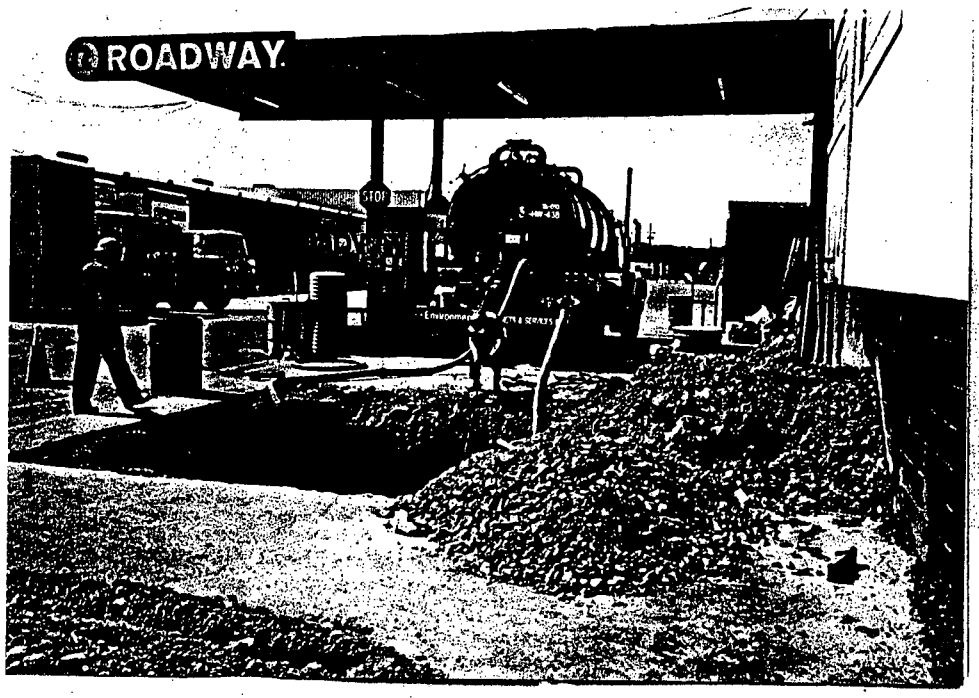
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: EDWARD PLAUK — Signature: [signature] — Month Day Year: 8 11 92

Form Approved OMB No 2050-0039. Expires 9/30/91. Previous edition is obsolete.

ENCLOSURE

Photographic Documentation

835 South Main Street, Waterbury, CT 06706 Tel: 203-753-2554 Fax: 203-753-0512



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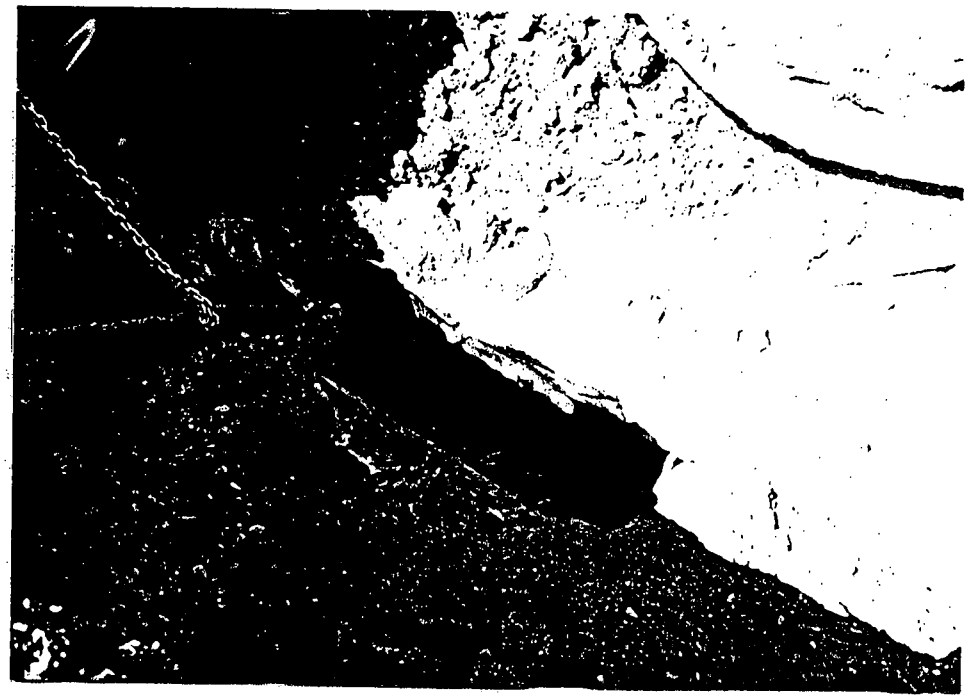

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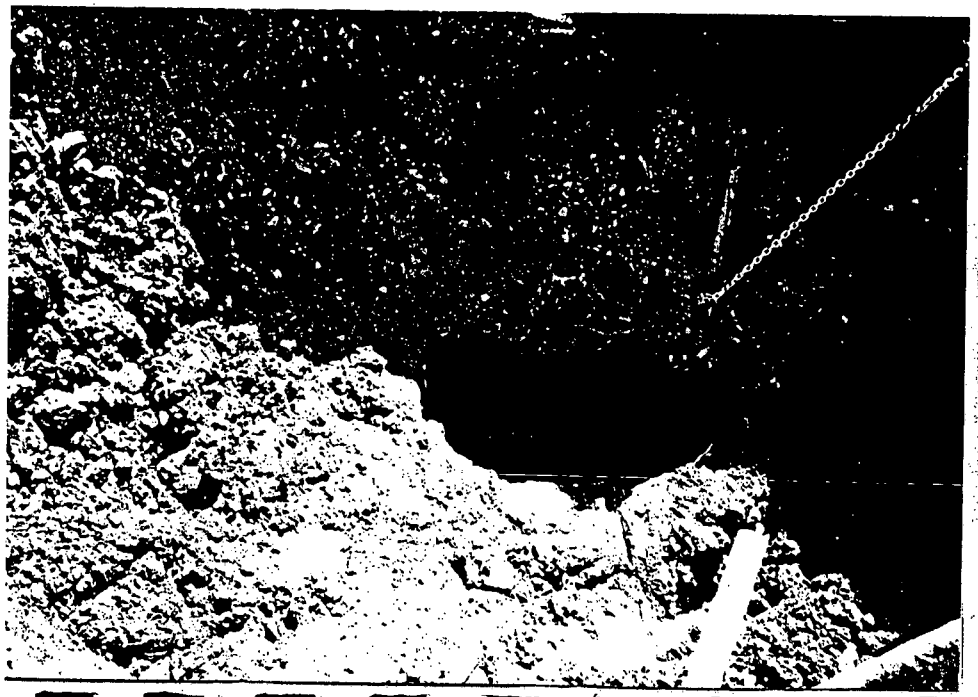

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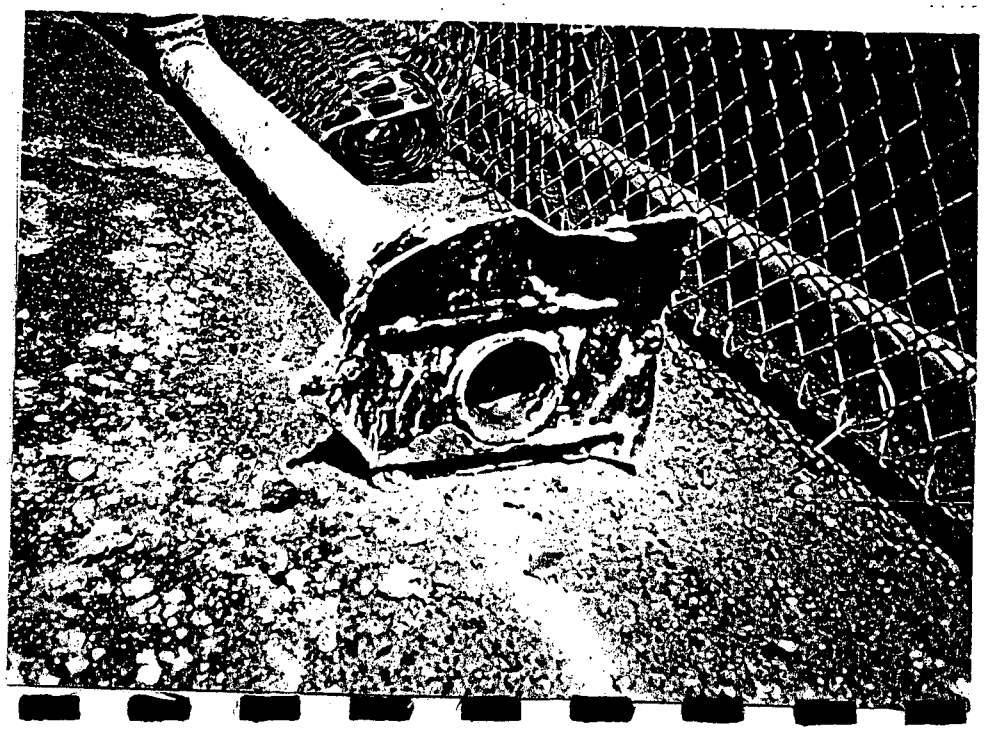

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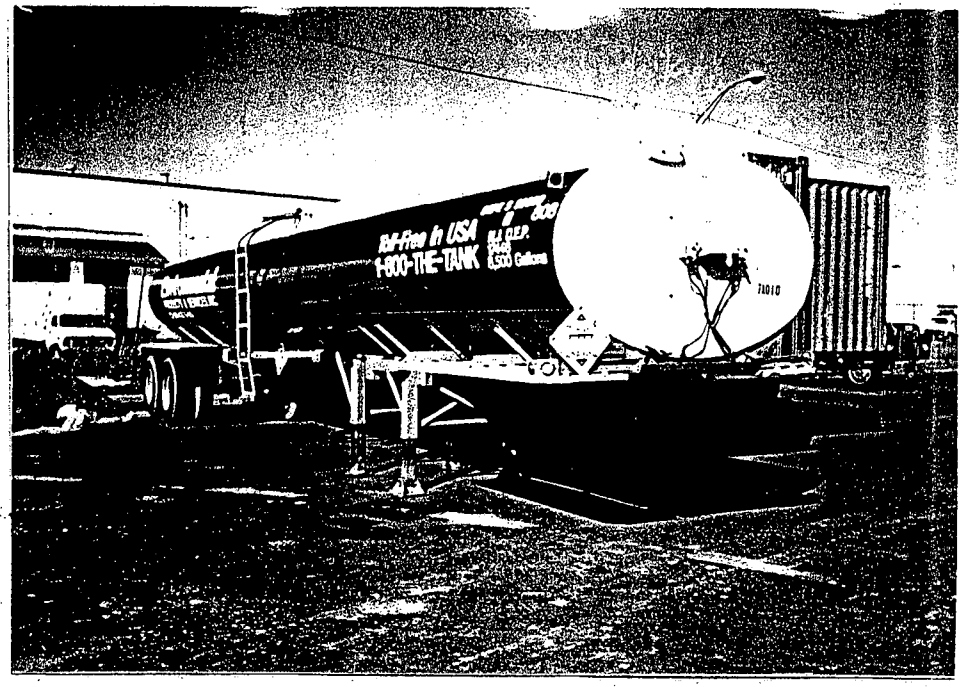

8

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
Trenton, N.J. 08625-0029

ATTN: BUST Program
(609) 984-3156

For State Use Only

Date Rec'd. ____
Auth. ____
Routing ____
UST NO. ____

STANDARD REPORTING FORM
for reporting activities at an UST facility:

___ General Facility Information Changes
X Closure (Abandonment or Removal)
___ Temporary Closure
___ Change in Service
___ Sale or Transfer
___ Substantial Modification
___ Financial Responsibility
___ Address Change Only

Check ONLY One Type of Activity – Complete Form For That Activity

(More than one tank can be listed per activity)

*** NOTE *** ALL NEW tank installations at existing registered facilities must submit a Registration Questionnaire for the new tanks.

Answer questions 1 through 5 and others as applicable.

1. Company name and address (as it appears on registration questionnaire): ROADWAY EXPRESS, INC.
650 COMMERCIAL AVE.
CARLSTADT NJ 07072
BERGEN COUNTY

2. Facility name and location (if different from above): —

3. Contact person for this activity: SCOTT L. TURNER
Telephone Number: (908) 486-8600

4. The identification number of the affected tank as it appears in Question Number 12 on the Registration Questionnaire: 001

5. Registration Number (if known): UST - 0006013

6. For GENERAL FACILITY INFORMATION changes (address, telephone, contact person, etc. – supply NEW information only):

a. Facility name: —
b. Facility location: ____
c. Owner's mailing address: ____
____ NJ ____
____
d. Block: ____ Lot: ____
e. Contact person (facility operator): ____
f. Contact telephone number: ( ) ____ - ____
g. Other (Specify): ____

(OVER)

7. For CLOSURE (abandonment or removal – check all that apply):
   a. ☒ Abandonment
      Attach the necessary implementation schedule (3 copies) and all documentation needed for abandonment per N.J.A.C. 7:14B-9.1 (d).
   b. ☐ Removal
      Attach the necessary implementation schedule (3 copies).

8. For CHANGES IN HAZARDOUS SUBSTANCES STORED (check all that apply):
   a. ☐ Temporary Closure (12 month maximum time – see N.J.A.C. 7:14B-9.1(b)). Remove all hazardous substances; leave tank in place.
   b. ☐ Change in service from a regulated substance to a non-regulated substance. Tank must be cleaned and site assessment performed per N.J.A.C. 7:14B-9.1(e).
   c. ☐ Changes in service from one regulated hazardous substance to another regulated hazardous substance.

      Tank No. _____ Old _____ New _____
      Tank No. _____ Old _____ New _____
      Tank No. _____ Old _____ New _____
      (Attach additional sheets if more space is needed)

9. For TRANSFER OF OWNERSHIP:
   a. New Owner (operator) _____
   b. New Facility Name _____
      _____
      _____ NJ _____
      _____
      County
   c. Closing Attorney _____ Tele: (____) _____ – _____

10. For SUBSTANTIAL MODIFICATIONS (to include any retrofitted activity – e.g. the addition of spill/overfill protection, monitoring systems, cathodic protection, etc.):
    a. Type of Modification _____
    b. * NOTE * Substantial modifications require a permit under N.J.A.C. 7:14B-10.

11. For changes in FINANCIAL RESPONSIBILITY to (check appropriate changes and attach copies of new information):
    a. Policy Type: ☐
    b. Policy Number: ☐
    c. Other: ☐
    d. Company/Carrier: ☐
    e. Expiration Date: ☐

    _____
    _____
    _____
    (Specify)

NOTE: ALL appropriate and applicable permits, licenses and certificates required by the above activity(ies) from any local, state and/or federal agencies must be obtained separately from this notification.

CERTIFICATION

"*This registration form shall be signed by the highest ranking individual at the facility with overall responsibility for that facility (N.J.A.C. 7:14B-2.3 (a) 1).*"

"I certify under penalty of law that the information provided in this document is true, accurate and complete. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate or incomplete information, including fines and/or imprisonment."

Signature: Peter DeLaRosa Sr.

Name (print or type): PETER DELLAROSA SR.

Title: TERMINAL MANAGER Date: APRIL 24 1992

Environmental
PRODUCTS & SERVICES, INC.
Corporate Office: P.O. Box 315, Syracuse, NY 13209-0315
315-471-0503 FAX 315-475-8920 USA 1-800-THE-TANK

DECEMBER 20, 1991

ROADWAY EXPRESS INC.
650 COMMERCIAL AVE
CARLSSTADT NJ 07072
(1) ONE 1000 GALLON WASTE OIL U.S.T.
FACILITY REGISTRATION #0006013

TANK DECOMMISSIONING PLAN

1. THE ASSOCIATED PIPING WILL BE DRAINED.

2. THE TANK WILL BE PUMPED UNTIL EMPTY.

3. ALL PUMPED PRODUCT WILL BE PROPERLY CONTAINERIZED.

4. THE TANK WILL BE NITROGEN PURGED; RENDERED AND MAINTAINED VAPOR FREE, WHILE BEING MONITORED FOR LOWER EXPLOSION LEVEL WITH AN EXPLOSION METER. IF VAPORS REACH ABOVE 15% OF THE LOWER EXPLOSION LEVEL. THE TANK WILL AGAIN BE PURGED.

5. REMOVE ALL ASSOCIATED PIPING TO BUILDING FOUNDATION AND CAP WITH CONCRETE FILL.

6. TANK WILL BE SPRAY WASHED USING A PRESSURE WASHER.

7. ENTER TANK, SQUEEGEE AND WIPE INSIDE SURFACE.

8. PIPING WILL BE BLANKED, LEAVING ONE VENT HOLE.

9. EXCAVATE TO EXPOSE THE TOP OF TANK.

10. REMOVE, SECURE AND EXAMINE TANK. IF ANY CORROSION HOLES ARE FOUND THE DEP HOTLINE WILL BE CALLED.

11. THE TANK WILL BE PROPERLY LABELED FOR DISPOSAL. UPON DISPOSAL THE TANK WILL BE REMOVED FROM THE SITE ACCORDING TO ALL PROPER PROCEDURES AND IN COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.

