ANALYTICAL DATA REPORT FOR THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Enseco

GeoEngineering, Inc.

Project Name: L.E. Carpenter
Samples Received on June 9, 1987

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Cambridge, Massachusetts 02138
617/661-3111

Facsimile: 617/354-5258

345988

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The New Jersey Department of Environmental Protection
Contractor: Enseco - Erco Laboratory
Project Name: L.E. Carpenter

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ENSECO - Erco Laboratory

Sample Analysis Instrumentation Key for Organics

ID	Manufacturer	Model	Data System
GC/MS #S-1	Finnigan	4530	INCOS
GC/MS #S-2	Finnigan	4615B	INCOS
GC/MS #S-3	Finnigan	4530	INCOS
GC/MS #V1*	Hewlett Packard	5996	RTE-6
GC/MS #V2*	Hewlett Packard	5996	RTE-6
GC/MS #V3*	Hewlett Packard	5996	RTE-6
GC/MS #V4*	Hewlett Packard	5985	RTE-6
GC/HECD #1	Perkin-Elmer/Tracor	3920/700	HP-1000
GC/HECD #2	Tracor/Tracor	560/700A	HP-1000
GC/HECD #3	Varian/Tracor	3700/700A	HP-1000
GC/PID #1	Perkin-Elmer/HNU	3920/52-02	HP-1000
GC/PID #3	Varian/HNU	3700/52-02	HP-1000
GC/ECD #2	Hewlett Packard	5840	--
GC/ECD #7	Hewlett Packard	5880	--
GC/ECC #9	Hewlett Packard	5880	--

*Purge-and-trap units manufactured by Tekmar - Model #LSC2/ALS

SUMMARY OF METHODS

The analytical EPA Methods 608 (Pesticides/PCBs), 624 (Volatile Organics) and 625 (Base/Neutrals and Acids) are designed to analyze water, sediment, and soil for the organic compounds on the Hazardous Substance List (HSL).

Volatile Organic Compounds

Analyses are conducted using purge and trap gas chromatographic/mass spectrometer (GC/MS) procedure in accordance with EPA Method 624. For sediment/soil samples, the purge device is heated.

Extractable Organic Compounds

Base/Neutrals and Acids (Semivolatiles)

The analyses are conducted in accordance with EPA Method 625. The method involves solvent extraction of the matrix, using a separatory funnel for waters and a sonicator for solids, concentration, and analysis by a GC/MS.

Pesticide/PCBs

The analysis of certain organochloride pesticides and polychlorinated biphenyls is conducted in accordance with EPA Method 608. The method involves solvent extraction of the matrix, concentration, and analysis. The extract is screened on a gas chromatograph/electron capture detector (GC/ECD) using a packed column. The sample is quantitated and confirmed on a GC/ECD using a second packed column.

Inorganic Analyses

All inorganic analyses are performed according to EPA Protocols described in "Methods for Chemical Analysis of Water and Wastes" EPA-600/4-79-020, Revised March 1983 or in "Methods for the Analysis of Solid Waste, Physical/Chemical Methods", 2nd edition, U.S. EPA SW 846.

Priority Pollutant Metals

To determine the metal content of a sample, ENSECO uses either atomic absorption spectroscopy (cold vapor techniques, hydride generation, and flame or furnace) or inductively coupled plasma spectroscopy (ICP). Acid digestion procedures are found in the U.S. EPA Contract Laboratory Program Protocols.

Two

WATER SURROGATE PERCENT RECOVERY SUMMARY

Case No. GeoEngineers Contract Laboratory Pace-Enseco Contract No. _____

	VOLATILE			SEMI-VOLATILE								PESTICIDE
EPA SAMPLE NO.	TOLUENE-D8 (88-110)	BFB (86-115)	1,2 DICHLOROETHANE-D4 (76-114)	NITROBENZENE-D5 (35-114)	2-FLUOROBIPHENYL (43-116)	TERPHENYL-D14 (33-141)			PHENOL-D5 (10-94)	2-FLUOROPHENOL (21-100)	2,4,6 TRIBROMOPHENOL (10-123)	DIBUTYLCHLORENDATE ** (24-154)
MW 1	100	104	102									
MW2	102	101	97									
MW3	98	88	91									
MW4	99	91	91									
MW5	105	97	95									
Field Blank	94	93	93									
AA524B	100	100	93									
J174B	100	100	95									

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

**ADVISORY LIMITS ONLY

Volatiles: 0 out of 24 ; outside of QC limits

Semi-Volatiles: _____ out of _____ ; outside of QC limits

Pesticides: _____ out of _____ ; outside of QC limits

Comments: _____

FORM II

7/85

METHOD BLANK SUMMARY

Case No. Geo Engineers Region ____ Contractor ERCO/A Division of ENSECO INC. Contract No. 68-01-7027

FILE ID	DATE OF ANALYSIS	FRACTION	MATRIX	CONC. LEVEL	INST. ID	CAS NUMBER	COMPOUND (NBS, TIC OR UNKNOWN)	CONC.	UNITS	CRQL
J174	6/17/87	VOA	water	low	V3	75.09.2	Methylene Chloride	7.1	ug/L	5u
J174	6/17/87	VOA	water	low	V3	67.64.1	Acetone	807	ug/L	10u
J174	6/17/87	VOA	water	low	V3	79.01.6	Trichloroethene	101	ug/L	5u
AA524	6/17/87	VOA	water	low	V4	75.09.2	Methylene Chloride	33	ug/L	5u
AA524	6/17/87	VOA	water	low	V4	67.64.1	Acetone	24	ug/L	10u

Comments:

GC/MS TUNING AND MASS CALIBRATION

Bromofluorobenzene (BFB)

Case No. GEI Contractor ENSECO INC. Contract No —

Instrument ID V4 Date 5.21.87 Time 12:10

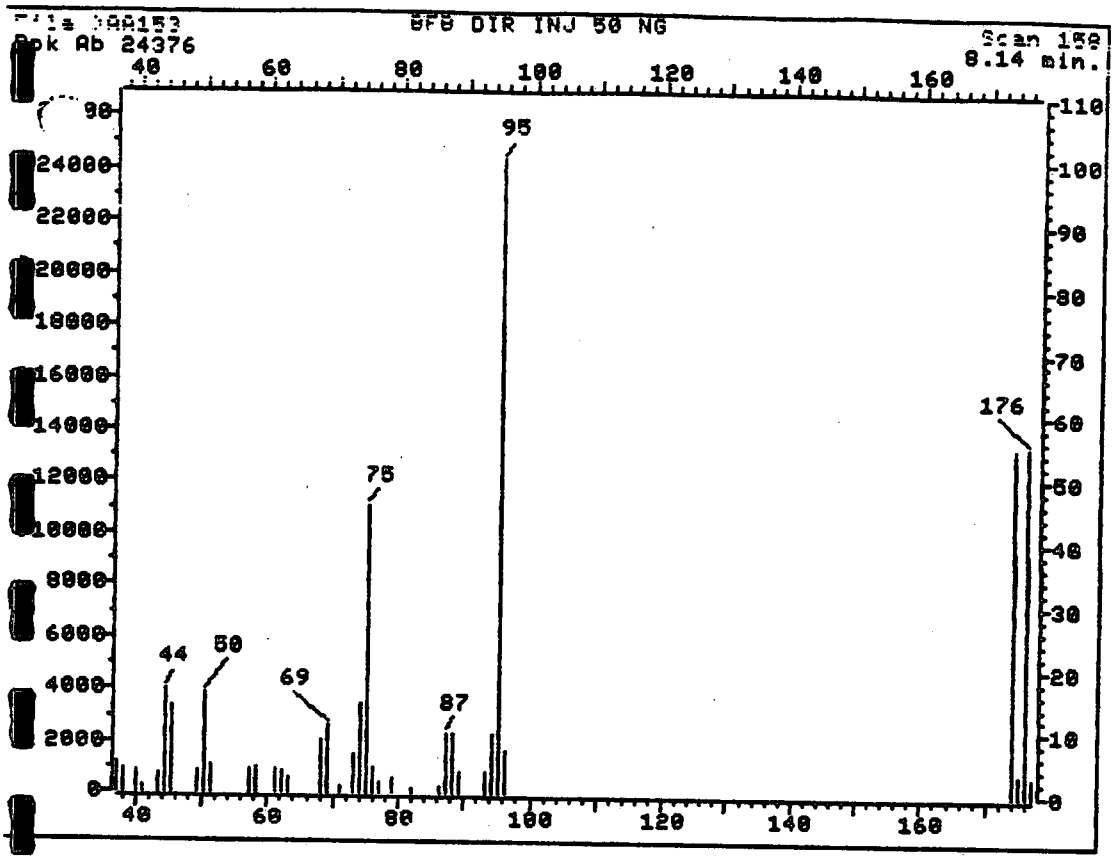
Lab ID >AA153 Data Release Authorized By: [illegible]

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	15.0 - 40.0% of the base peak	15.8
75	30.0 - 60.0% of the base peak	45.5
95	Base peak, 100% relative abundance	100
96	5.0 - 9.0% of the base peak	6.78
173	Less than 1.0% of the base peak	0.00
174	Greater than 50.0% of the base peak	55.0
175	5.0 - 9.0% of mass 174	3.42 (6.22)[1]
176	Greater than 95.0%, but less than 101.0% of mass 174	55.3 (100)[1]
177	5.0 - 9.0% of mass 176	3.15 (5.71)[2]

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS.

[1] Value in parenthesis is % mass 174
[2] Value in parenthesis is % mass 176.

SAMPLE ID	LAB ID	DATE OF ANALYSIS	TIME OF ANALYSIS
	BFB tune >AA153	5.21.87	12:10
	20ppb std >AA159	5.21.87	15:50
	50ppb std >AA158	5.21.87	14:49
	100ppb std >AA160	5.21.87	16:50
	150ppb std >AA161	5.21.87	17:50
	200ppb std >AA162	5.21.87	18:44



MS data file header from : >AA153

Sample: BFB DIR INJ 50 NG Operator: ALAN MS 5/21/87 12:10
Misc :
Sys. #: 1 MS model: 87 SW/HW rev.: IA ALS # : 0
Method file: BFB4 Tuning file: MT7404 No. of extra records: 1
Source temp.: 210 Analyzer temp.: 0 Transfer line temp. : 0

Chromatographic temperatures :	0.	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.0	0.0

GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
50	15-40% of mass 95	15.78	15.78	Ok
75	30-60% of mass 95	45.49	45.49	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	6.78	6.78	Ok
173	Less then 1% of mass 95	0.00	0.00	Ok
174	Greater then 50% of mass 95	55.01	55.01	Ok
175	5-9% of mass 174	3.42	6.22	Ok
176	95-101% of mass 174	55.30	100.51	Ok
177	5-9% of mass 176	3.15	5.71	Ok

Injection Date: 05/21/87
Injection Time: 12:10
Data File: >AA153
Scan: 158

AB

>AA153 BFB DIR INJ 50 NG
158 NRM

File: >AA153 Scan #: 158 Retn. time: 8.14

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
37.20	4.80	50.25	15.78	69.20	10.77	79.05	2.27	94.25	9.64
38.20	3.63	51.25	4.56	71.20	1.12	82.05	.80	95.25	100.00
40.20	3.40	57.25	3.88	73.20	6.05	86.20	.99	96.25	6.78
41.20	1.12	58.25	4.05	74.20	14.24	87.20	9.64	174.15	55.01
43.30	3.19	61.25	3.86	75.20	45.49	88.25	9.40	175.15	3.42
44.30	16.45	62.25	3.28	76.20	4.03	89.25	3.41	176.15	55.30
45.30	13.89	63.25	2.36	77.20	1.76	93.15	3.38	177.15	3.15
49.25	3.60	68.25	8.64						

GC/MS TUNING AND MASS CALIBRATION

Bromofluorobenzene (BFB)

Case No. GeoEngineers Contractor: EXSECO INC. Contract No. —

Instrument ID V4 Date 6/17/87 Time 12:25

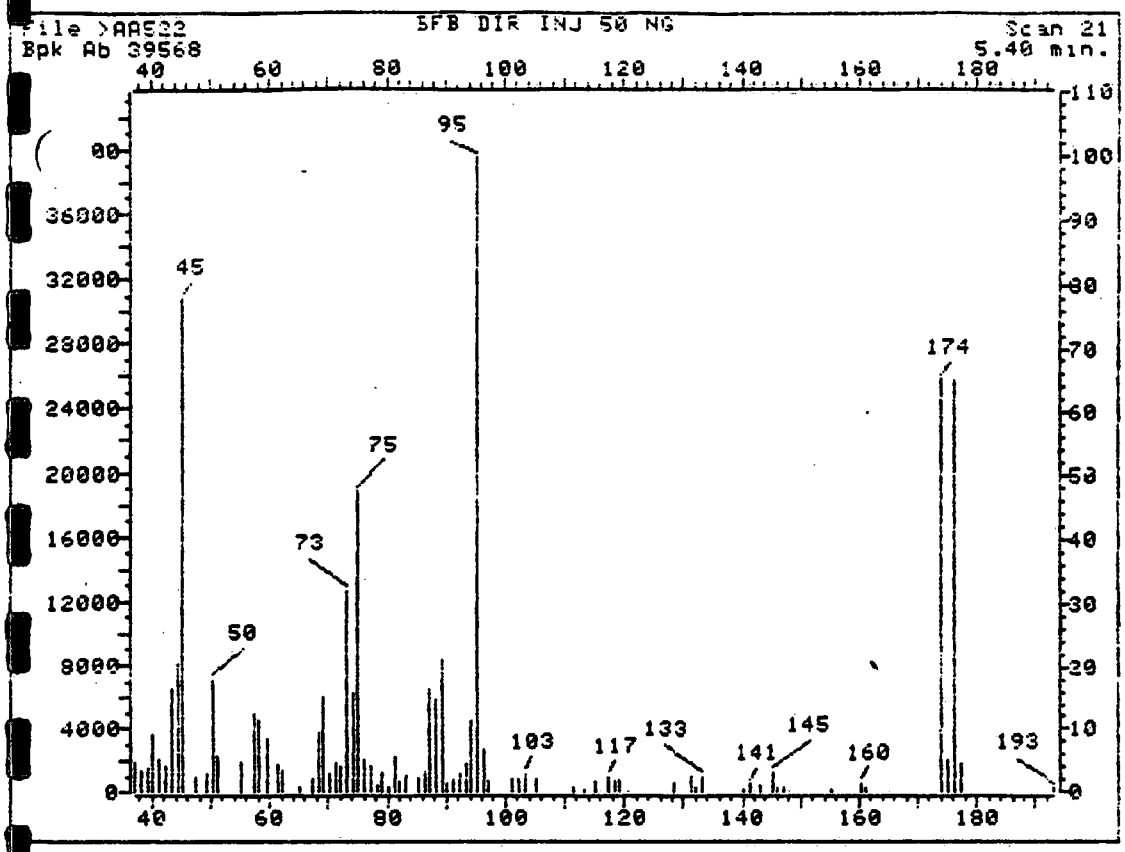
Lab ID AA522 Data Release Authorized By: [illegible]

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	15.0 - 40.0% of the base peak	18
75	30.0 - 60.0% of the base peak	47.6
95	Base peak, 100% relative abundance	100
96	5.0 - 9.0% of the base peak	6.77
173	Less than 1.0% of the base peak	0.00
174	Greater than 50.0% of the base peak	65.5
175	5.0 - 9.0% of mass 174	4.98 (7.61)[1]
176	Greater than 95.0%, but less than 101.0% of mass 174	65.0 (99.3)[1]
177	5.0 - 9.0% of mass 176	4.32 (6.65)[2]

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS.

[1] Value in parenthesis is % mass 174
[2] Value in parenthesis is % mass 176.

SAMPLE ID	LAB ID		DATE OF ANALYSIS	TIME OF ANALYSIS
	BFB Tune	AA522	6/17/87	12:25
	50 ppb Std	AA523	6/17/8	12:56
	Ecco Prox. Blnk	AA524	6/17/87	14:07
			~~6/17~~	
MW-3	87-007838	AA526	6/17/87	16:11
MW-4	87-007839	AA527	6/17/87	16:54
MW-5	87-007840	AA528	6/17/87	17:38
Field Blank	87-007841	AA529	6/17/87	18:21



MS data file header from : >AA522

Sample: BFB DIR INJ 50 NG Operator: JEAN MS 6/17/87 12:25
Desc :
Sys. #: 1 MS model: 87 SW/HW rev.: IA ALS # : 0
Method file: BFB4 Tuning file: MT7404 No. of extra records: 1
Source temp.: 210 Analyzer temp.: 0 Transfer line temp. : 0

Chromatographic temperatures :	0.	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.0	0.0

GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
50	15-40% of mass 95	18.00	18.00	Ok
75	30-60% of mass 95	47.63	47.63	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	6.77	6.77	Ok
173	Less then 1% of mass 95	0.00	0.00	Ok
174	Greater then 50% of mass 95	65.45	65.45	Ok
175	5-9% of mass 174	4.98	7.61	Ok
176	95-101% of mass 174	64.98	99.29	Ok
177	5-9% of mass 176	4.32	6.65	Ok

Injection Date: 06/17/87
Injection Time: 12:25
Data File: >AA522
Scan: 21

AA522 BFB DIR INJ 50 NG
21 NRM

File: >AA522 Scan #: 21 Retn. time: 5.40

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
37.20	4.85	59.40	8.33	79.20	3.21	96.25	6.77	133.25	2.58
38.30	3.40	61.25	4.40	80.20	.88	97.25	1.87	140.25	.44
39.30	3.86	62.25	3.56	81.20	5.72	101.25	2.20	141.15	1.32
40.20	9.07	65.15	.89	82.20	1.76	102.25	2.04	143.15	1.10
41.30	5.13	67.25	1.97	83.30	2.80	103.25	3.14	145.40	3.21
42.30	4.17	68.25	9.53	85.30	2.30	105.25	1.93	146.20	.59
43.30	16.53	69.20	15.12	86.30	3.30	111.30	.92	147.30	.78
44.30	20.41	70.20	3.16	87.30	16.46	113.20	.47	155.20	.55
45.30	77.76	71.30	4.85	88.25	14.87	115.30	1.86	160.30	1.56
47.30	2.34	72.20	4.02	89.25	21.27	117.20	2.54	161.30	.72
49.25	3.26	73.20	32.10	90.25	1.50	118.30	1.67	174.15	65.45
50.25	18.00	74.20	15.92	91.25	2.26	119.30	2.13	175.25	4.98
51.25	5.95	75.20	47.63	92.25	2.89	128.25	1.45	176.15	64.98
55.25	4.89	76.20	5.22	93.25	4.51	131.25	2.43	177.25	4.32
57.25	12.48	77.20	3.97	94.25	11.31	132.25	.60	193.30	.60
58.25	11.57	78.20	1.01	95.25	100.00				

GC/MS TUNING AND MASS CALIBRATION

Bromofluorobenzene (BFB)

Case No. CAEX Contractor ENSECO INC. Contract No

Instrument ID V3 Date 5.16.87 Time 17:08

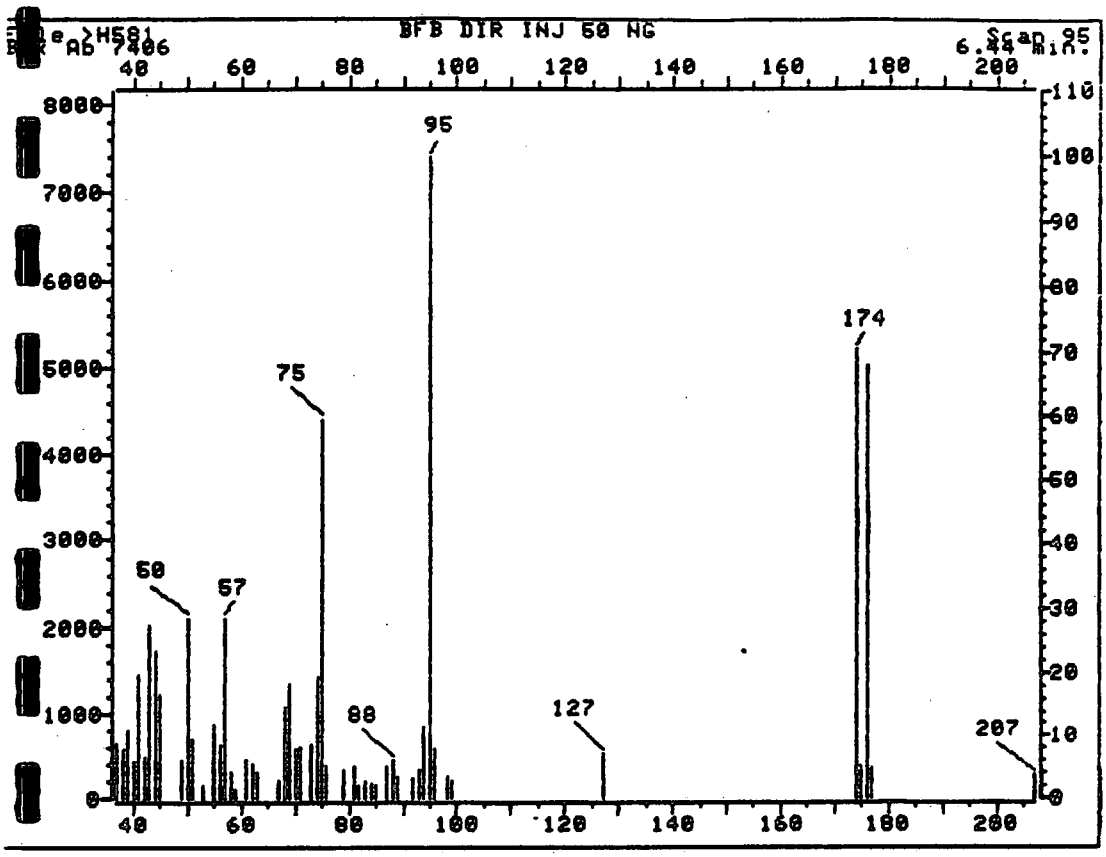
Lab ID >H581 Data Release Authorized By: An

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	15.0 - 40.0% of the base peak	28.3
75	30.0 - 60.0% of the base peak	59.5
95	Base peak, 100% relative abundance	100
96	5.0 - 9.0% of the base peak	7.72
173	Less than 1.0% of the base peak	0.00
174	Greater than 50.0% of the base peak	70.4
175	5.0 - 9.0% of mass 174	5.16 (7.33)[1]
176	Greater than 95.0%, but less than 101.0% of mass 174	67.9 (96.5)[1]
177	5.0 - 9.0% of mass 176	4.86 (7.16)[2]

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS

[1] Value in parenthesis is % mass 174
[2] Value in parenthesis is % mass 176.

SAMPLE ID	LAB ID	DATE OF ANALYSIS	TIME OF ANALYSIS
	BFB tune >H581	5.16.87	17:08
	VOA 20 ppb std >H583	5.16.87	18:55
	VOA 50 ppb std >H585	5.16.87	20:43
	VOA 100 ppb std >H586	5.16.87	21:37
	VOA 150 ppb std >H587	5.16.87	22:31
	VOA 200 ppb std >H588	5.16.87	23:25



data file header from : >H581

Sample: BFB DIR INJ 50 NG Operator: STEVE MS 5/16/87 17:08
Misc :
Ins. #: 1 MS model: 96 SW/HW rev.: IA ALS # : 0
Method file: BFB3 Tuning file: MT7403 No. of extra records: 1
Source temp.: 200 Analyzer temp.: 200 Transfer line temp. : 220

Chromatographic temperatures :	220.	220.	0.	0.	0.
Chromatographic times, min. :	.1	10.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	.1	0.0	0.0	0.0	0.0

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	28.34	28.34	Ok
75	30-60% of mass 95	59.48	59.48	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.72	7.72	Ok
173	Less then 1% of mass 95	0.00	0.00	Ok
174	Greater then 50% of mass 95	70.36	70.36	Ok
175	5-9% of mass 174	5.16	7.33	Ok
176	95-101% of mass 174	67.90	96.51	Ok
177	5-9% of mass 176	4.86	7.16	Ok

Injection Date: 05/16/87
Injection Time: 17:08
Data File: >H581
Scan: 95

:TAB

>H581 BFB DIR INJ 50 NG
95 NRM

File: >H581 Scan #: 95 Retn. time: 6.44

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
36.90	8.91	50.95	9.47	67.95	14.39	81.95	1.94	95.00	100.00
37.90	7.71	52.95	2.04	68.95	18.16	82.95	2.66	96.00	7.72
38.90	10.76	55.05	11.83	70.05	7.84	84.10	2.39	98.10	3.47
39.90	5.81	55.95	8.32	71.05	8.17	85.10	2.03	99.10	2.62
40.90	19.44	57.05	28.37	72.95	8.44	87.00	5.24	126.95	7.10
42.00	6.47	57.95	4.27	73.95	19.25	88.00	6.02	174.00	70.36
43.00	27.38	58.95	1.55	74.95	59.48	89.00	3.51	175.00	5.16
43.90	23.36	60.95	6.27	75.95	5.23	92.00	2.94	176.00	67.90
45.00	16.38	61.95	5.58	78.85	4.39	93.00	4.43	177.00	4.86
48.90	6.20	62.95	4.08	80.85	5.05	94.00	11.52	207.15	3.74
49.90	28.34	67.05	2.73						

GC/MS TUNING AND MASS CALIBRATION

Bromofluorobenzene (BFB)

Case No. Geoengineering Contractor: ENSECO INC. Contract No. —

Instrument ID V3 Date 6/17/87 Time 8:52

Lab ID J170 Data Release Authorized By: Av.

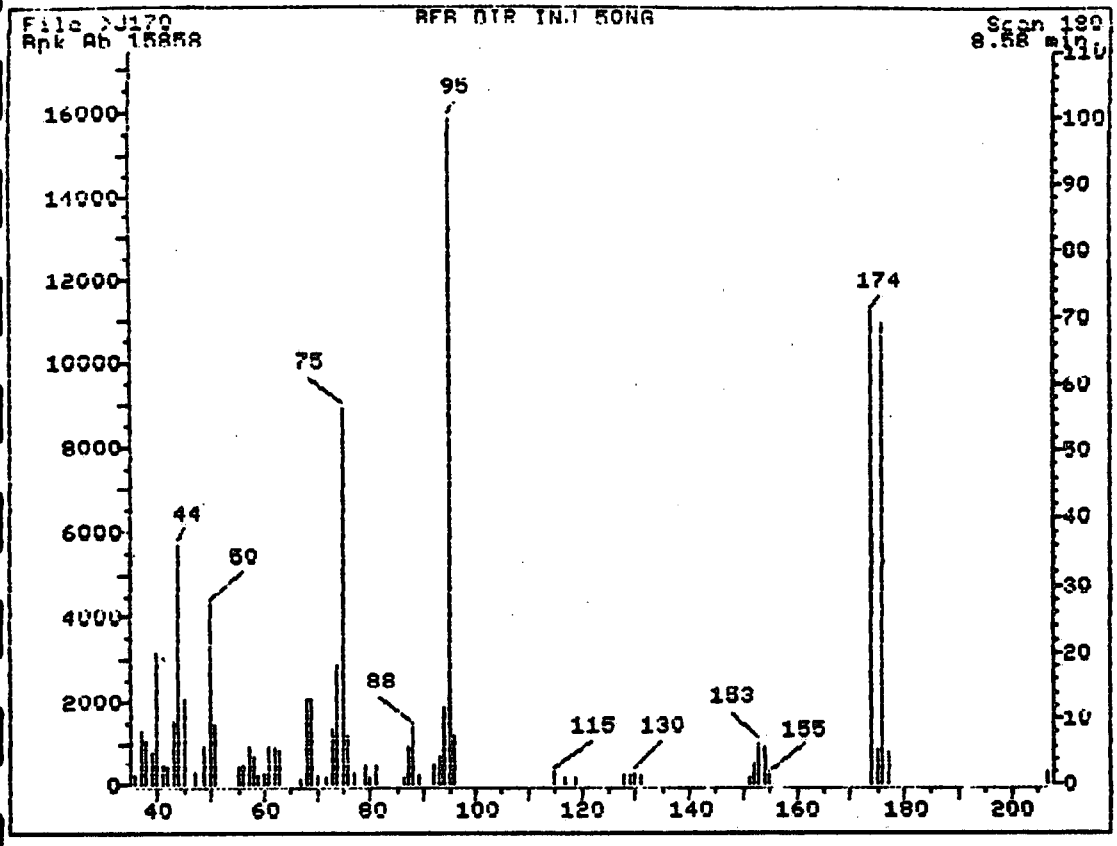
m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	15.0 - 40.0% of the base peak	27.2
75	30.0 - 60.0% of the base peak	56.2
95	Base peak, 100% relative abundance	100
96	5.0 - 9.0% of the base peak	7.47
173	Less than 1.0% of the base peak	0.00
174	Greater than 50.0% of the base peak	70.8
175	5.0 - 9.0% of mass 174	5.13 (7.3)[1]
176	Greater than 95.0%, but less than 101.0% of mass 174	69.0 (97.4)[1]
177	5.0 - 9.0% of mass 176	4.92 (7.1)[2]

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS.

[1] Value in parenthesis is % mass 174
[2] Value in parenthesis is % mass 176.

SAMPLE ID	LAB ID	DATE OF ANALYSIS	TIME OF ANALYSIS
	BFB Tune J170	6/17/87	8:52
	50 ppb Std J173	6/17/87	12:33
	Ecco Prac. Blank J174	6/17/87	13:47
MW-1	87-007886 J179	6/17/87	19:27
MW-2	87-007887 J180	6/17/87	20:20

FORM V 7/85



MS data file header from : >J170

Sample: BFB DIR INJ 50NG Operator: STEVE MS 6/17/87 8:59
Misc :
Sys. #: 1 MS model: 96 SW/HW rev.: IA ALS # : 0
Method file: BFB3 Tuning file: MT7403 No. of extra records: 1
Source temp.: 200 Analyzer temp.: 200 Transfer line temp. : 220

Chromatographic temperatures :	220.	220.	0.	0.	0.
Chromatographic times, min. :	.1	15.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	.1	0.0	0.0	0.0	0.0

GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
50	15-40% of mass 95	27.22	27.22	Ok
75	30-60% of mass 95	56.15	56.15	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.47	7.47	Ok
173	Less than 1% of mass 95	0.00	0.00	Ok
174	Greater than 50% of mass 95	70.80	70.80	Ok
175	5-9% of mass 174	5.13	7.25	Ok
176	95-101% of mass 174	69.03	97.51	Ok
177	5-9% of mass 176	4.92	7.13	Ok

Injection Date: 06/17/87
Injection Time: 08:52
Data File: >J170
Scan: 180

>J170 BFB DIR INJ 50NG
180 NRM

File: >J170 Scan #: 180 Retn. time: 8.58

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
35.90	1.44	50.95	9.00	69.95	1.52	88.00	8.58	130.05	1.73
36.90	8.19	55.05	2.60	71.95	1.03	89.00	1.20	131.15	1.31
37.90	6.45	55.95	2.89	72.95	8.49	92.00	2.83	151.20	1.10
39.00	4.78	57.05	5.95	73.95	18.01	93.00	4.40	152.10	3.37
39.90	19.88	57.95	4.36	74.95	56.15	94.00	11.69	153.10	6.29
41.00	3.29	58.95	1.45	75.95	7.31	95.00	100.00	154.20	5.94
41.90	2.58	59.95	1.77	76.95	2.14	96.00	7.47	155.10	1.27
42.90	9.64	60.95	5.95	78.85	2.96	115.10	1.84	174.00	70.80
43.90	36.04	61.95	5.91	79.85	1.07	117.05	1.14	175.00	5.13
44.90	12.74	62.95	5.13	80.95	3.10	119.05	.93	176.00	69.03
47.00	2.06	66.95	.82	86.10	1.19	128.05	1.23	177.00	4.92
48.90	5.78	67.95	12.98	87.00	5.74	129.05	1.25	207.15	1.95
49.90	27.22	68.95	12.88						

Three

Enseco

PRIORITY POLLUTANT VOLATILE ORGANICS

EPA Method 624 + 624/HSL List

QUALITY CONTROL

Client Name: GeoEngineering, Inc.

Client ID: Laboratory Control Spike

Laboratory ID: J091LCS

Matrix: Water Prepared: 06/13/87 Analyzed: 06/13/87

Parameter	% Recovery	QC Advisory Limits
1,1-Dichloroethene	85	61 - 145%
Trichloroethene	80	71 - 120%
Benzene	90	76 - 127%
Toluene	86	76 - 125%
Chlorobenzene	92	75 - 130%

Reported by _____ Approved by _____

Enseco

PRIORITY POLLUTANT VOLATILE ORGANICS

EPA Method 624 + 624/HSL List

QUALITY CONTROL

Client Name: GeoEngineering, Inc.
Client ID: Laboratory Control Spike Dup.
Laboratory ID: J206LCSD
Matrix: Water Prepared: 06/19/87 Analyzed: 06/19/87

Parameter	% Recovery	QC Advisory Limits
1,1-Dichloroethene	73	61 - 145%
Trichloroethene	67	71 - 120%
Benzene	82	76 - 127%
Toluene	82	76 - 125%
Chlorobenzene	86	75 - 130%

Reported by _____ Approved by _____

Enseco

HAZARDOUS SUBSTANCE LIST (HSL) VOLATILE ORGANICS

EPA Method 624/HSL List

Client Name: GeoEngineering, Inc.
Client ID: MW-1
Laboratory ID: 87-007836
Matrix: Water Sampled: 06/08/87 Received: 06/09/87
Authorized: 06/09/87 Prepared: 06/17/87 Analyzed: 06/17/87

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	µg/L	5,000
Bromomethane	ND	µg/L	5,000
Vinyl chloride	ND	µg/L	5,000
Chloroethane	ND	µg/L	5,000
Methylene chloride	16,000B	µg/L	5,000
Acetone	11,000*B	µg/L	50,000
Carbon disulfide	ND	µg/L	2,000
1,1-Dichloroethene	ND	µg/L	2,000
1,1-Dichloroethane	ND	µg/L	2,000
trans-1,2-Dichloroethene	ND	µg/L	2,000
Chloroform	ND	µg/L	2,000
1,2-Dichloroethane	ND	µg/L	2,000
2-Butanone	ND	µg/L	10,000
1,1,1-Trichloroethane	ND	µg/L	2,000
Carbon tetrachloride	ND	µg/L	2,000
Vinyl acetate	ND	µg/L	10,000
Bromodichloromethane	ND	µg/L	2,000
1,2-Dichloropropane	ND	µg/L	2,000
trans-1,3-Dichloropropene	ND	µg/L	2,000
Trichloroethene	1,300*B	µg/L	2,000
Dibromochloromethane	ND	µg/L	2,000
1,1,2-Trichloroethane	ND	µg/L	2,000
Benzene	ND	µg/L	2,000
cis-1,3-Dichloropropene	ND	µg/L	2,000
2-Chloroethyl vinyl ether	ND	µg/L	10,000
Bromoform	ND	µg/L	2,000
4-Methyl-2-pentanone	ND	µg/L	10,000
2-Hexanone	ND	µg/L	10,000
1,1,2,2-Tetrachloroethane	ND	µg/L	2,000
Tetrachloroethene	ND	µg/L	2,000
Toluene	ND	µg/L	2,000
Chlorobenzene	ND	µg/L	2,000
Ethyl benzene	6,700	µg/L	2,000
Styrene	ND	µg/L	2,000
Total xylenes	39,000	µg/L	2,000

ND = Not detected.
*Trace concentrations detected below the reporting limit.

Reported by _____ Approved by _____

Enseco

VOLATILE ORGANICS

TENTATIVELY IDENTIFIED COMPOUNDS

EPA Method 624/8240

Client Name: GeoEngineering, Inc.

Client ID: MW-1

Laboratory ID: 87-007836

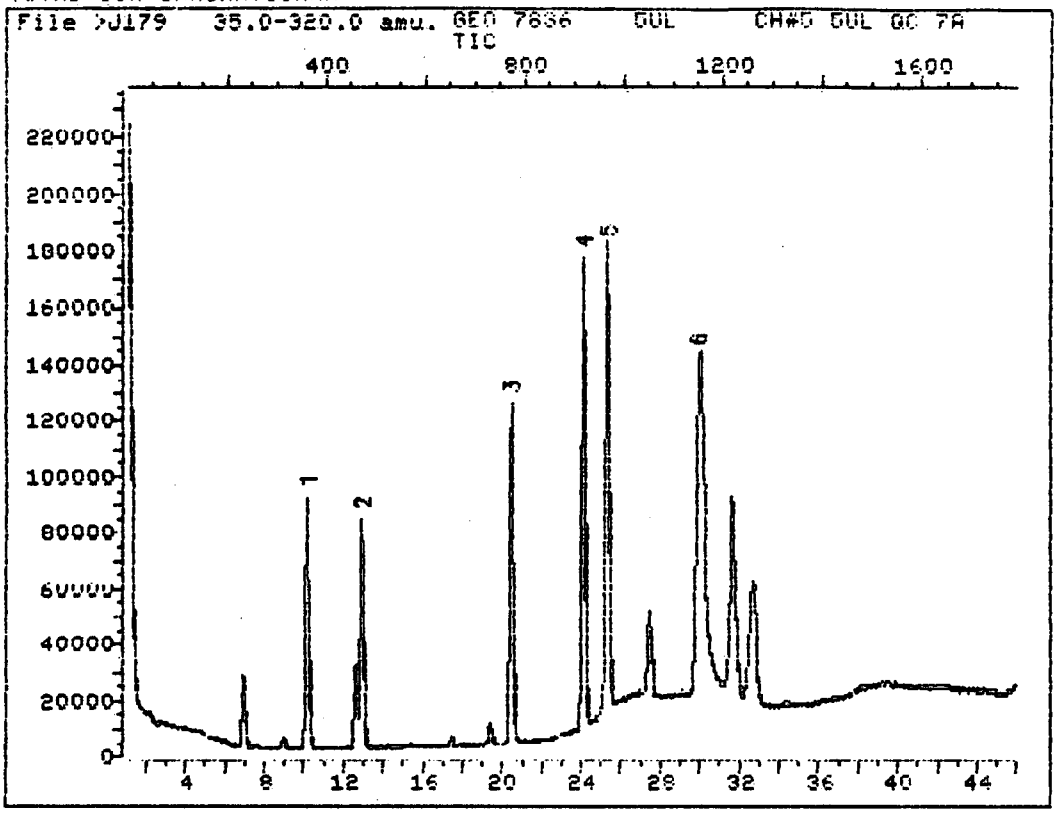
Matrix: Water Sampled: 06/08/87 Received: 06/09/87

Authorized: 06/09/87 Prepared: 06/17/87 Analyzed: 06/17/87

Parameter	Scan No.	Units	Estimated concentration
None detected			

Reported by _____ Approved by _____

TOTAL ION CHROMATOGRAM



Data File: >J179::D3
Name: GEO 7836 5UL
Misc: CH#5 5UL QC 7A

Id File: VOAID3::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V3:ERCO/ENSECO
Last Calibration: 870617 13:49

Operator ID: STEVE
Quant Time: 870617 20:13
Injected at: 870617 19:27

Previous Sample 5178 ERCO ID 7807
Matrix Confirmed
J1666
7959

QUANT REPORT

Operator ID: STEVE
Output File: ^J179::QO
Data File: >J179::D3
Name: GFO 7836 5UL
Misc: CH#5 5UL QC 7A

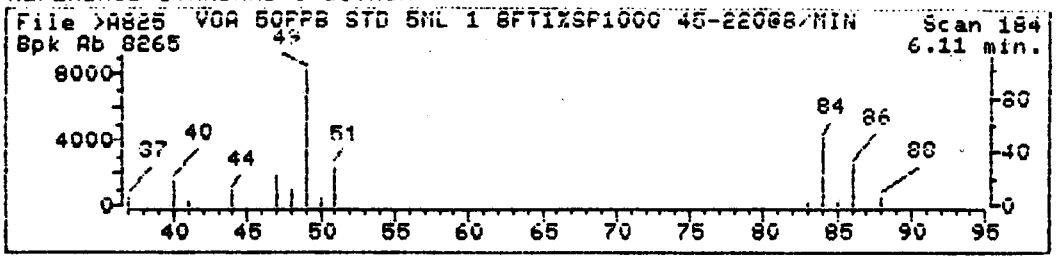
Quant Rev: 4 Quant Time: 870617 20:1[illegible]
Injected at: 870617 19:27
Dilution Factor: 1.00
1000

ID File: VOAID3::$$
Title: HSL VOLATILES:BFT1%SP1000:45-220@8/MIN:GCMS V3:ERCO/ENSECO
Last Calibration: 870617 13:49

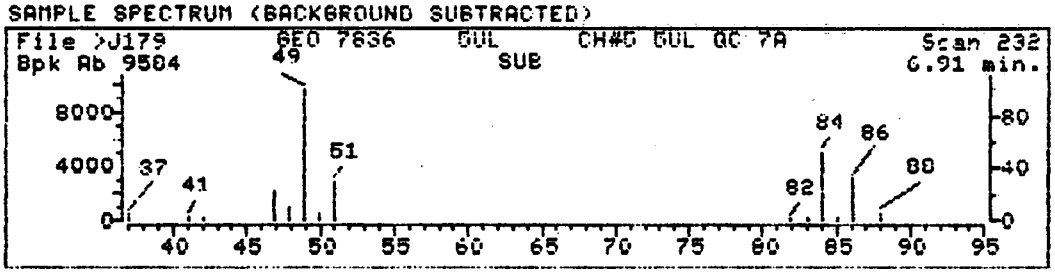
	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	10.19	363	231151	50.00	ug/L	91
6)	Methylene Chloride	6.91	232	52680	16.21	ug/L	8[illegible]
7)	Acetone	7.64	261	14884	10.76	ug/L	100
14)	D4-1,2-Dichloroethane	12.92	472	332264	50.93	ug/L 102	99
15)	*1,4-Difluorobenzene	20.45	773	446846	50.00	ug/L	100
17)	1,1,1-Trichloroethane	14.32	528	2411	.29	ug/L	89
23)	Trichloroethene	17.40	651	6343	1.30	ug/L	96
30)	*D5-Chlorobenzene	25.31	967	496644	50.00	ug/L	8[illegible]
35)	Toluene	24.28	926	1764	.18	ug/L	88
36)	D8-Toluene	24.10	919	387007	50.04	ug/L 100	96
38)	Ethylbenzene	27.41	1051	43491	6.72	ug/L	93
39)	Xylene (m)	31.65	1220	216303	22.68	ug/L	96
40)	Styrene	31.63	1219	10960	.59	ug/L	100
41)	Xylenes (o , p)	32.63	1259	154209	15.85	ug/L	94
42)	Bromofluorobenzene (BFB)	29.92	1151	396149	51.83	ug/L	70

* Compound is ISTD

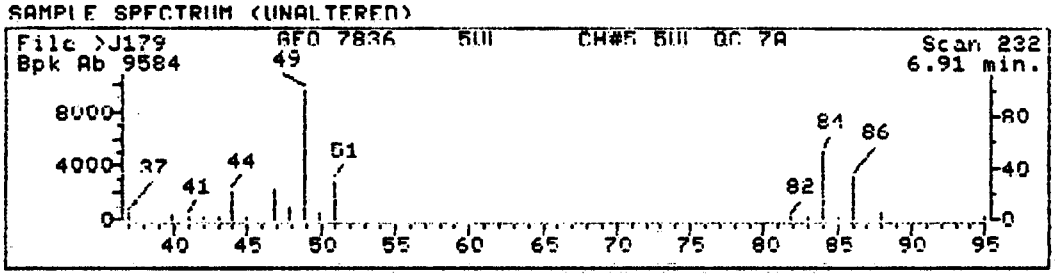
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



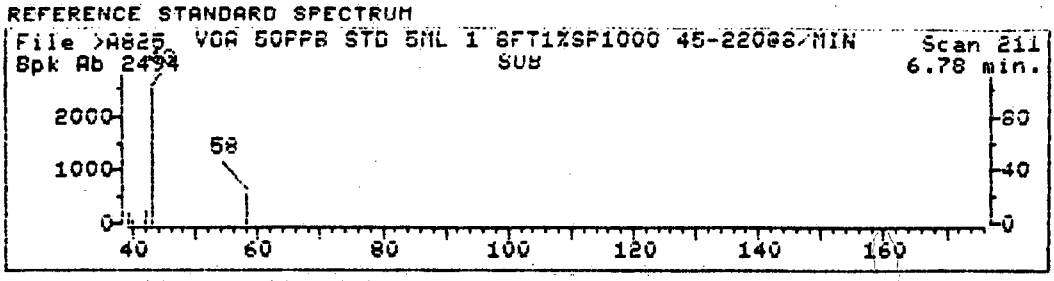
SAMPLE SPECTRUM (UNALTERED)



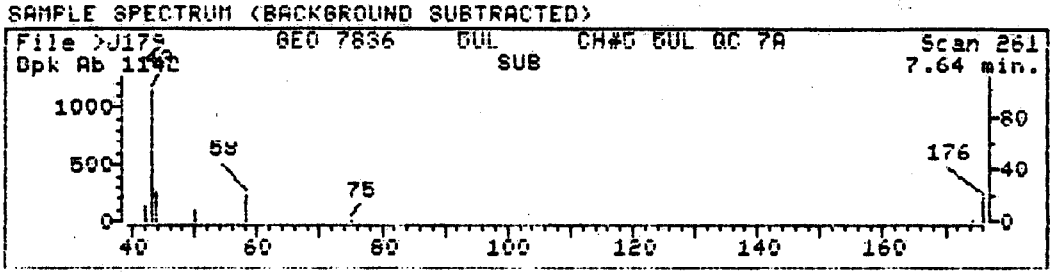
Data File: >J179::D3
Name: GEO 7836 5UL
Misc: CH#5 5UL QC 7A
Quant Time: 870617 20:13
Injected at: 870617 19:27

Compound No: 6
Compound Name: Methylene Chloride
Scan Number: 232
Retention Time: 6.91 min.
Area: 52680
Concentration: 16.21 ug/L
q-value: 83

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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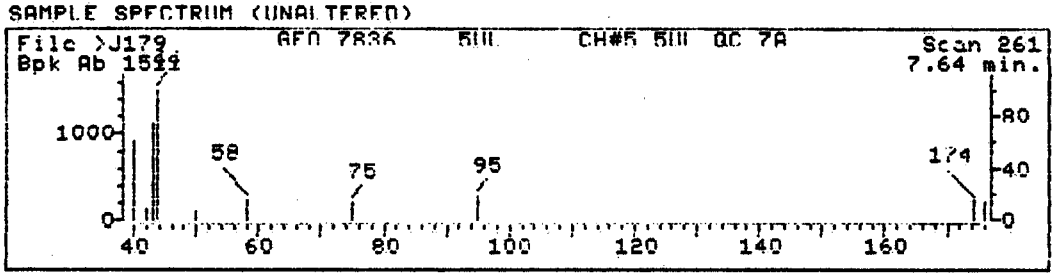
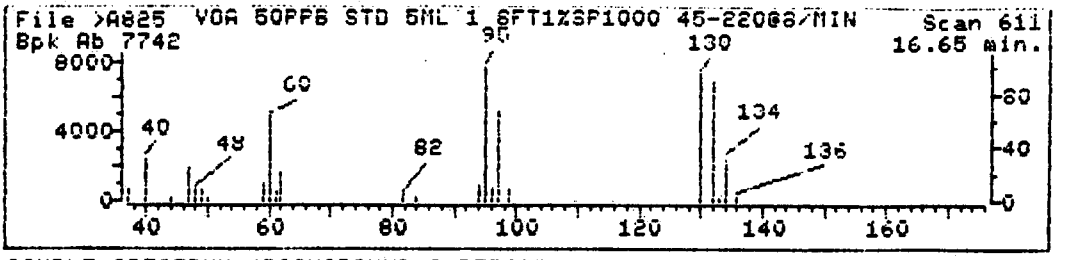


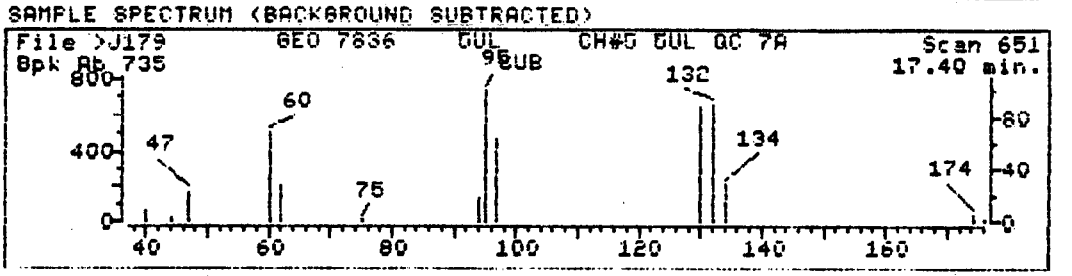
Data File: >J179::D3
Name: GEO 7836 5UL
Misc: CH#5 5UL QC 7A
Quant Time: 870617 20:13
Injected at: 870617 19:27

Compound No: 7
Compound Name: Acetone
Scan Number: 261
Retention Time: 7.64 min.
Area: 14884
Concentration: 10.76 ug/L
q-value: 100

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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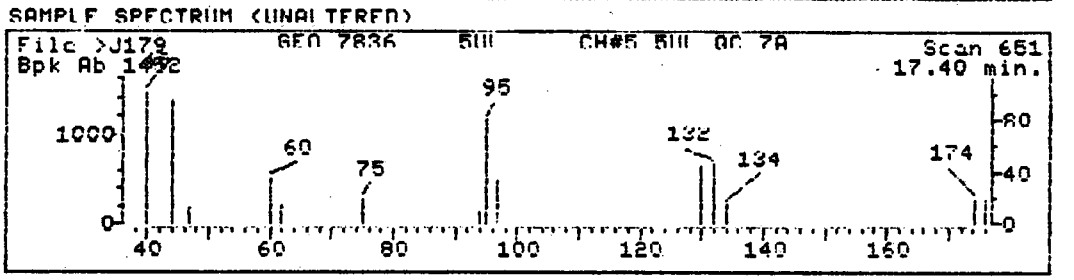
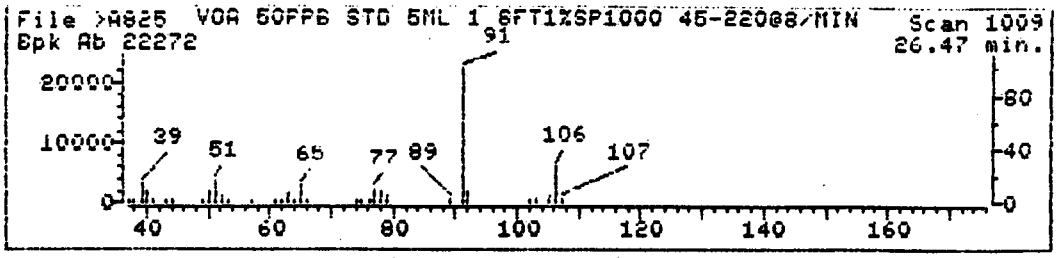


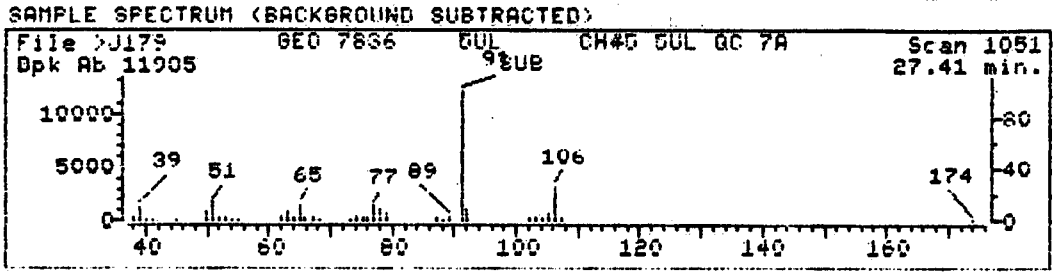
Data File: >J179::D3
Name: GEO 7836 5UL
Misc: CH#5 5UL QC 7A
Quant Time: 870617 20:13
Injected at: 870617 19:27

Compound No: 23
Compound Name: Trichloroethene
Scan Number: 651
Retention Time: 17.40 min.
Area: 6343
Concentration: 1.30 ug/l
q-value: 96

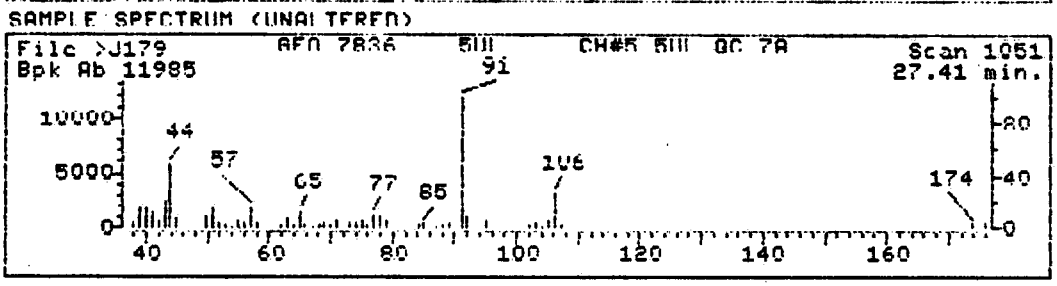
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



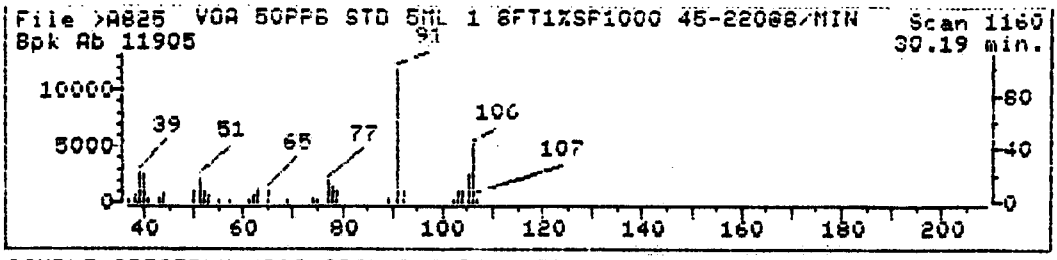
SAMPLE SPECTRUM (UNALTERED)



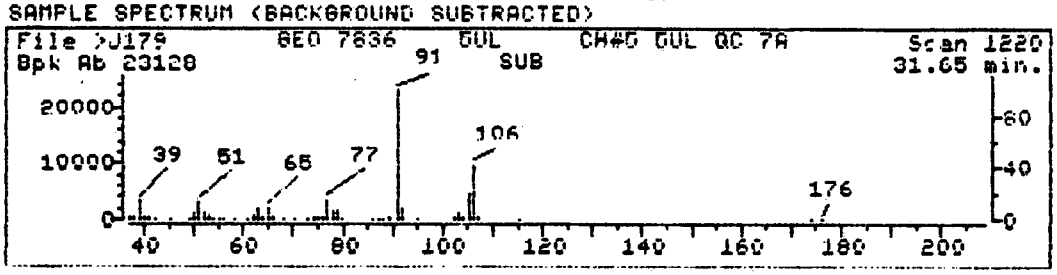
Data File: >J179::D3
Name: GEO 7836 5UL
Misc: CH#5 5UL QC 7A
Quant Time: 870617 20:13
Injected at: 870617 19:27

Compound No: 38
Compound Name: Ethylbenzene
Scan Number: 1051
Retention Time: 27.41 min.
Area: 43491
Concentration: 6.72 ug/L
q-value: 93

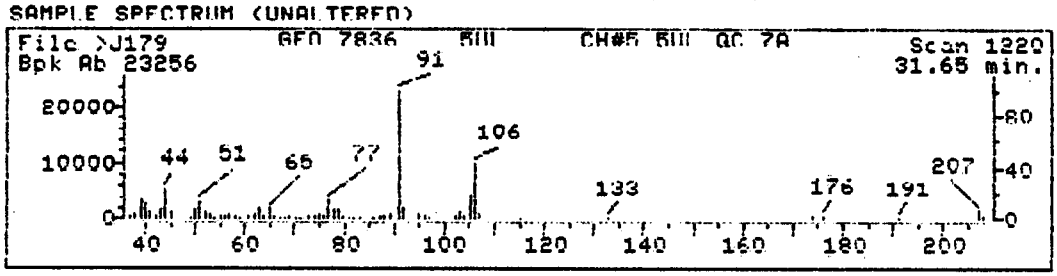
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



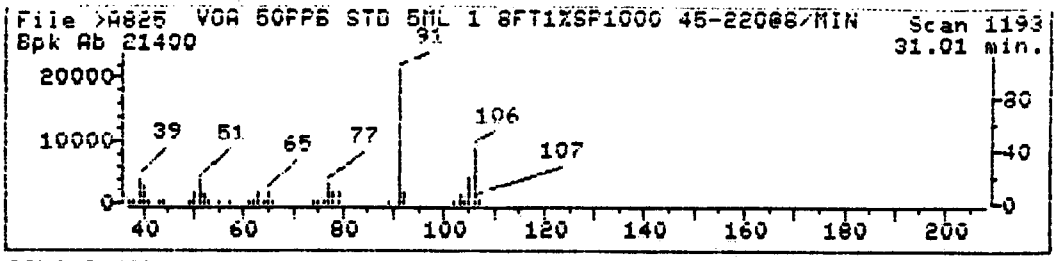
SAMPLE SPECTRUM (UNALTERED)



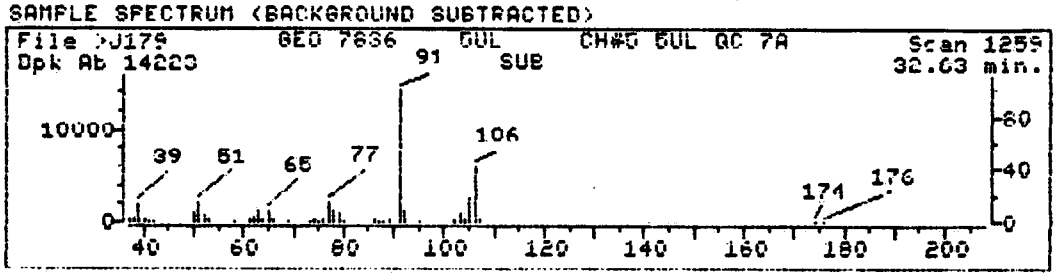
Data File: >J179::D3
Name: GEO 7836 5UL
Misc: CH#5 5UL QC 7A
Quant Time: 870617 20:13
Injected at: 870617 19:27

Compound No: 39
Compound Name: Xylene (m)
Scan Number: 1220
Retention Time: 31.65 min.
Area: 216303
Concentration: 22.68 ug/L
q-value: 96

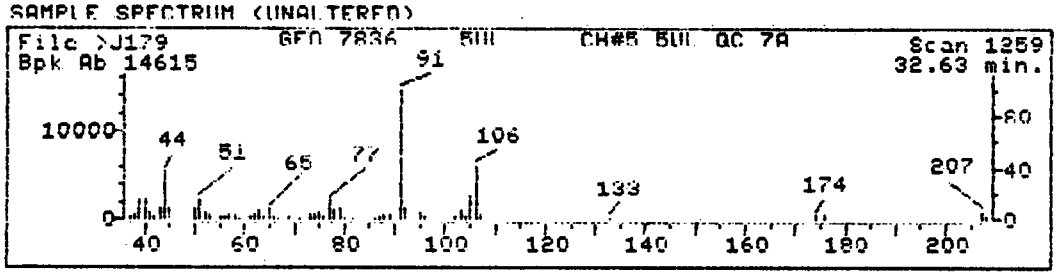
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >J179::D3
Name: GEO 7836 5UL
Misc: CH#5 5UL QC 7A
Quant Time: 870617 20:13
Injected at: 870617 19:27

Compound No: 41
Compound Name: Xylenes (o , p)
Scan Number: 1259
Retention Time: 32.63 min.
Area: 154209
Concentration: 15.85 ug/L
q-value: 94

Enseco

HAZARDOUS SUBSTANCE LIST (HSL) VOLATILE ORGANICS

EPA Method 624/HSL List

Client Name: GeoEngineering, Inc.
Client ID: MW-2
Laboratory ID: 87-007837
Matrix: Water Sampled: 06/08/87 Received: 06/09/87
Authorized: 06/09/87 Prepared: 06/17/87 Analyzed: 06/17/87

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	µg/L	500
Bromomethane	ND	µg/L	500
Vinyl chloride	ND	µg/L	500
Chloroethane	ND	µg/L	500
Methylene chloride	3,900B	µg/L	500
Acetone	2,400*B	µg/L	5,000
Carbon disulfide	ND	µg/L	200
1,1-Dichloroethene	ND	µg/L	200
1,1-Dichloroethane	ND	µg/L	200
trans-1,2-Dichloroethene	ND	µg/L	200
Chloroform	ND	µg/L	200
1,2-Dichloroethane	ND	µg/L	200
2-Butanone	ND	µg/L	1,000
1,1,1-Trichloroethane	ND	µg/L	200
Carbon tetrachloride	ND	µg/L	200
Vinyl acetate	ND	µg/L	1,000
Bromodichloromethane	ND	µg/L	200
1,2-Dichloropropane	ND	µg/L	200
trans-1,3-Dichloropropene	ND	µg/L	200
Trichloroethene	150*B	µg/L	200
Dibromochloromethane	ND	µg/L	200
1,1,2-Trichloroethane	ND	µg/L	200
Benzene	ND	µg/L	200
cis-1,3-Dichloropropene	ND	µg/L	200
2-Chloroethyl vinyl ether	ND	µg/L	1,000
Bromoform	ND	µg/L	200
4-Methyl-2-pentanone	ND	µg/L	1,000
2-Hexanone	ND	µg/L	1,000
1,1,2,2-Tetrachloroethane	ND	µg/L	200
Tetrachloroethene	ND	µg/L	200
Toluene	ND	µg/L	200
Chlorobenzene	ND	µg/L	200
Ethyl benzene	740	µg/L	200
Styrene	ND	µg/L	200
Total xylenes	9,500	µg/L	200

ND = Not detected.
*Trace concentrations detected below the reporting limit.

Reported by _____ Approved by _____

Enseco

VOLATILE ORGANICS

TENTATIVELY IDENTIFIED COMPOUNDS

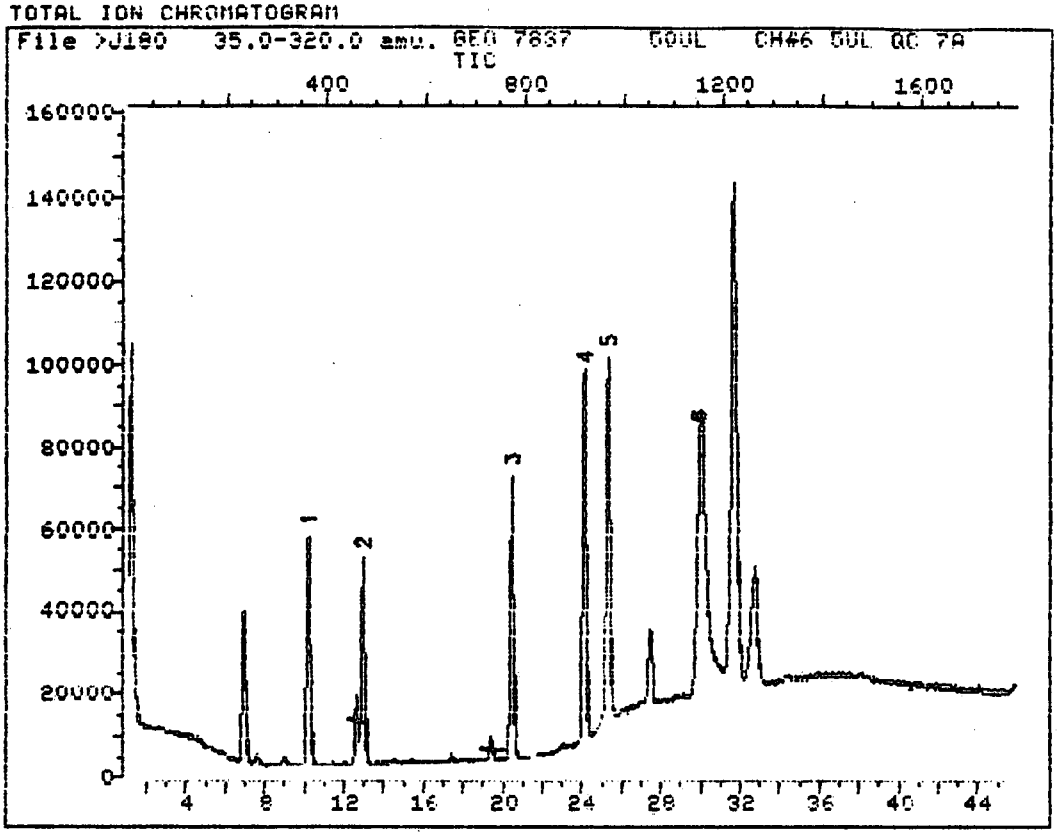
EPA Method 624/8240

Client Name: GeoEngineering, Inc.
Client ID: MW-2
Laboratory ID: 87-007837
Matrix: Water Sampled: 06/08/87 Received: 06/09/87
Authorized: 06/09/87 Prepared: 06/17/87 Analyzed: 06/17/87

Parameter	Scan No.	Units	Estimated concentration
None detected			

Reported by _____ Approved by _____

TOTAL ION CHROMATOGRAM



Data File: >J180::D3
Name: BFB 7837 50UL
Misc: CH#6 5UL QC 7A

Id File: VOA1D3::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V3:ERCO/ENSECO
Last Calibration: 870617 13:49

Operator ID: STEVE
Quant Time: 870617 21:02
Injected at: 870617 20:20

Sample or Standard S179 ERCO ID 7836

J167

79600

QUANT REPORT

Operator ID: STEVE
Output File: ^J180::QO
Data File: >J180::D3
Name: GEO 7837 5ML
Misc: CH#6 5ML QC 7A

Quant Rev: 4
Quant Time: 870617 21:0
Injected at: 870617 20:20
Dilution Factor: 1.00

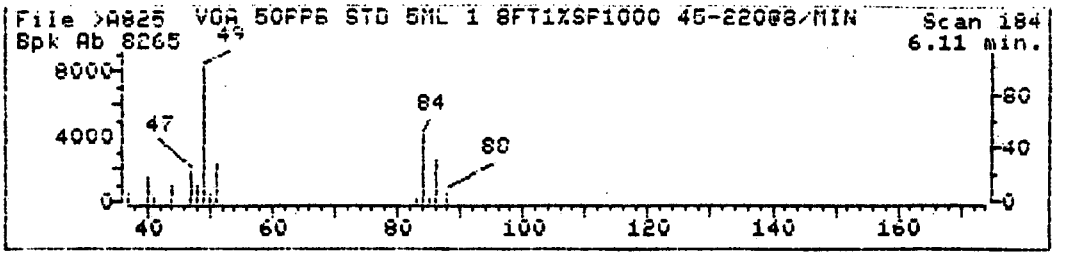
1oc

ID File: VOAID3::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V3:ERCO/ENSECO
Last Calibration: 870617 13:49

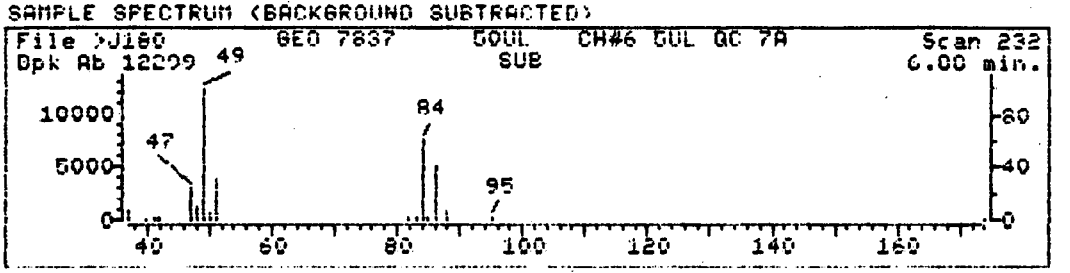
	Compound	R.T.	Scan#	Area	Conc	Units		q
1)	*Bromochloromethane	10.21	365	145385	50.00	ug/L		92
6)	Methylene Chloride	6.88	232	80141	39.21	ug/L		95
7)	Acetone	7.61	261	21171	24.33	ug/L		100
14)	D4-1,2-Dichloroethane	12.91	473	198684	48.43	ug/L	97	91
15)	*1,4-Difluorobenzene	20.44	774	248727	50.00	ug/L		100
23)	Trichloroethene	17.39	652	3976	1.47	ug/L		81
30)	*D5-Chlorobenzene	25.32	969	260498	50.00	ug/L		79
36)	D8-Toluene	24.10	920	206518	50.91	ug/L	102	96
38)	Ethylbenzene	27.43	1053	25389	2.47	ug/L		94
39)	Xylene (m)	31.64	1221	377405	25.43	ug/L		96
40)	Styrene	31.64	1221	17740	1.09	ug/L		100
41)	Xylenes (o , p)	32.67	1262	98891	19.32	ug/L		96
42)	Bromofluorobenzene (BFB)	29.91	1152	203040	50.64	ug/L	101	71

* Compound is ISTD

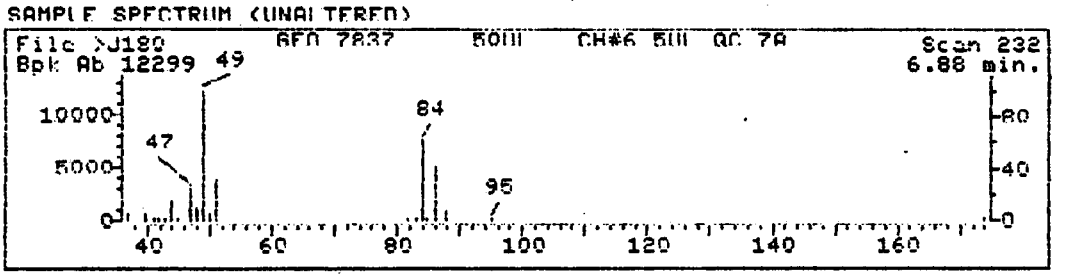
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



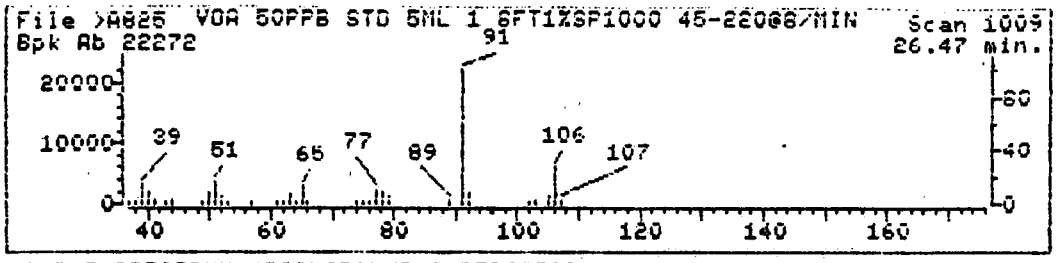
SAMPLE SPECTRUM (UNALTERED)