12. A SITE ASSESSMENT WILL THEN BE PERFORMED.

THERE WILL BE NO SMOKING IN AREA OF TANK REMOVAL. THE PROPER LEVELS OF PERSONAL PROTECTION WILL BE WORN IN ACCORDANCE TO OSHA STANDARDS. ALL PERSONNEL ARE 40-HOUR OSHA TRAINED. ALL VAPORS WILL BE VENTED ABOVE NEIGHBORING ROOFTOPS. FIRE EXTINGUISHERS WILL READILY AVAILABLE ON SITE.

7. CLOSURE (abandonment or removal – check all that apply):
   a. ☒ Abandonment
      Attach the necessary implementation schedule (3 copies) and all documentation needed for abandonment per N.J.A.C. 7:14B-9.1 (d).
   b. ☐ Removal
      Attach the necessary implementation schedule (3 copies).

8. For CHANGES IN HAZARDOUS SUBSTANCES STORED (check all that apply):
   a. ☐ Temporary Closure (12 month maximum time – see N.J.A.C. 7:14B-9.1(b)). Remove all hazardous substances; leave tank in place.
   b. ☐ Change in service from a regulated substance to a non-regulated substance. Tank must be cleaned and site assessment performed per N.J.A.C. 7:14B-9.1(e).
   c. ☐ Changes in service from one regulated hazardous substance to another regulated hazardous substance.
      Tank No. _____ Old _____ New _____
      Tank No. _____ Old _____ New _____
      Tank No. _____ Old _____ New _____
      (Attach additional sheets if more space is needed)

9. For TRANSFER OF OWNERSHIP:
   a. New Owner (operator) _____
   b. New Facility Name _____
      _____
      _____ NJ _____
      _____
      County
   c. Closing Attorney _____ Tele: (____) _____ – _____

10. For SUBSTANTIAL MODIFICATIONS (to include any retrofitted activity – e.g. the addition of spill/overfill protection, monitoring systems, cathodic protection, etc.):
   a. Type of Modification _____
   b. * NOTE * Substantial modifications require a permit under N.J.A.C. 7:14B-10.

11. For changes in FINANCIAL RESPONSIBILITY to (check appropriate changes and attach copies of new information):
   a. Policy Type: ☐
   b. Policy Number: ☐
   c. Other: ☐
   d. Company/Carrier: ☐
   e. Expiration Date: ☐

   _____
   _____
   _____
   (Specify)

NOTE: ALL appropriate and applicable permits, licenses and certificates required by the above activity(ies) from any local, state and/or federal agencies must be obtained separately from this notification.

CERTIFICATION

"*This registration form shall be signed by the highest ranking individual at the facility with overall responsibility for that facility (N.J.A.C. 7:14B-2.3 (a) 1).*"

"I certify under penalty of law that the information provided in this document is true, accurate and complete. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate or incomplete information, including fines and/or imprisonment."

Signature: Peter DeClaRosa Sr.

Name (print or type): PETER DECLAROSA SR.

Title: TERMINAL MANAGER Date: APRIL 24 1992

ROADWAY EXPRESS INC.
650 COMMERCIAL AVE.
CARLSSTADT, NEW JERSEY 07072
FACILITY REGISTRATION #0006013

SITE ASSESSMENT PLAN

A SITE ASSESSMENT WILL BE PERFORMED TO DETERMINE WHETHER THE PRESENCE OF CONTAMINATION EXISTS, DUE TO A RELEASE FROM THE SAID TANK SYSTEM. THE AREA IN AND AROUND TANK EXCAVATION, AND WHERE ADJACENT PIPING RUNS, IF APPLICABLE, WILL BE ASSESSED FOR THE PRESENCE OF CONTAMINATION. THE PROCEDURE FOR ASSESSMENT WILL BE AS FOLLOWS:

1. VISUAL OBSERVATION WILL BE USED DURING THE TANK AND RELATED PIPING REMOVAL TO DETERMINE ANY PRODUCT ODORS, STAINED SOILS, AND/OR FREE PRODUCT.

2. A FIELD TEST WILL BE CONDUCTED ON RELATED SOILS USING BOTH THE SOIL/WATER AGITATION TEST AND A FIELD SORPTION TEST AS DESCRIBED IN APPENDIX 1 OF THE INTERIM CLOSURE REQUIREMENTS FOR UNDERGROUND STORAGE TANK SYSTEM.

3. A SITE SURVEY WILL BE CONDUCTED USING A HNu, PHOTOIONIZATION DETECTOR, TO SCREEN FOR THE PRESENCE OF CONTAMINATION AND LOCATE ANY "HOT SPOTS". THIS METHOD USED, ALONG WITH FIELD PROCEDURES AND INSTRUMENT CALIBRATION METHODS WILL BE DOCUMENTED.

4. ASSUMING NO GROUND WATER IS ENCOUNTERED OR EVIDENT, THREE (3) SOIL SAMPLES IN TANK EXCAVATION AND ONE (1) IN RELATED PIPING AREA WILL BE TAKEN AS DESCRIBED BELOW.

   A. SAMPLES WILL BE TAKEN AT THE SIDES AND ENDS AND ALONG THE CENTERLINE OF THE TANK OUTLINE WITHIN THE EXCAVATION.
   B. ALL SAMPLES WILL BE TAKEN IN THE NATIVE SOIL BELOW THE BEDDING MATERIAL.

ATTACHMENT N

Remedial Action Workplan dated January, 1997

By Geraghty & Miller, Inc.

REMEDIAL ACTION WORKPLAN
ROADWAY EXPRESS, INC.
CARLSTADT, NEW JERSEY

January 1997

Prepared for:

Roadway Express, Inc.
1077 Gorge Boulevard
Akron, Ohio 44309-0471

Prepared by:

Geraghty & Miller, Inc.
3000 Cabot Boulevard West, Suite 3004
Langhorne, Pennsylvania 19047
(215) 752-6840

REMEDIAL ACTION WORKPLAN
ROADWAY EXPRESS, INC.
CARLSTADT, NEW JERSEY

January 1997

Prepared by GERAGHTY & MILLER, INC.

Douglas Dubrosky
Staff Scientist

Peter N. Milionis
Associate

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2. Summary of Soil Analytical Results for Samples Collected During September 1996 from Area 2 at Roadway Express Inc., Carlstadt, New Jersey.

3. Water-Level Elevations Collected on October 15, 1996 at Roadway Express, Inc., Carlstadt, New Jersey.

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5. Summary of Volatile Organic Compound Analytical Results for Groundwater Samples Collected on October 15, 1996 at Roadway Express Inc., Carlstadt, New Jersey.

6. Summary of Base Neutral Extractable Compound Analytical Results for Groundwater Samples Collected on October 15, 1996 at Roadway Express Inc., Carlstadt, New Jersey.

7. Summary of Metals and Polychlorinated Biphenyls Analytical Results for Groundwater Samples Collected on October 15, 1996 at Roadway Express Inc., Carlstadt, New Jersey.

8. Field Parameters Measured During the October 15, 1996 Groundwater Sampling Event at Roadway Express, Inc., Carlstadt, New Jersey.

9. Summary of Metals Analytical Results for Groundwater Samples Collected on December 3, 1996 at Roadway Express Inc., Carlstadt, New Jersey.

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1. Site Location, Roadway Express Inc., Carlstadt, New Jersey.

2. Site Layout, Roadway Express Inc., Carlstadt, New Jersey.

3. Soil Boring Locations, Roadway Express Inc., Carlstadt, New Jersey.

4. Groundwater Elevations, October 15, 1996, Roadway Express Inc., Carlstadt, New Jersey.

5. Groundwater Elevations, December 3, 1996, Roadway Express Inc., Carlstadt, New Jersey.

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A. Soil Boring Logs.

B. Soil Laboratory Analytical Report.

C. Soil Microbial Laboratory Report.

D. Well Construction Logs.

E. NJDEP Form B.

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G. Groundwater Laboratory Analytical Reports.

REMEDIAL ACTION WORKPLAN
ROADWAY EXPRESS INC.
CARLSTADT, NEW JERSEY

INTRODUCTION

The following Remedial Action Workplan (RAW) was prepared by Geraghty & Miller on behalf of Roadway Express, Inc. (Roadway) to satisfy the requirements of the January 22, 1996 letter from the New Jersey Department of Environmental Protection (NJDEP) concerning the Roadway Express, Inc. terminal located at 650 Commercial Avenue in Carlstadt, Bergen County, New Jersey. The facility is located in an area of light industrial manufacturing operations and commercial facilities. The site location is shown on Figure 1.

This RAW was prepared in accordance with the NJDEP Technical Requirements for Site Remediation N.J.A.C. 7:26E (Technical Requirements). The site layout is shown on Figure 2 and shows the two general areas of concern at the site, each having its own NJDEP Bureau of Underground Storage Tanks (BUST) case number. Area 1, identified as NJDEP BUST case number 89-04-17-1356, refers to the former location of four underground storage tanks (USTs) which were located along Commercial Avenue at the northeast corner of the maintenance shop. Area 2, identified as NJDEP BUST case number 92-04-21-1136, refers to the former location of a 550-gallon waste oil UST closed in place beneath the site entrance at the southwestern portion of the site. The two investigation locations are within two hundred feet of each other and on the same property.

SITE HISTORY

AREA 1

In April 1989, Groundwater Technology, Inc. (GTI) removed four underground storage tanks (USTs) from Area 1 at the Roadway Express facility (GTI 1989). These tanks consisted of one 8,000-gallon gear oil UST, one 8,000-gallon motor oil UST, and one 1,000-gallon waste oil

UST. During UST removal activities, a previously unknown 1,000-gallon UST (prior use unknown) was discovered and removed along with the three other USTs. Following the removal of the four USTs, hydrocarbon-impacted soils were observed and were excavated to the extent possible. Excavation was limited in all directions due to the existing building to the northwest, utility lines to the northeast, concrete paving to the southwest and Commercial Avenue to the southeast. Approximately 40 cubic yards of soil were removed from the excavation. Groundwater reportedly entered the excavation during UST removal activities and was observed to have a discontinuous layer of separate phase hydrocarbons floating upon it. Separate phase hydrocarbons were pumped into a vacuum truck from the water surface in the excavation. During the removal activities, the NJDEP was notified about the previously unknown tank and stained soil and a NJDEP BUST case number was assigned (#89-04-17-1356). The excavation was backfilled with pea-gravel and two eight-inch diameter monitoring wells (MW-1 and MW-2) were installed within the excavation to a depth of approximately 15 feet below ground surface. Three post-excavation soil samples were collected from the excavation sidewalls and were analyzed for total petroleum hydrocarbons (TPH) using United States Environmental Protection Agency (USEPA) Methods 418.1, 503D, and 503E. The analytical results for the soil samples indicated TPH at concentrations of 370 milligrams per kilogram (mg/kg), 34,000 mg/kg, and 15,000 mg/kg.

In October 1990, Melick-Tully Environmental, Inc. (Melick-Tully) completed an UST investigation for the four USTs which included an agency file review, a one-mile radius well search, and groundwater sampling from Monitoring Wells MW-1 and MW-2 (Melick-Tully 1990). Groundwater samples were analyzed for volatile organic compounds (VOCs) using USEPA Method 624 plus a library search including methyl-tertiary-butyl-ether (MTBE) and tertiary butyl alcohol (TBA), and base neutral extractable compounds using USEPA Method 625 plus a library search. The only targeted VOC compound detected in the Monitoring Well MW-1 sample was 1,2-dichlorobenzene, at a concentration of 6.1 micrograms per liter (ug/l). The only targeted base neutral compounds detected were 1,2-dichlorobenzene (9.1 ug/l), 1,4-dichlorobenzene (1.4 ug/l), and naphthalene (5.2 ug/l). These compounds were detected at trace concentrations, all significantly below current NJDEP Groundwater Quality Standards (NJDEP 1994). The analytical

results for the Monitoring Well MW-2 sample indicated that no targeted VOCs or base neutral compounds were detected. The compounds MTBE and TBA were not detected in either sample.

Melick-Tully documented the results of a well search which indicated that of the 23 wells located within one mile of the study site, "none of the well records indicate that groundwater is being used for potable purposes in the projected downgradient direction of the facility." Melick-Tully recommended that no further action be taken due to the low levels of VOCs in the groundwater samples and the absence of potable groundwater supply wells with the limits of the well search.

On April 2, 1992, Aaron Environmental Specialists (Aaron) personnel collected a confirmatory round of groundwater samples from Monitoring Wells MW-1 and MW-2 (Aaron 1992a). The groundwater samples were analyzed for VOCs using USEPA Method 624 plus a library search (including xylenes, MTBE, and TBA), and base neutrals using USEPA Method 625 plus a library search. The analytical results indicated that only the targeted compounds chlorobenzene (76 ug/l) and 1,2-dichlorobenzene (16 ug/l) were detected in the sample collected from Monitoring Well MW-1. No target compounds were detected in the sample collected from Monitoring Well MW-2. Aaron recommended that no further actions be conducted concerning the subject UST removals.

AREA 2

On April 20 and April 23, 1992, Aaron abandoned-in-place a 550-gallon waste oil UST and subsequently submitted a closure report in October 1992 (Aaron 1992b). The UST was abandoned-in-place due to its depth below the high water table and difficulties removing the UST from a concrete anchor pad. During initial excavation activities, stained soils were identified around the fill pipe and along the top of the tank. The NJDEP was notified and a BUST case number was assigned (#92-04-21-1136). During field activities, the tank fill pipe was observed to have been modified in the past and physically bolted to the tank top and patched with a fiberglass resin. Approximately 50 to 60 cubic yards of soil were removed from the excavation and stockpiled on-

site. Three soil samples (identified as North, South, and East) were collected from the bottom of the excavation and one soil sample was collected from beneath the tank piping (identified as Pipe-1. All four soil samples were analyzed for TPH using USEPA Method 418.1 and the two samples having the highest TPH concentrations (North and Pipe-1) were also analyzed for VOCs using USEPA Method 624 plus a library search, semi volatile organic compounds using USEPA Method 625 plus a library search, polychlorinated byphenols (PCBs), and priority pollutant metals. TPH concentrations in the four soil samples ranged from 208 mg/kg to 460 mg/kg. The only target compounds detected in the two samples run for VOCs and semi volatile organic compounds were 2-Propanone (0.016 mg/kg), and bis(2-Ethylhexyl)Phthalate (1.6 mg/kg and 2.0 mg/kg). No PCBs were detected in either sample. Antimony was detected at concentrations of 25.6 mg/kg and 74.8 mg/kg and was the only metal detected above the NJDEP Residential Soil Cleanup Criteria of 14 mg/kg.

AREAS 1 AND 2

In March 1993, Aaron completed a Remedial Investigation Report documenting site investigation and remedial investigation activities associated with former USTs in both Area 1 (NJDEP BUST Case #89-04-17-1356) and Area 2 (NJDEP BUST Case #92-04-21-1136) (Aaron 1993). On February 4, 1993, Aaron installed Monitoring Wells MW-A and MW-B near the former 550-gallon waste oil UST (Area 2), sampled all four on-site monitoring wells, and completed soil borings in the area of the four previously removed USTs (Area 1). Soil samples collected during the installation of Monitoring Wells MW-A and MW-B, and groundwater samples collected from Monitoring Wells MW-A and MW-B indicate that antimony was not detected. Cadmium was detected above applicable NJDEP cleanup criteria in soil samples collected in Area 1 and Area 2. Cadmium, lead, mercury, selenium, and PCB 1248 were detected above applicable NJDEP cleanup criteria in groundwater samples collected from Monitoring Wells MW-A and MW-B near Area 2. Chlorobenzene was detected in the groundwater sample collected from Monitoring Well MW-1 (Area 1) at a concentration which exceeded NJDEP Groundwater Standard of 50 ug/l.

AREA AND SITE CHARACTERIZATION

Roadway Express Inc. operates the Carlstadt site as a freight transfer facility. Refueling and maintenance of trucks are conducted at the facility maintenance shop. This maintenance shop, which is shared by Ryder Truck Rental, is shown on Figure 2. The site is surrounded by a variety of commercial and light industrial properties. Due to the shallow water table (2 to 3 feet below ground surface), buildings in the area do not have basements.

The United States Geological Survey (USGS) Weehawken, New Jersey-New York Quadrangle, dated 1967 (photorevised 1981) was reviewed to determine the geographical features at and around the subject property. The Roadway site is a relatively flat, filled area and lies at an approximate elevation of 10 feet above mean sea level. Based on topographic data the direction of surface runoff is towards Eight Day Swamp and Berry's Creek, which are located approximately 3,500 feet to the southwest. Surface drainage at the site is directed toward storm sewers located throughout the property.

According to a NJDEP well records search performed in 1993, there are no known potable water wells within a one half-mile radius of the site (Aaron 1993). Potable water is supplied to the site by United Water of New Jersey.

REGIONAL/SITE GEOLOGY

The Roadway Express facility is located within the tidal Hackensack Meadows section of the Hackensack River basin in the Piedmont Province of the Appalachian Highlands. The Hackensack River basin at the site is bounded by the Palisades Diabase to the east and Laurel Hill to the west. The bedrock in the area is composed of predominantly sandstone, mudstone, and conglomerate of the Brunswick Formation.