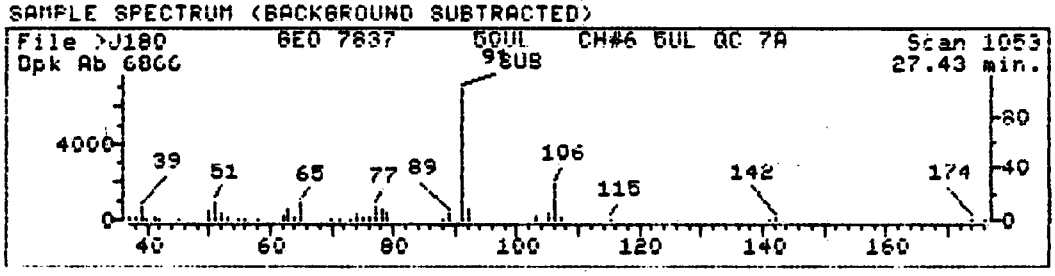
Data File: >J180::D3
Name: GEO 7837 50UL
Misc: CH#6 5UL QC 7A
Quant Time: 870617 21:07
Injected at: 870617 20:20

Compound No: 6
Compound Name: Methylene Chloride
Scan Number: 232
Retention Time: 6.88 min.
Area: 80141
Concentration: 39.21 ug/l
q-value: 95

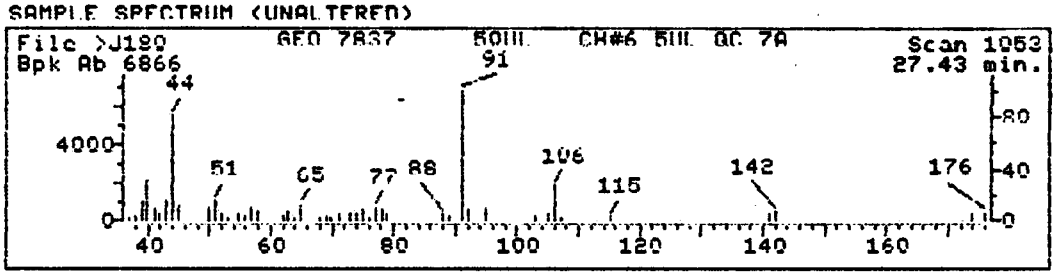
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



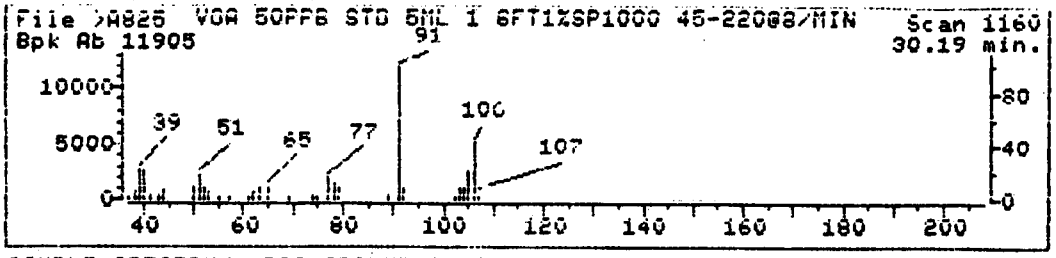
SAMPLE SPECTRUM (UNALTERED)



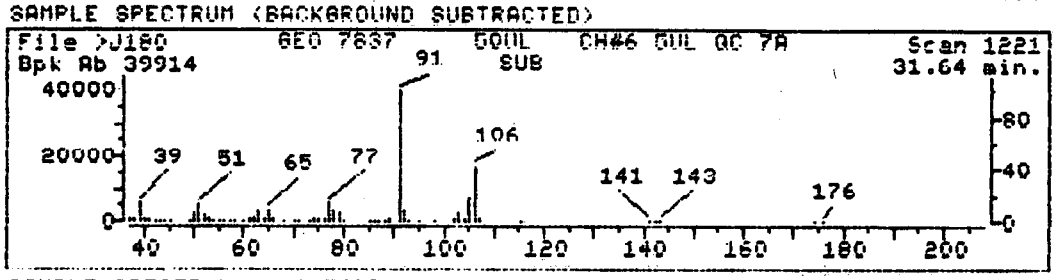
Data File: >J180::D3
Name: GEO 7837 50UL
Misc: CH#6 5UL QC 7A
Quant Time: 870617 21:07
Injected at: 870617 20:20

Compound No: 38
Compound Name: Ethylbenzene
Scan Number: 1053
Retention Time: 27.43 min.
Area: 25389
Concentration: 7.47 ug/L
q-value: 94

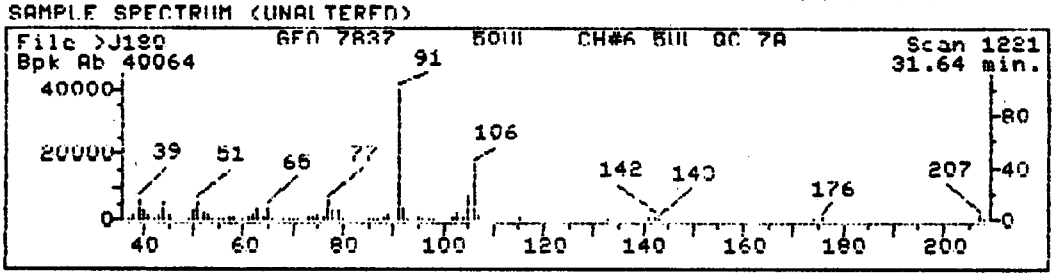
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



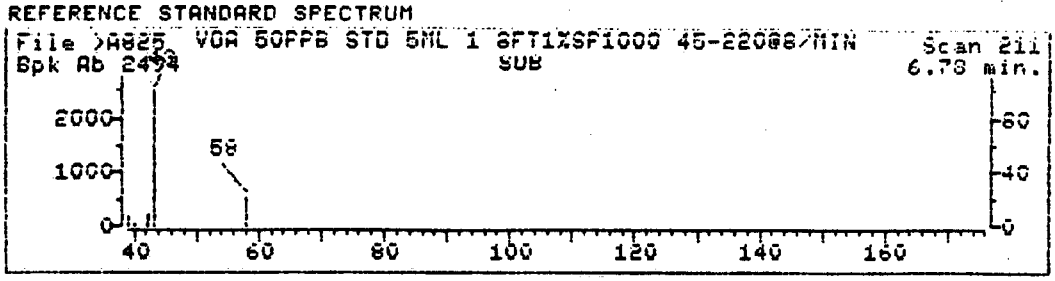
SAMPLE SPECTRUM (UNALTERED)



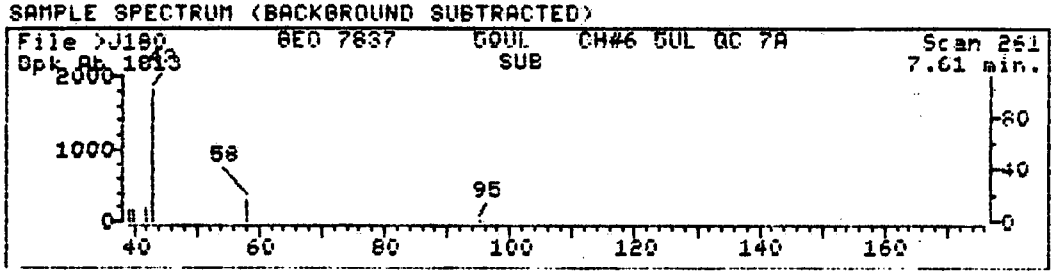
Data File: >J180::D3
Name: 6E0 7837 50UL
Misc: CH#6 5UL QC 7A
Quant Time: 870617 21:07
Injected at: 870617 20:20

Compound No: 39
Compound Name: Xylene (m)
Scan Number: 1221
Retention Time: 31.64 min.
Area: 377405
Concentration: 75.43 ug/L
q-value: 96

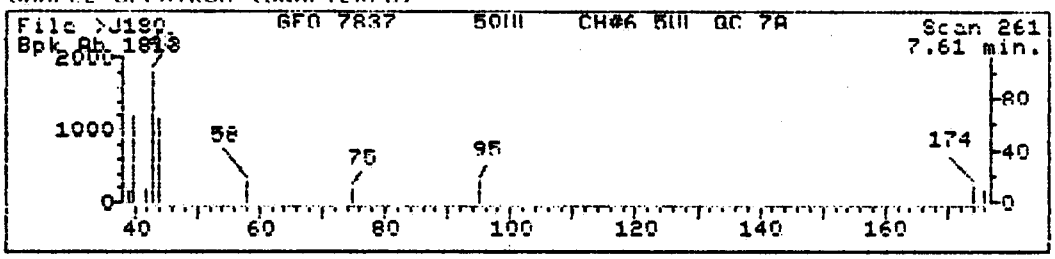
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



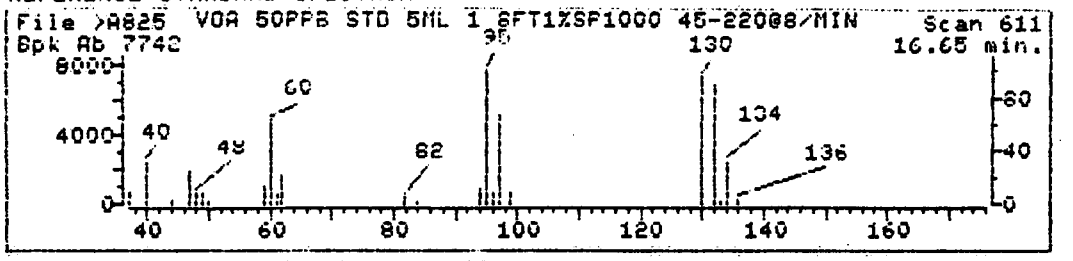
SAMPLE SPECTRUM (UNALTERED)



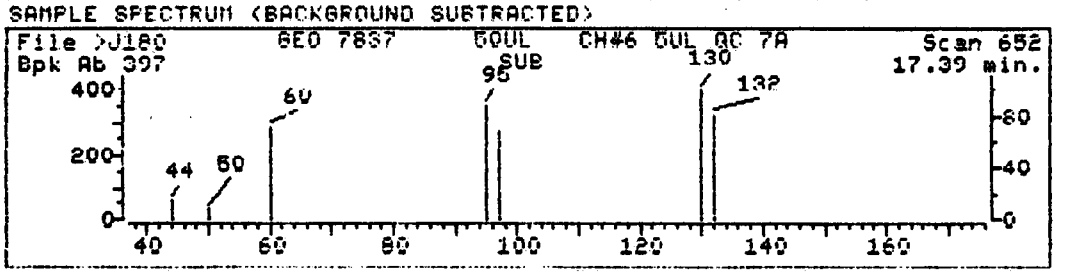
Data File: >J180::D3
Name: GFO 7837 50UL
Misc: CH#6 5UL QC 7A
Quant Time: 870617 21:07
Injected at: 870617 20:20

Compound No: 7
Compound Name: Acetone
Scan Number: 261
Retention Time: 7.61 min.
Area: 21171
Concentration: 24.33 ug/L
q-value: 100

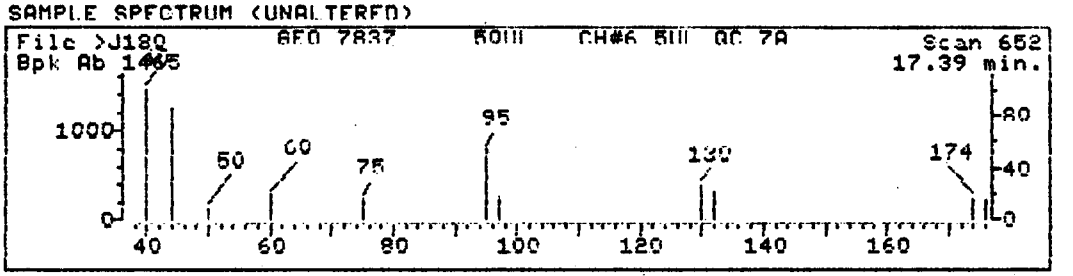
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



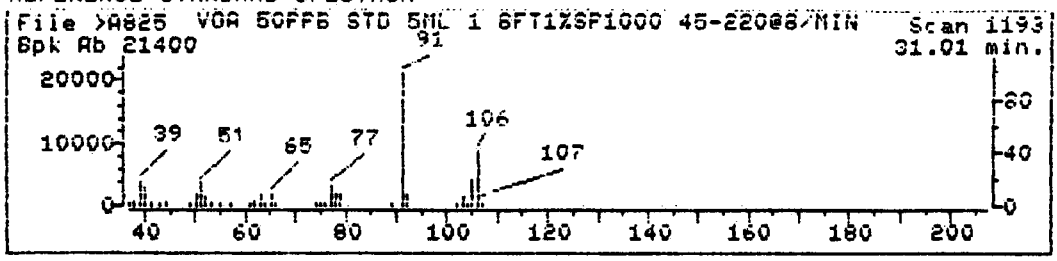
SAMPLE SPECTRUM (UNALTERED)



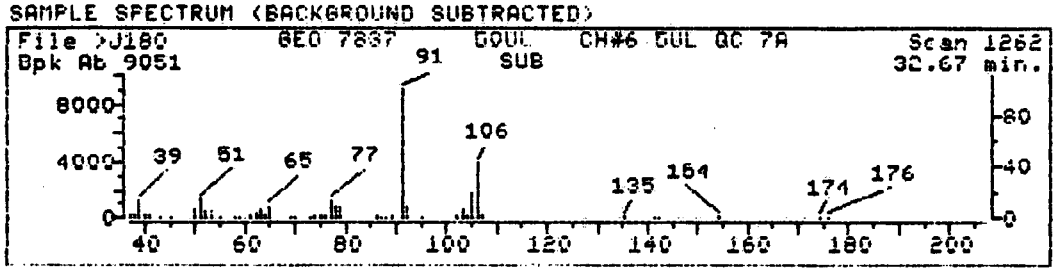
Data File: >J180::D3
Name: GEO 7837 50UL
Misc: CH#6 50UL QC 7A
Quant Time: 870617 21:02
Injected at: 870617 20:20

Compound No: 23
Compound Name: Trichloroethene
Scan Number: 652
Retention Time: 17.39 min.
Area: 3976
Concentration: 1.47 ug/L
q-value: 82

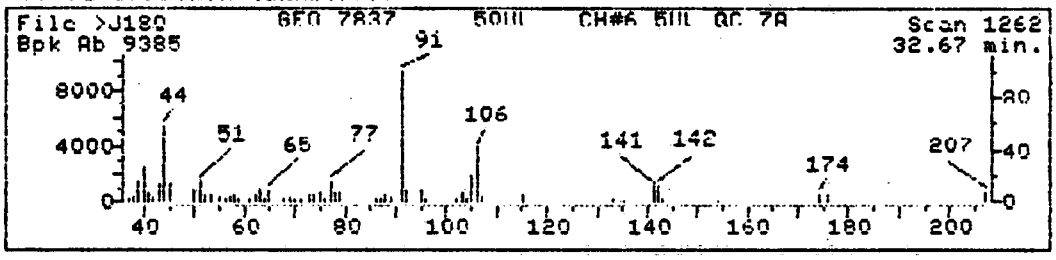
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >J180::D3
Name: 6ED 7837 50UL
Misc: CH#6 5UL QC 7A
Quant Time: 870617 21:07
Injected at: 870617 20:20

Compound No: 41
Compound Name: Xylenes (o , p)
Scan Number: 1262
Retention Time: 32.67 min.
Area: 98891
Concentration: 19.37 ug/L
q-value: 96

Enseco

HAZARDOUS SUBSTANCE LIST (HSL) VOLATILE ORGANICS

EPA Method 624/HSL List

Client Name: GeoEngineering, Inc.
Client ID: MW-3
Laboratory ID: 87-007838
Matrix: Water Sampled: 06/08/87 Received: 06/09/87
Authorized: 06/09/87 Prepared: 06/17/87 Analyzed: 06/17/87

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	µg/L	500
Bromomethane	ND	µg/L	500
Vinyl chloride	ND	µg/L	500
Chloroethane	ND	µg/L	500
Methylene chloride	7,000B	µg/L	500
Acetone	ND	µg/L	5,000
Carbon disulfide	ND	µg/L	200
1,1-Dichloroethene	ND	µg/L	200
1,1-Dichloroethane	ND	µg/L	200
trans-1,2-Dichloroethene	ND	µg/L	200
Chloroform	ND	µg/L	200
1,2-Dichloroethane	ND	µg/L	200
2-Butanone	ND	µg/L	1,000
1,1,1-Trichloroethane	ND	µg/L	200
Carbon tetrachloride	ND	µg/L	200
Vinyl acetate	ND	µg/L	1,000
Bromodichloromethane	ND	µg/L	200
1,2-Dichloropropane	ND	µg/L	200
trans-1,3-Dichloropropene	ND	µg/L	200
Trichloroethene	130*	µg/L	200
Dibromochloromethane	ND	µg/L	200
1,1,2-Trichloroethane	ND	µg/L	200
Benzene	ND	µg/L	200
cis-1,3-Dichloropropene	ND	µg/L	200
2-Chloroethyl vinyl ether	ND	µg/L	1,000
Bromoform	ND	µg/L	200
4-Methyl-2-pentanone	ND	µg/L	1,000
2-Hexanone	ND	µg/L	1,000
1,1,2,2-Tetrachloroethane	ND	µg/L	200
Tetrachloroethene	ND	µg/L	200
Toluene	ND	µg/L	200
Chlorobenzene	ND	µg/L	200
Ethyl benzene	7,800	µg/L	200
Styrene	ND	µg/L	200
Total xylenes	47,000	µg/L	200

ND = Not detected.
*Trace concentrations detected below the reporting limit.

Reported by _____ Approved by _____

Enseco

VOLATILE ORGANICS

TENTATIVELY IDENTIFIED COMPOUNDS

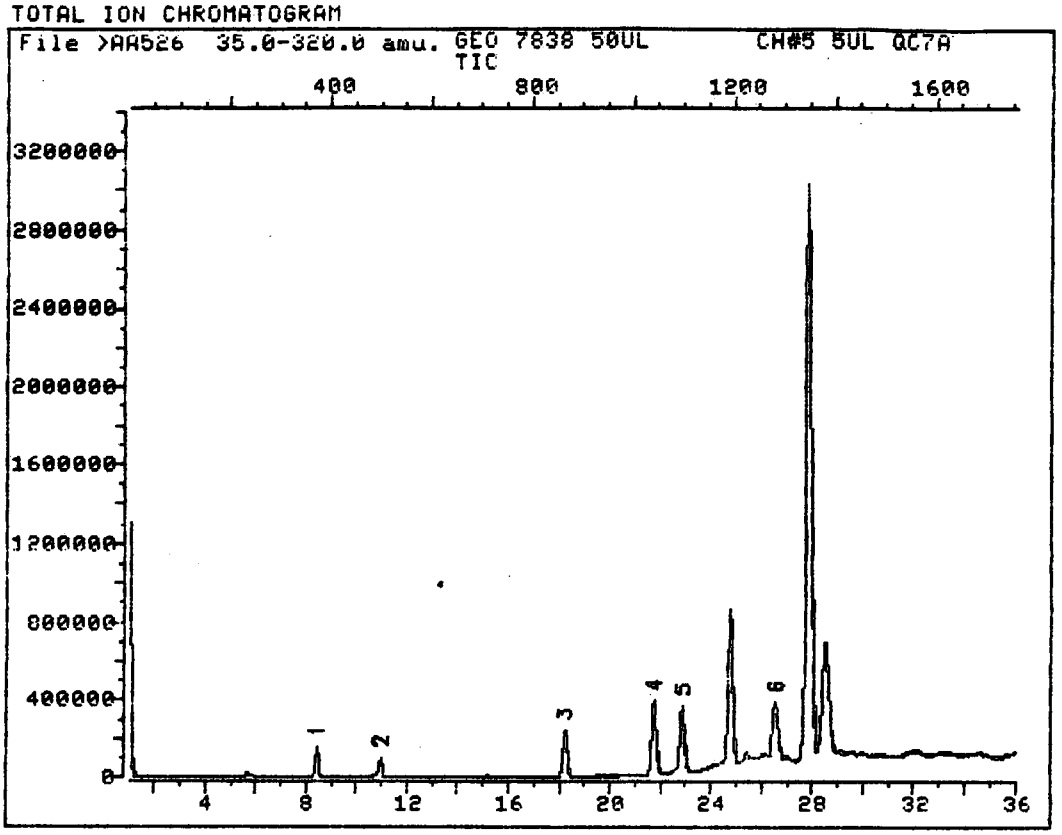
EPA Method 624/8240

Client Name: GeoEngineering, Inc.
Client ID: MW-3
Laboratory ID: 87-007838
Matrix: Water Sampled: 06/08/87 Received: 06/09/87
Authorized: 06/09/87 Prepared: 06/17/87 Analyzed: 06/17/87

Parameter	Scan No.	Units	Estimated concentration
None detected			

Reported by _____ Approved by _____

TOTAL ION CHROMATOGRAM



Data File: >AA526::D4
Name: GEO 7838 50UL
Misc: CH#5 5UL QC7A

Id File: VOAID4::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V4:ERCO/ENSECO
Last Calibration: 870617 15:43

Operator ID: JEAN
Quant Time: 870617 16:48
Injected at: 870617 16:11

Previous Sample AA525 ERCO ID SPIKE
Major Contaminants —
Sample in Chamber Previously AA515
ERCO ID H_2O
Major Contaminants —
J.L Carryover? Yes No X
Dilution Factor
Spectra Checked
Areas Checked
Calculations Checked
Manually check for 1,2 - di
1,1,2,2 -
All peaks accounted for? Yes
if no, Number of unknowns

QUANT REPORT

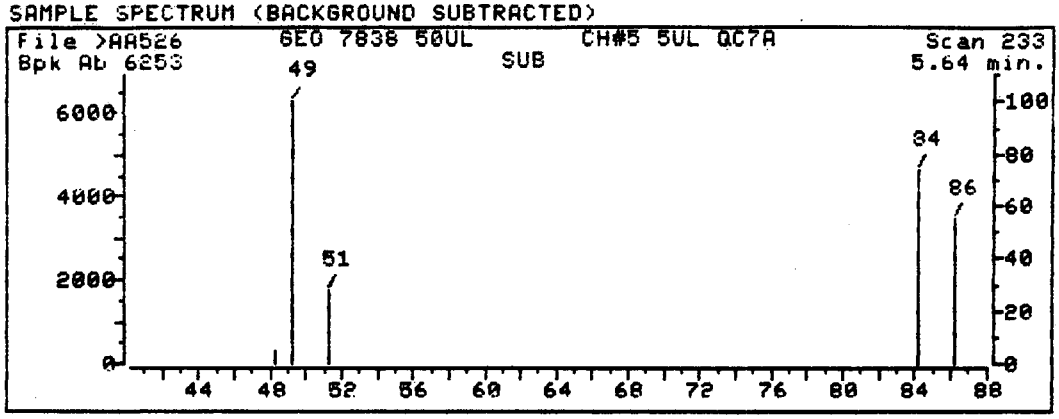
Operator ID: JEAN Quant Rev: 4 Quant Time: 870617 16:48
Output File: ^AA526::QT Injected at: 870617 16:11
Data File: >AA526::D4 Dilution Factor: 1.00
Name: GEO 7838 50UL
Misc: CH#5 5UL QC7A

ID File: VOAID4::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V4:ERCO/ENSECO
Last Calibration: 870617 15:43

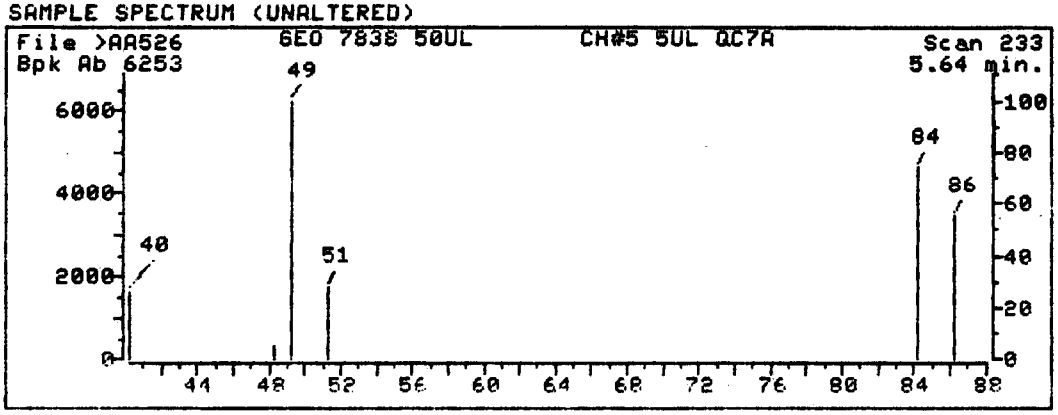
	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	8.39	371	406543	50.00	ug/L	82
6)	Methylene Chloride	5.64	233	68016	69.96	ug/L	88
7)	~~Acetone~~ Spec no good.	6.24	263	2690	3.13	ug/L	100
10)	1,1-Dichloroethane	8.39	371	4027	.69	ug/L	83
14)	D4-1,2-Dichloroethane	10.91	498	283446	45.40	ug/L 91	68
15)	*1,4-Difluorobenzene	18.19	864	1189872	50.00	ug/L	100
23)	Trichloroethene	15.21	714	17039	1.26	ug/L	75
30)	*D5-Chlorobenzene	22.85	1098	1329689	50.00	ug/L	69
31)	4-Methyl-2-Pentanone	19.32	921	1580	.12	ug/L	58
32)	2-Hexanone	20.34	972	3210	.31	ug/L	99
34)	1,1,2,2-Tetrachloroethane	21.07	1009	2029	.09	ug/L	69
36)	D8-Toluene	21.73	1042	1059871	49.01	ug/L 98	96
37)	Chlorobenzene	22.61	1086	9418	.31	ug/L	59
38)	Ethylbenzene	24.70	1191	1202913	22.79	ug/L	97
39)	Xylene (m)	27.81	1347	7890211	383.44	ug/L	93
40)	Styrene	27.81	1347	313993	2.67	ug/L	100
41)	Xylenes (o , p)	28.49	1381	1828830	88.63	ug/L	92
42)	Bromofluorobenzene (BFB)	26.54	1283	822908	44.01	ug/L 88	78

* Compound is ISTD

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



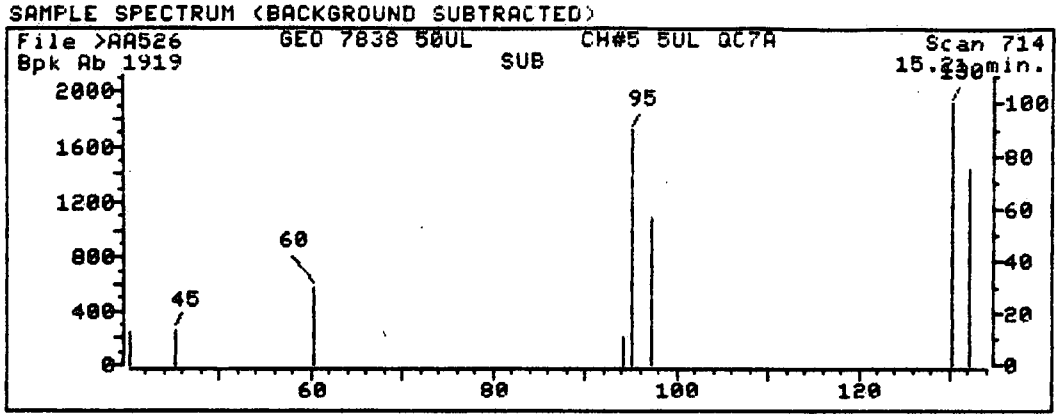
SAMPLE SPECTRUM (UNALTERED)



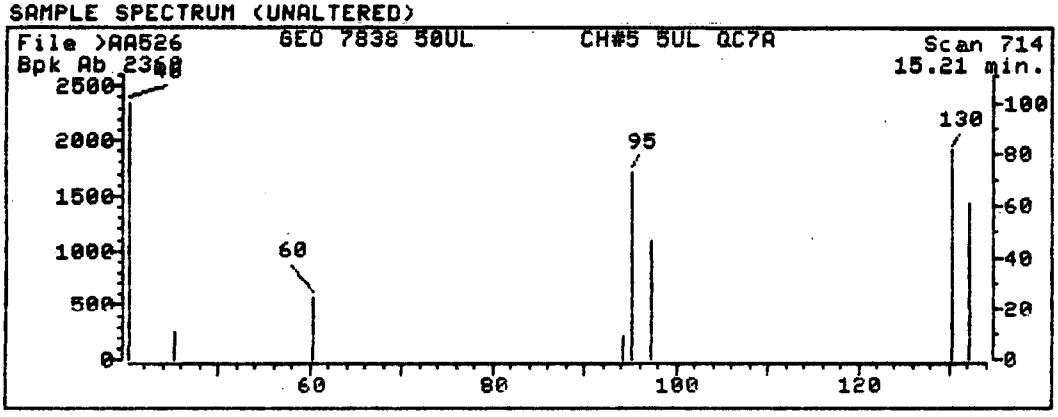
Data File: >AA526::D4
Name: GEO 7838 50UL
Misc: CH#5 5UL QC7A
Quant Time: 870617 16:48
Injected at: 870617 16:11

Compound No: 6
Compound Name: Methylene Chloride
Scan Number: 233
Retention Time: 5.64 min.
Area: 68016
Concentration: 69.96 ug/L
q-value: 88

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



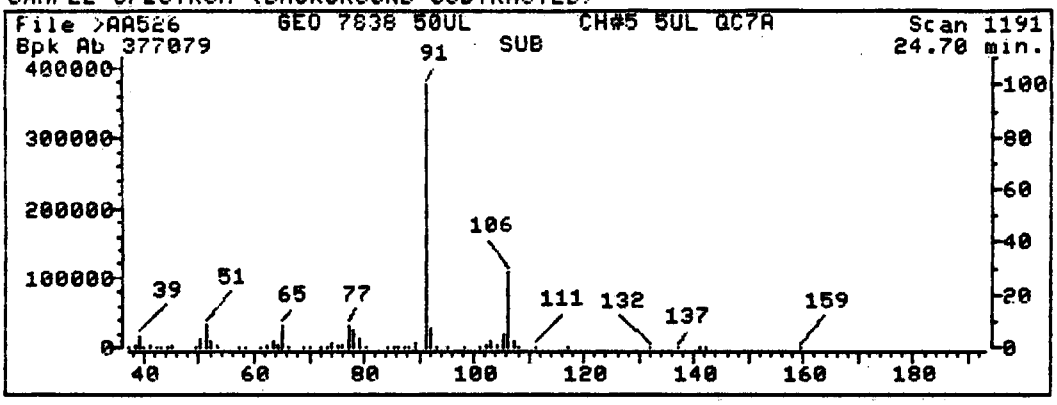
SAMPLE SPECTRUM (UNALTERED)



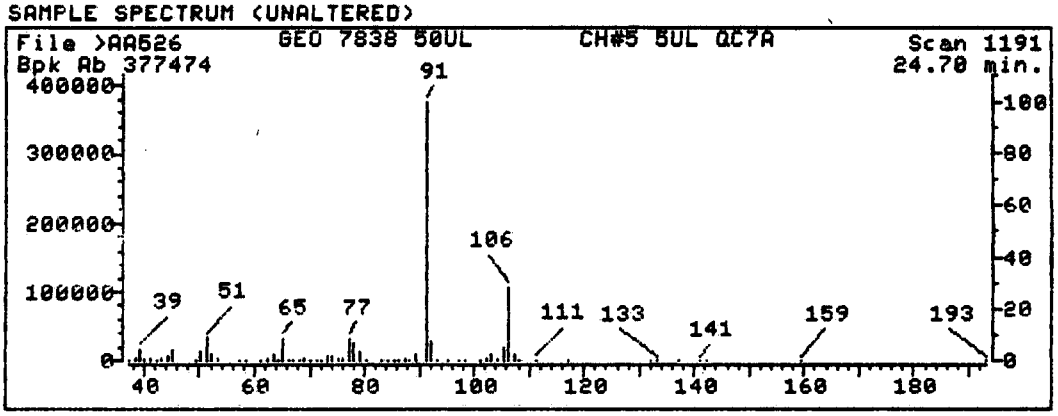
Data File: >AA526::D4
Name: GEO 7838 50UL
Misc: CH#5 5UL QC7A
Quant Time: 870617 16:48
Injected at: 870617 16:11

Compound No: 23
Compound Name: Trichloroethene
Scan Number: 714
Retention Time: 15.21 min.
Area: 17039
Concentration: 1.26 ug/L
q-value: 75

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



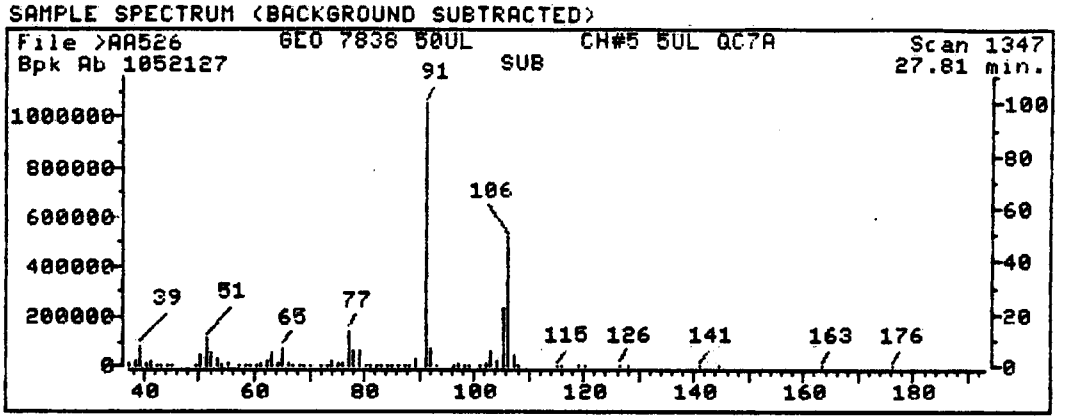
SAMPLE SPECTRUM (UNALTERED)



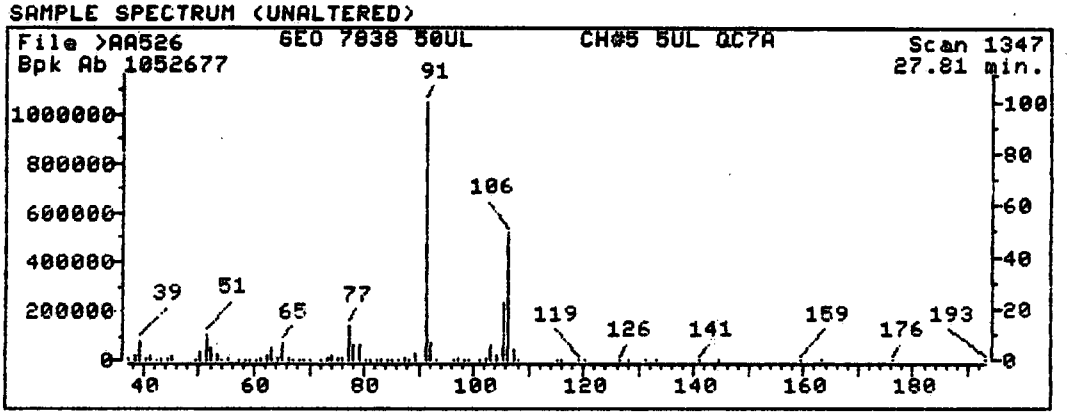
Data File: >AA526::D4
Name: GEO 7838 50UL
Misc: CH#5 5UL QC7A
Quant Time: 870617 16:48
Injected at: 870617 16:11

Compound No: 38
Compound Name: Ethylbenzene
Scan Number: 1191
Retention Time: 24.70 min.
Area: 1202913
Concentration: 77.79 ug/L
q-value: 97

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



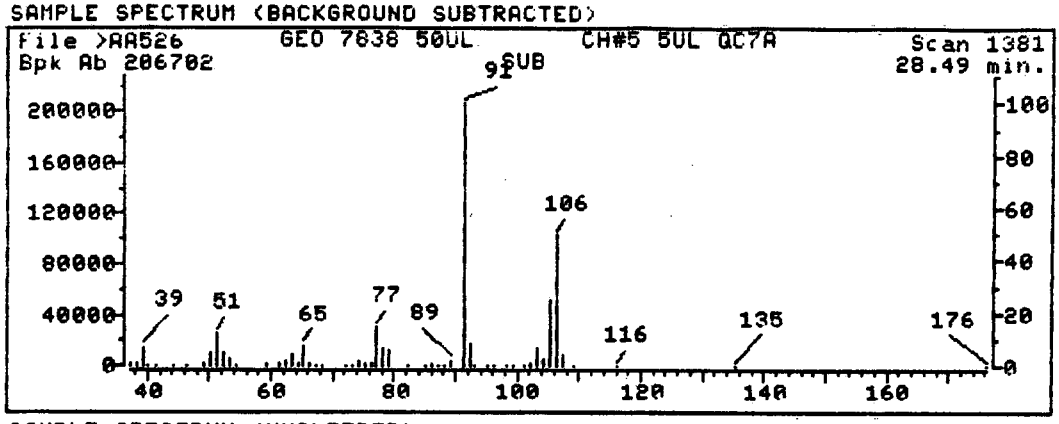
SAMPLE SPECTRUM (UNALTERED)



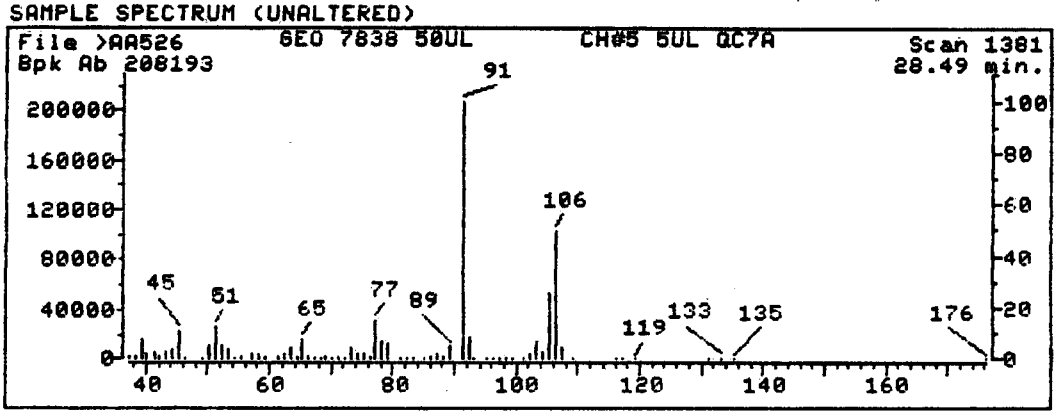
Data File: >AA526::D4
Name: GEO 7838 50UL
Misc: CH#5 5UL QC7A
Quant Time: 870617 16:48
Injected at: 870617 16:11

Compound No: 39
Compound Name: Xylene (m)
Scan Number: 1347
Retention Time: 27.81 min.
Area: 7890211
Concentration: 383.44 ug/L
q-value: 93

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AA526::D4
Name: GEO 7838 50UL
Misc: CH#5 5UL QC7A
Quant Time: 870617 16:48
Injected at: 870617 16:11

Compound No: 41
Compound Name: Xylenes (o , p)
Scan Number: 1381
Retention Time: 28.49 min.
Area: 1828830
Concentration: 88.63 ug/L
q-value: 92

Enseco

HAZARDOUS SUBSTANCE LIST (HSL) VOLATILE ORGANICS

EPA Method 624/HSL List

Client Name: GeoEngineering, Inc.
Client ID: MW-4
Laboratory ID: 87-007839
Matrix: Water Sampled: 06/08/87 Received: 06/09/87
Authorized: 06/09/87 Prepared: 06/17/87 Analyzed: 06/17/87

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	µg/L	5
Bromomethane	ND	µg/L	5
Vinyl chloride	ND	µg/L	5
Chloroethane	ND	µg/L	5
Methylene chloride	260B	µg/L	5
Acetone	ND	µg/L	50
Carbon disulfide	ND	µg/L	2
1,1-Dichloroethene	ND	µg/L	2
1,1-Dichloroethane	ND	µg/L	2
trans-1,2-Dichloroethene	ND	µg/L	2
Chloroform	ND	µg/L	2
1,2-Dichloroethane	ND	µg/L	2
2-Butanone	ND	µg/L	10
1,1,1-Trichloroethane	ND	µg/L	2
Carbon tetrachloride	ND	µg/L	2
Vinyl acetate	ND	µg/L	10
Bromodichloromethane	ND	µg/L	2
1,2-Dichloropropane	ND	µg/L	2
trans-1,3-Dichloropropene	ND	µg/L	2
Trichloroethene	1.3*	µg/L	2
Dibromochloromethane	ND	µg/L	2
1,1,2-Trichloroethane	ND	µg/L	2
Benzene	ND	µg/L	2
cis-1,3-Dichloropropene	ND	µg/L	2
2-Chloroethyl vinyl ether	ND	µg/L	10
Bromoform	ND	µg/L	2
4-Methyl-2-pentanone	ND	µg/L	10
2-Hexanone	ND	µg/L	10
1,1,2,2-Tetrachloroethane	ND	µg/L	2
Tetrachloroethene	ND	µg/L	2
Toluene	ND	µg/L	2
Chlorobenzene	ND	µg/L	2
Ethyl benzene	ND	µg/L	2
Styrene	ND	µg/L	2
Total xylenes	8.8	µg/L	2

ND = Not detected.
*Trace concentrations detected below the reporting limit.

Reported by _____ Approved by _____

Enseco

VOLATILE ORGANICS

TENTATIVELY IDENTIFIED COMPOUNDS

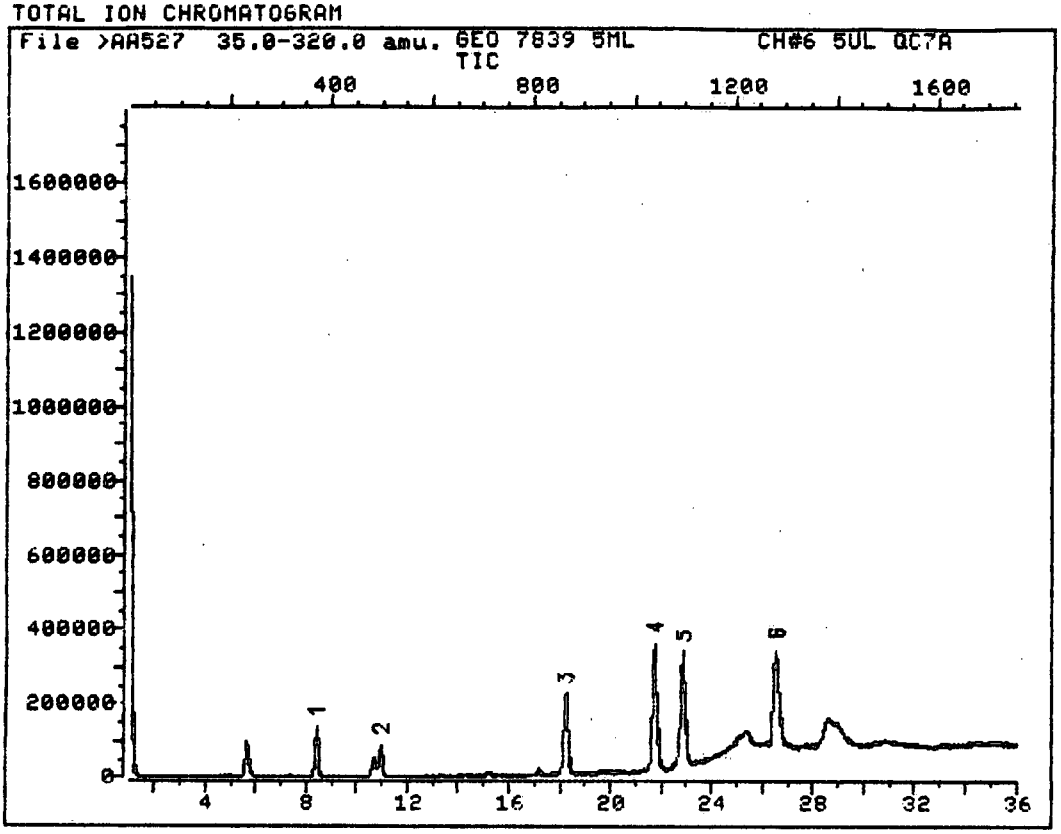
EPA Method 624/8240

Client Name: GeoEngineering, Inc.
Client ID: MW-4
Laboratory ID: 87-007839
Matrix: Water Sampled: 06/08/87 Received: 06/09/87
Authorized: 06/09/87 Prepared: 06/17/87 Analyzed: 06/17/87

Parameter	Scan No.	Units	Estimated concentration
None detected			

Reported by _____ Approved by _____

TOTAL ION CHROMATOGRAM



Data File: >AA527::D4
Name: GEO 7839 5ML
Misc: CH#6 5UL QC7A

Id File: VOAID4::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V4:ERCO/ENSECO
Last Calibration: 870617 15:43

Operator ID: JEAN
Quant Time: 870617 17:31
Injected at: 870617 16:54

Previous Sample AA525 ERCO ID 7838
Major Contaminants Xylene (m)
Sample in Chamber Previously AA 517
ERCO ID 7656
Major Contaminants
Carryover? Yes
Dilution Factor
Standard Curve
Area Check
Calibration
Manually Integrated

All peaks
Known, No

Xylene OK

QUANT REPORT

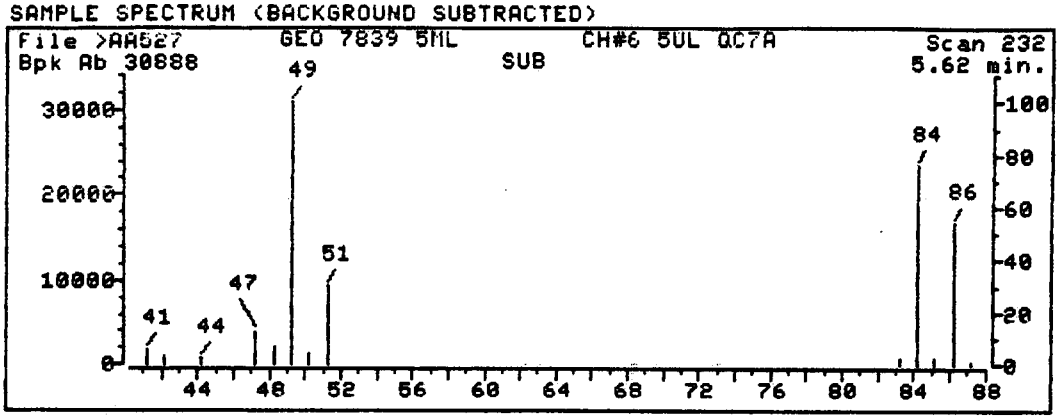
Operator ID: JEAN Quant Rev: 4 Quant Time: 870617 17:31
Output File: ^AA527::QT Injected at: 870617 16:54
Data File: >AA527::D4 Dilution Factor: 1.00
Name: GEO 7839 5ML
Misc: CH#6 5UL QC7A

D File: VOAID4::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V4:ERCO/ENSECO
Last Calibration: 870617 15:43

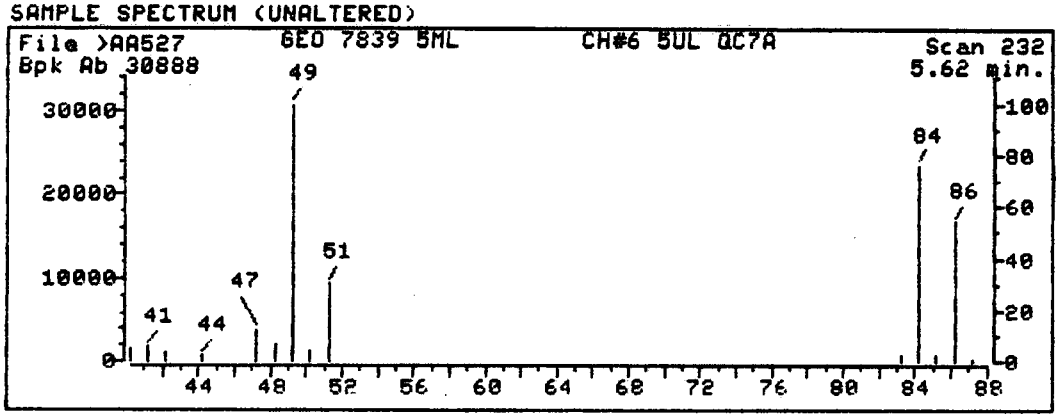
	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	8.39	371	354498	50.00	ug/L	75
6)	Methylene Chloride	5.62	232	217798	256.91	ug/L	85
7)	~~Acetone~~ poor spec	6.20	261	1781	5.41	ug/L	100
14)	D4-1,2-Dichloroethane	10.91	498	247514	45.46	ug/L 91	68
15)	*1,4-Difluorobenzene	18.21	865	1068962	50.00	ug/L	100
23)	Trichloroethene	15.19	713	15901	1.31	ug/L	79
30)	*D5-Chlorobenzene	22.85	1098	1186805	50.00	ug/L	70
31)	4-Methyl-2-Pentanone	19.46	928	12156	1.01	ug/L	85
32)	2-Hexanone	19.46	928	12156	1.22	ug/L	57
34)	1,1,2,2-Tetrachloroethane	21.14	1012	2133	.10	ug/L	67
36)	D8-Toluene	21.71	1041	952644	49.36	ug/L 99	94
37)	Chlorobenzene	22.67	1089	5054	.19	ug/L	86
38)	Ethylbenzene	24.74	1193	3366	.24	ug/L	53
39)	Xylene (m)	27.85	1349	2552	.14	ug/L	93
40)	Styrene	28.53	1383	6858	.19	ug/L	100
41)	Xylenes (o , p)	28.49	1381	161775	8.78	ug/L	92
42)	Bromofluorobenzene (BFB)	26.54	1283	758315	45.44	ug/L 91	74

* Compound is ISTD

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



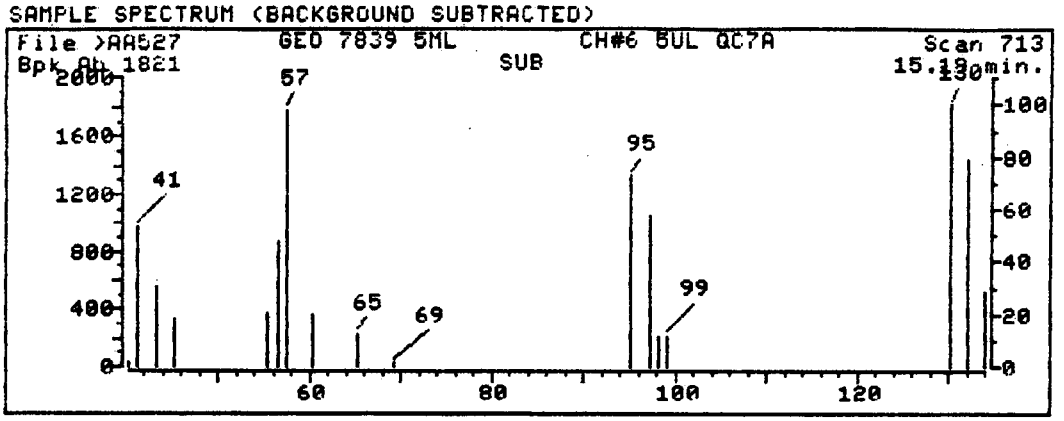
SAMPLE SPECTRUM (UNALTERED)



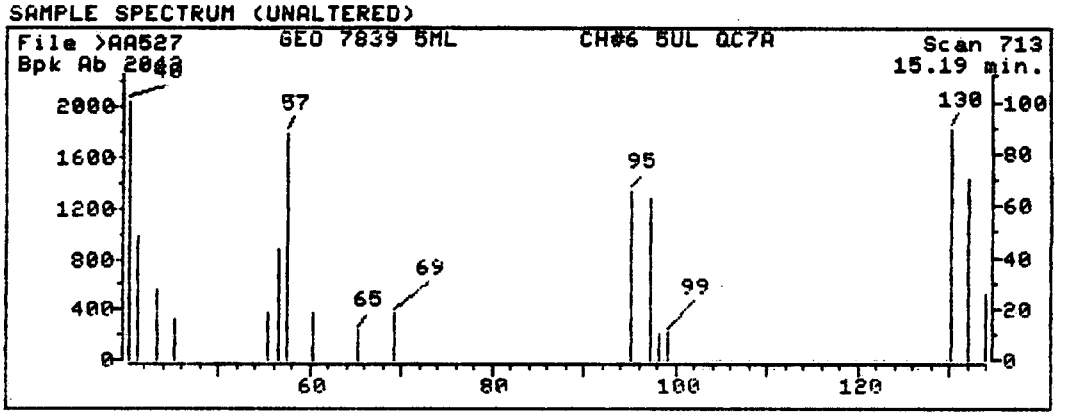
Data File: >AA527::D4
Name: GEO 7839 5ML
Misc: CH#6 5UL QC7A
Quant Time: 870617 17:31
Injected at: 870617 16:54

Compound No: 6
Compound Name: Methylene Chloride
Scan Number: 232
Retention Time: 5.62 min.
Area: 217798
Concentration: 256.91 ug/L
q-value: 85

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



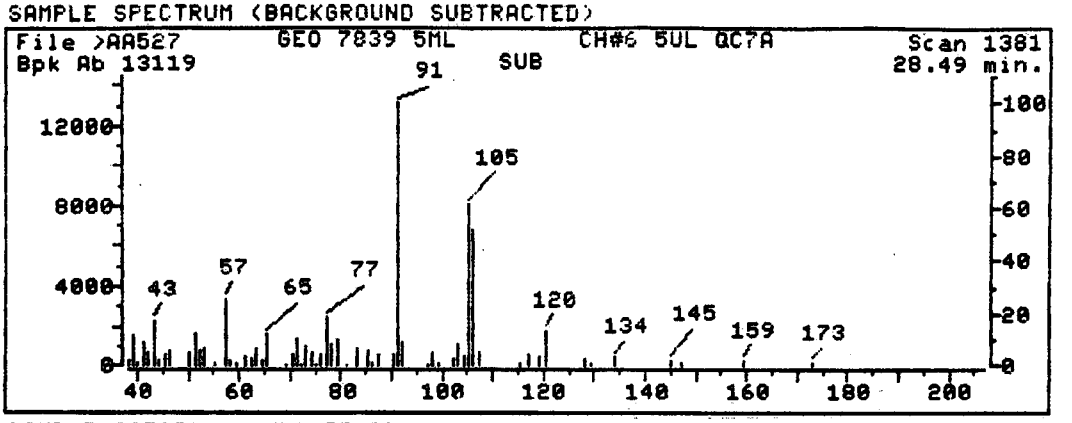
SAMPLE SPECTRUM (UNALTERED)



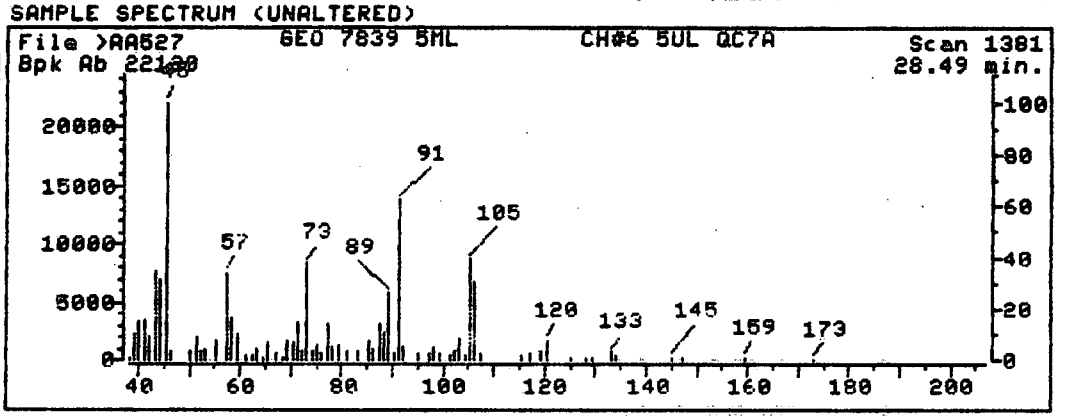
Data File: >AA527::D4
Name: GEO 7839 5ML
Misc: CH#6 5UL QC7A
Quant Time: 870617 17:31
Injected at: 870617 16:54

Compound No: 23
Compound Name: Trichloroethene
Scan Number: 713
Retention Time: 15.19 min.
Area: 15901
Concentration: 1.31 ug/L
q-value: 79

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AA527::D4
Name: GEO 7839 5ML
Misc: CH#6 5UL QC7A
Quant Time: 870617 17:31
Injected at: 870617 16:54

Compound No: 41
Compound Name: Xylenes (o , p)
Scan Number: 1381
Retention Time: 28.49 min.
Area: 161775
Concentration: 8.78 ug/L
q-value: 92

Enseco

HAZARDOUS SUBSTANCE LIST (HSL) VOLATILE ORGANICS

EPA Method 624/HSL List

Client Name: GeoEngineering, Inc.
Client ID: MW-5
Laboratory ID: 87-007840
Matrix: Water Sampled: 06/08/87 Received: 06/09/87
Authorized: 06/09/87 Prepared: 06/17/87 Analyzed: 06/17/87

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	µg/L	5
Bromomethane	ND	µg/L	5
Vinyl chloride	ND	µg/L	5
Chloroethane	ND	µg/L	5
Methylene chloride ----------	130B	µg/L	5
Acetone ----------	2.7*B	µg/L	50
Carbon disulfide	ND	µg/L	2
1,1-Dichloroethene	ND	µg/L	2
1,1-Dichloroethane	ND	µg/L	2
trans-1,2-Dichloroethene	ND	µg/L	2
Chloroform	ND	µg/L	2
1,2-Dichloroethane	ND	µg/L	2
2-Butanone	ND	µg/L	10
1,1,1-Trichloroethane	ND	µg/L	2
Carbon tetrachloride	ND	µg/L	2
Vinyl acetate	ND	µg/L	10
Bromodichloromethane	ND	µg/L	2
1,2-Dichloropropane	ND	µg/L	2
trans-1,3-Dichloropropene	ND	µg/L	2
Trichloroethene ----------	1.4*	µg/L	2
Dibromochloromethane	ND	µg/L	2
1,1,2-Trichloroethane	ND	µg/L	2
Benzene	ND	µg/L	2
cis-1,3-Dichloropropene	ND	µg/L	2
2-Chloroethyl vinyl ether	ND	µg/L	10
Bromoform	ND	µg/L	2
4-Methyl-2-pentanone	ND	µg/L	10
2-Hexanone	ND	µg/L	10
1,1,2,2-Tetrachloroethane	ND	µg/L	2
Tetrachloroethene	ND	µg/L	2
Toluene	ND	µg/L	2
Chlorobenzene	ND	µg/L	2
Ethyl benzene	ND	µg/L	2
Styrene	ND	µg/L	2
Total xylenes	ND	µg/L	2

ND = Not detected.
*Trace concentrations detected below the reporting limit.

Reported by _____ Approved by _____

Enseco

VOLATILE ORGANICS

TENTATIVELY IDENTIFIED COMPOUNDS

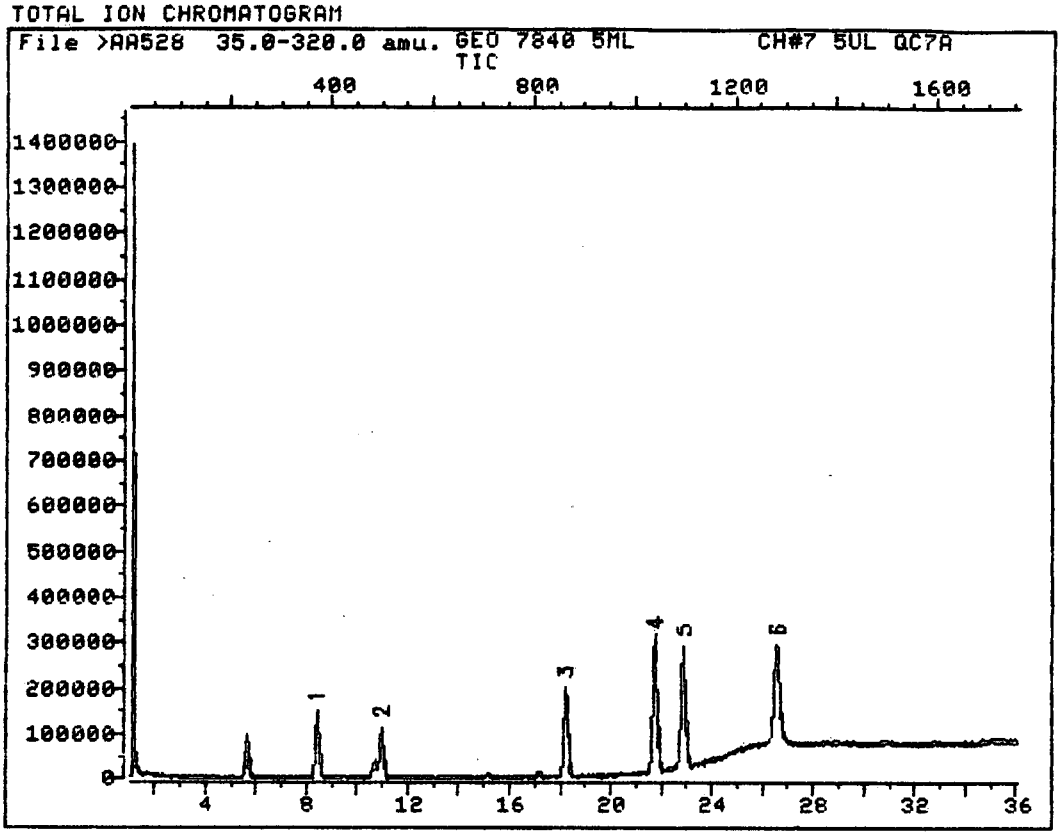
EPA Method 624/8240

Client Name: GeoEngineering, Inc.
Client ID: MW-5
Laboratory ID: 87-007840
Matrix: Water Sampled: 06/08/87 Received: 06/09/87
Authorized: 06/09/87 Prepared: 06/17/87 Analyzed: 06/17/87

Parameter	Scan No.	Units	Estimated concentration
None detected			

Reported by _____ Approved by _____

TOTAL ION CHROMATOGRAM



Data File: >AA528::D4
Name: GEO 7840 5ML
Misc: CH#7 5UL QC7A

Id File: VOAID4::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V4:ERCO/ENSECO
Last Calibration: 870617 15:43

Operator ID: JEAN
Quant Time: 870617 18:14
Injected at: 870617 17:38

Previous Sample AA527 ERCO ID 7839
Major Contaminant CH_2Cl_2
Sample ID AA517
ERCO 7656
JL.
CH_2Cl_2
All peaks accounted for
If no, Number of unknowns

QUANT REPORT

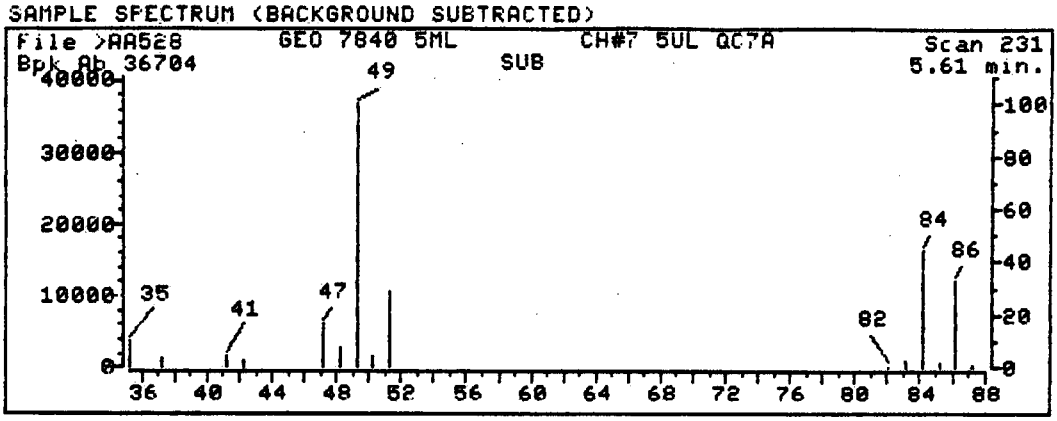
Operator ID: JEAN Quant Rev: 4 Quant Time: 870617 18:14
Output File: ^AA528::QT Injected at: 870617 17:38
Data File: >AA528::D4 Dilution Factor: 1.00
Name: GEO 7840 5ML
Misc: CH#7 5UL QC7A

ID File: VOAID4::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V4:ERCO/ENSECO
Last Calibration: 870617 15:43

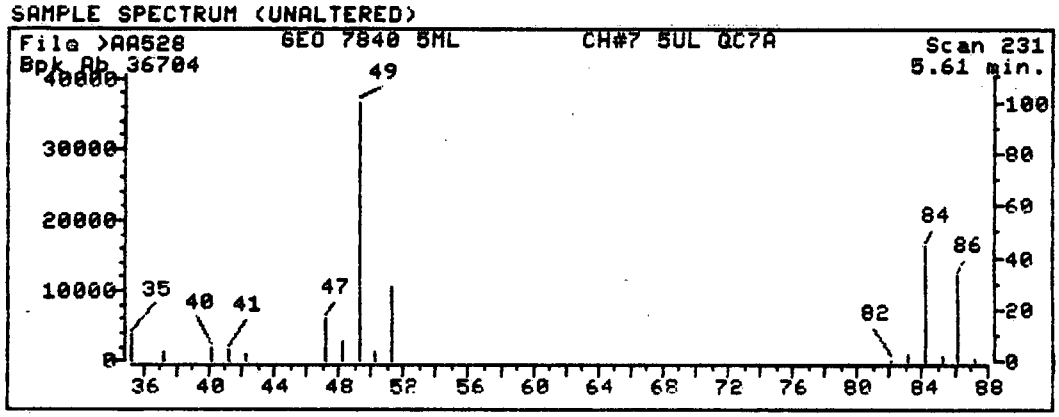
	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	8.37	370	489048	50.00	ug/L	46
6)	Methylene Chloride	5.61	231	147029	125.72	ug/L	73
7)	Acetone	6.22	262	1226	- 2.70	ug/L	100
10)	1,1-Dichloroethane	8.37	370	3906	~~9.~~56	ug/L	74
14)	D4-1,2-Dichloroethane	10.92	498	355629	47.35	ug/L 95	84
15)	*1,4-Difluorobenzene	18.19	864	805845	50.00	ug/L	100
16)	2-Butanone	11.04	504	29410	~~9.94~~	ug/L	88
23)	Trichloroethene	15.15	711	12878	- 1.41	ug/L	78
30)	*D5-Chlorobenzene	22.85	1098	886501	50.00	ug/L	86
31)	4-Methyl-2-Pentanone	18.81	895	4287	.48	ug/L	86
32)	2-Hexanone	20.40	975	3832	.56	ug/L	85
35)	Toluene	21.89	1050	6786	.39	ug/L	87
36)	D8-Toluene	21.74	1042	754628	52.34	ug/L 105	93
42)	Bromofluorobenzene (BFB)	26.56	1284	607393	48.72	ug/L 97	62

* Compound is ISTD

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



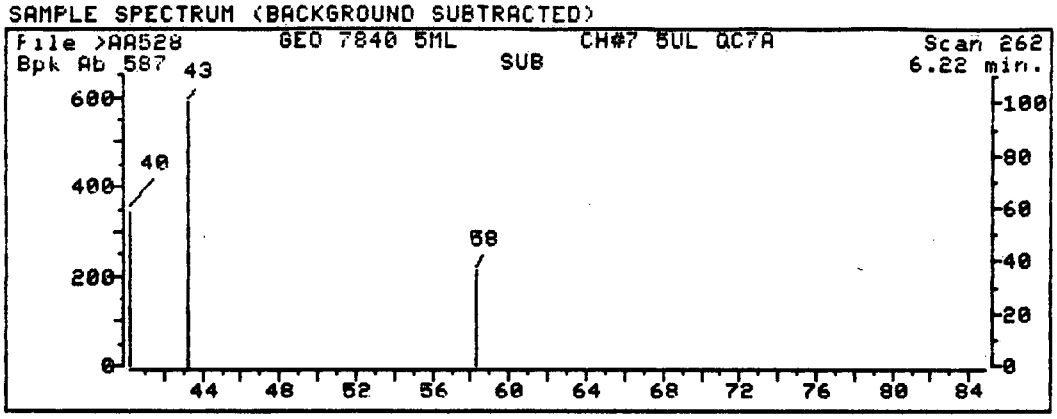
SAMPLE SPECTRUM (UNALTERED)



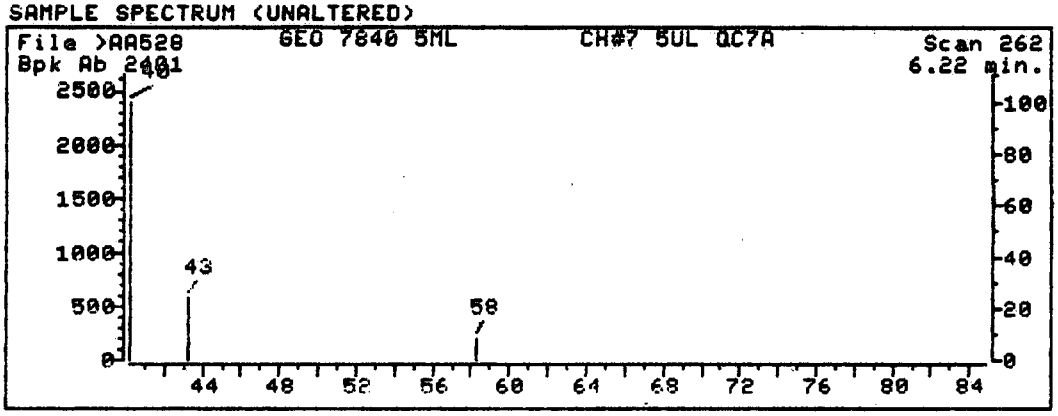
Data File: >AA528::D4
Name: GEO 7840 5ML
Misc: CH#7 5UL QC7A
Quant Time: 870617 18:14
Injected at: 870617 17:38

Compound No: 6
Compound Name: Methylene Chloride
Scan Number: 231
Retention Time: 5.61 min.
Area: 147029
Concentration: 125.72 ug/L
q-value: 73

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



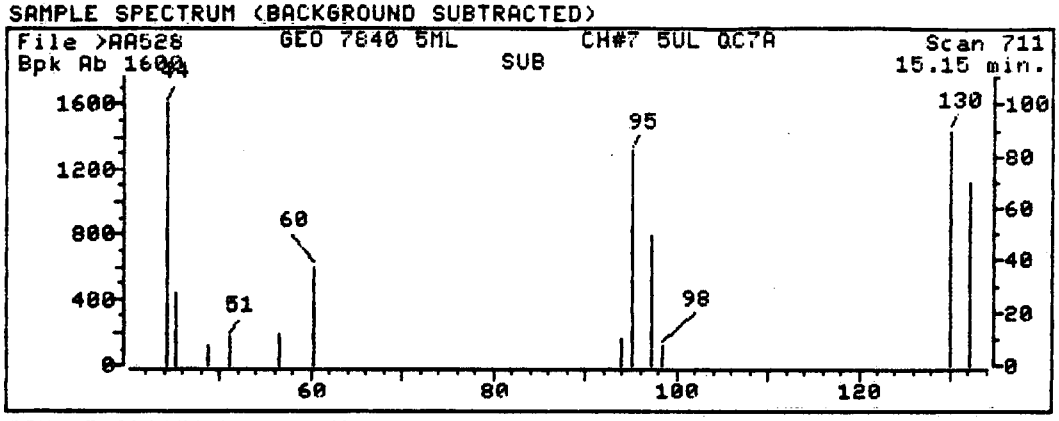
SAMPLE SPECTRUM (UNALTERED)



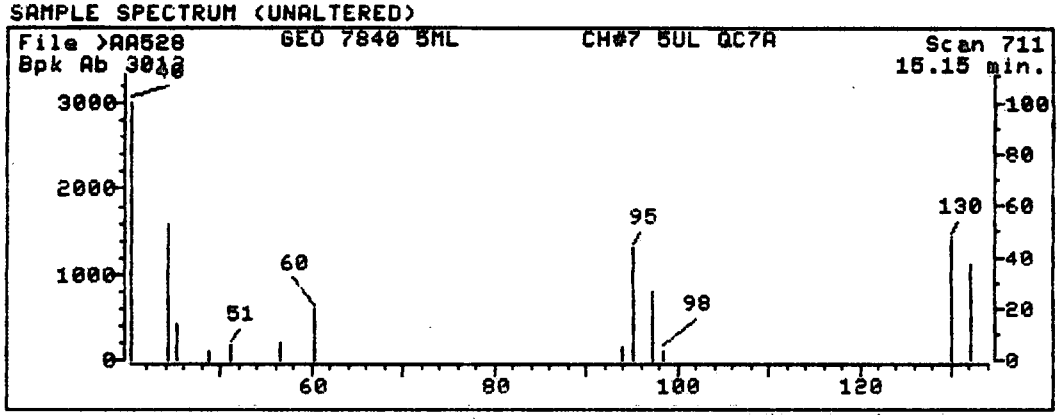
Data File: >AA528::D4
Name: GEO 7840 5ML
Misc: CH#7 5UL QC7A
Quant Time: 870617 18:14
Injected at: 870617 17:38

Compound No: 7
Compound Name: Acetone
Scan Number: 262
Retention Time: 6.22 min.
Area: 1226
Concentration: 2.70 ug/L
q-value: 100

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AA528::D4
Name: GEO 7840 5ML
Misc: CH#7 5UL QC7A
Quant Time: 870617 18:14
Injected at: 870617 17:38

Compound No: 23
Compound Name: Trichloroethene
Scan Number: 711
Retention Time: 15.15 min.
Area: 12878
Concentration: 1.41 ug/L
q-value: 78

Enseco

HAZARDOUS SUBSTANCE LIST (HSL) VOLATILE ORGANICS

EPA Method 624/HSL List

Client Name: GeoEngineering, Inc.
Client ID: Field Blank
Laboratory ID: 87-007841
Matrix: Water Sampled: 06/08/87 Received: 06/09/87
Authorized: 06/09/87 Prepared: 06/17/87 Analyzed: 06/17/87

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	µg/L	5
Bromomethane	ND	µg/L	5
Vinyl chloride	ND	µg/L	5
Chloroethane	ND	µg/L	5
Methylene chloride ----------	280B	µg/L	5
Acetone	ND	µg/L	50
Carbon disulfide	ND	µg/L	2
1,1-Dichloroethene	ND	µg/L	2
1,1-Dichloroethane	ND	µg/L	2
trans-1,2-Dichloroethene	ND	µg/L	2
Chloroform	ND	µg/L	2
1,2-Dichloroethane	ND	µg/L	2
2-Butanone	ND	µg/L	10
1,1,1-Trichloroethane	ND	µg/L	2
Carbon tetrachloride	ND	µg/L	2
Vinyl acetate	ND	µg/L	10
Bromodichloromethane	ND	µg/L	2
1,2-Dichloropropane	ND	µg/L	2
trans-1,3-Dichloropropene	ND	µg/L	2
Trichloroethene ----------	1.3*	µg/L	2
Dibromochloromethane	ND	µg/L	2
1,1,2-Trichloroethane	ND	µg/L	2
Benzene	ND	µg/L	2
cis-1,3-Dichloropropene	ND	µg/L	2
2-Chloroethyl vinyl ether	ND	µg/L	10
Bromoform	ND	µg/L	2
4-Methyl-2-pentanone	ND	µg/L	10
2-Hexanone	ND	µg/L	10
1,1,2,2-Tetrachloroethane	ND	µg/L	2
Tetrachloroethene	ND	µg/L	2
Toluene	ND	µg/L	2
Chlorobenzene	ND	µg/L	2
Ethyl benzene	ND	µg/L	2
Styrene	ND	µg/L	2
Total xylenes	ND	µg/L	2

ND = Not detected.
*Trace concentrations detected below the reporting limit.