Based on the soils encountered during the soil boring and monitoring well installation programs, the geology of the site consists of gravel fill material that extends from ground surface to

depths of 1 to 2 feet below ground surface. From 2 feet to approximately 7 feet below ground surface, the fill material is medium to fine-grained gray and reddish-brown silty sands interbedded with layers of higher clay content unconsolidated materials. A layer of gray clay is encountered at depths ranging from 7 to 9 feet below ground surface and extends to at least 18 feet below ground surface.

SOIL

In response to the NJDEP's January 22, 1996 letter to Roadway, Geraghty & Miller conducted a soil boring and sampling program and a soil microbial evaluation at the site in September 1996.

SOIL BORING AND SAMPLING PROGRAM

In September 1996, Geraghty & Miller conducted a soil boring and sampling program at the site in accordance with NJDEP protocol. The soil boring and sampling program was conducted to delineate the extent of petroleum hydrocarbons near the four former USTs (Area 1) and near the former 550-gallon waste oil UST (Area 2).

Area 1

On September 16 and 17, 1996, 11 soil borings (B-1 through B-11) were advanced in Area 1 using a hollow-stem auger by Uni-Tech Drilling, Inc. of Malaga, New Jersey. The locations of the soil borings are shown on Figure 3. Continuous split-spoon samples were collected from approximately 1 foot below ground surface to depths ranging from 13 to 19 feet below ground surface. The split-spoon samples were geologically characterized and logged, and field screened for total volatile organics with a photoionization detector (PID). Sample core logs were completed for each boring and are presented in Appendix A. The sample interval having the highest PID reading was submitted for laboratory analysis. If no PID readings were detected in a given soil boring, the sample interval at the groundwater-soil interface was submitted for laboratory analysis.

Additional soil samples from the 10 to 10.5-foot intervals from Soil Borings B-2, B-8, B-9, and B-11 were also submitted for laboratory analysis to aid in vertical delineation. The placement of soil borings around the former UST excavation was restricted by the presence of underground utilities to the north and east, the maintenance shop to the west, and Commercial Avenue to the southeast. Groundwater was encountered in the borings at depths ranging from 2 to 4 feet below ground surface. PID readings from samples in Soil Borings B-1 through B-11 and ranged from 0 parts per million (ppm) to 20 ppm.

A total of 14 soil samples were collected and submitted from the 11 soil borings. The soil samples were submitted to Columbia Analytical Services of Rochester, New York and analyzed for TPH by Method 418.1. Three soil samples having the highest TPH concentrations (B-4, B-9, and B-11) were also analyzed for polynuclear-aromatic hydrocarbons (PAH) by USEPA Method 8270. Five soil samples, B-1, B-2, B-3, B-4, and B-5, were analyzed for cadmium by using SW-846 ICP Method 6010. The complete laboratory report for the soil samples is provided in Appendix B.

A summary of the laboratory analytical results for the soil samples collected in Area 1 are presented in Table 1. TPH concentrations ranged from 72.9 mg/kg in Sample B-2B to 5,290 mg/kg in Sample B-11. TPH were not detected in Soil Samples B-5, B-6, B-7, and B-11B, and PAH were not detected in soil samples B-4 and B-11. Naphthalene was detected in Soil Sample B-9 at a concentration of 8.10 mg/kg. Fluorene and phenanthrene were detected below method detection limits in Soil Sample B-9 at estimated concentrations of 0.96 mg/kg and 2.40 mg/kg, respectively. Cadmium was not detected in any soil samples collected in Area 1.

The proposed NJDEP Soil Cleanup Criteria and guidance level for the compounds analyzed are listed in Table 1 for comparison purposes. No analytical results for soil samples collected in Area 1 were above applicable NJDEP Soil Cleanup Criteria.

Area 2

On September 18, 1996, 5 soil borings (B-12 through B-16) were advanced using a hollow-stem auger near the former 550-gallon waste oil UST (Area 2). The locations of the soil borings are shown on Figure 3. Continuous split-spoon samples were collected from approximately 1 foot below ground surface to depths ranging from 13 to 15 feet below ground surface.

Seventeen soil samples were collected from the 5 soil borings completed in Area 2. The soil samples were collected from three intervals: 3.5 to 4.0 feet below ground surface (ft bgs); 8.0 to 8.5 ft bgs; and 12.0 to 12.5 ft bgs. In Soil Borings 14 and 16, soil samples were also collected from the 14.0 to 14.5 ft bgs interval. Soil samples were analyzed by Columbia Analytical Services for antimony and cadmium using SW-846 ICP by USEPA Method 6010 and the analytical results are presented on Table 2. Antimony was not detected in nine of the seventeen soil samples: Soil Samples B-12 (3.5-4.0), B-13 (3.5-4.0), B-14 (3.5-4.0), B-14 (8.0-8.5), B-14B (12.0-12.5), B-15 (3.5-4.0), B-16 (3.5-4.0), B-16B (12.0-12.5), and B-16C (14.0-14.5). Antimony was detected in eight of the seventeen soil samples at concentrations ranging from 16.8 mg/kg in soil sample B-14C (14.0-14.5) to 27.3 mg/kg in soil sample B-12B (12.0-12.5). The concentrations of antimony in these eight samples were far below the NJDEP Non-Residential Soil Cleanup Criteria of 340 mg/kg. However, the concentrations of antimony exceeded the proposed NJDEP Residential Soil Cleanup Standard of 14.0 mg/kg. Cadmium was not detected in any of the soil samples.

SOIL DELINEATION

Area 1

Based on soil screening data, field observations, and laboratory analytical results for soil samples, TPH concentrations in soils in Area 1 are below the NJDEP guidance level of 10,000 mg/kg. Cadmium was not detected in any soil samples collected in Area 1.

Area 2

The concentrations of antimony in soils in Area 2 exceed the NJDEP Residential Soil Cleanup Criteria in at least one sample interval from each of the borings and do not correlate with distance from the former waste oil UST. The concentrations of antimony in all soil samples collected at the site are far below the NJDEP Non-Residential Soil Cleanup Criteria. Cadmium was not detected in any soil samples collected in Area 2.

SOIL MICROBIAL EVALUATION

Two soil samples (AREA-1 and AREA-2) were collected during the soil boring and sampling program from the saturated zone for microbial evaluation. Although the concentrations of TPH in soil samples are below the TPH guidance level, these samples were collected to document the soil at the site contains heterotrophic microbial populations that will effectively degrade the low-level residual TPH. The samples were submitted to Acurex Environmental Corporation Treatability Laboratory in Durham, North Carolina. The laboratory report from Acurex Environmental is provided in Appendix C.

The results of the soil microbial evaluation indicate that substantial populations of heterotrophic bacteria exist in both Area 1 and Area 2. Respiration rates were measured in both the Area-1 and Area-2 samples and indicated that natural attenuation is a viable option for soil remediation at the site. The large heterotrophic microbial populations detected in both soil samples generally indicate that site soils are microbially diverse and, thus are amenable to biodegradation. Based on the respirometry results, these data suggest that the microbial populations have the ability to utilize oxygen as an electron acceptor under aerobic conditions, and nitrate, iron, and sulfate as electron acceptors under anaerobic conditions (Acurex 1996).

GROUNDWATER

In accordance with the January 22, 1996 NJDEP letter to Roadway, Monitoring Well MW-C was installed in Area 2 to delineate the extent of metals and PCBs in groundwater in this area of the site.

MONITORING WELL INSTALLATION

On September 19, 1996, a driller in the employ of Uni-Tech Drilling, Inc. installed Monitoring Well MW-C, under the supervision of a Geraghty & Miller hydrogeologist, approximately 30 feet south of Monitoring Well MW-A. The location of Monitoring Well MW-C was affected by the presence of overhead lines and numerous underground utilities just south of the well.

Monitoring Well MW-C is constructed of four-inch diameter Schedule 40 PVC using a 10-foot long, 0.010-inch slot well screen and 5 foot-long casing. The well screen in the well was installed to intersect the groundwater table and to allow for water level fluctuations within the well. Filter pack (clean silica sand) was installed around the well above the screen. A bentonite seal was placed above the filter pack and the remainder of the borehole annulus was filled to the ground surface with a cement/bentonite mixture. The well was completed with a lockable water-tight cap, and a flush-mounted, steel protective cover was placed over the well casings and set into the cement grout. Following installation, Monitoring Well MW-C was developed to remove the fine-grained sediments that were introduced into the well screen and filter pack during the drilling and well installation process. A well construction log for Monitoring Well MW-C is presented in Appendix D.

A professional surveyor, in the employ of Robert W. Ent, Inc., of Stockton, New Jersey, surveyed the recently installed Monitoring Well MW-C, the four existing site monitoring wells, the soil boring locations, excavation scars, buildings, and the locations of the utility mark-outs at the facility. The elevations at the top of the well casings were surveyed to the nearest hundredth

of a foot relative to mean sea level. Copies of the NJDEP Form B for the site monitoring wells are provided in Appendix E.

GROUNDWATER FLOW

Five monitoring wells (MW-1, MW-2, MW-A, MW-B, and MW-C) exist at the site and are shown on Figure 4. Depth-to-water measurements were collected from all five site monitoring wells on October 15, 1996, and on December 3, 1996, and are summarized in Tables 3 and 4, respectively. The calculated water-level elevations in site monitoring wells ranged from 1.20 feet above mean sea level (ft amsl) in Monitoring Well MW-A to 3.14 ft amsl in Monitoring Well MW-1 on October 15, 1996. The calculated water-level elevations in site monitoring wells ranged from 2.00 ft below mean sea level in Monitoring Well MW-C to 3.28 ft amsl in Monitoring Well MW-1 on December 3, 1996. No separate-phase hydrocarbons were detected in any of the site monitoring wells; separate-phase hydrocarbons have historically not been detected in the monitoring wells

Figure 4 is a groundwater elevation contour map constructed from the October 15, 1996 water-level elevation data. Based on the elevation contours shown on Figure 4, shallow groundwater flow direction at the site appears to be towards the south-southwest. Figure 5 is a groundwater elevation contour map constructed from the December 3, 1996 water-level elevation data. Based on the elevation contours shown on Figure 5, shallow groundwater flow direction at the site appears to be towards the south. Appendix F contains the contour map reporting forms for Figures 4 and 5. Monitoring Wells MW-1 and MW-2 are constructed within the former UST excavation in Area 1 and the backfill material used to fill this excavation is more permeable than natural material on-site. Therefore, these monitoring wells may not represent the true groundwater elevations, and have historically exhibited significantly higher groundwater elevations compared to the monitoring wells in Area 2.

GROUNDWATER QUALITY

On October 15, 1996, groundwater samples were collected from the five on-site monitoring wells. Prior to the collection of samples, the monitoring wells were purged of three to five well volumes of water where possible, to ensure the collection of representative groundwater samples. Groundwater samples were collected using dedicated disposable bailers. Samples were collected into clean laboratory-supplied containers and maintained at 4-degrees Celsius. Samples were shipped by a common carrier to Columbia Analytical Services for analysis.

The groundwater analytical results for VOCs, base neutral extractable compounds, and metals and PCBs are presented in Tables 5, 6, and 7, respectively. Measurements of field parameters such as pH, temperature, specific conductance, oxidation/reduction potential (REDOX), and dissolved oxygen were collected during groundwater sampling and are summarized in Table 8. Appendix G contains the complete laboratory analytical report for groundwater sampling.

Volatile Organic Compounds

Groundwater samples collected from Monitoring Wells MW-1, MW-2, and MW-C were analyzed for VOCs using USEPA Method 624. The laboratory analytical results indicate target VOCs were not detected in the groundwater samples collected from Monitoring Wells MW-2 and MW-C. Chlorobenzene was the only VOC detected in the sample collected from Monitoring Well MW-1, at a concentration of 40 micrograms per liter (ug/L). This concentration is below the proposed NJDEP Groundwater Quality Standard for chlorobenzene of 50 ug/l.

Base Neutral Compounds

The groundwater sample collected from Monitoring Well MW-C was analyzed for base neutral extractable compounds using USEPA Method 625. No target base neutral compounds were detected in the groundwater sample.

Priority Pollutant Metals

Groundwater samples collected from Monitoring Wells MW-A, MW-B, and MW-C were analyzed for priority pollutant metals using USEPA Methods 200.7/245.1. The laboratory analytical results indicate that arsenic, cadmium, and lead were detected at concentrations above NJDEP Groundwater Quality Standards in the groundwater sample collected from Monitoring Well MW-B. Arsenic and lead were detected at concentrations above NJDEP Groundwater Quality Standards in the groundwater sample collected from Monitoring Well MW-C. No priority pollutant metals were detected above NJDEP Groundwater Quality Standards in the groundwater sample collected from Monitoring Well MW-A. The groundwater samples collected from Monitoring Wells MW-B and MW-C were described as slightly turbid/light gray and turbid/light brown, respectively. Whereas the groundwater sample collected from Monitoring Well MW-A was described as clear.

Polychlorinated Biphenyls

PCBs were not detected in the groundwater samples collected from Monitoring Wells MW-A, MW-B, and MW-C on October 15, 1996.

ADDITIONAL GROUNDWATER SAMPLING FOR SELECT METALS

On December 3, 1996, Geraghty & Miller resampled Monitoring Wells MW-B and MW-C in an effort to obtain relatively non-turbid groundwater samples. Before these wells were sampled, both monitoring wells were redeveloped using a surge block and a centrifugal pump. After redevelopment, the monitoring wells were purged using a centrifugal pump to remove suspended sediment in the well and allowed to recover. Then, each well was purged very slowly using a peristaltic pump in an effort to obtain representative groundwater samples with as little turbidity as possible. Both filtered and unfiltered groundwater samples were collected and shipped by a common carrier to Columbia Analytical Services for dissolved and total metals analysis for arsenic, cadmium, and lead.

The analytical results for the December 3, 1996 groundwater sampling event are shown on Table 9. Arsenic and lead were not detected in the filtered or unfiltered samples collected from Monitoring Well MW-C. Cadmium and lead were not detected in the filtered or unfiltered samples collected from Monitoring Well MW-B. Arsenic was detected at concentrations of 10.6 ug/kg in the filtered groundwater sample collected from Monitoring Well MW-B, and 13.5 ug/kg in the unfiltered groundwater sample collected from Monitoring Well MW-B, both slightly exceeding the NJDEP Groundwater Standard for arsenic of 8 ug/kg.

GROUNDWATER DELINEATION

Historical Groundwater Sampling Results

Historically, Monitoring Wells MW-1 and MW-2 were sampled three times; July 16, 1990, April 2, 1992, and February 18, 1993. Chlorobenzene is the only VOC or base neutral compound historically detected above applicable NJDEP Groundwater Quality Standards in groundwater samples collected from Monitoring Well MW-1. Chlorobenzene was detected at a concentration of 76 ug/L in April 1992, and at a concentration of 150 ug/L on February 1993. No compounds having concentrations in excess of applicable NJDEP Groundwater Quality Standards have historically been detected in Monitoring Well MW-2.

Monitoring Wells MW-A and MW-B were sampled only once before, on February 18, 1993. Volatile and semi-volatile organic compounds were not detected at concentrations above applicable NJDEP Groundwater Quality Standards in groundwater samples collected from Monitoring Wells MW-A and MW-B. The priority pollutant metals results for groundwater samples collected from Monitoring Wells MW-A and MW-B indicated that cadmium, lead, mercury, and selenium were detected above NJDEP Groundwater Quality Standards. In addition, PCB 1248 was detected above NJDEP Groundwater Quality Standards in both the Monitoring Well MW-A and MW-B samples.

Recent Groundwater Sampling Results

There were no VOCs, base neutral extractable compounds, or PCBs detected at concentrations above applicable NJDEP Groundwater Quality Standards in groundwater samples collected at the site on October 15, 1996. The only parameters detected above applicable NJDEP Groundwater Quality Standards were arsenic and lead in groundwater samples collected from Monitoring Wells MW-B and MW-C and cadmium in the groundwater sample collected from Monitoring Well MW-B. These parameters were not detected in the groundwater sample collected from Monitoring Well MW-A, which is actually the closest downgradient well to the former UST excavation. Furthermore, the samples from Monitoring Wells MW-B and MW-C were both turbid whereas the sample from Monitoring Well MW-A was clear.

Relatively non-turbid groundwater samples were collected from Monitoring Wells MW-B and MW-C on December 3, 1996 and cadmium and lead were not detected in either filtered or unfiltered samples from these two wells. Arsenic was not detected in either the filtered or unfiltered groundwater samples collected from Monitoring Well MW-C. Arsenic was detected in both the filtered and unfiltered groundwater samples collected from Monitoring Well MW-B at concentrations slightly above NJDEP Groundwater Quality Standards. Based on the December 3, 1996 groundwater analytical data, the concentrations of arsenic, cadmium, and lead detected in the October 15, 1996 groundwater samples were likely attributed to suspended sediment in the groundwater samples. Monitoring Well MW-B is upgradient of the former waste-oil UST and the isolated occurrence of arsenic in this well appears to be unrelated to the former UST.