Reported by AT Approved by

Enseco

VOLATILE ORGANICS

TENTATIVELY IDENTIFIED COMPOUNDS

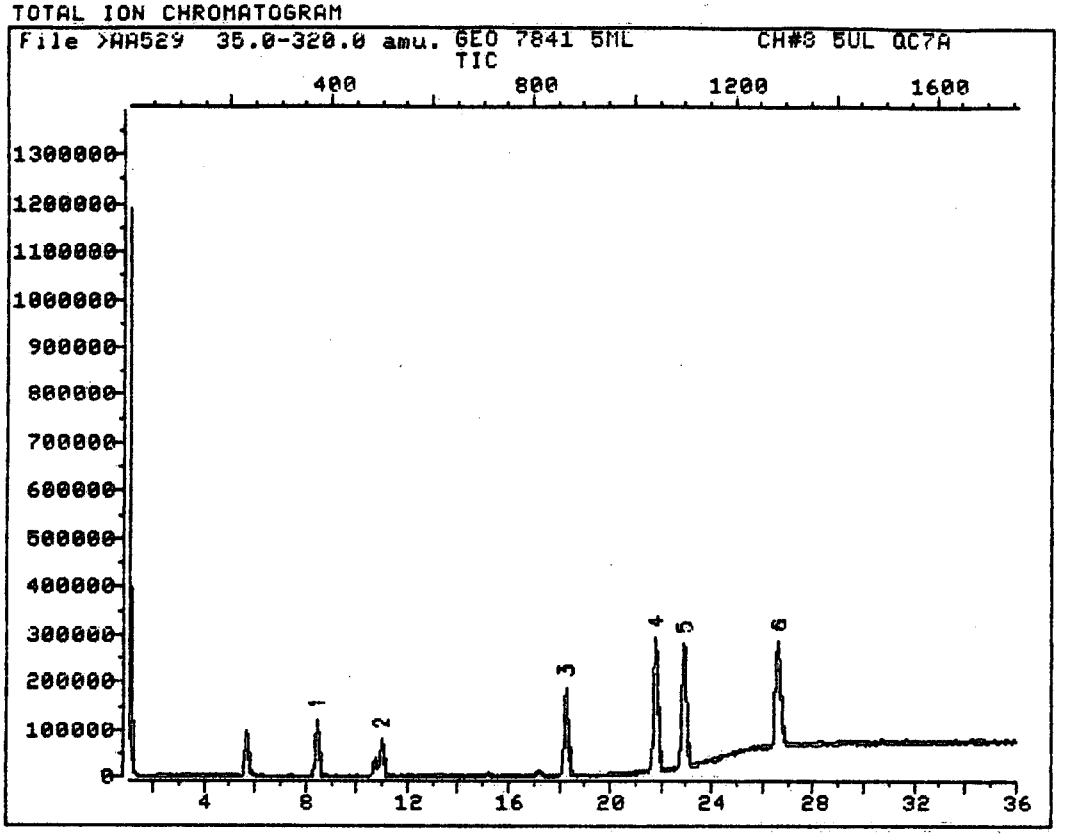
EPA Method 624/8240

Client Name: GeoEngineering, Inc.
Client ID: Field Blank
Laboratory ID: 87-007841
Matrix: Water Sampled: 06/08/87 Received: 06/09/87
Authorized: 06/09/87 Prepared: 06/17/87 Analyzed: 06/17/87

Parameter	Scan No.	Units	Estimated concentration
None detected			

Reported by AT Approved by

TOTAL ION CHROMATOGRAM



Data File: >AA529::D4
Name: GEO 7841 5ML
Misc: CH#8 5UL QC7A

Id File: VOAID4::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V4:ERCO/ENSECO
Last Calibration: 870617 15:43

Operator ID: JEAN
Quant Time: 870617 18:58
Injected at: 870617 18:21

Previous Sample AA528 ERCO ID 7840
Major Contaminants
Sample ID Class AA518
ERCO ID 7689
Major Co
Derivatives
Dilution
Dreco
Area C
Calcul
Manual

All peaks accounted for
If no, Number of unka

QUANT REPORT

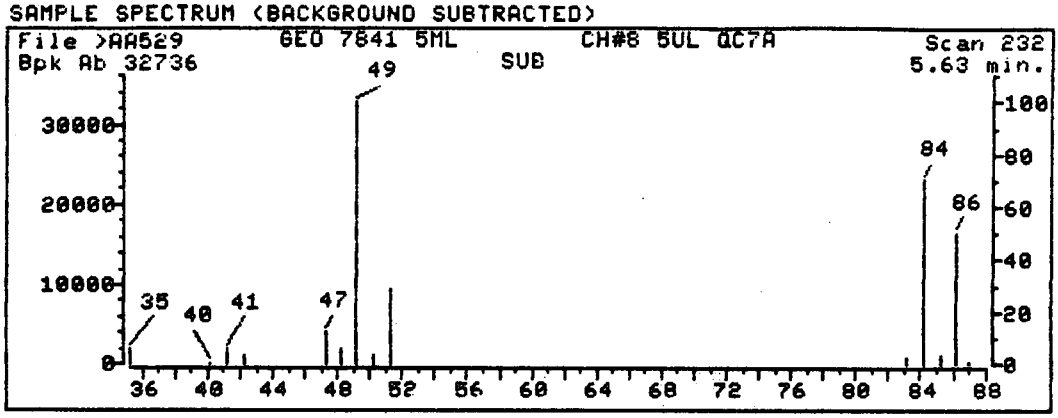
Operator ID: JEAN Quant Rev: 4 Quant Time: 870617 18:58
Output File: ^AA529::QT Injected at: 870617 18:21
Data File: >AA529::D4 Dilution Factor: 1.00
Name: GEO 7841 5ML
Misc: CH#8 5UL QC7A

TD File: VOAID4::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V4:ERCO/ENSECO
Last Calibration: 870617 15:43

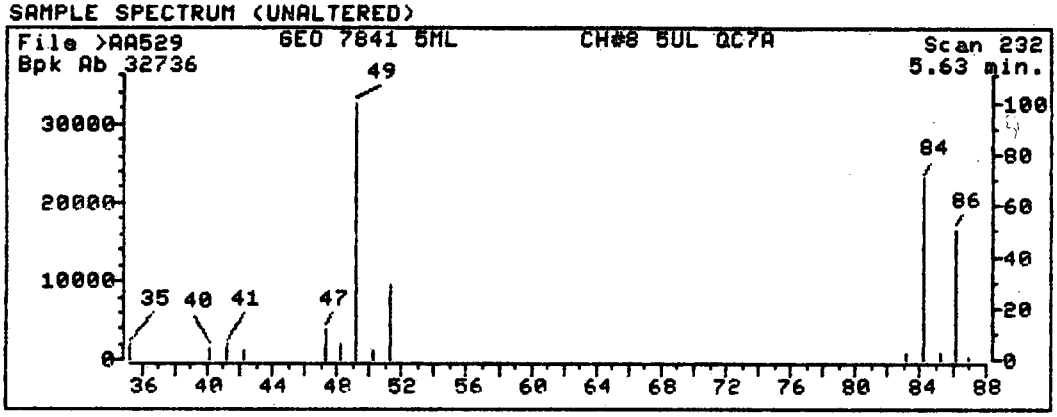
	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	8.39	371	309272	~~50.00~~	ug/L	80
6)	Methylene Chloride	5.63	232	210393	284.47	ug/L	92
7)	Acetone	6.31	266	3557	JB 12.39	ug/L	100
14)	D4-1,2-Dichloroethane	10.94	499	221481	46.63	ug/L 93	72
15)	*1,4-Difluorobenzene	18.24	866	904942	50.00	ug/L	100
23)	Trichloroethene	15.24	715	13466	J 1.31	ug/L	70
30)	*D5-Chlorobenzene	22.87	1099	1018320	50.00	ug/L	69
31)	4-Methyl-2-Pentanone) poor spectra	18.54	881	1636	5.16	ug/L	21
32)	2-Hexanone	20.25	967	2255	BMS .28	ug/L	46
36)	D8-Toluene	21.76	1043	782353	47.24	ug/L 94	90
42)	Bromofluorobenzene (BFB)	26.60	1286	664166	46.38	ug/L 93	72

* Compound is ISTD

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



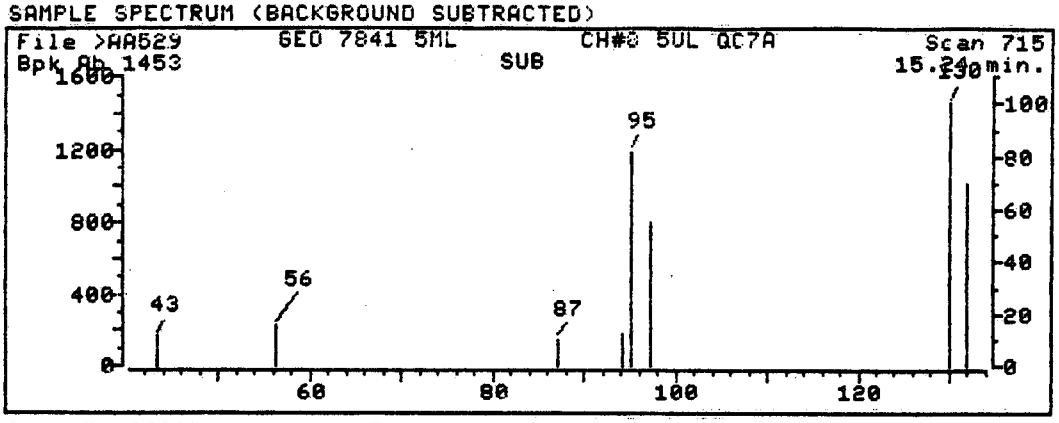
SAMPLE SPECTRUM (UNALTERED)



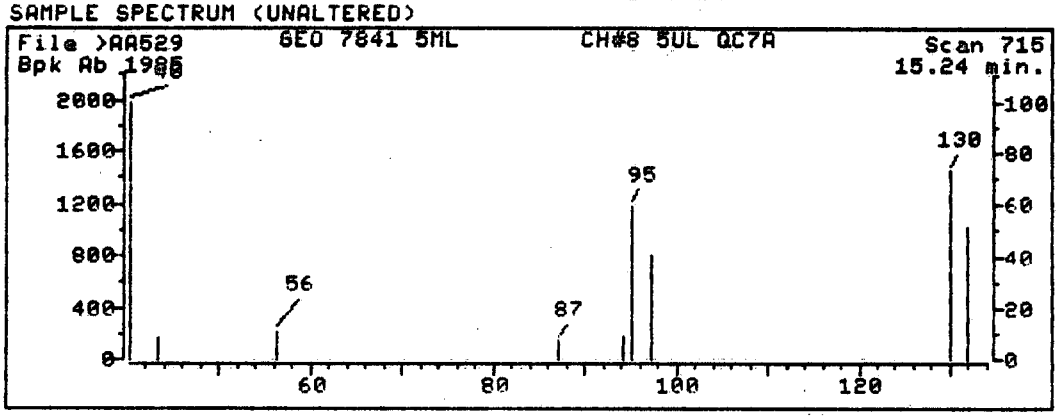
Data File: >AA529::D4
Name: GEO 7841 5ML
Misc: CH#8 5UL QC7A
Quant Time: 870617 18:58
Injected at: 870617 18:21

Compound No: 6
Compound Name: Methylene Chloride
Scan Number: 232
Retention Time: 5.63 min.
Area: 210393
Concentration: 284.47 ug/L
q-value: 92

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AA529::D4
Name: GEO 7841 5ML
Misc: CH#8 5UL QC7A
Quant Time: 870617 18:58
Injected at: 870617 18:21

Compound No: 23
Compound Name: Trichloroethene
Scan Number: 715
Retention Time: 15.24 min.
Area: 13466
Concentration: 1.31 ug/L
q-value: 70

Enseco

HAZARDOUS SUBSTANCE LIST (HSL) VOLATILE ORGANICS

EPA Method 624/HSL List

Client Name: GeoEngineering, Inc.

Client ID: Erco Procedural Blank

Laboratory ID: J174B

Matrix: Water Sampled: 06/08/87 Received: 06/09/87

Authorized: 06/09/87 Prepared: 06/17/87 Analyzed: 06/17/87

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	µg/L	5
Bromomethane	ND	µg/L	5
Vinyl chloride	ND	µg/L	5
Chloroethane	ND	µg/L	5
Methylene chloride	7.1	µg/L	5
Acetone	8.7*	µg/L	50
Carbon disulfide	ND	µg/L	2
1,1-Dichloroethene	ND	µg/L	2
1,1-Dichloroethane	ND	µg/L	2
trans-1,2-Dichloroethene	ND	µg/L	2
Chloroform	ND	µg/L	2
1,2-Dichloroethane	ND	µg/L	2
2-Butanone	ND	µg/L	10
1,1,1-Trichloroethane	ND	µg/L	2
Carbon tetrachloride	ND	µg/L	2
Vinyl acetate	ND	µg/L	10
Bromodichloromethane	ND	µg/L	2
1,2-Dichloropropane	ND	µg/L	2
trans-1,3-Dichloropropene	ND	µg/L	2
Trichloroethene	1.1*	µg/L	2
Dibromochloromethane	ND	µg/L	2
1,1,2-Trichloroethane	ND	µg/L	2
Benzene	ND	µg/L	2
cis-1,3-Dichloropropene	ND	µg/L	2
2-Chloroethyl vinyl ether	ND	µg/L	10
Bromoform	ND	µg/L	2
4-Methyl-2-pentanone	ND	µg/L	10
2-Hexanone	ND	µg/L	10
1,1,2,2-Tetrachloroethane	ND	µg/L	2
Tetrachloroethene	ND	µg/L	2
Toluene	ND	µg/L	2
Chlorobenzene	ND	µg/L	2
Ethyl benzene	ND	µg/L	2
Styrene	ND	µg/L	2
Total xylenes	ND	µg/L	2

ND = Not detected.

*Trace concentrations detected below the reporting limit.

Reported by AT Approved by

Enseco

VOLATILE ORGANICS

TENTATIVELY IDENTIFIED COMPOUNDS

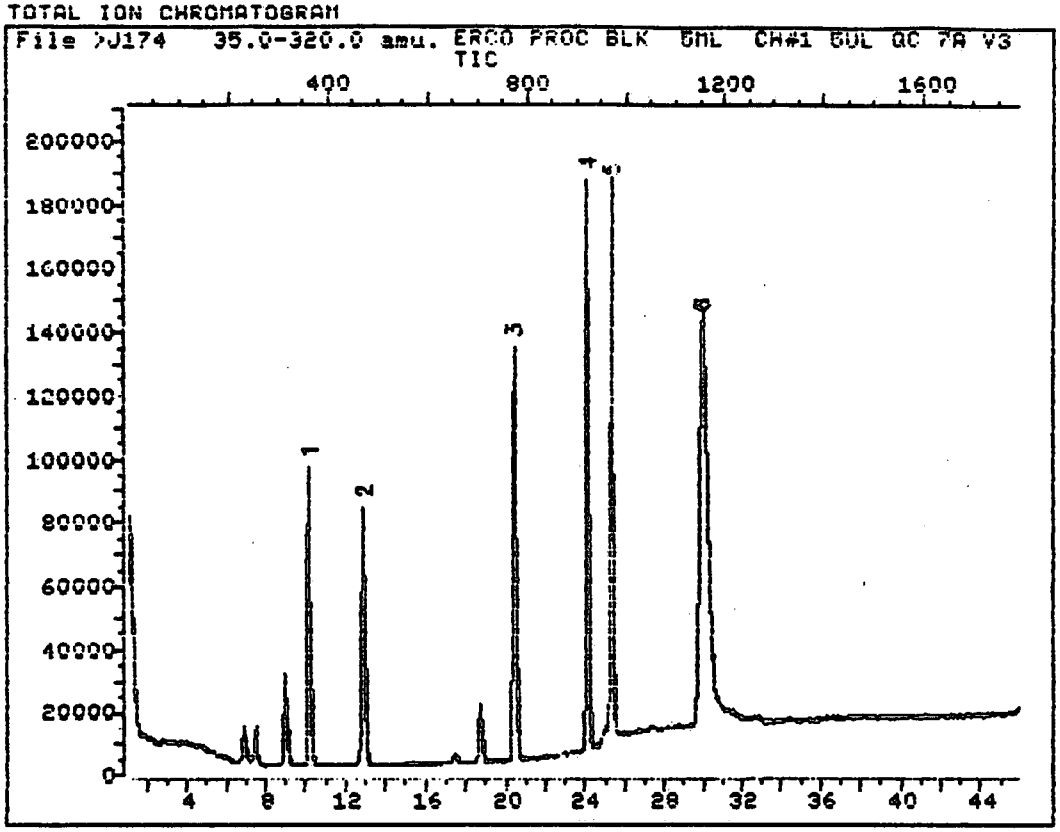
EPA Method 624/8240

Client Name: GeoEngineering, Inc.
Client ID: Erco Procedural Blank
Laboratory ID: J174B
Matrix: Water Sampled: 06/08/87 Received: 06/09/87
Authorized: 06/09/87 Prepared: 06/17/87 Analyzed: 06/17/87

Parameter	Scan No.	Units	Estimated concentration
None detected			

Reported by _____ Approved by _____

TOTAL ION CHROMATOGRAM



Data File: >J174::D3
Name: ERCO PROC BLK 5ML
Misc: CH#1 5UL QC 7A V3

Id File: VOAID3::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V3:ERCO/ENSECO
Last Calibration: 870617 13:49

Operator ID: BILL
Quant Time: 870617 14:43
Injected at: 870617 13:47

QUANT REPORT

Operator ID: BILL
utput File: ^J174::Q0
Data File: >J174::D3
Name: ERCO PROC BLK 5ML
Misc: CH#1 5UL QC 7A V3

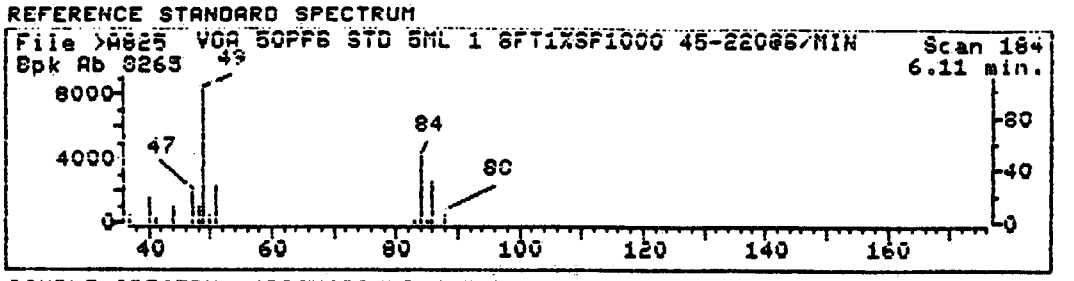
Quant Rev: 4 Quant Time: 870617 14:4
Injected at: 870617 13:47
Dilution Factor: 1.00

ID File: VOAID3::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V3:ERCO/ENSECO
Last Calibration: 870617 13:49

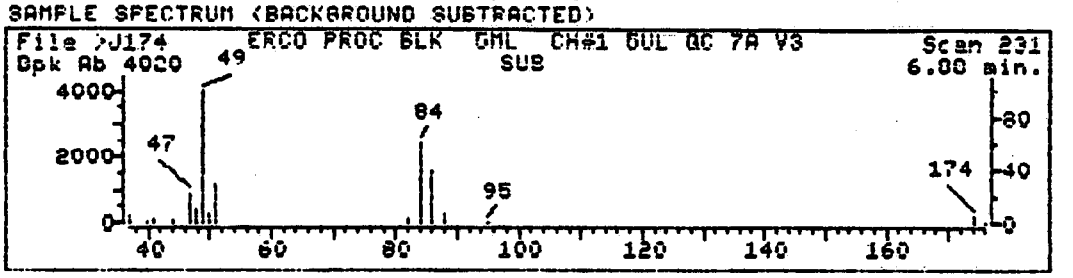
	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	10.16	362	245434	50.00	ug/L	94
6)	Methylene Chloride	6.88	231	24315	7.05	ug/L	94
7)	Acetone	7.59	259	12787	8.70	ug/L	100
14)	D4-1,2-Dichloroethane	12.89	471	330202	47.67	ug/L 95	99
15)	*1,4-Difluorobenzene	20.45	773	486938	50.00	ug/L	100
23)	Trichloroethene	17.42	652	5634	1.06	ug/L	98
30)	*D5-Chlorobenzene	25.30	967	537003	50.00	ug/L	79
31)	4-Methyl-2-Pentanone	21.20	803	6239	~~1.10~~	ug/L	93
32)	2-Hexanone	22.75	865	7160	~~1.81~~	ug/L	75
35)	Toluene	24.25	925	1854	BM .17	ug/L	73
36)	D8-Toluene	24.10	919	416678	49.83	ug/L 100	94
40)	Styrene	31.37	1209	2961	BM .15	ug/L	100
41)	Xylenes (o , p)	32.65	1260	1901	.18	ug/L	88
42)	Bromofluorobenzene (BFB)	29.94	1152	414905	50.20	ug/L 100	71

* Compound is ISTD

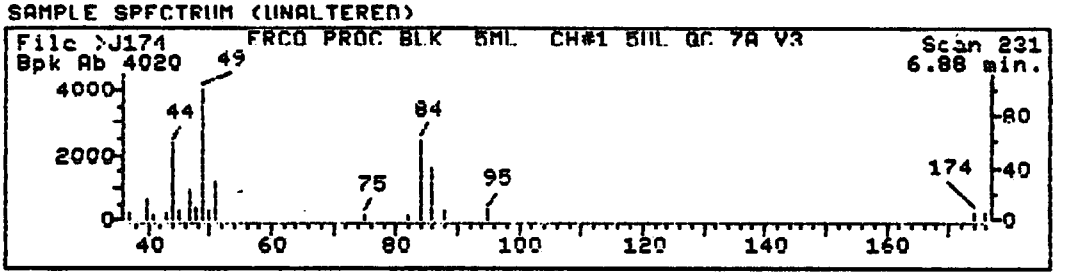
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



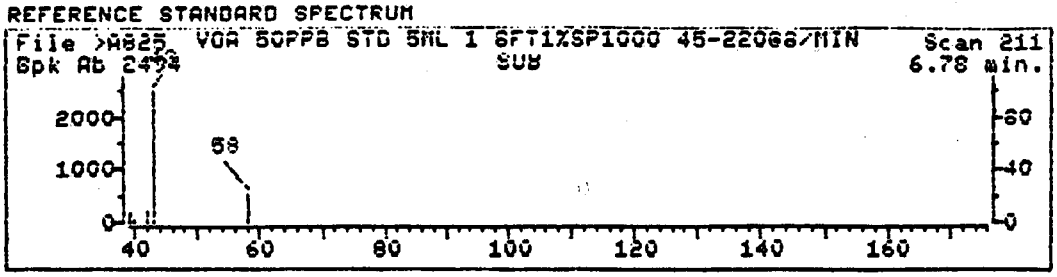
SAMPLE SPECTRUM (UNALTERED)



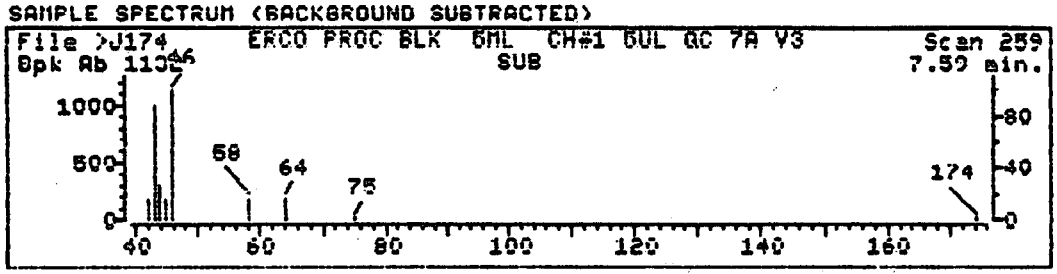
Data File: >J174::D3
Name: ERCO PROC BLK 5ML
Misc: CH#1 5UL QC 7A V3
Quant Time: 870617 14:43
Injected at: 870617 13:47

Compound No: 6
Compound Name: Methylene Chloride
Scan Number: 231
Retention Time: 6.88 min.
Area: 24315
Concentration: 7.05 ug/L
q-value: 94

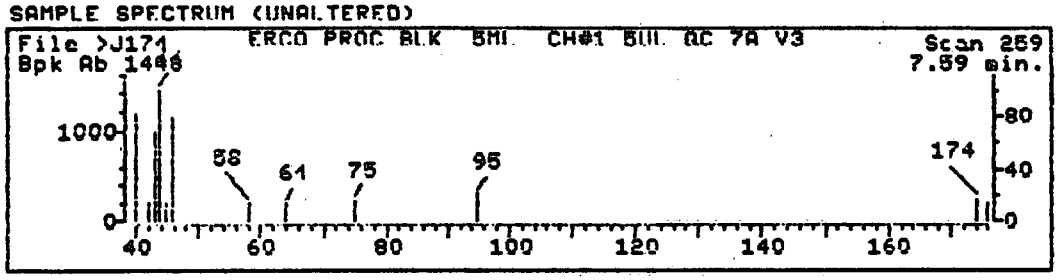
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



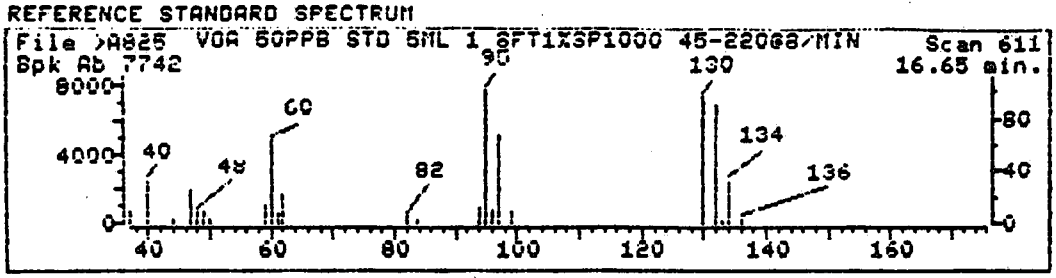
SAMPLE SPECTRUM (UNALTERED)



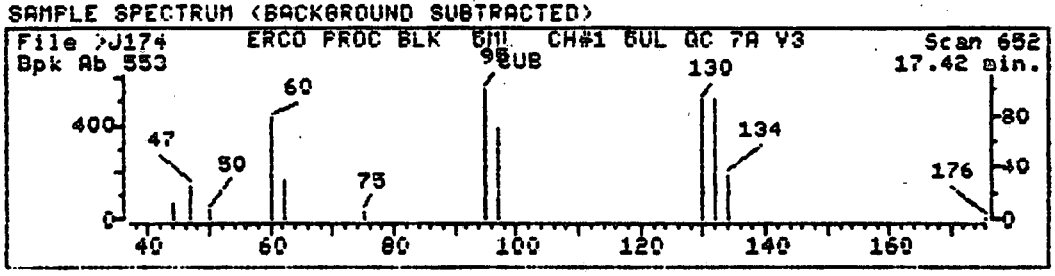
Data File: >J174::D3
Name: ERCO PROC BLK 5ML
Misc: CH#1 5UL QC 7A V3
Quant Time: 870617 14:43
Injected at: 870617 13:47

Compound No: 7
Compound Name: Acetone
Scan Number: 259
Retention Time: 7.59 min.
Area: 12787
Concentration: 8.70 ug/L
q-value: 100

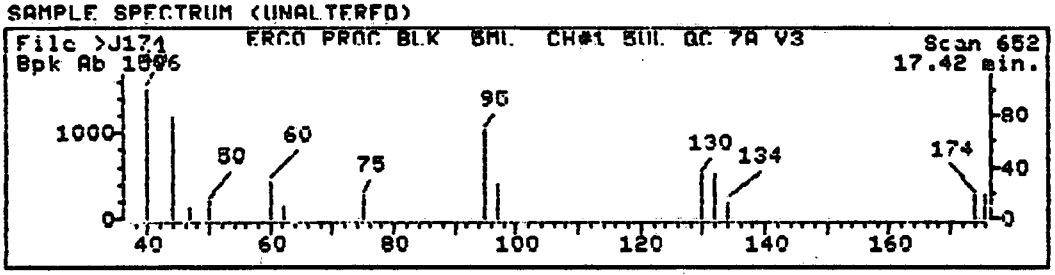
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >J174::D3
Name: ERCO PROC BLK 5ML
Misc: CH#1 5UL QC 7A V3
Quant Time: 870617 14:43
Injected at: 870617 13:47

Compound No: 23
Compound Name: Trichloroethene
Scan Number: 652
Retention Time: 17.42 min.
Area: 5634
Concentration: 1.06 ug/L
q-value: 98

Enseco

HAZARDOUS SUBSTANCE LIST (HSL) VOLATILE ORGANICS

EPA Method 624/HSL List

Client Name: GeoEngineering, Inc.
Client ID: Erco Procedural Blank
Laboratory ID: AA524
Matrix: Water Sampled: 06/08/87 Received: 06/09/87
Authorized: 06/09/87 Prepared: 06/17/87 Analyzed: 06/17/87

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	µg/L	5
Bromomethane	ND	µg/L	5
Vinyl chloride	ND	µg/L	5
Chloroethane	ND	µg/L	5
Methylene chloride	33	µg/L	5
Acetone	24*	µg/L	50
Carbon disulfide	ND	µg/L	2
1,1-Dichloroethene	ND	µg/L	2
1,1-Dichloroethane	ND	µg/L	2
trans-1,2-Dichloroethene	ND	µg/L	2
Chloroform	ND	µg/L	2
1,2-Dichloroethane	ND	µg/L	2
2-Butanone	ND	µg/L	10
1,1,1-Trichloroethane	ND	µg/L	2
Carbon tetrachloride	ND	µg/L	2
Vinyl acetate	ND	µg/L	10
Bromodichloromethane	ND	µg/L	2
1,2-Dichloropropane	ND	µg/L	2
trans-1,3-Dichloropropene	ND	µg/L	2
Trichloroethene	ND	µg/L	2
Dibromochloromethane	ND	µg/L	2
1,1,2-Trichloroethane	ND	µg/L	2
Benzene	ND	µg/L	2
cis-1,3-Dichloropropene	ND	µg/L	2
2-Chloroethyl vinyl ether	ND	µg/L	10
Bromoform	ND	µg/L	2
4-Methyl-2-pentanone	ND	µg/L	10
2-Hexanone	ND	µg/L	10
1,1,2,2-Tetrachloroethane	ND	µg/L	2
Tetrachloroethene	ND	µg/L	2
Toluene	ND	µg/L	2
Chlorobenzene	ND	µg/L	2
Ethyl benzene	ND	µg/L	2
Styrene	ND	µg/L	2
Total xylenes	ND	µg/L	2

*Trace concentrations detected below the reporting limit.
ND = Not detected.

Reported by AT Approved by

Enseco

VOLATILE ORGANICS

TENTATIVELY IDENTIFIED COMPOUNDS

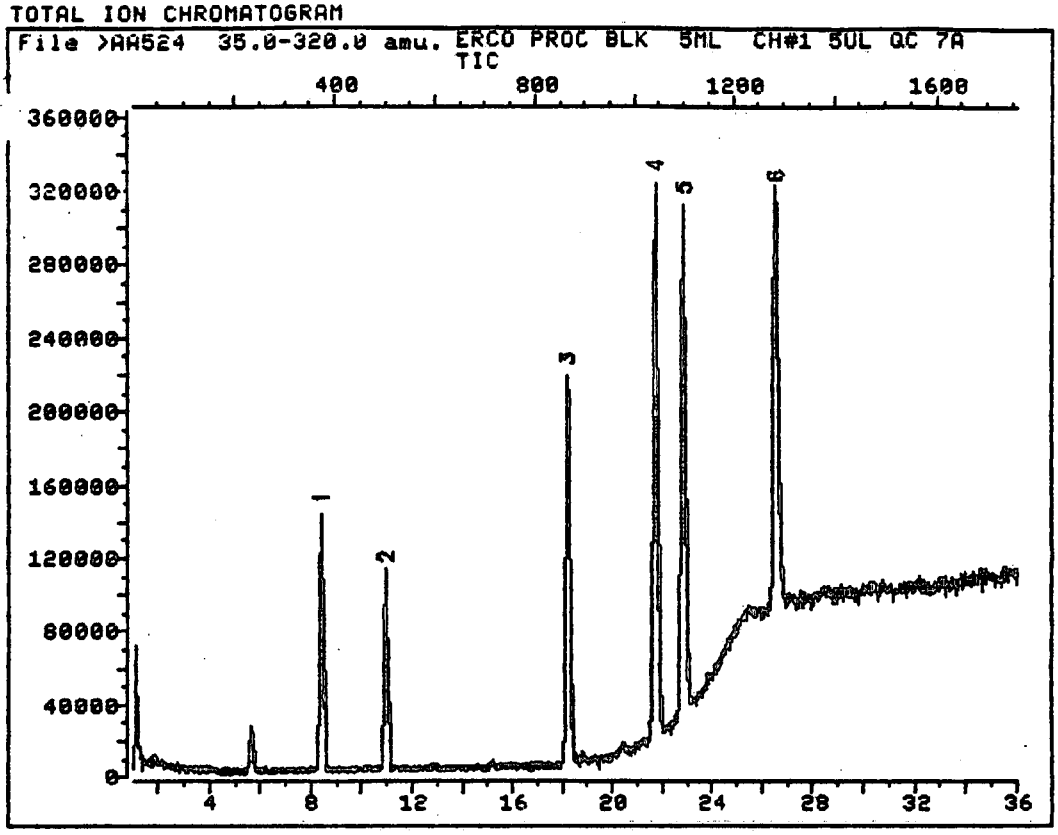
EPA Method 624/8240

Client Name: GeoEngineering, Inc.
Client ID: Erco Procedural Blank
Laboratory ID: AA524
Matrix: Water Sampled: 06/08/87 Received: 06/09/87
Authorized: 06/09/87 Prepared: 06/17/87 Analyzed: 06/17/87

Parameter	Scan No.	Units	Estimated concentration
None detected			

Reported by AT Approved by

TOTAL ION CHROMATOGRAM



Data File: >AA524::D4
Name: ERCO PROC BLK 5ML
Misc: CH#1 5UL QC 7A

Id File: VOAID4::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V4:ERCO/ENSECO
Last Calibration: 870617 15:43

Operator ID: JEAN
Quant Time: 870617 15:44
Injected at: 870617 14:07

QUANT REPORT

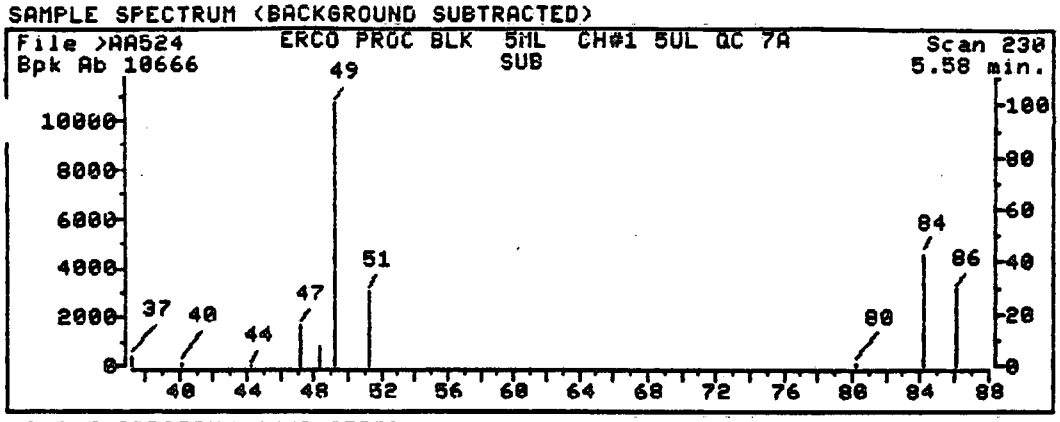
Operator ID: JEAN Quant Rev: 4 Quant Time: 870617 15:44
Input File: ^AA524::QT Injected at: 870617 14:07
Data File: >AA524::D4 Dilution Factor: 1.00
Name: ERCO PROC BLK 5ML
Misc: CH#1 5UL QC 7A

MD File: VOAID4::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V4:ERCO/ENSECO
Last Calibration: 870617 15:43

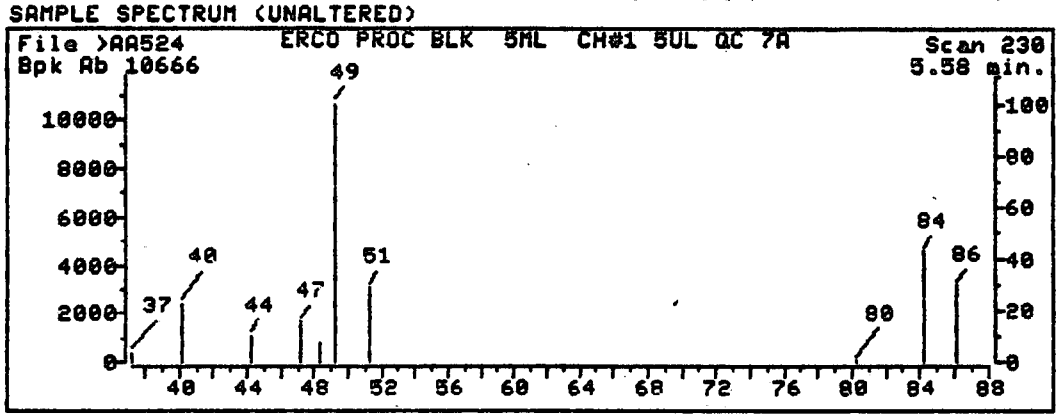
	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	8.39	371	502399	50.00	ug/L	39
6)	Methylene Chloride	5.58	230	40167	33.43	ug/L	71
7)	Acetone	6.22	262	11030	23.66	ug/L	100
14)	D4-1,2-Dichloroethane	10.93	499	359448	46.58	ug/L 93	85
15)	*1,4-Difluorobenzene	18.19	864	860083	50.00	ug/L	100
23)	Trichloroethene	15.21	714	5690	.58	ug/L	82
30)	*D5-Chlorobenzene	22.87	1099	941887	50.00	ug/L	80
31)	4-Methyl-2-Pentanone	18.81	895	23079	~~2.42~~	ug/L	81
32)	2-Hexanone	20.36	973	33361	~~4.55~~	ug/L	90
34)	1,1,2,2-Tetrachloroethane	20.44	977	12601	~~.77~~	ug/L	97
36)	D8-Toluene	21.73	1042	766184	50.02	ug/L 100	96
39)	Xylene (m)	28.45	1379	5467	.38	ug/L	75
40)	Styrene	27.59	1336	6850	.24	ug/L	100
41)	Xylenes (o , p)	28.45	1379	5467	.37	ug/L	75
42	Bromofluorobenzene (BFB)	26.53	1283	661902	49.97	ug/L 100	64

* Compound is ISTD

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



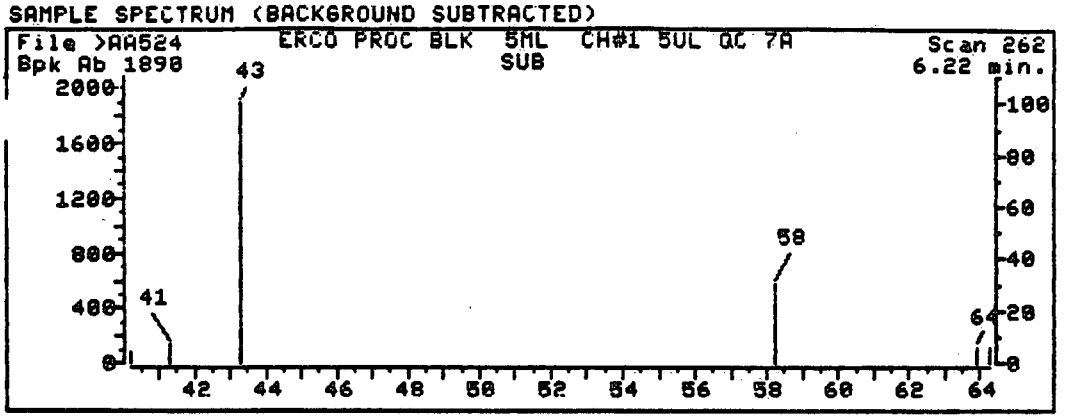
SAMPLE SPECTRUM (UNALTERED)



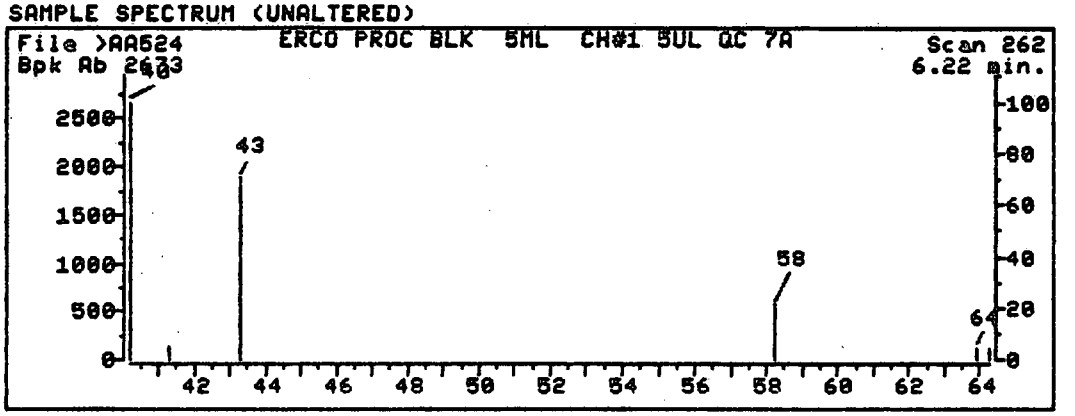
Data File: >AA524::D4
Name: ERCO PROC BLK 5ML
Misc: CH#1 5UL QC 7A
Quant Time: 870617 15:44
Injected at: 870617 14:07

Compound No: 6
Compound Name: Methylene Chloride
Scan Number: 230
Retention Time: 5.58 min.
Area: 40167
Concentration: 33.43 ug/L
q-value: 71

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AA524::D4
Name: ERCO PROC BLK 5ML
Misc: CH#1 5UL QC 7A
Quant Time: 870617 15:44
Injected at: 870617 14:07

Compound No: 7
Compound Name: Acetone
Scan Number: 262
Retention Time: 6.22 min.
Area: 11030
Concentration: 23.66 ug/L
q-value: 100

Four

Initial Calibration Data
HSL Compounds

Case No: GEI

Instrument ID: ~~45~~ 1C K4

Contractor: ENSECO

Calibration Date: 05/21/87

Contract No: —

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % RSD for CCC is 30%

Laboratory ID:	>AA159	>AA158	>AA160	>AA161	>AA162				
Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	RF 200.00	$\overline{RF}$	% RSD	CCC	SPCC
Chloromethane	1.18674	.99935	1.19308	1.12652	.99813	1.10076	8.784		**
Bromomethane	.87945	.60245	.85530	.65257	.56489	.71093	20.594		
Vinyl Chloride	.84289	.56993	.88072	.75563	.63430	.73669	18.043	*	
Chloroethane	.42417	.34107	.46780	.43107	.36168	.40516	12.916		
Methylene Chloride	1.19510	.90110	.90429	.86644	.78463	.93031	16.734		
Acetone	.16090	.16607	.13258	.13660	.08765	.13676	22.748		
Carbon Disulfide	2.32140	1.86438	2.06924	1.91276	1.79019	1.99159	10.585		
1,1-Dichloroethene	.65302	.54293	.62278	.69438	.62696	.62801	8.828	*	
1,1-Dichloroethane	1.71945	1.12230	1.61026	1.59312	1.47145	1.50331	15.329		**
Trans-1,2-Dichloroethene	1.04057	.61209	1.00460	.97725	.88346	.90359	19.150		
Chloroform	2.08840	1.31953	1.89170	1.83588	1.69410	1.76592	16.244	*	
1,2-Dichloroethane	1.09543	.73259	.96273	.85563	.75203	.87968	17.236		
D4-1,2-Dichloroethane	.76734	.63181	.74856	.76978	.77954	.73941	8.275		(Conc=50.0,50.0,50.0,50.0,50.0)
2-Butanone	.36409	.14520	.18037	.18054	.14666	.20337	44.986		
1,1,1-Trichloroethane	.57508	.39556	.58419	.56621	.49036	.52228	15.325		
Carbon Tetrachloride	.50525	.37124	.51752	.50354	.43753	.46702	13.281		
Vinyl Acetate	.51591	.40719	.58139	.50846	.42275	.48714	14.768		
Bromodichloromethane	.82195	.62106	.86074	.83908	.75007	.77858	12.505		
1,2-Dichloropropane	.52666	.43069	.52434	.51910	.47908	.49598	8.330	*	
Trans-1,3-Dichloropropene	1.13261	.91774	1.18384	1.15925	1.05357	1.08940	9.888		
Trichloroethene	.60798	.48021	.60157	.62133	.55417	.57305	10.078		
Dibromochloromethane	.42813	.38517	.43033	.42483	.37965	.40962	6.102		
1,1,2-Trichloroethane	.50503	.44636	.49217	.47108	.41833	.46659	7.494		
Benzene	1.84728	1.40462	1.87612	1.87849	1.63751	1.72880	11.980		
cis-1,3-Dichloropropene	.46935	.39155	.48045	.44960	.39485	.43716	9.525		
2-Chloroethylvinylether	.22946	.22508	.26729	.24241	.20443	.23373	9.927		
Bromoform	.33739	.31274	.35435	.33198	.28310	.32391	8.403		**
4-Methyl-2-Pentanone	1.34386	.53328	.57361	.53297	.42361	.68147	54.950		
2-Hexanone	1.14214	.45741	.45773	.42172	.33618	.56304	58.168		
Tetrachloroethene	.37767	.31072	.38785	.40397	.34578	.36520	10.168		
1,1,2,2-Tetrachloroethane	1.01549	.87048	1.05497	1.00922	.78714	.94746	11.991		**
Toluene	.99517	.80446	1.02119	1.00387	.88428	.94179	9.957	*	
D8-Toluene	.78169	.82778	.77647	.77133	.76471	.78440	3.194		(Conc=50.0,50.0,50.0,50.0,50.0)
Chlorobenzene	1.15793	1.03406	1.18710	1.20025	1.09291	1.13445	6.148		**
Ethylbenzene	.62046	.48968	.63701	.62642	.54538	.58379	10.943	*	
Xylene (m)	.80815	.65243	.80498	.81060	.72574	.76038	9.217		

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

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

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

Initial Calibration Data
HSL Compounds

Case No: GEI

Instrument ID: ~~V5~~ 4C V4

Contractor: ENSECO

Calibration Date: 05/21/87

Contract No: —

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % RSD for CCC is 30 %

Laboratory ID:	>AA159	>AA158	>AA160	>AA161	>AA162				
	RF	RF	RF	RF	RF				
Compound	20.00	50.00	100.00	150.00	200.00	$\overline{RF}$	% RSD	CCC	SPCC
Styrene	1.50811	1.32325	1.53596	1.53436	1.41494	1.46332	6.327		
Xylenes (o , p)	.78842	.64410	.79245	.79448	.71107	.74610	8.969		(Conc=40.0,100.0,200.0,300.0,400.
Bromofluorobenzene (BFB)	.60136	.58182	.59919	.59169	.59190	.59319	1.295		(Conc=50.0,50.0,50.0,50.0,50.0)

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

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

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

Initial Calibration Data
HSL Compounds

Case No: GEI

Instrument ID: V3

Contractor: ENSECO

Calibration Date: 05/18/87

Contract No: -

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % RSD for CCC is 30 %

Laboratory ID:	>H583	>H585	>H586	>H587	>H588				
Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	RF 200.00	$\overline{RF}$	% RSD	CCC	SPCC
Chloromethane	1.37169	1.21555	1.48992	1.38229	1.22583	1.33706	8.670		**
Bromomethane	.99512	.89488	1.13155	.99843	.83060	.97012	11.822		
Vinyl Chloride	1.01341	.91282	1.17315	1.10452	.92411	1.02560	11.028	*	
Chloroethane	.54245	.48764	.62916	.60176	.52210	.55662	10.418		
Methylene Chloride	.52572	.39398	.46719	.45139	.41306	.45027	11.397		
Acetone	.27493	.28837	.20722	.21653	.21926	.24126	15.519		
Carbon Disulfide	2.77640	2.38071	2.92803	2.78875	2.52882	2.68054	8.238		
1,1-Dichloroethene	.82703	.73155	.94802	.93960	.78697	.84664	11.222	*	
1,1-Dichloroethane	2.09805	1.87293	2.35028	2.23723	1.96107	2.10391	9.273		**
Trans-1,2-Dichloroethene	1.11176	.87620	1.08126	1.06429	.93463	1.01363	10.097		
Chloroform	2.52256	2.31045	2.89769	2.75720	2.44620	2.58682	9.188	*	
1,2-Dichloroethane	2.30985	2.15465	2.31875	2.44626	2.17025	2.27995	5.272		
D4-1,2-Dichloroethane	1.27454	1.33121	1.35719	1.52994	1.46891	1.39236	7.502		(Conc=50.0,50.0,50.0,50.0,50.0)
2-Butanone	.16027	.16418	.13524	.17071	.17265	.16061	9.358		
1,1,1-Trichloroethane	1.05375	.92850	1.13463	1.13737	1.07527	1.06590	7.981		
Carbon Tetrachloride	1.00739	.92754	1.13988	1.11783	1.01399	1.04133	8.373		
Vinyl Acetate	.56477	.27170	.50437	.61558	.64732	.52075	28.683		
Bromodichloromethane	1.16775	1.11893	1.25571	1.27949	1.25020	1.21442	5.602		
1,2-Dichloropropane	.53020	.50077	.56456	.56507	.54388	.54090	4.959	*	
Trans-1,3-Dichloropropene	1.22911	1.15537	1.25663	1.33089	1.29798	1.25400	5.379		
Trichloroethene	.56148	.55881	.59809	.57559	.54581	.56796	3.502		
Dibromochloromethane	.58779	.61524	.61815	.66336	.64693	.62629	4.703		
1,1,2-Trichloroethane	.41579	.42676	.41464	.45379	.43902	.43000	3.848		
Benzene	1.51504	1.34538	1.58669	1.54581	1.48326	1.49524	6.158		
cis-1,3-Dichloropropene	.64963	.62556	.64945	.69387	.67000	.65770	3.895		
2-Chloroethylvinylether	.29861	.28499	.27676	.32520	.31656	.30042	6.812		
Bromoform	.51691	.54661	.51022	.60685	.59093	.55430	7.814		**
4-Methyl-2-Pentanone	.36063	.43182	.34548	.44299	.43175	.40253	11.356		
2-Hexanone	.27697	.29753	.23561	.31145	.29943	.28420	10.505		
Tetrachloroethene	.44605	.40365	.47914	.46820	.42436	.44428	6.972		
1,1,2,2-Tetrachloroethane	.47146	.45042	.44038	.56391	.55245	.49572	11.750		**
Toluene	.99107	.87663	1.02454	1.01309	.96128	.97332	6.082	*	
D8-Toluene	.78836	.79897	.79080	.79128	.79072	.79203	.510		(Conc=50.0,50.0,50.0,50.0,50.0)
Chlorobenzene	1.17323	1.09499	1.25348	1.23288	1.17512	1.18594	5.218		**
Ethylbenzene	.57149	.50171	.58993	.58437	.55627	.56076	6.324	*	
Xylene (m)	.76343	.67358	.77347	.74954	.72612	.73723	5.394		

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

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

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

Initial Calibration Data
HSL Compounds

Case No: CaET

Instrument ID: V3

Contractor: ENSECO

Calibration Date: 05/18/87

Contract No: —

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % RSD for CCC is 30%

Laboratory ID:	>H583	>H585	>H586	>H587	>H588				
Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	RF 200.00	$\overline{RF}$	% RSD	CCC	SPCC
Styrene	.08291	.07523	.08402	.08163	.07832	.08042	4.484		
Xylenes (o , p)	.74514	.65932	.76255	.73951	.71590	.72448	5.531		(Conc=40.0,100.0,200.0,300.0,400.
Bromofluorobenzene (BFB)	.80105	.80006	.77846	.79141	.80655	.79550	1.378		(Conc=50.0,50.0,50.0,50.0,50.0)

total xylenes RF = .73 SA

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

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

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

Continuing Calibration Check
HSL Compounds

Case No: GEI

Calibration Date: 06/17/87

Contractor: ENSECO

Time: 12:56

Contract No: —

Laboratory ID: VAA523

Instrument ID: VOA4

Initial Calibration Date: 05/21/87

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % Diff for CCC is 25%%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Chloromethane	1.10076	.27268	75.23		**
Bromomethane	.71093	.33920	52.29		
Vinyl Chloride	.73669	.35304	52.08	*	
Chloroethane	.40516	.04725	88.34		
Methylene Chloride	.93031	.11957	87.15		
Acetone	.13676	.04640	66.07		
Carbon Disulfide	1.99159	.54040	72.87		
1,1-Dichloroethene	.62801	.04916	92.17	*	
1,1-Dichloroethane	1.50331	.71355	52.53		**
Trans-1,2-Dichloroethene	.90359	.34191	62.16		
Chloroform	1.76592	1.25215	29.09	*	
1,2-Dichloroethane	.87968	.91033	3.48		
D4-1,2-Dichloroethane	.73941	.76792	3.86		
2-Butanone	.20337	.18356	9.74		
1,1,1-Trichloroethane	.52228	.26978	48.35		
Carbon Tetrachloride	.46702	.27040	42.10		
Vinyl Acetate	.48714	.80356	64.95		
Bromodichloromethane	.77858	.94873	21.85		
1,2-Dichloropropane	.49598	.65949	32.97	*	
Trans-1,3-Dichloropropene	1.08940	1.37768	26.46		
Trichloroethene	.57305	.56793	.89		
Dibromochloromethane	.40962	.47111	15.01		
1,1,2-Trichloroethane	.46659	.53952	15.63		
Benzene	1.72880	1.76989	2.38		
cis-1,3-Dichloropropene	.43716	.63344	44.90		
2-Chloroethylvinylether	.23373	.38646	65.34		
Bromoform	.32391	.45942	41.84		**
4-Methyl-2-Pentanone	.68147	.50696	25.61		
2-Hexanone	.56304	.38913	30.89		
Tetrachloroethene	.36520	.33805	7.43		
1,1,2,2-Tetrachloroethane	.94746	.86664	8.53		**
Toluene	.94179	.97775	3.82	*	
D8-Toluene	.78440	.81311	3.66		
Chlorobenzene	1.13445	1.14428	.87		**
Ethylbenzene	.58379	.58145	.40	*	
Xylene (m)	.76038	.77376	1.76		

RF - Response Factor from daily standard file at 50.00 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 (**)

Continuing Calibration Check
HSL Compounds

Case No: GEI

Calibration Date: 06/17/87

Contractor: ENSECO

Time: 12:56

Contract No: —

Laboratory ID: >AA523

Instrument ID: V4

Initial Calibration Date: 05/21/87

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % Diff for CCC is 25%%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Styrene	1.46332	1.53990	5.23		
Xylenes (o , p)	.74610	1.55186	108.00		
Bromofluorobenzene (BFB)	.59319	.70315	18.54		

RF - Response Factor from daily standard file at 50.00 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 (**)

Continuing Calibration Check
HSL Compounds

Case No: GEL

Contractor: ENSECO

Contract No: —

Instrument ID: V3

Calibration Date: 06/17/87

Time: 12:33

Laboratory ID: >J173

Initial Calibration Date: ~~06/14/87~~ 5-16-87

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % Diff for CCC is 25%%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Chloromethane	1.34174	.86673	35.40		**
Bromomethane	.96844	1.45946	50.70		
Vinyl Chloride	1.02913	.80059	22.21	*	
Chloroethane	.55862	.64057	14.67		
Methylene Chloride	.45184	.70301	55.59		
Acetone	.24210	.29930	23.63		
Carbon Disulfide	2.69020	2.77582	3.18		
1,1-Dichloroethene	.84964	.77573	8.70	*	
1,1-Dichloroethane	2.11169	1.93935	8.16		**
Trans-1,2-Dichloroethene	1.01720	.95328	6.28		
Chloroform	2.59616	2.30385	11.26	*	
1,2-Dichloroethane	.18825	2.15134	1042.78		
D4-1,2-Dichloroethane	1.39797	1.41105	.94		
2-Butanone	.16061	.23145	44.10		
1,1,1-Trichloroethane	1.06590	.92252	13.45		
Carbon Tetrachloride	1.04133	.82595	20.68		
Vinyl Acetate	.52075	.91280	75.29		
Bromodichloromethane	1.21442	1.04826	13.68		
1,2-Dichloropropane	.54090	.51812	4.21	*	
Trans-1,3-Dichloropropene	1.25363	1.24189	.94		
Trichloroethene	.56796	.54426	4.17		
Dibromochloromethane	.62617	.52221	16.60		
1,1,2-Trichloroethane	.43000	.45794	6.50		
Benzene	1.49524	1.54136	3.08		
cis-1,3-Dichloropropene	.65700	.65335	.56		
2-Chloroethylvinylether	.30042	.36047	19.99		
Bromoform	.55430	.41133	25.79		**
4-Methyl-2-Pentanone	.40057	.52642	31.42		
2-Hexanone	.27840	.36908	32.57		
Tetrachloroethene	.44428	.36456	17.94		
1,1,2,2-Tetrachloroethane	.49572	.52209	5.32		**
Toluene	.97332	.99138	1.86	*	
D8-Toluene	.79203	.77858	1.70		
Chlorobenzene	1.18594	1.24458	4.94		**
Ethylbenzene	.56076	.65196	16.26	*	
Xylene (m)	1.44896	.96033	33.72		

RF - Response Factor from daily standard file at 50.00 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 (**)

Continuing Calibration Check
HSL Compounds

Case No: GEF

Calibration Date: 06/17/87

Contractor: ENSECO

Time: 12:33

Contract No: —

Laboratory ID: 0J173

Instrument ID: V3

Initial Calibration Date: ~~06/14/87~~ 5/6/87

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % Diff for CCC is 25%%

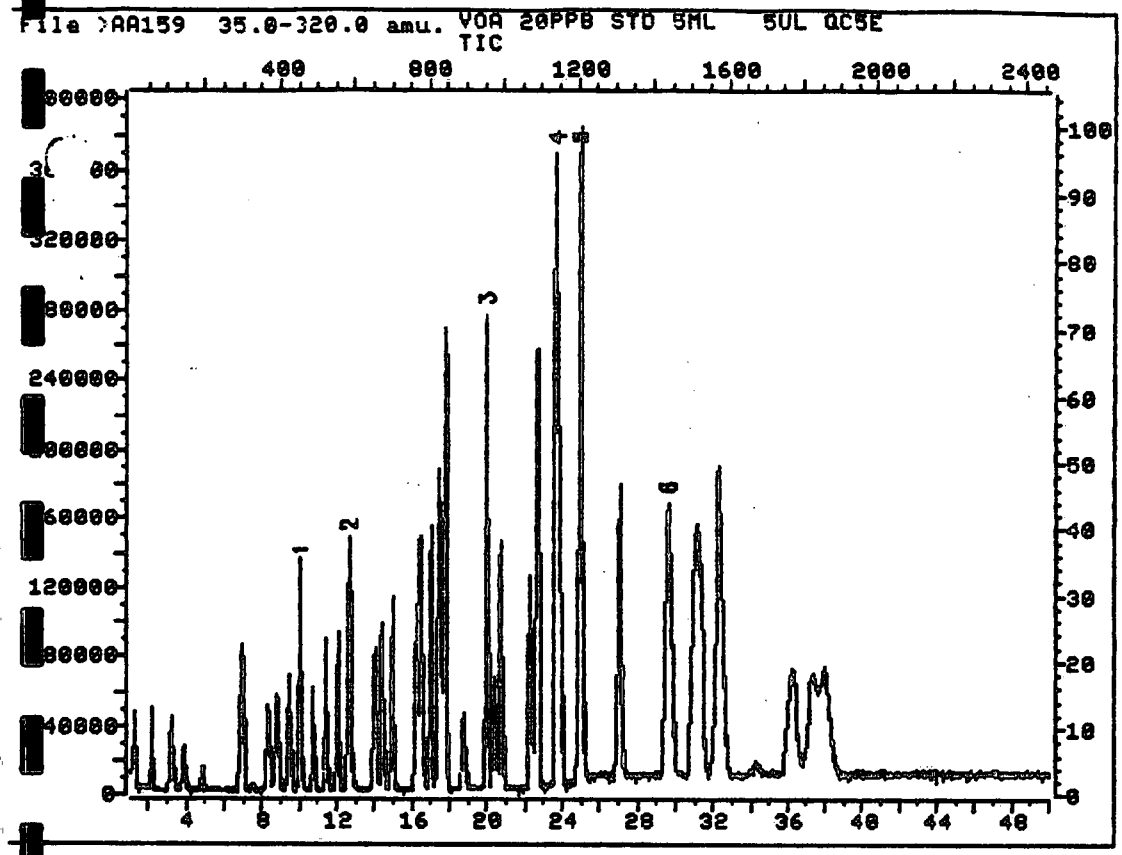
Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Styrene	.08042	1.86230	2215.63		
Xylenes (o , p)	.72448	1.95959	170.48		
Bromofluorobenzene (BFB)	.79550	.76955	3.26		

RF - Response Factor from daily standard file at 50.00 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 (**)



MS data file header from : >AA159

ample: VOA 20PPB STD 5ML Operator: ALAN MS 5/21/87 15:50
: : 5UL QC5E
Sys. #: 1 MS model: 87 SW/HW rev.: IA ALS # : 0
Method file: VOA4 Tuning file: MT7404 No. of extra records: 1
Source temp.: 210 Analyzer temp.: 0 Transfer line temp. : 0

Chromatographic temperatures :	0.	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.0	0.0

QUANT REPORT

Operator ID: ALAN
Output File: ^AA159::QT
Data File: >AA159::D4
Name: VOA 20PPB STD 5ML
Misc: 5UL QC5E

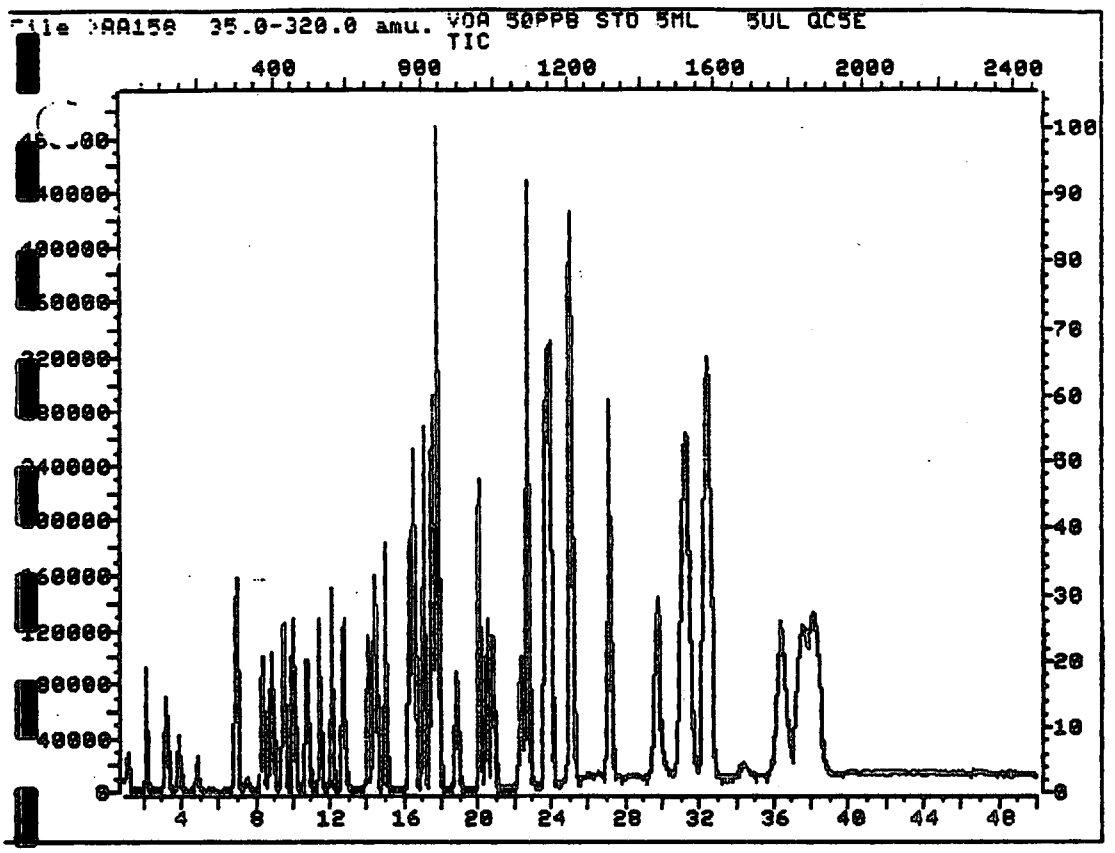
Quant Rev: 4

Quant Time
Injected at
Dilution Factor

ID File: VOAID4::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V4:ERCC
Last Calibration: 870521 16:52