PROPOSED REMEDIAL ACTION PLAN

Based on the findings of the soil and groundwater investigations conducted at the site, no further action is proposed for the site. This proposal is based on the following findings:

SOIL

- During UST closure activities, soils were removed from Areas 1 and 2.
- TPH concentrations in all soil samples collected in Area 1 are below the NJDEP guidance level of 10,000 mg/kg.
- Cadmium was not detected in any soil samples collected in Area 1 or Area 2.
- The concentrations of antimony in soils in Area 2 exceed the NJDEP Residential Soil Cleanup Criteria. However, the concentrations of antimony in all soil samples collected at the site are an order of magnitude below the NJDEP Non-Residential Soil Cleanup Criteria, and it is Roadway's intention to implement the appropriate institutional control, in the form of a Declaration of Environmental Restriction (DER), for the purposes of applying Non-Residential Soil Cleanup Criteria at the site.

GROUNDWATER

- Free product has never been observed in any of the monitoring wells at the site.
- There were no VOCs, base neutral extractable compounds, or PCBs detected at concentrations above applicable NJDEP Groundwater Quality Standards in groundwater samples collected at the site on October 15, 1996.
- Cadmium was detected at a concentration above applicable NJDEP Groundwater Quality Standards in the groundwater sample collected from Monitoring Wells MW-B on October 15, 1996. However, the sample was turbid, and during a subsequent groundwater sampling event conducted on December 3, 1996, cadmium was not detected in a relatively non-turbid groundwater sample collected from Monitoring Well MW-B.
- Lead was detected at concentrations above applicable NJDEP Groundwater Quality Standards in groundwater samples collected from Monitoring Wells MW-B and MW-C on October 15, 1996. However, the samples from these wells were turbid, and during a subsequent groundwater sampling event conducted on December 3, 1996, lead was not detected in

relatively non-turbid groundwater samples collected from Monitoring Wells MW-B and MW-C.

- Arsenic was detected at concentrations above applicable NJDEP Groundwater Quality Standards in groundwater samples collected from Monitoring Wells MW-B and MW-C on October 15, 1996. However, the samples from these wells were turbid, and during a subsequent groundwater sampling event conducted on December 3, 1996, arsenic was only detected in the Monitoring Well MW-B sample, at a concentration slightly above NJDEP Groundwater Quality Standards. Arsenic was not detected in the groundwater sample collected from Monitoring Well MW-C, which is located downgradient of the former waste-oil UST. Arsenic was not detected in the October 15, 1996 groundwater sample collected from Monitoring Well MW-A which is also located downgradient of the former waste-oil UST. Monitoring Well MW-B is upgradient of the former waste-oil UST location and the isolated occurrence of arsenic in Monitoring Well MW-B appears to be unrelated to the former waste-oil UST.
- There are no known potable wells located within a one half-mile radius of the site.

REMEDIAL ACTION SUMMARY

No further action is proposed for the site. Concentrations of arsenic in groundwater samples collected from Monitoring Well MW-B are slightly above NJDEP Groundwater Quality Standards, but appear to be unrelated to the former waste-oil UST. Antimony concentrations in soil samples were above NJDEP Residential Soil Cleanup Criteria, however a DER will be pursued for the site to apply NJDEP Non-Residential Soil Cleanup Criteria. Concentrations of antimony in soil samples are an order of magnitude below the NJDEP Non-Residential Soil Cleanup Criteria.

REFERENCES

Aaron Environmental Specialists. 1992a. Evaluation of Subsurface Conditions, 2nd Round Sampling & Analysis, Ryder Truck Terminal, Carlstadt, New Jersey, April 29, 1992.

Aaron Environmental Specialists. 1992b. Underground Storage Tank Closure Project, Roadway Express, Inc., Carlstadt, New Jersey, October 7, 1992.

Aaron Environmental Specialists. 1993. Site/Remedial Investigation Report, Roadway Express, Inc., 650 Commercial Avenue, Carlstadt, New Jersey, March 31, 1993.

Acurex Environmental Corporation. 1996. Microbial Evaluation, Roadway Express Site, October 15, 1996.

Groundwater Technology, Inc. 1989. Project Report, Removal and Disposal of Four Underground Storage Tanks from the Roadway Express, Inc. Ryder Shop, 650 Commercial Avenue, Carlstadt, New Jersey, July 13, 1989.

Melick-Tully Environmental, Inc. 1990. Report on Underground Storage Tank Investigation, Ryder Trucking Terminal, Carlstadt, New Jersey, Roadway Services, Inc., October 17, 1990.

New Jersey Department of Environmental Protection. 1996. Site Remediation News, v. 8, no. 1.

New Jersey Department of Environmental Protection. 1994. Memorandum from M. Kenney (Bureau of State Case Management) Re: Interim Generic Groundwater Quality Criteria, October 27, 1994.

Sarnas, J. 1996., Kearny Department of Health. Personal Communication with Douglas Schaible, Geraghty & Miller, Inc., March 12, 1996.

United States Geological Survey (USGS) Weehawken, New Jersey-New York Quadrangle, 7.5 Minute Series (Topographic), 1967 (photorevised 1981).

Wiedemeier, T.H., J.T. Wilson, R.N. Miller, and D.H. Kampbell. 1994. "United States Air Force Guidelines for Successfully Supporting Intrinsic Remediation with an Example from Hill Air Force Base", 1994 NWWA/API Outdoor Action Conference.

Table 1. Summary of Soil Analytical Results for Samples Collected on September 16 through September 18, 1996 from Area 1, Roadway Express Inc., Carlstadt, New Jersey.

Sample ID:	B-1	B-2	B-2B	B-3	B-4	NJDEP Soil Cleanup Standards[1]
Sample Depth (ft bgs):	(2.0 - 2.5)	(2.0 - 2.5)	(10.0 - 10.5)	(2.0 - 2.5)	(2.0 - 2.5)	
Polynuclear Aromatic Hydrocarbons (mg/kg):						
Acenaphthene	NA	NA	NA	NA	ND	100
Acenaphthylene	NA	NA	NA	NA	ND	NS
Anthracene	NA	NA	NA	NA	ND	100
Benzo (a) Anthracene	NA	NA	NA	NA	ND	0.9
Benzo (a) Pyrene	NA	NA	NA	NA	ND	0.66
Benzo (b) Fluoranthene	NA	NA	NA	NA	ND	0.9
Benzo (g,h,i) Perylene	NA	NA	NA	NA	ND	NS
Benzo (k) Fluoranthene	NA	NA	NA	NA	ND	0.9
Indeno (1,2,3-CD) Pyrene	NA	NA	NA	NA	ND	0.9
Chrysene	NA	NA	NA	NA	ND	9
Dibenz (a,h) Anthracene	NA	NA	NA	NA	ND	0.66
Fluoranthene	NA	NA	NA	NA	ND	100
Fluorene	NA	NA	NA	NA	ND	100
Naphthalene	NA	NA	NA	NA	ND	100
Phenanthrene	NA	NA	NA	NA	ND	NS
Pyrene	NA	NA	NA	NA	ND	100
Total Petroleum Hydrocarbons (mg/kg):	154	1,210	72.9	951	3,000	10,000[2]
Metals (mg/kg):						
Cadmium	ND	ND	NA	ND	ND	1

mg/kg Milligrams per kilogram; equivalent to parts per million.
ft bgs Feet below ground surface.
NA Not analyzed.
ND Not detected.
NS No standard.
1 Proposed New Jersey Department of Environmental Protection (NJDEP) Soil Cleanup Criteria, February 3, 1994. Most stringent standard used.
2 NJDEP guidance level.

Table 1. Summary of Soil Analytical Results for Samples Collected on September 16 through September 18, 1996 from Area 1, Roadway Express Inc., Carlstadt, New Jersey.

Sample ID:	B-5	B-6	B-7	B-8	B-8B	NJDEP Soil Cleanup Standards[1]
Sample Depth (ft bgs):	(4.0 - 4.5)	(4.0 - 4.5)	(2.5 - 3.0)	(4.0 - 4.5)	(10.0 - 10.5)	
Polynuclear Aromatic Hydrocarbons (mg/kg):						
Acenaphthene	NA	NA	NA	NA	NA	100
Acenaphthylene	NA	NA	NA	NA	NA	NS
Anthracene	NA	NA	NA	NA	NA	100
Benzo (a) Anthracene	NA	NA	NA	NA	NA	0.9
Benzo (a) Pyrene	NA	NA	NA	NA	NA	0.66
Benzo (b) Fluoranthene	NA	NA	NA	NA	NA	0.9
Benzo (g,h,i) Perylene	NA	NA	NA	NA	NA	NS
Benzo (k) Fluoranthene	NA	NA	NA	NA	NA	0.9
Indeno (1,2,3-CD) Pyrene	NA	NA	NA	NA	NA	0.9
Chrysene	NA	NA	NA	NA	NA	9
Dibenz (a,h) Anthracene	NA	NA	NA	NA	NA	0.66
Fluoranthene	NA	NA	NA	NA	NA	100
Fluorene	NA	NA	NA	NA	NA	100
Naphthalene	NA	NA	NA	NA	NA	100
Phenanthrene	NA	NA	NA	NA	NA	NS
Pyrene	NA	NA	NA	NA	NA	100
Total Petroleum Hydrocarbons (mg/kg):	ND	ND	ND	1,280	1,040	10,000[2]
Metals (mg/kg):						
Cadmium	ND	NA	NA	NA	NA	1

mg/kg Milligrams per kilogram; equivalent to parts per million.
ft bgs Feet below ground surface.
NA Not analyzed.
ND Not detected.
NS No standard.
[1] Proposed New Jersey Department of Environmental Protection (NJDEP) Soil Cleanup Criteria, February 3, 1994. Most stringent standard used.
[2] NJDEP guidance level.

Table 1. Summary of Soil Analytical Results for Samples Collected on September 16 through September 18, 1996 from Area 1, Roadway Express Inc., Carlstadt, New Jersey.

Sample ID:	B-9	B-10	B-11	B-11B	NJDEP Soil Cleanup Standards[1]
Sample Depth (ft bgs):	(10.0 - 10.5)	(4.0 - 4.5)	(4.0 - 4.5)	(10.0 - 10.5)	
Polynuclear Aromatic Hydrocarbons (mg/kg):					
Acenaphthene	ND	NA	ND	NA	100
Acenaphthylene	ND	NA	ND	NA	NS
Anthracene	ND	NA	ND	NA	100
Benzo (a) Anthracene	ND	NA	ND	NA	0.9
Benzo (a) Pyrene	ND	NA	ND	NA	0.66
Benzo (b) Fluoranthene	ND	NA	ND	NA	0.9
Benzo (g,h,i) Perylene	ND	NA	ND	NA	NS
Benzo (k) Fluoranthene	ND	NA	ND	NA	0.9
Indeno (1,2,3-CD) Pyrene	ND	NA	ND	NA	0.9
Chrysene	ND	NA	ND	NA	9
Dibenz (a,h) Anthracene	ND	NA	ND	NA	0.66
Fluoranthene	ND	NA	ND	NA	100
Fluorene	0.96 J	NA	ND	NA	100
Naphthalene	8.10	NA	ND	NA	100
Phenanthrene	2.40 J	NA	ND	NA	NS
Pyrene	ND	NA	ND	NA	100
Total Petroleum Hydrocarbons (mg/kg):	3,740	1,080	5,210/5,290	ND	10,000[2]
Metals (mg/kg):					
Cadmium	NA	NA	NA	NA	1

mg/kg Milligrams per kilogram; equivalent to parts per million.
ft bgs Feet below ground surface.
NA Not analyzed.
ND Not detected.
NS No standard.
[1] Proposed New Jersey Department of Environmental Protection (NJDEP) Soil Cleanup Criteria, February 3, 1994. Most stringent standard used.
[2] NJDEP guidance level.

Table 2. Summary of Soil Analytical Results for Samples Collected During September 1996 from Area 2, Roadway Express Inc., Carlstadt, New Jersey.

Sample ID:	B-12(3.5)	B-12	B-12B	B-13(3.5)	B-13	B-13B	B-14(3.5)	B-14	B-14B	NJDEP Soil Cleanup Standards[1]	
Sample Depth (ft bgs):	(3.5 - 4.0)	(8.0 - 8.5)	(12.0 - 12.5)	(3.5 - 4.0)	(8.0 - 8.5)	(12.0 - 12.5)	(3.5 - 4.0)	(8.0 - 8.5)	(12.0 - 12.5)	Residential	Non-Residential
Antimony	ND	26.1	27.3	ND	18.1	21.6	ND	ND	ND	14.0	340
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	100

All concentrations in milligrams per kilogram (mg/kg); equivalent to parts per million.

ND Not detected.

[1] Proposed New Jersey Department of Environmental Protection (NJDEP) Soil Cleanup Criteria, February 3, 1994, Residential Direct Contact Criteria and Non-Residential Direct Contact Criteria.

Table 2. Summary of Soil Analytical Results for Samples Collected during September 1996 from Area 2, Roadway Express Inc., Carlstadt, New Jersey.

Sample ID:	B-14C	B-15(3.5)	B-15	B-15B	B-16(3.5)	B-16	B-16B	B-16C	NJDEP Soil Cleanup Standards[1]	
Sample Depth (ft bgs):	(14.0 - 14.5)	(3.5 - 4.0)	(8.0 - 8.5)	(12.0 - 12.5)	(3.5 - 4.0)	(8.0 - 8.5)	(12.0 - 12.5)	(14.0 - 14.5)	Residential	Non-Residential
Antimony	16.8	ND	21.0	20.8	ND	17.5	ND	ND	14.0	340
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	1	100

All concentrations in milligrams per kilogram (mg/kg); equivalent to parts per million.

ND Not detected.

[1] Proposed New Jersey Department of Environmental Protection (NJDEP) Soil Cleanup Criteria, February 3, 1994, Residential Direct Contact Criteria and Non-Residential Direct Contact Criteria.

Table 3. Water-Level Elevations Collected on October 15, 1996 at Roadway Express Inc., Carlstadt, New Jersey.

Well ID	Top of Casing Elevation (ft amsl)	Depth to Water (ft btoc)	Water-Level Elevation (ft amsl)
MW-1	4.59	1.45	3.14
MW-2	4.79	1.68	3.11
MW-A	4.15	2.95	1.20
MW-B	4.48	2.29	2.19
MW-C	4.44	2.79	1.65

Top of casing elevations based on Robert W. Ent Inc., October 1996 site survey.

ft amsl Feet above mean sea level.

ft btoc Feet below top of casing.

Table 4. Water-Level Elevations Collected on December 3, 1996 at Roadway Express Inc., Carlstadt, New Jersey.

Well ID	Top of Casing Elevation (ft amsl)	Depth to Water (ft btoc)	Water-Level Elevation (ft amsl)
MW-1	4.59	1.31	3.28
MW-2	4.79	1.56	3.23
MW-A	4.15	2.45	1.70
MW-B	4.48	1.61	2.87
MW-C	4.44	6.44	-2.00

Top of casing elevations based on Robert W. Ent Inc., October 1996 site survey.

ft amsl Feet above mean sea level.

ft btoc Feet below top of casing.

Table 5. Summary of Volatile Organic Compound Analytical Results for Groundwater Samples Collected on October 15, 1996 at Roadway Express Inc., Carlstadt, New Jersey.

Parameters: / Well ID:	MW-1	MW-2	MW-C	NJDEP Water Quality Criteria[1]
Acrolein	ND	ND	ND	NS
Acrolonitrile	ND	ND	ND	NS
Benzene	ND	ND	ND	1
Bromodichloromethane	ND	ND	ND	1
Bromoform	ND	ND	ND	4
Bromomethane	ND	ND	ND	10
Carbon tetrachloride	ND	ND	ND	2
Chlorobenzene	40	ND	ND	50
Chloroethane	ND	ND	ND	100
2-Chloroethylvinyl ether	ND	ND	ND	NS
Chloroform	ND	ND	ND	6
Chloromethane	ND	ND	ND	30
Dibromochloromethane	ND	ND	ND	10
1,1-Dichloroethane	ND	ND	ND	70
1,2-Dichloroethane	ND	ND	ND	2
1,1-Dichloroethene	ND	ND	ND	2
trans-1,2-Dichloroethene	ND	ND	ND	100
1,2-Dichloropropane	ND	ND	ND	1
cis-1,3-Dichloropropene	ND	ND	ND	0.02
trans-1,3-Dichloropropene	ND	ND	ND	0.02
Ethylbenzene	ND	ND	ND	700
Methylene chloride	ND	ND	ND	2
1,1,2,2-Tetrachloroethane	ND	ND	ND	2
Tetrachloroethene	ND	ND	ND	1
Toluene	ND	ND	ND	1,000
1,1,1-Trichloroethane	ND	ND	ND	30
1,1,2-Trichloroethane	ND	ND	ND	3
Trichloroethene	ND	ND	ND	1
Trichlorofluoromethane	ND	ND	ND	NS
Vinyl chloride	ND	ND	ND	5

µg/L Micrograms per liter; equivalent to parts per billion.
ND Not detected.
NA Not analyzed.
NS No standard.
[1] New Jersey Administrative Code (N.J.A.C.) 7: 9-6. NJDEP, 1994, Memorandum from M. Kenney (Bureau of State Case Management) Re: Interim Generic Groundwater Quality Criteria, October 27, 1994.

Table 6. Summary of Base Neutral Extractable Compound Analytical Results for Groundwater Samples Collected on October 15, 1996 at Roadway Express Inc., Carlstadt, New Jersey.

Parameters:	Well ID: MW-C	NJDEP Water Quality Criteria[1]
Acenaphthene	ND	400
Acenaphthylene	ND	NS
Anthracene	ND	2,000
Benzidine	ND	NS
Benzo(a)Anthracene	ND	NS
Benzo(a)Pyrene	ND	NS
Benzo(b)Fluoranthene	ND	NS
Benzo(g,h,i)perylene	ND	NS
Benzo(k)Fluoranthene	ND	NS
Butyl benzyl phthalate	ND	100
Di-n-butylphthalate	ND	900
Indeno(l,2,3-c,d)pyrene	ND	NS
Bis(2-chloroethoxy)methane	ND	NS
Bis(2-chloroethyl)ether	ND	10
2-Chloronaphthalene	ND	NS
2,2'-Oxybis(1-Chloropropane)	ND	NS
Chrysene	ND	NS
Dibenz(a,h)anthracene	ND	NS
1,3-Dichlorobenzene	ND	600
1,2-Dichlorobenzene	ND	600
1,4-Dichlorobenzene	ND	75
3,3'-Dichlorobenzidine	ND	60
Diethylphthalate	ND	5,000
Dimethyl phthalate	ND	NS
2,4-Dinitrotoulene	ND	10
2,6-Dinitrotoluene	ND	10
1,2-Diphenylhydrazine	ND	NS
Bis(2-ethylhexyl)phthalate	ND	30
Fluoranthene	ND	300
Fluorene	ND	300

µg/L Micrograms per liter; equivalent to parts per billion.
ND Not detected.
NA Not analyzed.
NS No standard.
[1] New Jersey Administrative Code (N.J.A.C.) 7: 9-6. NJDEP, 1994, Memorandum from M. Kenney (Bureau of State Case Management) Re: Interim Generic Groundwater Quality Criteria, October 27, 1994.

Table 6. Summary of Base Neutral Extractable Compound Analytical Results for Groundwater Samples Collected on October 15, 1996 at Roadway Express Inc., Carlstadt, New Jersey.

Parameters:	Well ID: MW-C	NJDEP Water Quality Criteria[1]
Hexachlorobenzene	ND	10
Hexachlorobutadiene	ND	1
Hexachlorocyclopentadiene	ND	50
Hexachloroethane	ND	10
Isophorone	ND	100
Naphthalene	ND	30
Nitrobenzene	ND	10
N-Nitrosodimethylamine	ND	NS
N-Nitrosodiphenylamine	ND	20
Di-n-octyl phthalate	ND	100
Phenanthrene	ND	100
4-Bromophenyl-phenylether	ND	NS
4-Chlorophenyl-phenylether	ND	NS
N-Nitrosodi-n-propylamine	ND	20
Pyrene	ND	200
1,2,4-Trichlorobenzene	ND	9

µg/L Micrograms per liter; equivalent to parts per billion.
ND Not detected.
NA Not analyzed.
NS No standard.
[1] New Jersey Administrative Code (N.J.A.C.) 7: 9-6. NJDEP, 1994, Memorandum from M. Kenney (Bureau of State Case Management) Re: Interim Generic Groundwater Quality Criteria, October 27, 1994.

Table 7. Summary of Metals and Polychlorinated Biphenyls Analytical Results for Groundwater Samples Collected on October 15, 1996 at Roadway Express Inc., Carlstadt, New Jersey.

Parameters: / Well ID:	MW-A	MW-B	MW-C	NJDEP Water Quality Criteria[1]
Priority Pollutant Metals (µg/L):				
Antimony	ND	ND	ND	20
Arsenic	ND	29.4	15.5	8
Beryllium	ND	ND	ND	20
Cadmium	ND	76.1	ND	4
Chromium	ND	10.6	59.0	100
Copper	ND	54.6	59.9	1,000
Lead	ND	12.7	23.6	10
Mercury	ND	ND	ND	2
Nickel	ND	ND	61.8	100
Selenium	ND	ND	11.8	50
Silver	ND	ND	ND	NS
Thallium	ND	ND	ND	10
Zinc	90	655	174	5,000
Polychlorinated Biphenyls (µg/L):				
PCB 1016	ND	ND	ND	0.5
PCB 1221	ND	ND	ND	0.5
PCB 1232	ND	ND	ND	0.5
PCB 1242	ND	ND	ND	0.5
PCB 1248	ND	ND	ND	0.5
PCB 1254	ND	ND	ND	0.5
PCB 1260	ND	ND	ND	0.5

µg/L Micrograms per liter; equivalent to parts per billion.
ND Not detected.
NA Not analyzed.
NS No standard.
[1] New Jersey Administrative Code (N.J.A.C.) 7: 9-6. NJDEP, 1994, Memorandum from M. Kenney (Bureau of State Case Management) Re: Interim Generic Groundwater Quality Criteria, October 27, 1994.

Table 5. Summary of Volatile Organic Compound Analytical Results for Groundwater Samples Collected on October 15, 1996 at Roadway Express Inc., Carlstadt, New Jersey.

Parameters: / Well ID:	MW-1	MW-2	MW-C	NJDEP Water Quality Criteria[1]
Acrolein	ND	ND	ND	NS
Acrolonitrile	ND	ND	ND	NS
Benzene	ND	ND	ND	1
Bromodichloromethane	ND	ND	ND	1
Bromoform	ND	ND	ND	4
Bromomethane	ND	ND	ND	10
Carbon tetrachloride	ND	ND	ND	2
Chlorobenzene	40	ND	ND	50
Chloroethane	ND	ND	ND	100
2-Chloroethylvinyl ether	ND	ND	ND	NS
Chloroform	ND	ND	ND	6
Chloromethane	ND	ND	ND	30
Dibromochloromethane	ND	ND	ND	10
1,1-Dichloroethane	ND	ND	ND	70
1,2-Dichloroethane	ND	ND	ND	2
1,1-Dichloroethene	ND	ND	ND	2
trans-1,2-Dichloroethene	ND	ND	ND	100
1,2-Dichloropropane	ND	ND	ND	1
cis-1,3-Dichloropropene	ND	ND	ND	0.02
trans-1,3-Dichloropropene	ND	ND	ND	0.02
Ethylbenzene	ND	ND	ND	700
Methylene chloride	ND	ND	ND	2
1,1,2,2-Tetrachloroethane	ND	ND	ND	2
Tetrachloroethene	ND	ND	ND	1
Toluene	ND	ND	ND	1,000
1,1,1-Trichloroethane	ND	ND	ND	30
1,1,2-Trichloroethane	ND	ND	ND	3
Trichloroethene	ND	ND	ND	1
Trichlorofluoromethane	ND	ND	ND	NS
Vinyl chloride	ND	ND	ND	5

µg/L Micrograms per liter; equivalent to parts per billion.
ND Not detected.
NA Not analyzed.
NS No standard.
[1] New Jersey Administrative Code (N.J.A.C.) 7: 9-6. NJDEP, 1994, Memorandum from M. Kenney (Bureau of State Case Management) Re: Interim Generic Groundwater Quality Criteria, October 27, 1994.

Table 8: Field Parameters Measured During the October 15, 1996 Groundwater Sampling Event at Roadway Express, Inc., Carlstadt, New Jersey.

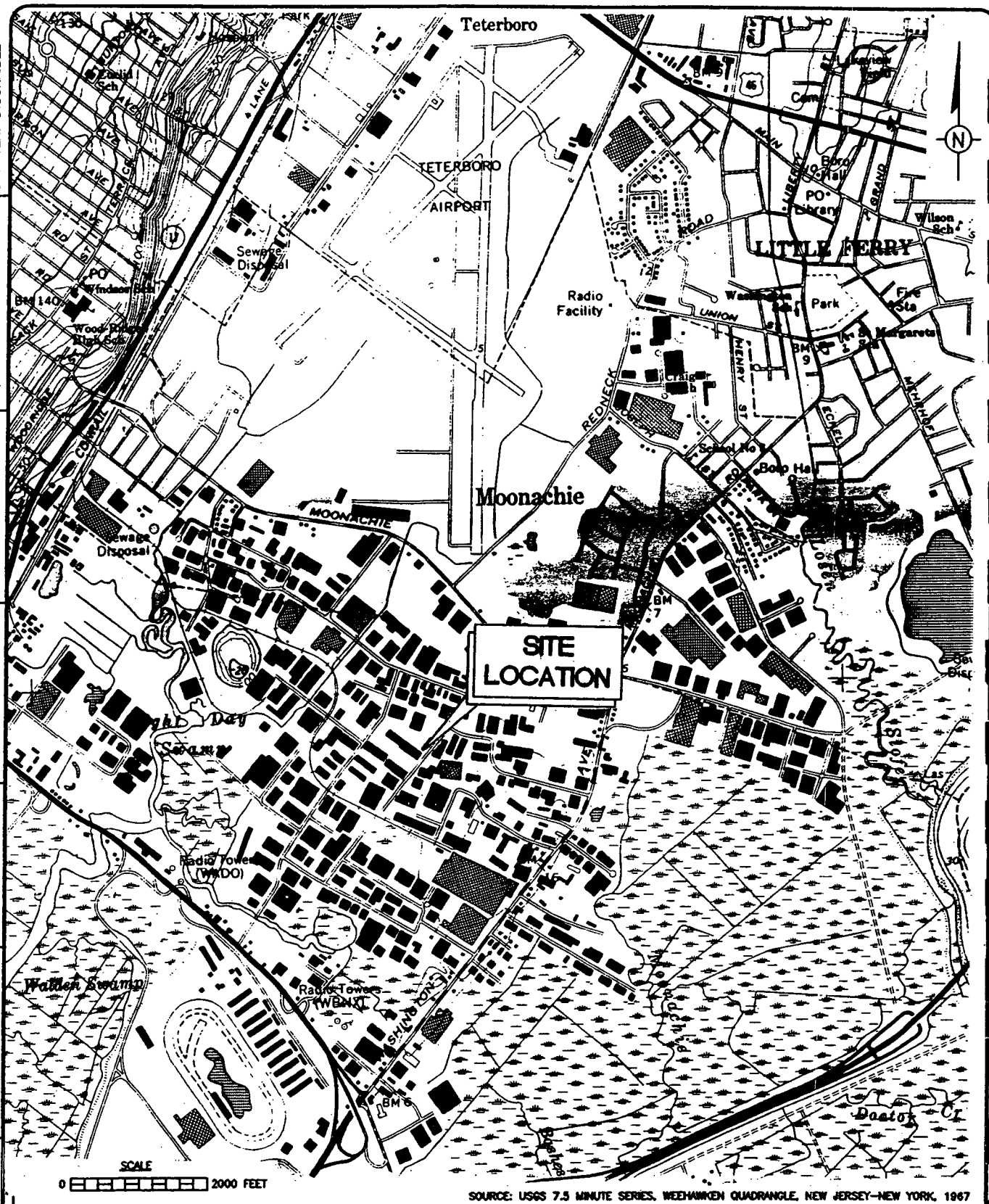
Well ID	Temperature (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	REDOX (mV)	pH	Sample Appearance
MW-1	12.66	0.504	1.29	20.1	7.16	clear
MW-2	19.94	0.494	1.04	60.5	8.16	clear
MW-A	22.07	1.832	1.87	11.8	6.91	clear
MW-B	20.75	1.258	1.29	-26.0	6.79	slightly turbid/light gray
MW-C	20.29	2.242	1.05	73.9	6.42	turbid/light brown

°C Degrees celsius.
µS/cm Microsiemens per centimeter.
mg/L Milligrams per liter.
mV Millivolts.

Table 9. Summary of Metals Analytical Results for Groundwater Samples Collected on December 3, 1996 at Roadway Express Inc., Carlstadt, New Jersey.

Parameters: / Well ID:	MW-B	MW-C	NJDEP Water Quality Criteria[1]
Total Metals (µg/L):			
Arsenic	13.5	ND	8
Cadmium	ND	NS	4
Lead	ND	ND	10
Dissolved Metals (µg/L):			
Arsenic	10.6	ND	8
Cadmium	ND	NS	4
Lead	ND	ND	10

µg/L Micrograms per liter; equivalent to parts per billion.
ND Not detected.
NA Not analyzed.
NS No standard.
[1] New Jersey Administrative Code (N.J.A.C.) 7: 9-6. NJDEP, 1994, Memorandum from M. Kenney (Bureau of State Case Management) Re: Interim Generic Groundwater Quality Criteria, October 27, 1994.



SOURCE: USGS 7.5 MINUTE SERIES, WEEHAWKEN QUADRANGLE, NEW JERSEY–NEW YORK, 1967

GERAGHTY & MILLER, INC.
Environmental Services
A Heidemij Company

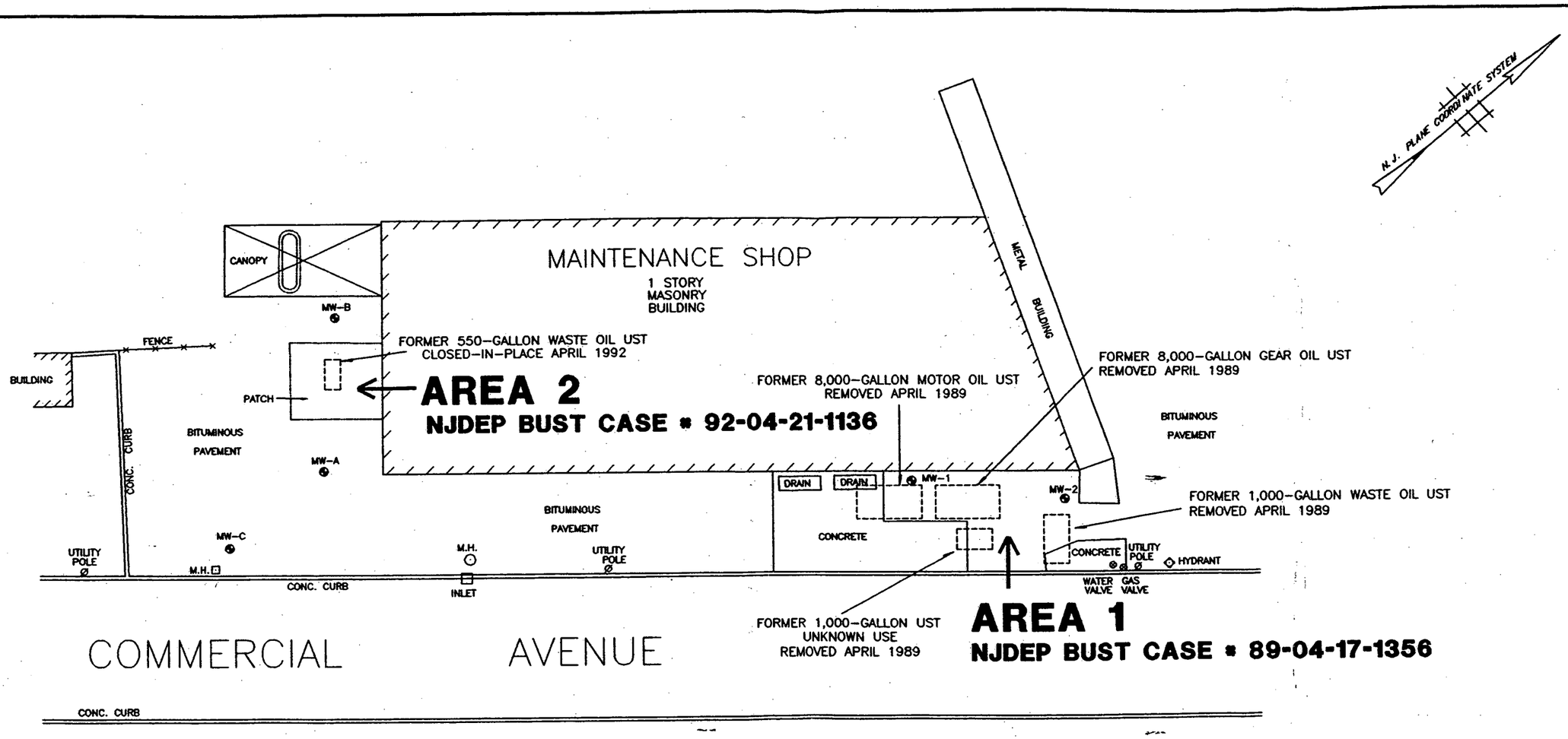
SITE LOCATION

ROADWAY EXPRESS INC.
CARLSTADT, NEW JERSEY

FIGURE
1

DRAFTER: D.SCHAIBLE | APPROVED: D.SCHAIBLE | CHECKED: D.SCHAIBLE | DRAWING: SITELOCA | HARD FILE: SITELOCA | PRJCT NO.: NP0342.001 | DWG DATE: 23OCT96

DWG DATE: 11/07/96 | PRJCT NO.: NP--- | HARD FILE: SITELAYD | DRAWING: SITELAYD | CHECKED: D. SCHAIBLE | APPROVED: P. MILIONIS | DRAFTER: E. LAYTON



LEGEND

- MW-C — MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- MANHOLE
- VALVE
- INLET
- APPROXIMATE LOCATION OF FORMER UNDERGROUND STORAGE TANK (UST)

SCALE 0 — 30

GENERAL NOTES:

1. THIS PLAN REPRESENTS A SURVEY MADE ON THE GROUND.
2. THIS IS NOT A PROPERTY SURVEY.
3. SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD.
4. VERTICAL CONTROL FOR THIS PROJECT IS BASED ON U.S.C.& G.S. MONUMENT #8-62 (EL. 6.83).
5. HORIZONTAL CONTROL FOR THIS PROJECT IS BASED ON U.S.C.& G.S. MONUMENTS "TETER 1" & "TETER 2".