	Compound	R.T.	Scan#	Area
1)	*Bromochloromethane	9.99	451	469677
2)	Chloromethane	2.10	54	222954
3)	Bromomethane	3.15	107	165223
4)	Vinyl Chloride	3.83	141	158355
5)	Chloroethane	4.80	190	79689
6)	Methylene Chloride	6.87	294	224524
7)	Acetone	7.47	324	30229
8)	Carbon Disulfide	8.26	364	436124
9)	1,1-Dichloroethene	9.46	424	122683
10)	1,1-Dichloroethane	10.73	488	323034
11)	Trans-1,2-Dichloroethene	11.37	520	195492
12)	Chloroform	12.02	553	392350
13)	1,2-Dichloroethane	12.70	587	205800
14)	D4-1,2-Dichloroethane	12.60	582	360404
15)	*1,4-Difluorobenzene	19.96	952	1336107
( )	2-Butanone	12.58	581	194587
17)	1,1,1-Trichloroethane	13.97	651	307345
18)	Carbon Tetrachloride	14.35	670	270026
19)	Vinyl Acetate	14.41	673	275726
20)	Bromodichloromethane	14.91	698	439284
21)	1,2-Dichloropropane	16.20	763	281470
22)	Trans-1,3-Dichloropropene	16.44	775	605314
23)	Trichloroethene	16.95	801	324931
24)	Dibromochloromethane	17.67	837	228810
25)	1,1,2-Trichloroethane	17.75	841	269909
26)	Benzene	17.41	824	987263
27)	cis-1,3-Dichloropropene	17.73	840	250841
28)	2-Chloroethylvinylether	18.75	891	122635
29)	Bromoform	20.38	973	180314
30)	*D5-Chlorobenzene	24.89	1200	1288714
31)	4-Methyl-2-Pentanone	20.73	991	692743
32)	2-Hexanone	22.27	1068	588757
33)	Tetrachloroethene	22.60	1085	194684
34)	1,1,2,2-Tetrachloroethane	22.64	1087	523471
35)	Toluene	23.84	1147	512995
36)	D8-Toluene	23.66	1138	1007377
37)	Chlorobenzene	25.03	1207	596895
38)	Ethylbenzene	27.04	1308	319836
39)	Xylene (m)	31.28	1521	416592
40)	Styrene	31.00	1507	777407
[illegible]	Xylenes (o , p)	32.27	1571	812840
42)	Bromofluorobenzene (BFB)	29.59	1436	774982

* Compound is ISTD



MS data file header from : >AA158

(ple: VOA 50PPB STD 5ML Operator: ALAN MS 5/21/87 14:49
Misc : 5UL QC5E
ys. #: 1 MS model: 87 SW/HW rev.: IA ALS # : 0
Method file: VOA4 Tuning file: MT7404 No. of extra records: 1
Source temp.: 210 Analyzer temp.: 0 Transfer line temp. : 0

Chromatographic temperatures :	0.	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.0	0.0

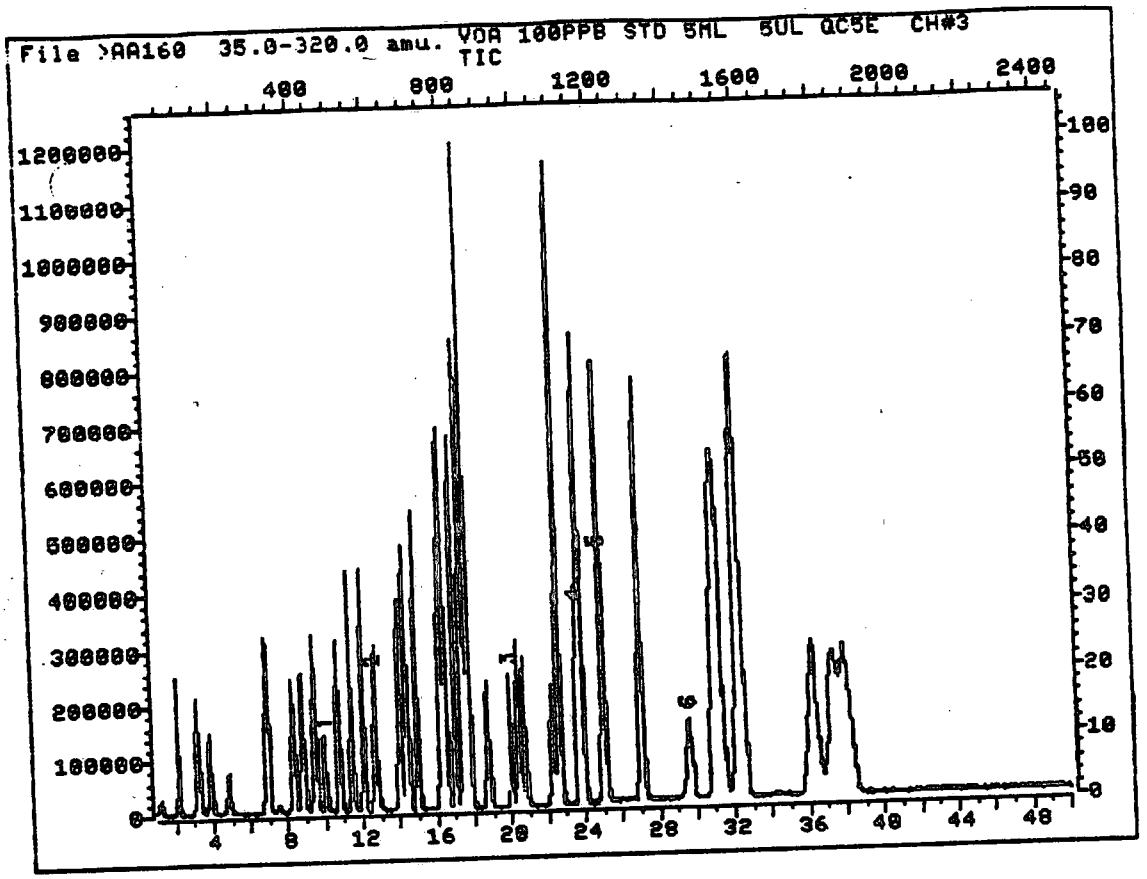
QUANT REPORT

Operator ID: ALAN Quant Rev: 4 Quant Time: 870521 15:42
Output File: ^AA158::QT Injected at: 870521 14:49
Data File: >AA158::D4 Dilution Factor: 1.000
Name: VOA 50PPB STD 5ML
Misc: 5UL QC5E

ID File: VOAID4::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V4:ERCO/ENSECO
Last Calibration: 870519 12:30

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	10.02	453	448039	50.00	ug/L	86
2)	Chloromethane	2.10	55	447747	34.68	ug/L	95
3)	Bromomethane	3.16	108	269921	24.56	ug/L	95
4)	Vinyl Chloride	3.85	143	255352	22.70	ug/L	78
5)	Chloroethane	4.83	192	152812	25.25	ug/L	69
6)	Methylene Chloride	6.89	296	403730M	75.16	ug/L	62
7)	Acetone	7.49	326	74408	35.22	ug/L	100
8)	Carbon Disulfide	8.31	367	835315M	30.44	ug/L	100
9)	1,1-Dichloroethene	9.48	426	243256	31.59	ug/L	99
10)	1,1-Dichloroethane	10.75	490	502833	26.20	ug/L	96
11)	Trans-1,2-Dichloroethene	11.41	523	274240	30.05	ug/L	95
12)	Chloroform	12.05	555	591200	26.71	ug/L	91
13)	1,2-Dichloroethane	12.74	590	328228	15.20	ug/L	91
[illegible])	D4-1,2-Dichloroethane	12.62	584	283074	23.98	ug/L	86
15)	*1,4-Difluorobenzene	20.02	956	1107906	50.00	ug/L	100
16)	2-Butanone	12.60	583	160871	41.20	ug/L	95
17)	1,1,1-Trichloroethane	14.01	654	438248	16.94	ug/L	86
18)	Carbon Tetrachloride	14.39	673	411304	17.64	ug/L	88
19)	Vinyl Acetate	14.45	676	451133	27.12	ug/L	98
20)	Bromodichloromethane	14.93	700	688074	24.16	ug/L	75
21)	1,2-Dichloropropane	16.24	766	477169	35.70	ug/L	51
22)	Trans-1,3-Dichloropropene	16.48	778	1016767	34.78	ug/L	93
23)	Trichloroethene	17.00	804	532023	43.59	ug/L	88
24)	Dibromochloromethane	17.73	841	426730	32.32	ug/L	81
25)	1,1,2-Trichloroethane	17.79	844	494522	52.01	ug/L	71
26)	Benzene	17.46	827	1556188	43.52	ug/L	100
27)	cis-1,3-Dichloropropene	17.75	842	433802	26.74	ug/L	100
28)	2-Chloroethylvinylether	18.81	895	249371	33.69	ug/L	80
29)	Bromoform	20.46	978	346492	31.69	ug/L	95
30)	*D5-Chlorobenzene	24.96	1204	1081545	50.00	ug/L	70
31)	4-Methyl-2-Pentanone	20.80	995	576770	66.86	ug/L	87
32)	2-Hexanone	22.35	1073	494707	81.10	ug/L	97
33)	Tetrachloroethene	22.67	1089	336063	40.13	ug/L	97
34)	1,1,2,2-Tetrachloroethane	22.71	1091	941460	90.97	ug/L	95
35)	Toluene	23.90	1151	870064	40.21	ug/L	97
36)	D8-Toluene	23.70	1141	895280	53.37	ug/L	97
37)	Chlorobenzene	25.08	1210	1118378	45.62	ug/L	76
38)	Ethylbenzene	27.10	1312	529613	42.30	ug/L	98
[illegible])	Xylene (m)	31.36	1526	705634	41.61	ug/L	91
40)	Styrene	31.08	1512	1431149	778.68	ug/L	100
41)	Xylenes (o , p)	32.40	1578	1393240	83.19	ug/L	93
42)	Bromofluorobenzene (BFB)	29.69	1442	629262	35.22	ug/L	58

* Compound is ISTD



MS data file header from : >AA160

Sample: VOA 100PPB STD 5ML Operator: ALAN MS
M(: : 5UL QC5E CH#3
Sys. #: 1 MS model: 87 SW/HW rev.: IA ALS # : 0
Method file: VOA4 Tuning file: MT7404 No. of extra re
Source temp.: 210 Analyzer temp.: 0 Transfer line t

Chromatographic temperatures :	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.

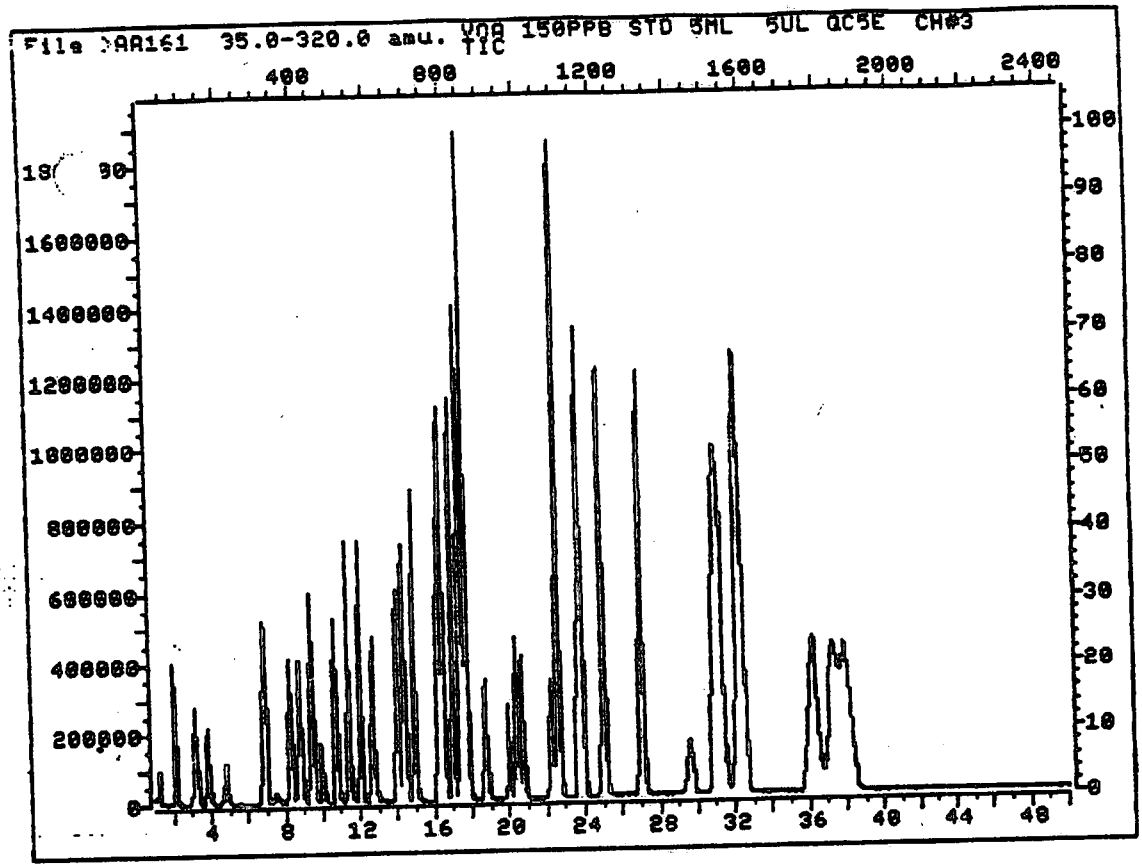
QUANT REPORT

Operator ID: ALAN Quant Rev: 4 Quant Time: 870521 17:45
Output File: ^AA160::QT Injected at: 870521 16:50
Data File: >AA160::D4 Dilution Factor: 1.000
Name: VOA 100PPB STD 5ML
Misc: 5UL QC5E CH#3

ID File: VOAID4::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V4:ERCO/ENSECO
Last Calibration: 870521 16:52

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	10.00	452	494560	50.00	ug/L	84
2)	Chloromethane	2.11	55	1180097	119.39	ug/L	89
3)	Bromomethane	3.18	109	845998	141.97	ug/L	92
4)	Vinyl Chloride	3.84	142	871134	154.53	ug/L	73
5)	Chloroethane	4.83	192	462708	137.16	ug/L	74
6)	Methylene Chloride	6.88	295	894448	100.35	ug/L	97
7)	Acetone	7.46	324	131137	79.83	ug/L	100
8)	Carbon Disulfide	8.25	364	2046726	110.99	ug/L	100
9)	1,1-Dichloroethene	9.44	424	616003	114.71	ug/L	97
10)	1,1-Dichloroethane	10.72	488	1592742	143.48	ug/L	98
11)	Trans-1,2-Dichloroethene	11.35	520	993672	164.13	ug/L	99
12)	Chloroform	12.01	553	1871114	143.36	ug/L	87
13)	1,2-Dichloroethane	12.71	588	952255	131.41	ug/L	85
14)	D4-1,2-Dichloroethane	12.61	583	370207	59.24	ug/L	82
15)	*1,4-Difluorobenzene	19.97	953	1205668	50.00	ug/L	100
16)	2-Butanone	12.59	582	434929	124.22	ug/L	99
17)	1,1,1-Trichloroethane	13.96	651	1408681	147.69	ug/L	86
18)	Carbon Tetrachloride	14.36	671	1247906	139.40	ug/L	89
19)	Vinyl Acetate	14.42	674	1401932	142.78	ug/L	96
20)	Bromodichloromethane	14.90	698	2075527	138.59	ug/L	74
21)	1,2-Dichloropropane	16.19	763	1264362	121.74	ug/L	45
22)	Trans-1,3-Dichloropropene	16.45	776	2854632	129.00	ug/L	92
23)	Trichloroethene	16.96	802	1450584	125.27	ug/L	82
24)	Dibromochloromethane	17.68	838	1037678	111.73	ug/L	82
25)	1,1,2-Trichloroethane	17.74	841	1186789	110.26	ug/L	66
26)	Benzene	17.42	825	4523959	133.57	ug/L	100
27)	cis-1,3-Dichloropropene	17.70	839	1158528	122.70	ug/L	100
28)	2-Chloroethylvinylether	18.74	891	644537	118.75	ug/L	78
29)	Bromoform	20.37	973	854457	113.30	ug/L	95
30)	*D5-Chlorobenzene	24.88	1200	1146140	50.00	ug/L	67
31)	4-Methyl-2-Pentanone	20.73	991	1314867	107.56	ug/L	81
32)	2-Hexanone	22.26	1068	1049245	100.07	ug/L	94
33)	Tetrachloroethene	22.62	1086	889059	124.82	ug/L	92
34)	1,1,2,2-Tetrachloroethane	22.64	1087	2418286	121.19	ug/L	98
35)	Toluene	23.83	1147	2340854	126.94	ug/L	98
36)	D8-Toluene	23.65	1138	889946	46.90	ug/L	94
37)	Chlorobenzene	25.00	1206	2721160	114.80	ug/L	73
38)	Ethylbenzene	27.01	1307	1460200	130.09	ug/L	96
39)	Xylene (m)	31.23	1519	1845234	123.38	ug/L	88
40)	Styrene	30.97	1506	3520851	116.08	ug/L	100
41)	Xylenes (o , p)	32.25	1570	3633035	246.07	ug/L	94
42)	Bromofluorobenzene (BFB)	29.58	1436	686753	51.49	ug/L	59

* Compound is ISTD



MS data file header from : >AA161

Sample: VOA 150PPB STD 5ML Operator: ALAN MS 5/21/87 17
M. : 5UL QC5E CH#3
Sys. #: 1 MS model: 87 SW/HW rev.: IA ALS # : 0
Method file: VOA4 Tuning file: MT7404 No. of extra records: 1
Source temp.: 210 Analyzer temp.: 0 Transfer line temp. : 0

Chromatographic temperatures :	0.	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.0	0.0

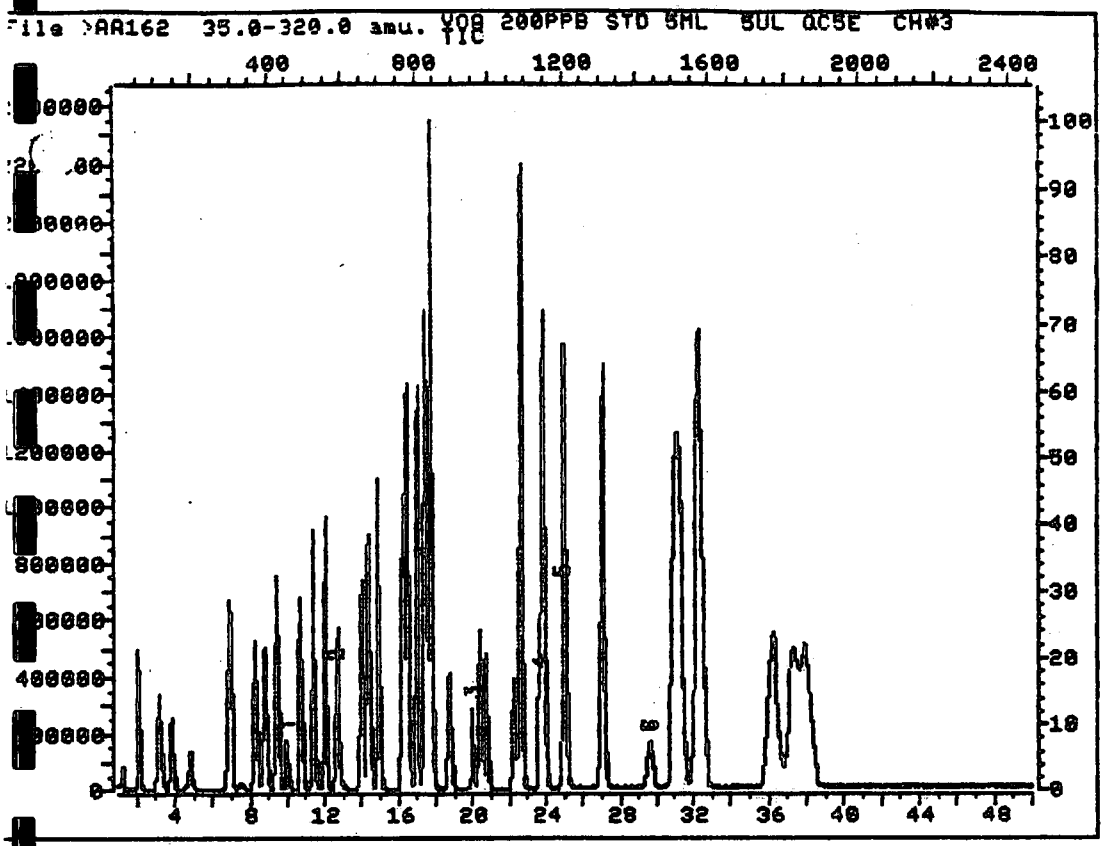
QUANT REPORT

Operator ID: ALAN Quant Rev: 4 Quant Time: 870521 18:43
Output File: ^AA161::QT Injected at: 870521 17:50
Data File: >AA161::D4 Dilution Factor: 1.000
Name: VOA 150PPB STD 5ML
Misc: 5UL QC5E CH#3

ID File: VOAID4::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V4:ERCO/ENSECO
Last Calibration: 870521 16:52

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	9.98	451	575702	50.00	ug/L	90
2)	Chloromethane	2.10	55	1945614	169.09	ug/L	87
3)	Bromomethane	3.16	108	1127062	162.48	ug/L	99
4)	Vinyl Chloride	3.81	141	1305058	198.87	ug/L	76
5)	Chloroethane	4.81	191	744498	189.58	ug/L	69
6)	Methylene Chloride	6.88	295	1496426	144.23	ug/L	96
7)	Acetone	7.49	326	235921	123.38	ug/L	100
8)	Carbon Disulfide	8.25	364	3303531	153.89	ug/L	100
9)	1,1-Dichloroethene	9.42	423	1199260	191.84	ug/L	97
10)	1,1-Dichloroethane	10.72	488	2751481	212.93	ug/L	97
11)	Trans-1,2-Dichloroethene	11.35	520	1687808	239.49	ug/L	97
12)	Chloroform	12.01	553	3170763	208.70	ug/L	91
13)	1,2-Dichloroethane	12.68	587	1477758	175.19	ug/L	84
14)	D4-1,2-Dichloroethane	12.61	583	443166	60.92	ug/L	87
15)	*1,4-Difluorobenzene	19.95	952	1333508	50.00	ug/L	100
16)	2-Butanone	12.57	581	722271	186.51	ug/L	97
17)	1,1,1-Trichloroethane	13.98	652	2265119	214.71	ug/L	86
18)	Carbon Tetrachloride	14.34	670	2014426	203.45	ug/L	87
19)	Vinyl Acetate	14.42	674	2034094	187.30	ug/L	94
20)	Bromodichloromethane	14.89	698	3356749	202.66	ug/L	78
21)	1,2-Dichloropropane	16.19	763	2076671	180.79	ug/L	42
22)	Trans-1,3-Dichloropropene	16.44	776	4637602	189.47	ug/L	93
23)	Trichloroethene	16.96	802	2485661	194.08	ug/L	85
24)	Dibromochloromethane	17.68	838	1699560	165.45	ug/L	82
25)	1,1,2-Trichloroethane	17.74	841	1884551	158.31	ug/L	69
26)	Benzene	17.40	824	7514933	200.60	ug/L	100
27)	cis-1,3-Dichloropropene	17.70	839	1798654	172.24	ug/L	100
28)	2-Chloroethylvinylether	18.75	892	969754	161.54	ug/L	80
29)	Bromoform	20.37	973	1328086	159.22	ug/L	97
30)	*D5-Chlorobenzene	24.90	1201	1228880	50.00	ug/L	66
31)	4-Methyl-2-Pentanone	20.72	991	1964858	149.91	ug/L	79
32)	2-Hexanone	22.26	1068	1554738	138.30	ug/L	90
33)	Tetrachloroethene	22.59	1085	1489275	195.01	ug/L	96
34)	1,1,2,2-Tetrachloroethane	22.65	1088	3720618	173.91	ug/L	92
35)	Toluene	23.83	1147	3700899	187.18	ug/L	97
36)	D8-Toluene	23.65	1138	947877	46.59	ug/L	91
37)	Chlorobenzene	25.00	1206	4424906	174.11	ug/L	72
38)	Ethylbenzene	27.01	1307	2309386	191.89	ug/L	96
39)	Xylene (m)	31.23	1519	2988406	186.37	ug/L	88
40)	Styrene	30.97	1506	5656632	173.93	ug/L	100
41)	Xylenes (o , p)	32.25	1570	5857912	370.04	ug/L	93
42)	Bromofluorobenzene (BFB)	29.58	1436	727111	50.85	ug/L	62

* Compound is ISTD



MS data file header from : >AA162

Sample: VOA 200PPB STD 5ML Operator: ALAN MS 5/21/87 18:44
File : 5UL QC5E CH#3
Sys. #: 1 MS model: 87 SW/HW rev.: IA ALS # : 0
Method file: VOA4 Tuning file: MT7404 No. of extra records: 1
Source temp.: 210 Analyzer temp.: 0 Transfer line temp. : 0

Chromatographic temperatures :	0.	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.0	0.0

QUANT REPORT

Quant Rev: 4 Quant Time: 870521 19:41
Injected at: 870521 18:44
Dilution Factor: 1.000

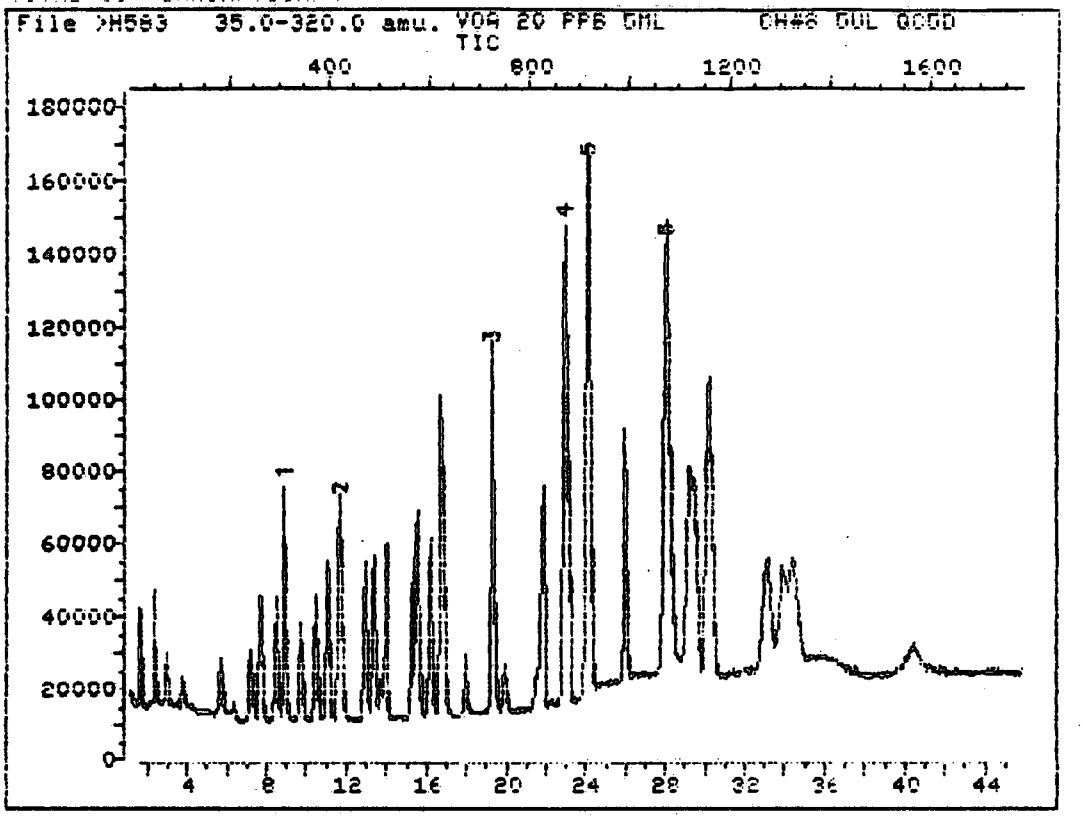
Operator ID: ALAN
Output File: ^AA162::QT
Data File: >AA162::D4
Name: VOA 200PPB STD 5ML
Misc: 5UL QC5E CH#3

ID File: VOAID4::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V4:ERCO/ENSECO
Last Calibration: 870521 16:52

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	9.98	451	604610	50.00	ug/L	90
2)	Chloromethane	2.10	55	2413926	199.76	ug/L	87
3)	Bromomethane	3.16	108	1366155	187.53	ug/L	99
4)	Vinyl Chloride	3.81	141	1534015	222.59	ug/L	74
5)	Chloroethane	4.81	191	874696	212.09	ug/L	71
6)	Methylene Chloride	6.88	295	1897577	174.15	ug/L	95
7)	Acetone	7.49	326	211982	105.56	ug/L	100
8)	Carbon Disulfide	8.23	363	4329474	192.04	ug/L	100
9)	1,1-Dichloroethene	9.42	423	1516272	230.95	ug/L	95
10)	1,1-Dichloroethane	10.71	488	3558610	262.22	ug/L	98
11)	Trans-1,2-Dichloroethene	11.35	520	2136589	288.67	ug/L	9
12)	Chloroform	12.01	553	4097072	256.77	ug/L	9
13)	1,2-Dichloroethane	12.68	587	1818747	205.31	ug/L	8
14)	D4-1,2-Dichloroethane	12.60	583	471319	61.69	ug/L	8
15)	*1,4-Difluorobenzene	19.95	952	1415232	50.00	ug/L	10
( )	2-Butanone	12.58	582	830239	202.01	ug/L	9
17)	1,1,1-Trichloroethane	13.96	651	2775909	247.93	ug/L	8
18)	Carbon Tetrachloride	14.34	670	2476849	235.71	ug/L	9
19)	Vinyl Acetate	14.40	673	2393157	207.64	ug/L	9
20)	Bromodichloromethane	14.89	698	4246094	241.55	ug/L	7
21)	1,2-Dichloropropane	16.19	763	2712054	222.47	ug/L	4
22)	Trans-1,3-Dichloropropene	16.44	776	5964194	229.60	ug/L	9
23)	Trichloroethene	16.96	802	3137119	230.81	ug/L	8
24)	Dibromochloromethane	17.68	838	2149161	197.13	ug/L	8
25)	1,1,2-Trichloroethane	17.74	841	2368159	187.44	ug/L	6
26)	Benzene	17.40	824	9269802	233.16	ug/L	10
27)	cis-1,3-Dichloropropene	17.70	839	2235230	201.69	ug/L	1
28)	2-Chloroethylvinylether	18.73	891	1157237	181.64	ug/L	
29)	Bromoform	20.37	973	1602630	181.04	ug/L	
30)	*D5-Chlorobenzene	24.88	1200	1340368	50.00	ug/L	
31)	4-Methyl-2-Pentanone	20.72	991	2271187	158.87	ug/L	
32)	2-Hexanone	22.26	1068	1802438	147.00	ug/L	
33)	Tetrachloroethene	22.59	1085	1853880	222.56	ug/L	
34)	1,1,2,2-Tetrachloroethane	22.63	1087	4220233	180.85	ug/L	
35)	Toluene	23.83	1147	4741029	219.84	ug/L	
36)	D8-Toluene	23.63	1137	1024999	46.19	ug/L	
37)	Chlorobenzene	25.00	1206	5859632	211.38	ug/L	
38)	Ethylbenzene	27.01	1307	2924042	222.75	ug/L	
39)	Xylene (m)	31.25	1520	3891058	222.47	ug/L	
40)	Styrene	30.95	1505	7586150	213.86	ug/L	1
( )	Xylenes (o , p)	32.25	1570	7624725	441.59	ug/L	
42)	Bromofluorobenzene (BFB)	29.58	1436	793360	50.87	ug/L	

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >H583::DA
Name: VOA 20 PPB 5ML
Misc: CH#8 5UL QCSD

Id File: VOAID3::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V3:ERCO/ENSECO
Last Calibration: 870515 18:40

Operator ID: STEVE
Quant Time: 870516 19:49
Injected at: 870516 18:55

QUANT REPORT

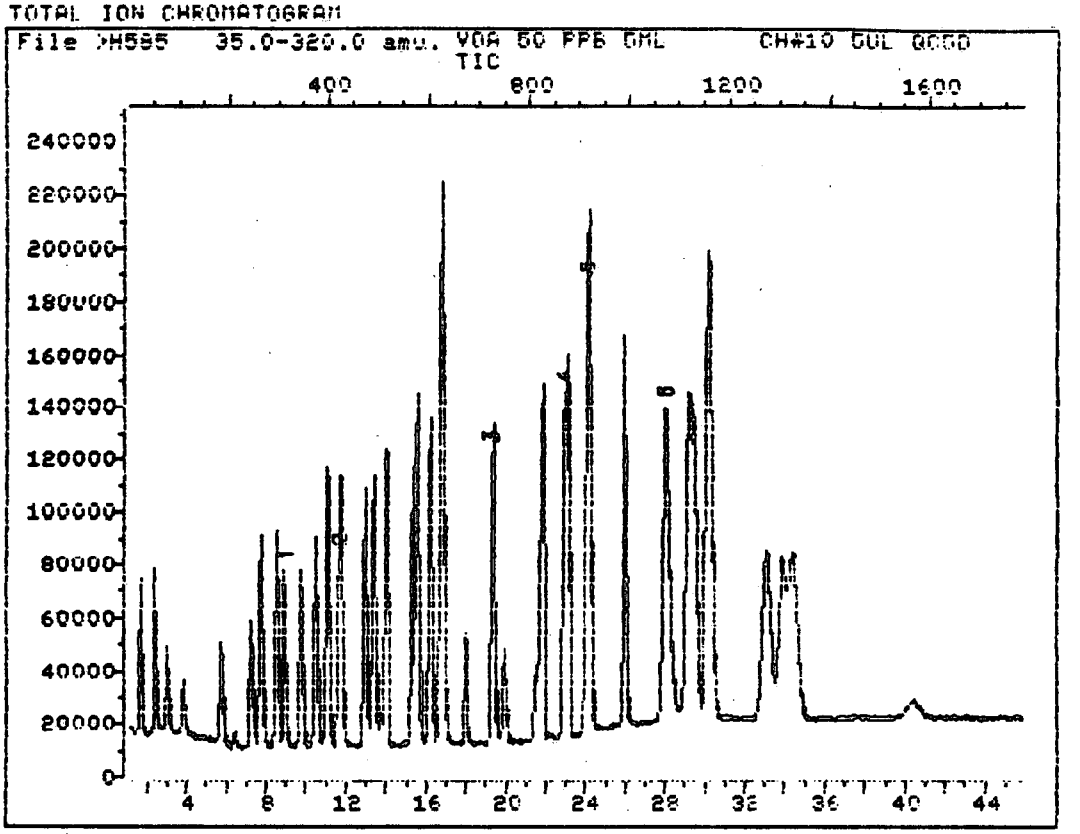
Operator ID: STEVE Quant Rev: 4 Quant Time: 870518 11:31
Output File: ^H583::QD Injected at: 870516 18:55
Data File: >H583::D0 Dilution Factor: 1.00
Name: VOA 20 PPB 5ML
Misc: CH#8 5UL QC5D

ID File: VOAID3::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V3:ERCO/ENSECO
Last Calibration: 870517 12:46