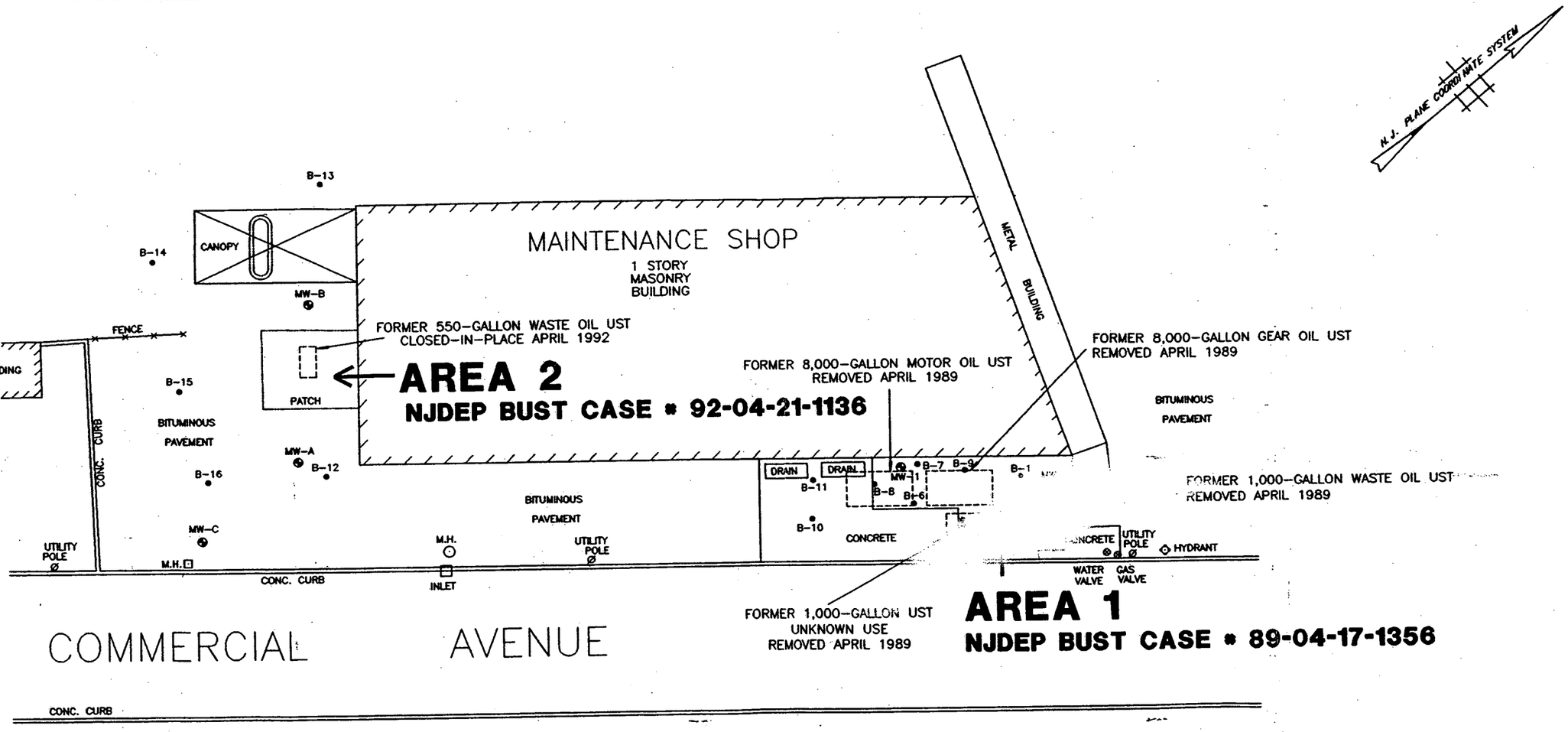
Base Map with Physical Features and Well Locations Provided by Robert W. Ent. Inc. of Stockton, NJ.

GERAGHTY & MILLER, INC.
Environmental Services
A Heidemij Company

SITE LAYOUT

ROADWAY EXPRESS INC.
CARLSTADT, NEW JERSEY

FIGURE
2



LEGEND

- MW-C — MONITORING WELL
- B-13 — BORING
- UTILITY POLE
- LIGHT POLE
- MANHOLE
- VALVE
- INLET
- APPROXIMATE LOCATION OF FORMER UNDERGROUND STORAGE TANK (UST)

GENERAL NOTES:

1. THIS PLAN REPRESENTS A SURVEY MADE ON THE GROUND.
2. THIS IS NOT A PROPERTY SURVEY.
3. SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD.
4. VERTICAL CONTROL FOR THIS PROJECT IS BASED ON U.S.C.& G.S. MONUMENT #B-62 (EL. 6.83).
5. HORIZONTAL CONTROL FOR THIS PROJECT IS BASED ON U.S.C.& G.S. MONUMENTS "TETER 1" & "TETER 2".

SCALE
0 30

GERAGHTY & MILLER, INC.
Environmental Services
A Heidemij Company

SOIL BORING LOCATIONS

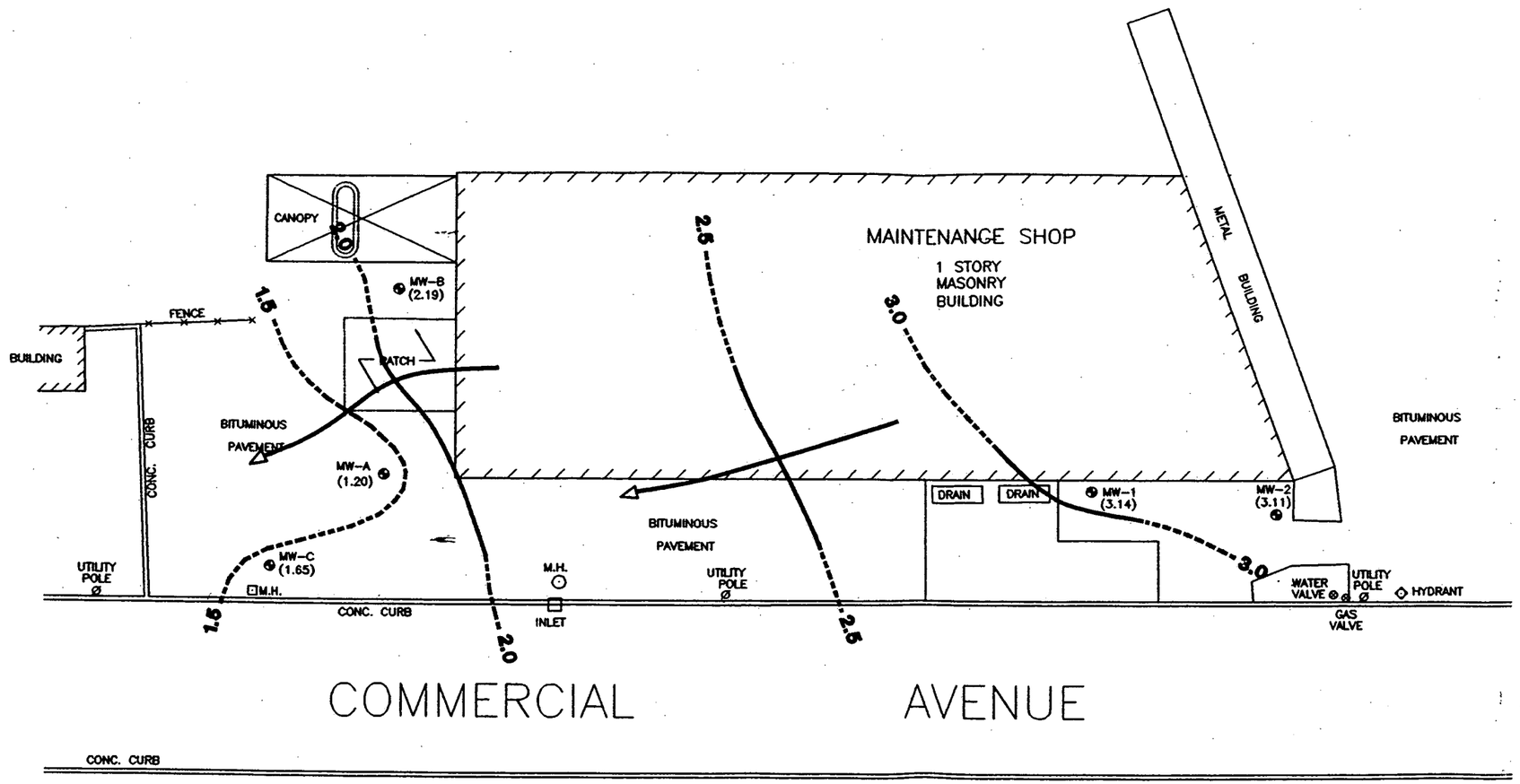
ROADWAY EXPRESS INC.
CARLSTADT, NEW JERSEY

FIGURE
3

Base Map with Physical Features and Well Locations Provided by Robert W. Ent. Inc. of Stockton, NJ.

DWG DATE: 11/07/96 | PRJCT NO.: NP--- | HARD FILE: SOILBOR | DRAWING: SOILBOR | CHECKED: D. SCHAIBLE | APPROVED: P. MILIONIS | DRAFTER: D. DUBROSKY

DRAFTER: D. DUBROSKY | APPROVED: P. MILIONIS | CHECKED: D. SCHAIBLE | DRAWING: GV_FLOW | HARD FILE: GV_FLOW | PRJCT NO.: NP--- | DWG DATE: 11/07/96



LEGEND

MW-C	MONITORING WELL
(1.65)	GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
1.5	GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
	GENERALIZED GROUNDWATER FLOW DIRECTION
	UTILITY POLE
	LIGHT POLE
	MANHOLE
	VALVE
	INLET

SCALE
0 30

GENERAL NOTES:

1. THIS PLAN REPRESENTS A SURVEY MADE ON THE GROUND.
2. THIS IS NOT A PROPERTY SURVEY.
3. SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD.
4. VERTICAL CONTROL FOR THIS PROJECT IS BASED ON U.S.C.& G.S. MONUMENT #8-62 (EL. 6.83).
5. HORIZONTAL CONTROL FOR THIS PROJECT IS BASED ON U.S.C.& G.S. MONUMENTS "TETER 1" & "TETER 2".

Base Map with Physical Features and Well Locations Provided by Robert W. Ent. Inc. of Stockton, NJ.

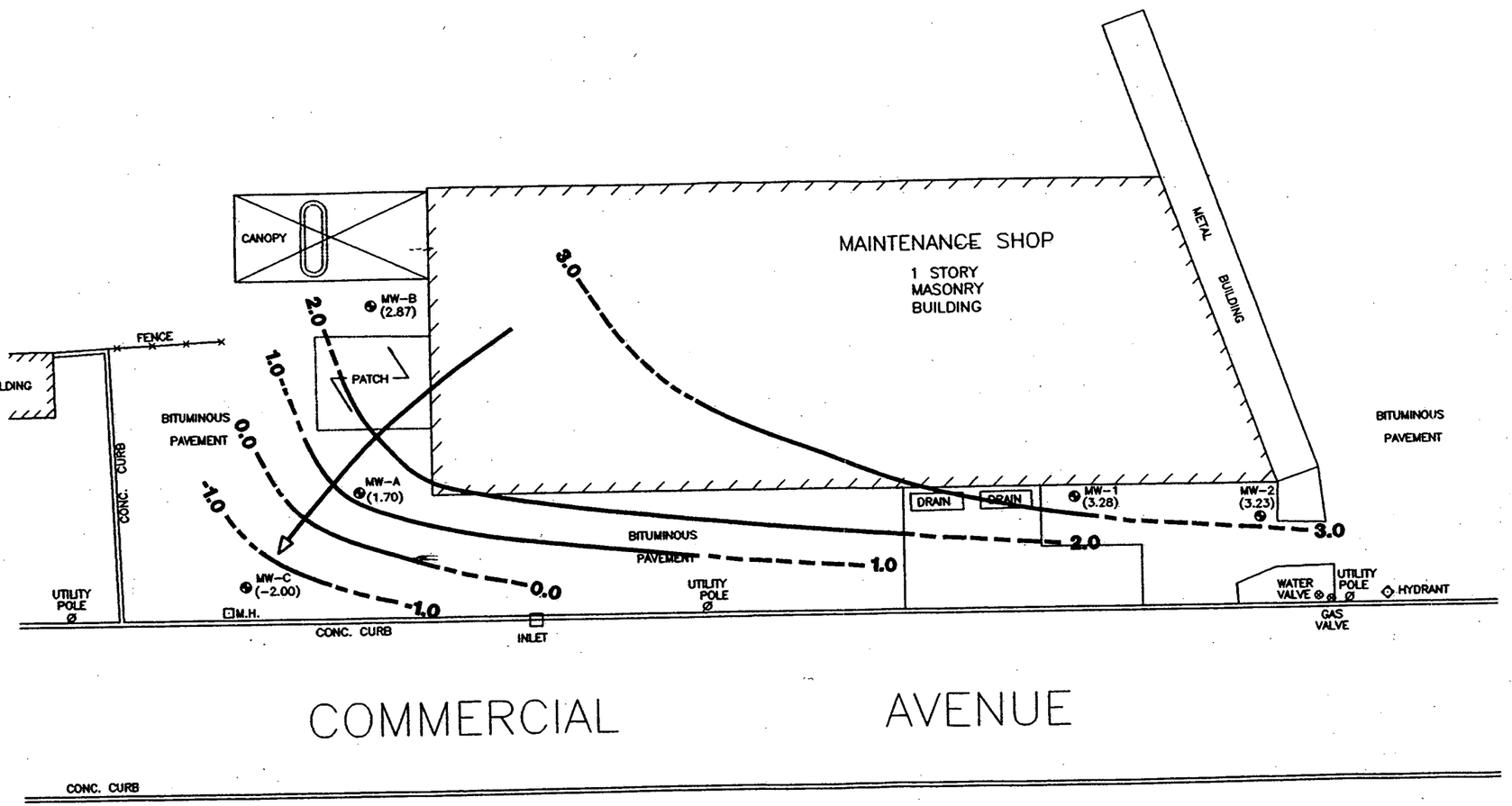
GERAGHTY & MILLER, INC.
Environmental Services
A Heidemij Company

GROUNDWATER ELEVATIONS
OCTOBER 15, 1996

ROADWAY EXPRESS INC.
CARLSTADT, NEW JERSEY

FIGURE
4

DRAFTER: D. DUBROSKY | APPROVED: P. MILIONIS | CHECKED: D. SCHAIBLE | HARD FILE: GV_FLOV2 | DRAWING: GV_FLOV2 | PRJCT NO.: NP--- | DWG DATE: 11/07/96



LEGEND

MW-A ⊕	MONITORING WELL
(1.70)	GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
2.0	GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
◄	GENERALIZED GROUNDWATER FLOW DIRECTION
⌀	UTILITY POLE
☼	LIGHT POLE
○	MANHOLE
⊗	VALVE
□	INLET

SCALE
0 30

GENERAL NOTES:

1. THIS PLAN REPRESENTS A SURVEY MADE ON THE GROUND.
2. THIS IS NOT A PROPERTY SURVEY.
3. SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD.
4. VERTICAL CONTROL FOR THIS PROJECT IS BASED ON U.S.C.& G.S. MONUMENT #8-62 (EL. 6.83).
5. HORIZONTAL CONTROL FOR THIS PROJECT IS BASED ON U.S.C.& G.S. MONUMENTS "TETER 1" & "TETER 2".

Base Map with Physical Features and Well Locations Provided by Robert W. Ent. Inc. of Stockton, NJ.

GERAGHTY & MILLER, INC.
Environmental Services
A Heidemij Company

GROUNDWATER ELEVATIONS
DECEMBER 3, 1996
ROADWAY EXPRESS INC.
CARLSTADT, NEW JERSEY

FIGURE
5

APPENDIX G

GROUNDWATER LABORATORY ANALYTICAL REPORTS

December 3, 1996

Contour Map Reporting Form

This reporting form shall accompany each ground water elevation contour map submittal. Use additional sheets as necessary.

1. Did any surveyed well casing elevations change from the previous sampling event? Yes X No___. If yes, attach new "Well Certification - Form B" and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

A site survey was conducted by Robert W. Ent Inc. on October 30, 1996. The new well elevations were used to develop the December 3, 1996 groundwater contour map. New "Well Certification - Form B's" are included in Appendix E.

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes __ No X. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes__ No X. Unless the omission of the well(s) has been previously approved by the department, justify the omissions.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes__No X. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No __. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45° from the previous ground water contour map? Yes __ No _X_. If yes, discuss the reasons for the change.

6. Has ground water mounts and/or depressions been identified in the ground water contour map? Yes __ No _X_ . Unless the ground water mounts and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are the wells used in the contour map screened in the same water-bearing zone? Yes _X_ No._. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated __, computer aided, __, or hand-drawn _X_ ? If computer aided or generated, identify the interpolation method(s) used.

5. Has the ground water flow direction changed more than 45° from the previous ground water contour map? Yes __ No _X_. If yes, discuss the reasons for the change.

6. Has ground water mounts and/or depressions been identified in the ground water contour map? Yes __ No _X_. Unless the ground water mounts and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are the wells used in the contour map screened in the same water-bearing zone? Yes _X_ No._. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated __, computer aided, __, or hand-drawn _X_? If computer aided or generated, identify the interpolation method(s) used.

October 15, 1996

Contour Map Reporting Form

This reporting form shall accompany each ground water elevation contour map submittal. Use additional sheets as necessary.

1. Did any surveyed well casing elevations change from the previous sampling event? Yes X No __. If yes, attach new "Well Certification - Form B" and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

A site survey was conducted by Robert W. Ent Inc. on October 30, 1996. The new well elevations were used to develop the October 15, 1996 groundwater contour map. New "Well Certification - Form B's" are included in Appendix E.

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes __ No X. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes__ No X. Unless the omission of the well(s) has been previously approved by the department, justify the omissions.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes__ No X. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No __. If yes, show the formula used to correct the water table elevation.

APPENDIX F

CONTOUR MAP REPORTING FORMS

THIS FORM MUST BE COMPLETED BY THE PERMITEE OR HIS/HER AGENT

GROUND WATER MONITORING WELL CERTIFICATION-FORM B-LOCATION CERTIFICATIO

Name of permitee: Roadway Express, Inc.
Name of Facility: Roadway Express, Inc. - Carlstadt Terminal
Location: 650 Commercial Avenue, Carlstadt, New Jersey
NJPDES Number: _____

LAND SURVEYOR'S CERTIFICATION

Well Permit Number (As assigned by NJDEP's Water Allocation Section, 609-984-6831): This number must be permanently affixed to the well casing. 26 - 456 - 87

Longitude (one tenth of a second): West 74-03'47.30"
Latitude (one tenth of a second): North 40-49'50.72"
Elevation of Top of Casing (cap off) (one-hundredth of a foot) PVC 4.44, Casing 5.01, Grnd 5.01
Owners Well Number (As shown on application or plans): MW-C

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Robert W Ent
PROFESSIONAL LAND SURVEYOR'S SIGNATURE

Robert W. Ent
PROFESSIONAL LAND SURVEYOR'S NAME
(Please print or type)

SEAL

20801
PROFESSIONAL LAND SURVEY'S LICENCE #

The department reserves the right is cases of violation of permit specified ground water limits or ground Quality Standards (N.J.A.C. 7:9-6.1 et seq.) to require that wells be resurveyed to an accuracy of one-hundredth of a second latitude and longitude. This shall not be considered to be a major modification of the NJPDES permit.

THIS FORM MUST BE COMPLETED BY THE PERMITEE OR HIS/HER AGENT

GROUND WATER MONITORING WELL CERTIFICATION-FORM B-LOCATION CERTIFICATION

Name of permitee: Roadway Express, Inc.
Name of Facility: Roadway Express, Inc. - Carlstadt Terminal
Location: 650 Commercial Avenue, Carlstadt, New Jersey
NJPDES Number: _____

LAND SURVEYOR'S CERTIFICATION

Well Permit Number (As assigned by NJDEP's Water Allocation Section, 609-984-6831): 26 - 32359 - __
This number must be permanently affixed to the well casing.

Longitude (one tenth of a second): West 74-03'47.70"
Latitude (one tenth of a second): North 40-49'51.37"
Elevation of Top of Casing (cap off) (one-hundredth of a foot) PVC 4.48, Casing 5.08, Grnd 5.09
Owners Well Number (As shown on application or plans): MW-B

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Robert W. Ent
PROFESSIONAL LAND SURVEYOR'S SIGNATURE

Robert W. Ent
PROFESSIONAL LAND SURVEYOR'S NAME
(Please print or type)

SEAL

20801
PROFESSIONAL LAND SURVEY'S LICENCE #

The department reserves the right is cases of violation of permit specified ground water limits or ground Quality Standards (N.J.A.C. 7:9-6.1 et seq.) to require that wells be resurveyed to an accuracy of one-hundredth of a second latitude and longitude. This shall not be considered to be a major modification of the NJPDES permit.

THIS FORM MUST BE COMPLETED BY THE PERMITEE OR HIS/HER AGENT

GROUND WATER MONITORING WELL CERTIFICATION-FORM B-LOCATION CERTIFICATIO

Name of permitee: Roadway Express, Inc.
Name of Facility: Roadway Express, Inc. - Carlstadt Terminal
Location: 650 Commercial Avenue, Carlstadt, New Jersey
NJPDES Number: _____

LAND SURVEYOR'S CERTIFICATION

Well Permit Number (As assigned by NJDEP's Water Allocation Section, 609-984-6831): This number must be permanently affixed to the well casing. 26 - 32358 -

Longitude (one tenth of a second): West 74-03'47.29"
Latitude (one tenth of a second): North 40-49'51.07"
Elevation of Top of Casing (cap off) (one-hundredth of a foot) PVC 4.15, Casing 4.76, Grnd 4.73
Owners Well Number (As shown on application or plans): MW-A

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Robert W. Ent

PROFESSIONAL LAND SURVEYOR'S SIGNATURE

Robert W. Ent
PROFESSIONAL LAND SURVEYOR'S NAME
(Please print or type)

SEAL

20801
PROFESSIONAL LAND SURVEY'S LICENCE #

The department reserves the right is cases of violation of permit specified ground water limits or ground Quality Standards (N.J.A.C. 7:9-6.1 et seq.) to require that wells be resurveyed to an accuracy of one-hundredth of a second latitude and longitude. This shall not be considered to be a major modification of the NJPDES permit.

THIS FORM MUST BE COMPLETED BY THE PERMITEE OR HIS/HER AGENT

GROUND WATER MONITORING WELL CERTIFICATION-FORM B-LOCATION CERTIFICATION

Name of permitee: Roadway Express, Inc.
Name of Facility: Roadway Express, Inc. - Carlstadt Terminal
Location: 650 Commercial Avenue, Carlstadt, New Jersey
NJPDES Number: _____

LAND SURVEYOR'S CERTIFICATION

Well Permit Number (As assigned by NJDEP's Water Allocation Section, 609-984-6831): 26 - 16242 - __
This number must be permanently affixed to the well casing.

Longitude (one tenth of a second): West 74-03'45.43"
Latitude (one tenth of a second): North 40-49'52.59"
Elevation of Top of Casing (cap off) (one-hundredth of a foot) PVC 4.79, Casing 5.00, Grnd 4.95
Owners Well Number (As shown on application or plans): MW-2

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Robert W Ent
PROFESSIONAL LAND SURVEYOR'S SIGNATURE

Robert W. Ent
PROFESSIONAL LAND SURVEYOR'S NAME
(Please print or type)

SEAL

20801
PROFESSIONAL LAND SURVEY'S LICENCE #

The department reserves the right is cases of violation of permit specified ground water limits or ground Quality Standards (N.J.A.C. 7:9-6.1 et seq.) to require that wells be resurveyed to an accuracy of one-hundredth of a second latitude and longitude. This shall not be considered to be a major modification of the NJPDES permit.

THIS FORM MUST BE COMPLETED BY THE PERMITEE OR HIS/HER AGENT

GROUND WATER MONITORING WELL CERTIFICATION-FORM B-LOCATION CERTIFICATION

Name of permitee: Roadway Express, Inc.
Name of Facility: Roadway Express, Inc. - Carlstadt Terminal
Location: 650 Commercial Avenue, Carlstadt, New Jersey
NJPDES Number: _____

LAND SURVEYOR'S CERTIFICATION

Well Permit Number (As assigned by NJDEP's Water Allocation Section, 609-984-6831): This number must be permanently affixed to the well casing. 26 -16241 -

Longitude (one tenth of a second): West 74-03'45.85"
Latitude (one tenth of a second): North 40-49'52.29"
Elevation of Top of Casing (cap off) (one-hundredth of a foot) PVC 4.59, Casing 5.00, Grnd 4.97
Owners Well Number (As shown on application or plans): MW-1

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Robert W Ent
PROFESSIONAL LAND SURVEYOR'S SIGNATURE

Robert W. Ent
PROFESSIONAL LAND SURVEYOR'S NAME
(Please print or type)

SEAL

20801
PROFESSIONAL LAND SURVEY'S LICENCE #

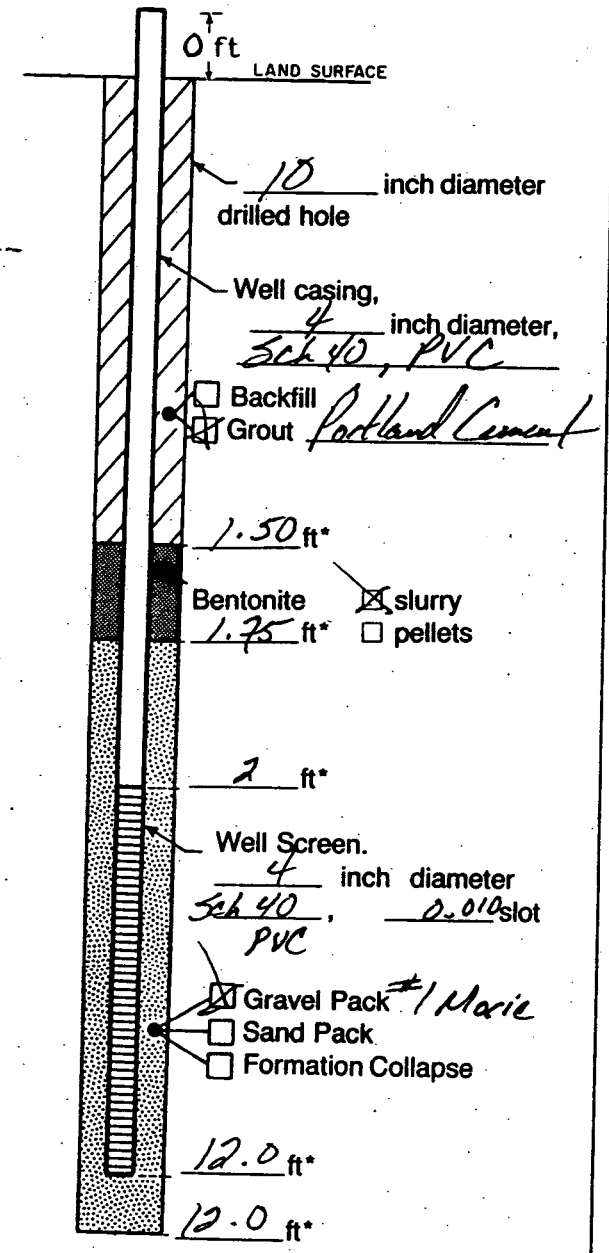
The department reserves the right is cases of violation of permit specified ground water limits or ground Quality Standards (N.J.A.C. 7:9-6.1 et seq.) to require that wells be resurveyed to an accuracy of one-hundredth of a second latitude and longitude. This shall not be considered to be a major modification of the NJPDES permit.

APPENDIX E

NJDEP FORM B

GERAGHTY & MILLER, INC.
Environmental Services
A Heidemij Company

WELL CONSTRUCTION LOG
(UNCONSOLIDATED)



Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project Roadway - NP0342.001 Well MW-C
Town/City Carlstadt
County Bergen State NJ
Permit No. 26-456-87
Land-Surface Elevation and Datum 5.01 feet ☒ Surveyed ☐ Estimated
Installation Date(s) 9/19/96
Drilling Method Hollow-Stem Auger
Drilling Contractor Uni-Tech Drilling
Drilling Fluid None

Development Technique(s) and Date(s)
Submersible Pump 10/19/96

Fluid Loss During Drilling None gallons
Water Removed During Development ≈ 45 gallons gallons
Static Depth to Water ≈ 2.5' feet below M.P
Pumping Depth to Water Went DRY feet below M.P
Pumping Duration ≈ 2.5 hours
Yield — gpm Date —
Specific Capacity — gpm/ft
Well Purpose Downgradient Monitoring Well

Remarks Well went dry after about 25 gallons, let recover & continue pumping.

Prepared by Doug Shaible

G&M Form 05 8-94

Southprint 94-1258

APPENDIX D

WELL CONSTRUCTION LOG

APPENDIX C

SOIL MICROBIAL LABORATORY REPORT

APPENDIX B

SOIL LABORATORY ANALYTICAL REPORT

SAMPLE/CORE LOG

Boring/Well: B-14

Project No.: NP0342.001

Page: 1 of 1

Site Location: Carlstadt, New Jersey

Drilling Started: 9/16/96

Drilling Completed:9/16/96

Total Depth Drilled: 17 feet

Hole Diameter: 6 inches

Type of Sample/
Coring Device: Split spoon

Length and Diameter of
Coring Device: 2 inches by 24 inches

Sampling Interval: Continuous

Drilling Fluid Used: None

Drilling Method: Hollow Stem Auger

Drilling
Contractor: Uni-tech Drilling

Driller:

Helper:

Prepared by: Doug Schaible

Hammer Weight: 130 lbs

Hammer Drop: 30 inches

PID (ppm)	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	1	3	1.5	5,6,4,4	Reddish brown silty medium sand with trace clay.
	3	5	2.0	8,7,5,8	Reddish brown silty clay with trace medium sand.
	5	7	2.0	10,11,15,14	Dark reddish brown silty clay, plastic.
	7	9	2.0	21,22,23,25	Dark reddish brown silty clay, dense. Sample B-14.
	9	11	2.0	26,23,20,21	Dark reddish brown silty clay, dense.
	11	13	1.75	25,30,15,20	Dark reddish brown clay with some silt and fine sand.
	13	15	2.0	26,15,11,20	Dark reddish brown clay with some silt and fine sand and a few grayish areas. Sample B-14B.

SAMPLE/CORE LOG

Boring/Well: B-16

Project No.: NP0342.001

Site Location: Carlstadt, New Jersey

Drilling Started: 9/16/96

Drilling Completed:9/16/96

Total Depth Drilled: 17 feet

Hole Diameter: 6 inches

Type of Sample/
Coring Device: Split spoon

Length and Diameter of
Coring Device: 2 inches by 24 inches

Sampling Interval: Continuous

Drilling Fluid Used: None

Drilling Method: Hollow Stem Auger

Drilling
Contractor: Uni-tech Drilling

Driller:

Helper:

Prepared by: Doug Schaible

Hammer Weight: 130 lbs

Hammer Drop: 30 inches

PID (ppm)	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	1	3	1.0	4,4,4,4	Reddish brown silty medium sand with trace clay.
	3	5	1.5	5,5,4,7	Reddish brown silty clay with trace medium sand.
	5	7	1.75	12,11,15,16	Dark reddish brown silty clay, plastic.
	7	9	1.75	19,18,17,19	Dark reddish brown silty clay, dense. Sample B-14.
	9	11	2.0	20,15,21,21	Dark reddish brown silty clay, dense.
	11	13	2.0	35,40,20,21	Dark reddish brown clay with some silt and fine sand, dense.
	13	15	2.0	20,30,21,25	Dark reddish brown clay with some silt and fine sand and a few grayish areas, dense. Sample B-16B.

SAMPLE/CORE LOG

Boring/Well: B-15

Project No.: NP0342.001

Site Location: Carlstadt, New Jersey

Drilling Started: 9/16/96

Drilling Completed:9/16/96

Total Depth Drilled: 17 feet

Hole Diameter: 6 inches

Type of Sample/
Coring Device: Split spoon

Length and Diameter of
Coring Device: 2 inches by 24 inches

Sampling Interval: Continuous

Drilling Fluid Used: None

Drilling Method: Hollow Stem Auger

Drilling
Contractor: Uni-tech Drilling

Driller:

Helper:

Prepared by: Doug Schaible

Hammer Weight: 130 lbs

Hammer Drop: 30 inches

PID (ppm)	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	1	3	1.50	7,4,5,9	Light brown medium sand and silt with some gravel.
	3	5	1.75	6,5,4,4	Reddish brown silt and fine to medium sand.
	5	7	2.0	10,9,9,9	Reddish brown silt and fine sand with some clay.
	7	9	2.0	5,6,8,7	Reddish brown silt and fine sand with some clay.
	9	11	1.75	10,11,12,10	Dark brown silt and clay.
	11	13	2.0	8,7,8,9	Dark brown silty clay. Sample B-15B.

SAMPLE/CORE LOG

Boring/Well: B-12

Project No.: NP0342.001

Site Location: Carlstadt, New Jersey

Drilling Started: 9/16/96

Drilling Completed:9/16/96

Total Depth Drilled: 17 feet

Hole Diameter: 6 inches

Type of Sample/
Coring Device: Split spoon

Length and Diameter of
Coring Device: 2 inches by 24 inches

Sampling Interval: Continuous

Drilling Fluid Used: None

Drilling Method: Hollow Stem Auger

Drilling
Contractor: Uni-tech Drilling

Driller:

Helper:

Prepared by: Doug Schaible

Hammer Weight: 130 lbs

Hammer Drop: 30 inches

PID (ppm)	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	1	3	1.25	5,8,7,4	Light brown silty clay with some gravel.
	3	5	1.0	4,8,8,6	Reddish brown silt clay with some medium sand.
	5	7	2.0	10,11,12,9	Reddish brown silty clay with trace fine sand.
	7	9	2.0	9,8,9,9	Reddish brown silty clay.
	9	11	2.0	10,11,11,11	Reddish brown clay with some silt and some grayish areas.
	11	13	2.0	10,15,20,16	Reddish brown clay with some silt and grayish areas. Sample B-12B.

SAMPLE/CORE LOG

Boring/Well: B-13

Project No.: NP0342.001

Page: 1 of 1

Site Location: Carlstadt, New Jersey

Drilling Started: 9/16/96

Drilling Completed:9/16/96

Total Depth Drilled: 17 feet

Hole Diameter: 6 inches

Type of Sample/
Coring Device: Split spoon

Length and Diameter of
Coring Device: 2 inches by 24 inches

Sampling Interval: Continuous

Drilling Fluid Used: None

Drilling Method: Hollow Stem Auger

Drilling
Contractor: Uni-tech Drilling

Driller:

Helper:

Prepared by: Doug Schaible

Hammer Weight: 130 lbs

Hammer Drop: 30 inches

PID (ppm)	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	1	3	1.0	5,6,5,4	Light brown medium sand and silt with some gravel.
	3	5	1.0	5,6,2,4	Light brown silt and fine to medium sand.
	5	7	1.5	8,9,8,7	Reddish brown silt and fine sand with some clay.
	7	9	1.5	8,8,8,8	Reddish brown silt and fine sand with some clay.
	9	11	1.5	9,8,7,9	Light brown silt and clay.
	11	13	1.75	9,10,10,9	Light brown silty clay. Sample B-13B.

SAMPLE/CORE LOG

Boring/Well: B-12

Project No.: NP0342.001

Site Location: Carlstadt, New Jersey

Drilling Started: 9/16/96

Drilling Completed:9/16/96

Total Depth Drilled: 17 feet

Hole Diameter: 6 inches

Type of Sample/
Coring Device: Split spoon

Length and Diameter of
Coring Device: 2 inches by 24 inches

Sampling Interval: Continuous

Drilling Fluid Used: None

Drilling Method: Hollow Stem Auger

Drilling
Contractor: Uni-tech Drilling

Driller:

Helper:

Prepared by: Doug Schaible

Hammer Weight: 130 lbs

Hammer Drop: 30 inches

PID (ppm)	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	1	3	1.25	5,8,7,4	Light brown silty clay with some gravel.
	3	5	1.0	4,8,8,6	Reddish brown silt clay with some medium sand.
	5	7	2.0	10,11,12,9	Reddish brown silty clay with trace fine sand.
	7	9	2.0	9,8,9,9	Reddish brown silty clay.
	9	11	2.0	10,11,11,11	Reddish brown clay with some silt and some grayish areas.
	11	13	2.0	10,15,20,16	Reddish brown clay with some silt and grayish areas. Sample B-12B.

SAMPLE/CORE LOG

Boring/Well: B-11

Project No.: NP0342.001

Page: 1 of 1

Site Location: Carlstadt, New Jersey

Drilling Started: 9/16/96

Drilling Completed:9/16/96

Total Depth Drilled: 17 feet

Hole Diameter: 6 inches

Type of Sample/
Coring Device: Split spoon

Length and Diameter of
Coring Device: 2 inches by 24 inches

Sampling Interval: Continuous

Drilling Fluid Used: None

Drilling Method: Hollow Stem Auger

Drilling
Contractor: Uni-tech Drilling

Driller:

Helper:

Prepared by: Doug Schaible

Hammer Weight: 130 lbs

Hammer Drop: 30 inches

PID (ppm)	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	1	3	0.75	2,3,2,2	Dark gray medium sand with some silt and gravel.
0	3	5	1.5	5,4,6,5	Dark gray medium sand and silt. Sample B-11.
0	5	7	1.25	5,4,5,4	Dark gray medium sand and silt with some red-brick fragments, wet.
0	7	9	1.5	7,8,4,8	Medium gray silt and clay with some fine sand and red-brick fragments, wet.
0	9	11	2.0	8,8,7,7	Medium gray clay with some silt, plastic, wet. Sample B-11B.

SAMPLE/CORE LOG

Boring/Well: B-10

Project No.: NP0342.001

Page: 1 of 1

Site Location: Carlstadt, New Jersey

Drilling Started: 9/16/96

Drilling Completed:9/16/96

Total Depth Drilled: 17 feet

Hole Diameter: 6 inches

Type of Sample/
Coring Device: Split spoon

Length and Diameter of
Coring Device: 2 inches by 24 inches

Sampling Interval: Continuous

Drilling Fluid Used: None

Drilling Method: Hollow Stem Auger

Drilling
Contractor: Uni-tech Drilling

Driller:

Helper:

Prepared by: Doug Schaible

Hammer Weight: 130 lbs

Hammer Drop: 30 inches

PID (ppm)	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	1	3	0.75	2,3,2,2	Dark gray medium sand with some silt and gravel.
0	3	5	1.5	5,4,6,5	Dark gray medium sand and silt. Sample B-10.
0	5	7	1.25	5,4,5,4	Dark gray medium sand and silt with some red-brick fragments, wet.
0	7	9	1.5	7,8,4,8	Medium gray silt and clay with some fine sand, wet.
0	9	11	2.0	8,8,7,7	Medium gray clay with some silt, plastic, wet.

SAMPLE/CORE LOG

Boring/Well: B-9

Project No.: NP0342.001

Site Location: Carlstadt, New Jersey

Drilling Started: 9/16/96

Drilling Completed:9/16/96

Total Depth Drilled: 17 feet

Hole Diameter: 6 inches

Type of Sample/
Coring Device: Split spoon

Length and Diameter of
Coring Device: 2 inches by 24 inches

Sampling Interval: Continuous

Drilling Fluid Used: None

Drilling Method: Hollow Stem Auger

Drilling
Contractor: Uni-tech Drilling

Driller:

Helper:

Prepared by: Doug Schaible

Hammer Weight: 130 lbs

Hammer Drop: 30 inches

PID (ppm)	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
5	1	3	1.0	2,1,2,2	Gray gravely silt.
3	3	5	2.0	3,3,3,3	Gray gravely silt, wet.
4	5	7	1.75	2,2,4,3	Gray gravely silt, wet.
2	7	9	1.5	4,2,3,4	Gray gravely silt, wet.
2	9	11	1.5	4,6,5,3	Gray gravely silt, wet.
2	11	13	2.0	5,6,5,4	Medium gray clay, very plastic, wet. Sample B-9.
0	13	15	1.0	4,6,7,8	Medium gray clay, very plastic, wet.

SAMPLE/CORE LOG

Boring/Well: B-8

Project No.: NP0342.001

Site Location: Carlstadt, New Jersey

Drilling Started: 9/16/96

Drilling Completed:9/16/96

Total Depth Drilled: 17 feet

Hole Diameter: 6 inches

Type of Sample/
Coring Device: Split spoon

Length and Diameter of
Coring Device: 2 inches by 24 inches

Sampling Interval: Continuous

Drilling Fluid Used: None

Drilling Method: Hollow Stem Auger

Drilling
Contractor: Uni-tech Drilling

Driller:

Helper:

Prepared by: Doug Schaible

Hammer Weight: 130 lbs

Hammer Drop: 30 inches

PID (ppm)	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
10	1	3	0.5	1,2,1,1	Medium gray gravelly medium sand with some fine sand and silt.
20	3	5	1.5	3,3,5,3	Medium gray medium sand with some fine sand, wet at 1.0. Sample B-8.
15	5	7	1.0	8,7,5,4	Medium gray fine sand and silt with a few clayey areas, wet.
10	7	9	1.25	5,6,5,4	Medium gray medium sand and silt, wet.
5-0	9	11	2.0	5,4,8,8	Medium gray medium sand and silt to 0.75 then medium gray clay, plastic, wet. Sample B-8B.
0	11	13	2.0	8,9,8,8	Medium gray clay, plastic, wet.

SAMPLE/CORE LOG

Boring/Well: B-7

Project No.: NP0342.001

Page: 1 of 1

Site Location: Carlstadt, New Jersey

Drilling Started: 9/16/96

Drilling Completed:9/16/96

Total Depth Drilled: 17 feet

Hole Diameter: 6 inches

Type of Sample/
Coring Device: Split spoon

Length and Diameter of
Coring Device: 2 inches by 24 inches

Sampling Interval: Continuous

Drilling Fluid Used: None

Drilling Method: Hollow Stem Auger

Drilling
Contractor: Uni-tech Drilling

Driller:

Helper:

Prepared by: Doug Schaible

Hammer Weight: 130 lbs

Hammer Drop: 30 inches

PID (ppm)	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
5	1	3	1.0	1,1,1,2	Gray gravely silt. Sample B-7.
5	3	5	2.0	3,2,4,3	Gray gravely silt, wet.
5	5	7	1.75	2,4,3,3	Gray gravely silt, wet.
5	7	9	1.5	2,4,4,4	Gray gravely silt, wet.
3	9	11	1.5	4,3,3,3	Medium gray clay, very plastic, wet.
5	11	13	2.0	5,3,5,4	Medium gray clay, very plastic, wet.
0	13	15	1.0	5,6,4,7	Medium gray clay, very plastic, wet.

SAMPLE/CORE LOG

Boring/Well: B-6

Project No.: NP0342.001

Page: 1 of 1

Site Location: Carlstadt, New Jersey

Drilling Started: 9/16/96

Drilling Completed:9/16/96

Total Depth Drilled: 17 feet

Hole Diameter: 6 inches

Type of Sample/
Coring Device: Split spoon

Length and Diameter of
Coring Device: 2 inches by 24 inches

Sampling Interval: Continuous

Drilling Fluid Used: None

Drilling Method: Hollow Stem Auger

Drilling
Contractor: Uni-tech Drilling

Driller:

Helper:

Prepared by: Doug Schaible

Hammer Weight: 130 lbs

Hammer Drop: 30 inches

PID (ppm)	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
3	1	3	0.5	2,3,2,2	Gray gravelly medium sand and silt with some fine sand.
2	3	5	1.5	3,4,3,4	Medium gray silt and fine sand with some red-brick fragments, wet at 1.0. Sample B-6.
2	5	7	1.5	3,5,3,4	Dark gray silt and clay with some fine sand, wet.
2	7	9	2.0	5,6,8,7	Dark gray silt and fine sand with a trace of clay, wet.
1	9	11	2.0	8,9,8,7	Medium gray clay with trace silt, plastic, wet.

SAMPLE/CORE LOG

Boring/Well: B-5

Project No.: NP0342.001

Page: 1 of 1

Site Location: Carlstadt, New Jersey

Drilling Started: 9/16/96

Drilling Completed:9/16/96

Total Depth Drilled: 17 feet

Hole Diameter: 6 inches

Type of Sample/
Coring Device: Split spoon

Length and Diameter of
Coring Device: 2 inches by 24 inches

Sampling Interval: Continuous

Drilling Fluid Used: None

Drilling Method: Hollow Stem Auger

Drilling
Contractor: Uni-tech Drilling

Driller:

Helper:

Prepared by: Doug Schaible

Hammer Weight: 130 lbs

Hammer Drop: 30 inches

PID (ppm)	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
0	1	3	1.0	2,3,2,1	Dark gray silt and medium sand with some clay and trace gravel.
2	3	5	1.5	5,2,4,3	Dark gray sandy silt with some clay, wet at 0.75. Sample B-5.
2	5	7	2.0	6,6,8,4	Dark gray silt with some fine to medium sand and clay, wet.
0	7	9	1.25	2,3,3,4	Medium gray clay with some silt, plastic.
0	9	11	2.0	8,9,9,7	Medium gray clay with some silt, plastic.
1	11	13	1.75	5,6,9,5	Medium gray clay with some silt, plastic.

SAMPLE/CORE LOG

Boring/Well: B-4

Project No.: NP0342.001

Site Location: Carlstadt, New Jersey

Drilling Started: 9/16/96

Drilling Completed:9/16/96

Total Depth Drilled: 17 feet

Hole Diameter: 6 inches

Type of Sample/
Coring Device: Split spoon

Length and Diameter of
Coring Device: 2 inches by 24 inches

Sampling Interval: Continuous

Drilling Fluid Used: None

Drilling Method: Hollow Stem Auger

Drilling
Contractor: Uni-tech Drilling

Driller:

Helper:

Prepared by: Doug Schaible

Hammer Weight: 130 lbs

Hammer Drop: 30 inches

PID (ppm)	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
5	1	3	0.75	2,4,2,5	Gray gravely silt. Sample B-4.
5	3	5	1.0	3,2,3,3	Gray gravely silt, wet.
3	5	7	1.0	3,4,5,2	Gray gravely silt, wet.
5	7	9	0.5	3,5,3,2	Gray gravely silt, wet.
2	9	11	2.0	7,5,8,9	Medium gray clay with a trace of silt, very plastic, wet.
2	11	13	2.0	9,910,8	Medium gray clay with a trace of silt, very plastic, wet.

SAMPLE/CORE LOG

Boring/Well: B-3

Project No.: NP0342.001

Page: 1 of 1

Site Location: Carlstadt, New Jersey

Drilling Started: 9/16/96

Drilling Completed:9/16/96

Total Depth Drilled: 17 feet

Hole Diameter: 6 inches

Type of Sample/
Coring Device: Split spoon

Length and Diameter of
Coring Device: 2 inches by 24 inches

Sampling Interval: Continuous

Drilling Fluid Used: None

Drilling Method: Hollow Stem Auger

Drilling
Contractor: Uni-tech Drilling

Driller:

Helper:

Prepared by: Doug Schaible

Hammer Weight: 130 lbs

Hammer Drop: 30 inches

PID (ppm)	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
20	1	3	1.0	2,3,4,2	Gray gravely silt. Sample B-3
10	3	5	1.5	3,2,1,2	Gray gravely silt, wet.
10	5	7	1.5	3,4,2,3	Gray gravely silt, wet.
5	7	9	1.0	3,4,2,5	Gray gravely silt, wet.
5	9	11	2.0	6,5,3,6	Medium gray clay, very plastic, wet.
0	11	13	2.0	7,6,5,8	Medium gray clay, very plastic, wet.

SAMPLE/CORE LOG

Boring/Well: B-2

Project No.: NP0342.001

Site Location: Carlstadt, New Jersey

Drilling Started: 9/16/96

Drilling Completed:9/16/96

Total Depth Drilled: 17 feet

Hole Diameter: 6 inches

Type of Sample/
Coring Device: Split spoon

Length and Diameter of
Coring Device: 2 inches by 24 inches

Sampling Interval: Continuous

Drilling Fluid Used: None

Drilling Method: Hollow Stem Auger

Drilling
Contractor: Uni-tech Drilling

Driller:

Helper:

Prepared by: Doug Schaible

Hammer Weight: 130 lbs

Hammer Drop: 30 inches

PID (ppm)	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
10	1	3	2.0	2,3,2,4	Light medium gray silty clay with some fine gravel. Sample B-2.
10	3	5	1.5	2,2,2,4	Light medium gray silty clay, wet.
5	5	7	1.75	3,5,4,2	Medium gray clay, trace of silt, wet.
5	7	9	1.5	2,4,5,3	Medium gray silty clay.
3	9	11	1.5	4,5,3,2	Medium gray silty clay. Sample B-2A.
0	11	13	2.0	5,7,8,5	Light medium gray clay, very plastic, wet.

SAMPLE/CORE LOG

Boring/Well: B-1

Project No.: NP0342.001

Page: 1 of 1

Site Location: Carlstadt, New Jersey

Drilling Started: 9/16/96

Drilling Completed:9/16/96

Total Depth Drilled: 17 feet

Hole Diameter: 6 inches

Type of Sample/
Coring Device: Split spoon

Length and Diameter of
Coring Device: 2 inches by 24 inches

Sampling Interval: Continuous

Drilling Fluid Used: None

Drilling Method: Hollow Stem Auger

Drilling
Contractor: Uni-tech Drilling

Driller:

Helper:

Prepared by: Doug Schaible

Hammer Weight: 130 lbs

Hammer Drop: 30 inches

PID (ppm)	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
10	1	3	1.0	1,2,4,4	Gray gravely silt. Sample B-1.
10	3	5	2.0	2,2,2,3	Gray gravely silt, wet.
5	5	7	1.75	3,4,2,3	Gray gravely silt, wet.
5	7	9	1.5	3,4,3,4	Gray gravely silt, wet.
5	9	11	1.5	4,2,2,3	Gray gravely silt, wet.
5	11	13	2.0	3,2,5,4	Medium gray clay with a trace of silt, very plastic, wet.
3	13	15	1.0	3,3,3,4	Medium gray clay, very plastic, wet.
0	15	17	2.0	5,5,8,9	Medium gray clay, very plastic, wet.
0	17	19	2.0	4,8,8,10	Medium gray clay, very plastic, wet.

APPENDIX A

SOIL BORING LOGS