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	8.89	311	167233	50.00	ug/L	99
2)	Chloromethane	1.60	20	91757	21.20	ug/L	9[illegible]
3)	Bromomethane	2.35	50	66567	17.92	ug/L	94
4)	Vinyl Chloride	2.93	73	67790	18.40	ug/L	86
5)	Chloroethane	3.81	108	36286	18.06	ug/L	96
6)	Methylene Chloride	5.66	182	35167	22.13	ug/L	7[illegible]
7)	Acetone	6.41	212	18391	25.42	ug/L	100
8)	Carbon Disulfide	7.16	242	185722	17.98	ug/L	10[illegible]
9)	1,1-Dichloroethene	8.47	294	55323	17.36	ug/L	81
10)	1,1-Dichloroethane	9.69	343	140345	19.00	ug/L	8[illegible]
11)	Trans-1,2-Dichloroethene	10.47	374	74369	21.14	ug/L	87
12)	Chloroform	11.02	396	168742	18.66	ug/L	9[illegible]
13)	1,2-Dichloroethane	11.75	425	154513	20.59	ug/L	98
14)	D4-1,2-Dichloroethane	11.65	421	213145	48.30	ug/L	9[illegible]
15)	*1,4-Difluorobenzene	19.24	724	361555	50.00	ug/L	100
16)	2-Butanone	11.75	425	23179	23.60	ug/L	9[illegible]
17)	1,1,1-Trichloroethane	12.98	474	152395	19.80	ug/L	90
18)	Carbon Tetrachloride	13.35	489	145691	18.26	ug/L	9[illegible]
19)	Vinyl Acetate	13.68	502	81678	16.68	ug/L	93
20)	Bromodichloromethane	13.95	513	168882	19.48	ug/L	8[illegible]
21)	1,2-Dichloropropane	15.28	566	76679	19.09	ug/L	99
22)	Trans-1,3-Dichloropropene	15.56	577	177757	20.42	ug/L	9[illegible]
23)	Trichloroethene	16.16	601	81203	19.73	ug/L	96
24)	Dibromochloromethane	16.71	623	85007	18.96	ug/L	9[illegible]
25)	1,1,2-Trichloroethane	16.84	628	60132	20.23	ug/L	70
26)	Benzene	16.66	621	219108	20.70	ug/L	10[illegible]
27)	cis-1,3-Dichloropropene	16.86	629	93951	20.17	ug/L	100
28)	2-Chloroethylvinylether	17.94	672	43186	20.82	ug/L	9[illegible]
29)	Bromoform	19.37	729	74756	20.82	ug/L	97
30)	*D5-Chlorobenzene	24.03	915	379667	50.00	ug/L	8[illegible]
31)	4-Methyl-2-Pentanone	19.92	751	54767	19.82	ug/L	94
32)	2-Hexanone	21.45	812	42062	23.60	ug/L	8[illegible]
33)	Tetrachloroethene	21.80	826	67740	19.72	ug/L	92
34)	1,1,2,2-Tetrachloroethane	21.67	821	71599	21.29	ug/L	9[illegible]
35)	Toluene	23.05	876	150511	20.73	ug/L	95
36)	D8-Toluene	22.88	869	299314	49.76	ug/L	9[illegible]
37)	Chlorobenzene	24.16	920	178175	19.55	ug/L	86
38)	Ethylbenzene	25.94	991	86791	20.83	ug/L	91
39)	Xylene (m)	29.43	1130	115939	10.22	ug/L	93
40)	Styrene	30.23	1162	12592	20.12	ug/L	10[illegible]
41)	Xylenes (o , p)	30.18	1160	226324	35.93	ug/L	91
42)	Bromofluorobenzene (BFB)	27.97	1072	304132	50.45	ug/L	7[illegible]

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >H585::DO
Name: VOA 50 PPB 5ML
Misc: CH#10 5UL QC5D

Id File: VOAID3::$$
Title: HSL VOLATILES:BFT1%SP1000:45-220@8/MIN:GCMS V3:ERCO/ENSECO
Last Calibration: 870515 18:40

Operator ID: STEVE
Quant Time: 870516 21:30
Injected at: 870516 20:43

QUANT REPORT

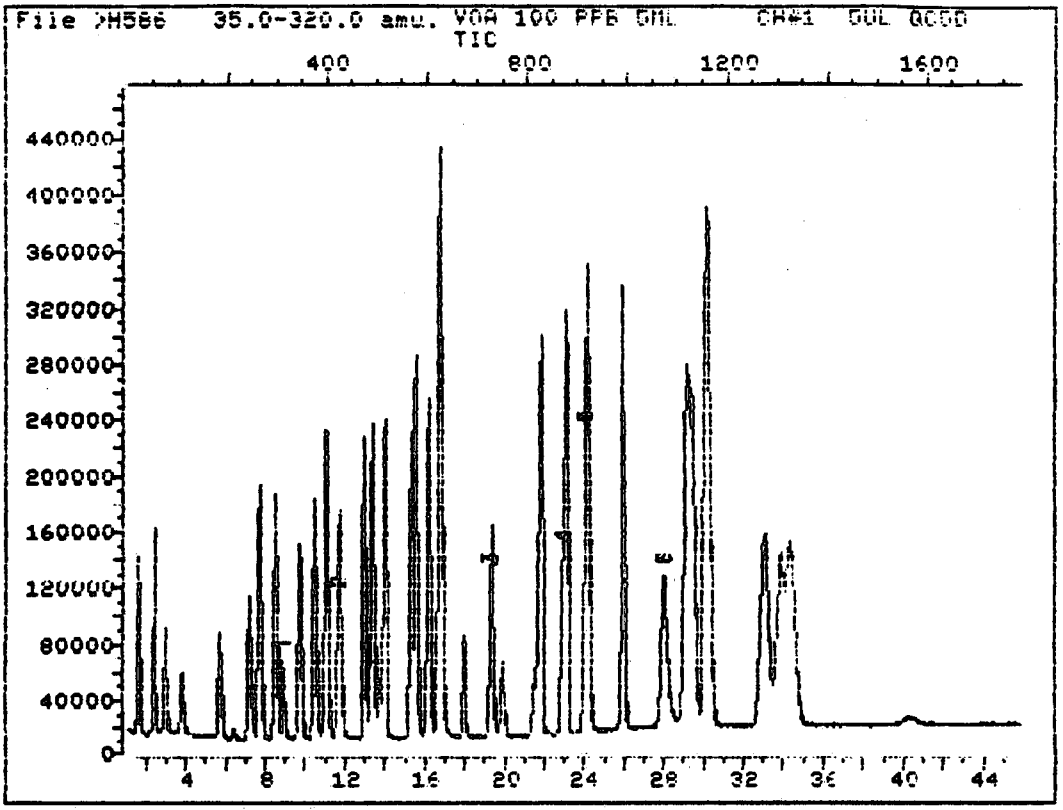
Operator ID: STEVE Quant Rev: 4 Quant Time: 870518 11:3[illegible]
Output File: ^H585::QO Injected at: 870516 20:43
Data File: >H585::DO Dilution Factor: 1.0[illegible]
Name: VOA 50 PPB 5ML
Misc: CH#10 5UL QC50

ID File: VOAID3::$$
Title: HSL VOLATILES:BFT1%SP1000:45-220@8/MIN:GCMS V3:ERCO/ENSECO
Last Calibration: 870517 12:46

	Compound	R.T.	Scan#	Area	Conc	Units	Q
1)	*Bromochloromethane	8.92	312	173718	50.00	ug/L	92
2)	Chloromethane	1.63	21	211163	46.97	ug/L	9[illegible]
3)	Bromomethane	2.38	51	155456	40.28	ug/L	95
4)	Vinyl Chloride	2.98	75	158574	41.43	ug/L	8[illegible]
5)	Chloroethane	3.83	109	84712	40.58	ug/L	92
6)	Methylene Chloride	5.71	184	68441	41.45	ug/L	7[illegible]
7)	Acetone	6.44	213	50095	66.66	ug/L	100
8)	Carbon Disulfide	7.19	243	413572	38.54	ug/L	10[illegible]
9)	1,1-Dichloroethene	8.49	295	127084	38.39	ug/L	82
10)	1,1-Dichloroethane	9.72	344	325361	42.40	ug/L	8[illegible]
11)	Trans-1,2-Dichloroethene	10.50	375	152211	41.64	ug/L	81
12)	Chloroform	11.02	396	401367	42.73	ug/L	9[illegible]
13)	1,2-Dichloroethane	11.75	425	374301	48.02	ug/L	92
14)	D4-1,2-Dichloroethane	11.65	421	231255	50.45	ug/L	9[illegible]
15)	*1,4-Difluorobenzene	19.25	724	358342	50.00	ug/L	100
16)	2-Butanone	11.75	425	58832	60.43	ug/L	9[illegible]
17)	1,1,1-Trichloroethane	12.98	474	332720	43.61	ug/L	9[illegible]
18)	Carbon Tetrachloride	13.35	489	332328	42.03	ug/L	9[illegible]
19)	Vinyl Acetate	13.68	502	97362	20.07	ug/L	92
20)	Bromodichloromethane	13.96	513	400960	46.65	ug/L	7[illegible]
21)	1,2-Dichloropropane	15.28	566	179446	45.09	ug/L	98
22)	Trans-1,3-Dichloropropene	15.56	577	414016	47.98	ug/L	9[illegible]
23)	Trichloroethene	16.16	601	200246	49.09	ug/L	98
24)	Dibromochloromethane	16.71	623	220465	49.62	ug/L	9[illegible]
25)	1,1,2-Trichloroethane	16.84	628	152925	51.92	ug/L	72
26)	Benzene	16.66	621	482107	45.96	ug/L	10[illegible]
27)	cis-1,3-Dichloropropene	16.86	629	224165	48.56	ug/L	100
28)	2-Chloroethylvinylether	17.94	672	102123	49.68	ug/L	95
29)	Bromoform	19.37	729	195872	55.05	ug/L	99
30)	*D5-Chlorobenzene	24.03	915	365994	50.00	ug/L	8[illegible]
31)	4-Methyl-2-Pentanone	19.90	750	158042	59.32	ug/L	92
32)	2-Hexanone	21.45	812	108893	63.38	ug/L	8[illegible]
33)	Tetrachloroethene	21.80	826	147733	44.62	ug/L	91
34)	1,1,2,2-Tetrachloroethane	21.68	821	164850	50.85	ug/L	9[illegible]
35)	Toluene	23.06	876	320840	45.85	ug/L	94
36)	D8-Toluene	22.88	869	292417	50.43	ug/L	9[illegible]
37)	Chlorobenzene	24.16	920	400759	45.63	ug/L	8[illegible]
38)	Ethylbenzene	25.94	991	183624	45.22	ug/L	9[illegible]
39)	Xylene (m)	29.40	1129	246528	22.66	ug/L	92
40)	Styrene	30.16	1159	27534	45.63	ug/L	10[illegible]
41)	Xylenes (o , p)	30.18	1160	482611	79.48	ug/L	91
42)	Bromofluorobenzene (BFB)	27.97	1072	292816	50.38	ug/L	7[illegible]

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >H586::D0
Name: VOA 100 PPB 5ML
Misc: CH#1 5UL QC50

Id File: VOAID3::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V3:FRCO/FNSFCO
Last Calibration: 870515 18:40

Operator ID: STEVE
Quant Time: 870516 22:24
Injected at: 870516 21:37

QUANT REPORT

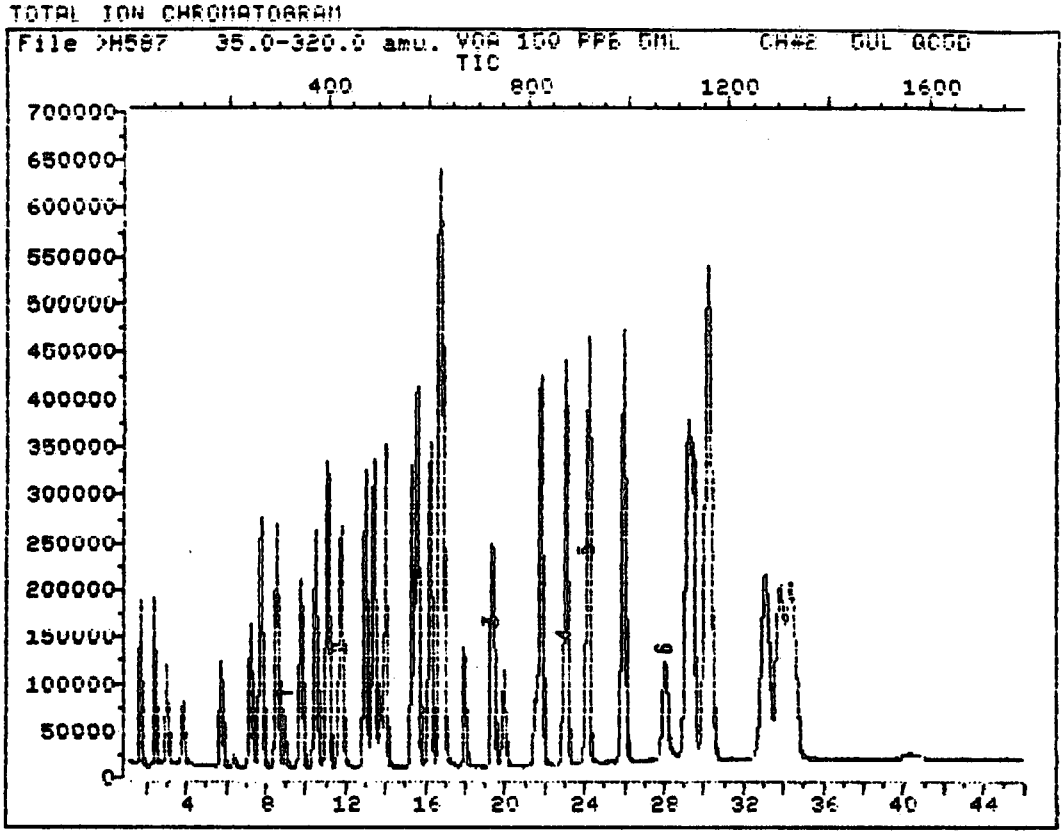
Operator ID: STEVE Quant Rev: 4 Quant Time: 870518 11:3[illegible]
Output File: ^H586::00 Injected at: 870516 21:32
Data File: >H586::00 Dilution Factor: 1.0[illegible]
Name: VOA 100 PPB 5ML
Misc: CH#1 5UL QC5D

ID File: VOAID3::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V3:ERCO/FNSFCO
Last Calibration: 870517 12:46

	Compound	R.T.	Scan#	Area	Conc	Units	Q
1)	*Bromochloromethane	8.92	312	148260	50.00	ug/L	98
2)	Chloromethane	1.60	20	441791	115.15	ug/L	9[illegible]
3)	Bromomethane	2.35	50	335527	101.87	ug/L	9[illegible]
4)	Vinyl Chloride	2.96	74	347863	106.49	ug/L	8[illegible]
5)	Chloroethane	3.83	109	186558	104.73	ug/L	95
6)	Methylene Chloride	5.69	183	138531	98.31	ug/L	7[illegible]
7)	Acetone	6.41	212	61445	95.80	ug/L	100
8)	Carbon Disulfide	7.19	243	868219	94.80	ug/L	10[illegible]
9)	1,1-Dichloroethene	8.49	295	281108	99.51	ug/L	81
10)	1,1-Dichloroethane	9.72	344	696904	106.41	ug/L	8[illegible]
11)	Trans-1,2-Dichloroethene	10.50	375	320616	102.78	ug/L	80
12)	Chloroform	11.02	396	859222	107.17	ug/L	9[illegible]
13)	1,2-Dichloroethane	11.78	426	687556	103.35	ug/L	92
14)	D4-1,2-Dichloroethane	11.68	422	201217	51.44	ug/L	9[illegible]
15)	*1,4-Difluorobenzene	19.25	724	324015	50.00	ug/L	100
16)	2-Butanone	11.75	425	87640	99.55	ug/L	9[illegible]
17)	1,1,1-Trichloroethane	12.98	474	735272	106.58	ug/L	92
18)	Carbon Tetrachloride	13.38	490	738675	103.31	ug/L	9[illegible]
19)	Vinyl Acetate	13.68	502	326850	74.50	ug/L	94
20)	Bromodichloromethane	13.96	513	813740	104.71	ug/L	7[illegible]
21)	1,2-Dichloropropane	15.29	566	365854	101.66	ug/L	99
22)	Trans-1,3-Dichloropropene	15.56	577	814337	104.37	ug/L	9[illegible]
23)	Trichloroethene	16.16	601	387583	105.08	ug/L	98
24)	Dibromochloromethane	16.72	623	400582	99.72	ug/L	9[illegible]
25)	1,1,2-Trichloroethane	16.84	628	268702	100.88	ug/L	72
26)	Benzene	16.67	621	1028220	108.41	ug/L	10[illegible]
27)	cis-1,3-Dichloropropene	16.84	628	420860	100.84	ug/L	100
28)	2-Chloroethylvinylether	17.94	672	179352	96.49	ug/L	9[illegible]
29)	Bromoform	19.37	729	330635	102.77	ug/L	99
30)	*D5-Chlorobenzene	24.04	915	337622	50.00	ug/L	8[illegible]
31)	4-Methyl-2-Pentanone	19.90	750	233284	94.92	ug/L	91
32)	2-Hexanone	21.45	812	159093	100.38	ug/L	9[illegible]
33)	Tetrachloroethene	21.80	826	323536	105.92	ug/L	89
34)	1,1,2,2-Tetrachloroethane	21.65	820	297362	99.43	ug/L	94
35)	Toluene	23.06	876	691812	107.16	ug/L	93
36)	D8-Toluene	22.88	869	266992	49.91	ug/L	9[illegible]
37)	Chlorobenzene	24.14	919	846403	104.46	ug/L	85
38)	Ethylbenzene	25.92	990	398349	107.53	ug/L	9[illegible]
39)	Xylene (m)	29.41	1129	522284	52.05	ug/L	92
40)	Styrene	30.18	1160	56734	101.93	ug/L	10[illegible]
41)	Xylenes (o , p)	30.16	1159	1029814	183.85	ug/L	90
42)	Bromofluorobenzene (BFB)	27.97	1072	262824	49.02	ug/L	7[illegible]

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >H587::DA
Name: VOA 150 PPB 5ML
Misc: CH#2 5UL QCSD

Id File: VOAID3::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V3:ERCO/ENSECO
Last Calibration: 870515 18:40

Operator ID: STEVE
Quant Time: 870516 23:18
Injected at: 870516 22:31

QUANT REPORT

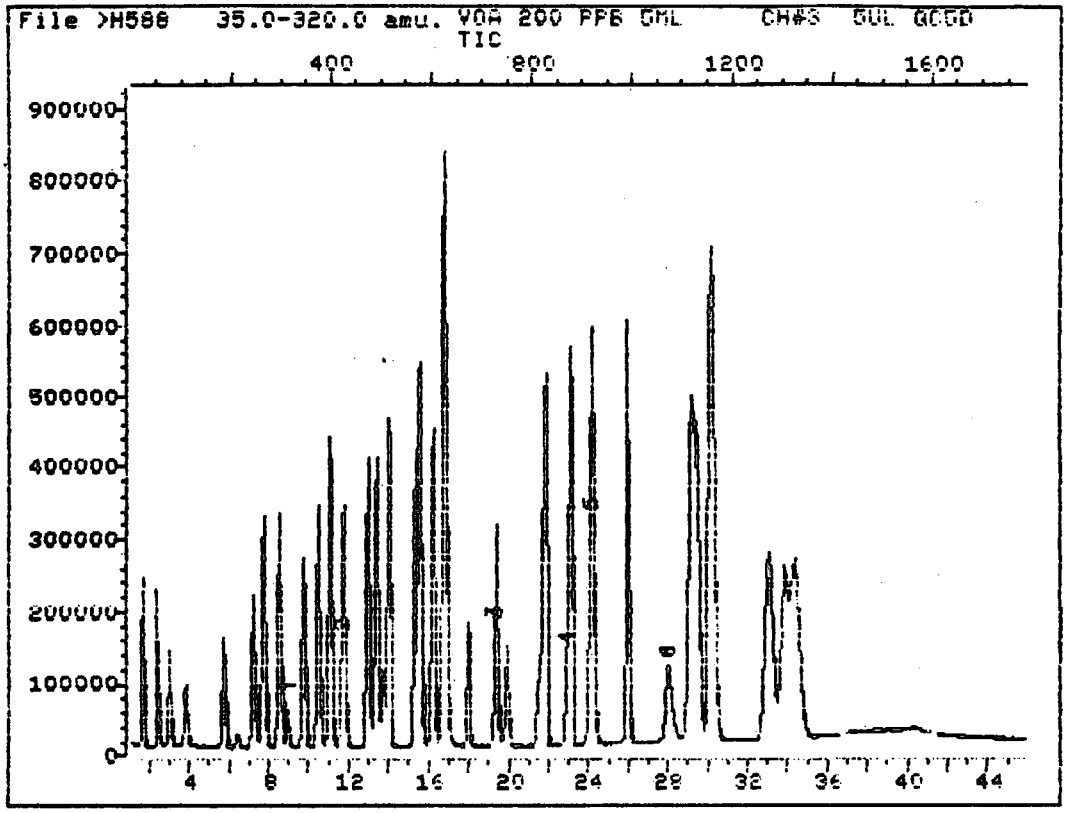
Operator ID: STEVE Quant Rev: 4 Quant Time: 870518 11:3[illegible]
Output File: ^H587::QD Injected at: 870516 22:31
Data File: >H587::D0 Dilution Factor: 1.0[illegible]
Name: VOA 150 PPB 5ML
Misc: CH#2 5UL QC5D

ID File: VOAID3::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V3:ERCO/ENSECO
Last Calibration: 870517 12:46

	Compound	R.T.	Scan#	Area	Conc	Units	Q
1)	*Bromochloromethane	8.92	312	149400	50.00	ug/L	9[illegible]
2)	Chloromethane	1.63	21	619543	160.25	ug/L	9[illegible]
3)	Bromomethane	2.38	51	447496	134.83	ug/L	95
4)	Vinyl Chloride	2.98	75	495047	150.38	ug/L	8[illegible]
5)	Chloroethane	3.83	109	269709	150.25	ug/L	9[illegible]
6)	Methylene Chloride	5.69	183	202311	142.48	ug/L	7[illegible]
7)	Acetone	6.44	213	97048	150.16	ug/L	100
8)	Carbon Disulfide	7.16	242	1249920	135.44	ug/L	10[illegible]
9)	1,1-Dichloroethene	8.49	295	421127	147.94	ug/L	81
10)	1,1-Dichloroethane	9.72	344	1002728	151.93	ug/L	8[illegible]
11)	Trans-1,2-Dichloroethene	10.47	374	472015	151.74	ug/L	81
12)	Chloroform	11.02	396	1235727	152.96	ug/L	9[illegible]
13)	1,2-Dichloroethane	11.75	425	1096414	163.55	ug/L	96
14)	D4-1,2-Dichloroethane	11.65	421	228573	57.98	ug/L	9[illegible]
15)	*1,4-Difluorobenzene	19.25	724	315252	50.00	ug/L	100
16)	2-Butanone	11.75	425	161453	188.49	ug/L	9[illegible]
17)	1,1,1-Trichloroethane	12.98	474	1075679	160.26	ug/L	91
18)	Carbon Tetrachloride	13.36	489	1157190	151.96	ug/L	9[illegible]
19)	Vinyl Acetate	13.66	501	582189	136.39	ug/L	93
20)	Bromodichloromethane	13.93	512	1210088	160.04	ug/L	.[illegible]
21)	1,2-Dichloropropane	15.29	566	534417	159.63	ug/L	99
22)	Trans-1,3-Dichloropropene	15.56	577	1258699	165.81	ug/L	9[illegible]
23)	Trichloroethene	16.16	601	544369	151.69	ug/L	9[illegible]
24)	Dibromochloromethane	16.72	623	627374	160.52	ug/L	9[illegible]
25)	1,1,2-Trichloroethane	16.84	628	429170	165.61	ug/L	72
26)	Benzene	16.64	620	1461958	158.43	ug/L	100
27)	cis-1,3-Dichloropropene	16.84	628	656229	161.60	ug/L	100
28)	2-Chloroethylvinylether	17.95	672	307556	170.05	ug/L	9[illegible]
29)	Bromoform	19.37	729	573931	183.35	ug/L	98
30)	*D5-Chlorobenzene	24.01	914	322463	50.00	ug/L	8[illegible]
31)	4-Methyl-2-Pentanone	19.90	750	428542	182.57	ug/L	91
32)	2-Hexanone	21.45	812	301294	199.04	ug/L	9[illegible]
33)	Tetrachloroethene	21.78	825	452929	155.26	ug/L	91
34)	1,1,2,2-Tetrachloroethane	21.66	820	545518	190.98	ug/L	9[illegible]
35)	Toluene	23.06	876	980057	158.95	ug/L	99
36)	D8-Toluene	22.86	868	255159	49.94	ug/L	9[illegible]
37)	Chlorobenzene	24.14	919	1192670	154.12	ug/L	85
38)	Ethylbenzene	25.92	990	565313	159.77	ug/L	9[illegible]
39)	Xylene (m)	29.38	1128	725094	75.66	ug/L	91
40)	Styrene	30.16	1159	78972	148.55	ug/L	10[illegible]
41)	Xylenes (o , p)	30.16	1159	1430782	267.44	ug/L	89
42)	Bromofluorobenzene (BFB)	27.95	1071	255200	49.84	ug/L	69

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >H588::D0
Name: VOA 200 PPB 5ML
Misc: CH#3 5UL QC5D

Id File: VOAID3::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V3:EPCO/ENSECO
Last Calibration: 870515 18:40

Operator ID: STEVE
Quant Time: 870517 00:12
Injected at: 870516 23:25

QUANT REPORT

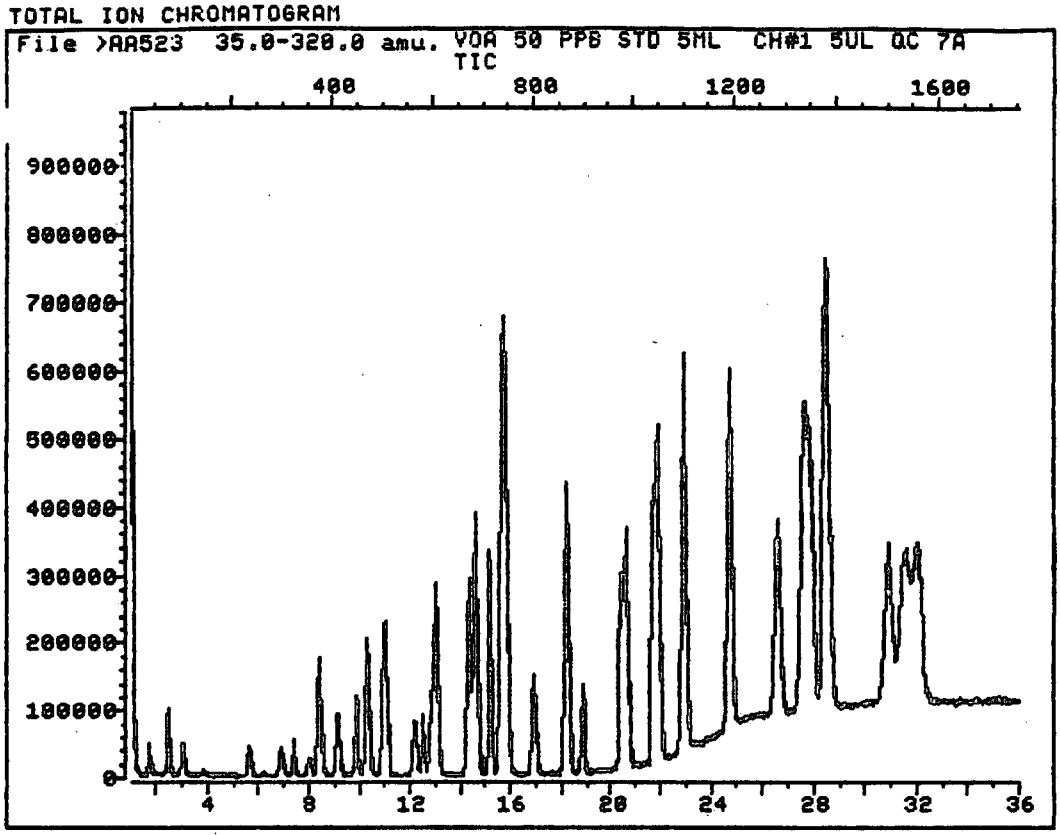
Operator ID: STEVE Quant Rev: 4 Quant Time: 870518 11:4
Output File: ^H588::QO Injected at: 870516 23:25
Data File: >H588::DO Dilution Factor: 1.0
Name: VOA 200 PPB 5ML
Misc: CH#3 5UL QC5D

ID File: VOAID3::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V3:ERCO/ENSECO
Last Calibration: 870517 12:46

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	8.92	312	166692	50.00	ug/l	94
2)	Chloromethane	1.63	21	817345	189.48	ug/l	9
3)	Bromomethane	2.38	51	553817	149.55	ug/L	94
4)	Vinyl Chloride	2.98	75	616164	167.76	ug/L	8
5)	Chloroethane	3.83	109	348122	173.81	ug/L	96
6)	Methylene Chloride	5.69	183	275414	173.84	ug/L	7
7)	Acetone	6.44	213	146198	202.74	ug/L	100
8)	Carbon Disulfide	7.16	242	1686135	163.76	ug/l	10
9)	1,1-Dichloroethene	8.49	295	524725	165.21	ug/L	8
10)	1,1-Dichloroethane	9.72	344	1307582	172.57	ug/l	8
11)	Trans-1,2-Dichloroethene	10.47	374	623180	172.68	ug/L	82
12)	Chloroform	11.02	396	1631045	180.95	ug/l	9
13)	1,2-Dichloroethane	11.75	425	1447051	193.47	ug/L	97
14)	D4-1,2-Dichloroethane	11.65	421	244856	55.67	ug/L	9
15)	*1,4-Difluorobenzene	19.25	724	322723	50.00	ug/l	100
16)	2-Butanone	11.75	425	222875	254.18	ug/l	9
17)	1,1,1-Trichloroethane	12.98	474	1388056	202.01	ug/L	93
18)	Carbon Tetrachloride	13.36	489	1308952	183.79	ug/l	9
19)	Vinyl Acetate	13.66	501	835623	191.23	ug/l	93
20)	Bromodichloromethane	13.93	512	1613870	208.51	ug/L	7
21)	1,2-Dichloropropane	15.29	566	702094	195.87	ug/L	99
22)	Trans-1,3-Dichloropropene	15.56	577	1675548	215.61	ug/l	9
23)	Trichloroethene	16.17	601	704582	191.79	ug/l	98
24)	Dibromochloromethane	16.72	623	835113	208.72	ug/L	9
25)	1,1,2-Trichloroethane	16.82	627	566724	213.63	ug/l	70
26)	Benzene	16.64	620	1914729	202.69	ug/l	10
27)	cis-1,3-Dichloropropene	16.84	628	864898	208.06	ug/L	100
28)	2-Chloroethylvinylether	17.95	672	408645	220.72	ug/L	9
29)	Bromoform	19.38	729	762825	238.05	ug/L	97
30)	*D5-Chlorobenzene	24.04	915	333386	50.00	ug/L	8
31)	4-Methyl-2-Pentanone	19.90	750	575751	237.25	ug/L	91
32)	2-Hexanone	21.46	812	399299	255.14	ug/L	9
33)	Tetrachloroethene	21.78	825	565908	187.63	ug/L	93
34)	1,1,2,2-Tetrachloroethane	21.66	820	736715	249.47	ug/L	9
35)	Toluene	23.06	876	1281903	201.09	ug/L	95
36)	D8-Toluene	22.86	868	263615	49.91	ug/L	9
37)	Chlorobenzene	24.14	919	1567080	195.86	ug/L	86
38)	Ethylbenzene	25.92	990	741813	202.78	ug/l	9
39)	Xylene (m)	29.41	1129	968318	97.72	ug/L	91
40)	Styrene	30.16	1159	104438	190.02	ug/l	10
41)	Xylenes (o , p)	30.16	1159	1909362	345.20	ug/L	91
42)	Bromofluorobenzene (BFB)	27.95	1071	268891	50.79	ug/L	69

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >AA523::D4
Name: VOA 50 PPB STD 5ML
Misc: CH#1 5UL QC 7A

Id File: VOAID4::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V4:ERCO/ENSECO
Last Calibration: 870616 22:52

Operator ID: JEAN
Quant Time: 870617 13:43
Injected at: 870617 12:56

QUANT REPORT

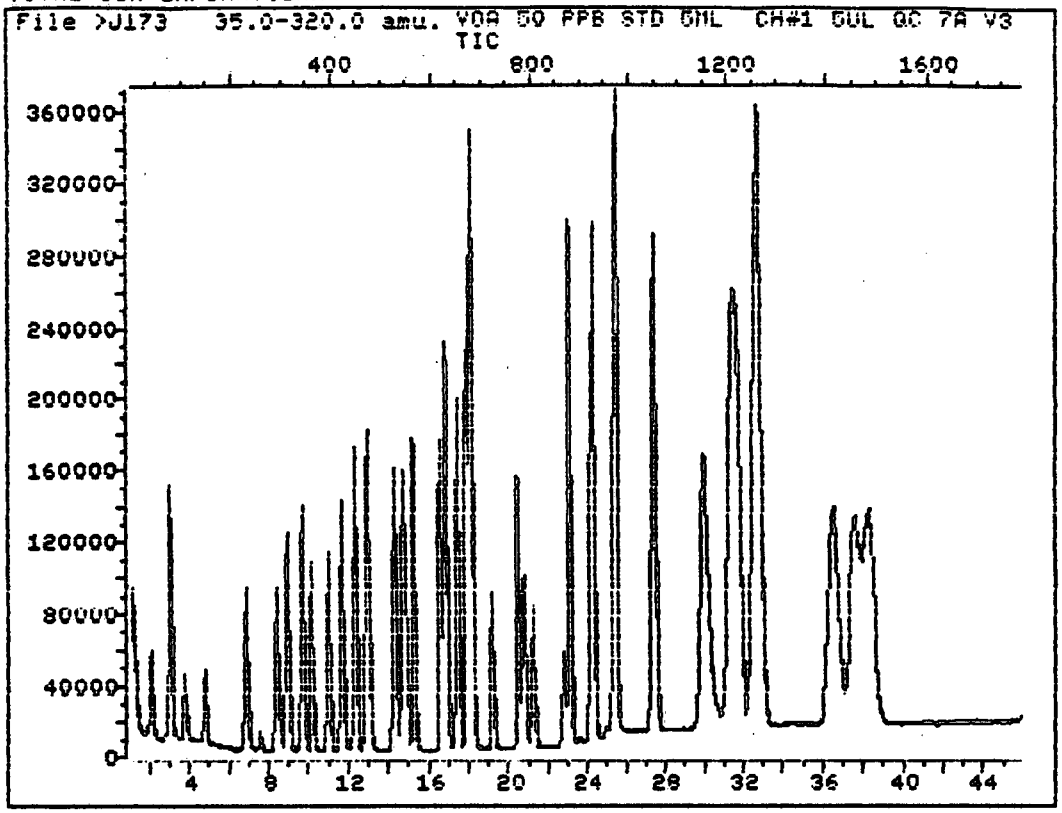
Operator ID: JEAN Quant Rev: 4 Quant Time: 870617 13:43
Output File: ^AA523::QT Injected at: 870617 12:56
Data File: >AA523::D4 Dilution Factor: 1.00
Name: VOA 50 PPB STD 5ML
Misc: CH#1 5UL QC 7A

ID File: VOAID4::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V4:ERCO/ENSECO
Last Calibration: 870616 22:52

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	8.37	370	609007	50.00	ug/L	41
2)	Chloromethane	1.70	35	166065	140.65	ug/L	90
3)	Bromomethane	2.46	73	206574	24.81	ug/L	83
4)	Vinyl Chloride	3.00	100	215005	34.25	ug/L	74
5)	Chloroethane	3.83	142	28776	12.76	ug/L	73
6)	Methylene Chloride	5.60	231	72820	4.86	ug/L	72
7)	Acetone	6.20	261	28257	20.52	ug/L	100
8)	Carbon Disulfide	6.85	294	329106	10.89	ug/L	100
9)	1,1-Dichloroethene	8.01	352	~~29956~~ 209885	5.46	ug/L	76
10)	1,1-Dichloroethane	9.14	409	434560	~~425~~ 4.39	ug/L	98
11)	Trans-1,2-Dichloroethene	9.86	445	208227	18.84	ug/L	75
12)	Chloroform	10.31	468	762568	32.99	ug/L	94
13)	1,2-Dichloroethane	10.99	502	554395	51.70	ug/L	85
14)	D4-1,2-Dichloroethane	10.91	498	467671	48.97	ug/L	87
15)	*1,4-Difluorobenzene	18.17	863	1033631	50.00	ug/L	100
16)	2-Butanone	11.03	504	189731	75.08	ug/L	92
17)	1,1,1-Trichloroethane	12.16	561	278856	41.58	ug/L	87
18)	Carbon Tetrachloride	12.50	578	279496	40.61	ug/L	92
19)	Vinyl Acetate	12.84	595	830582	83.68	ug/L	93
20)	Bromodichloromethane	13.00	603	980634	58.44	ug/L	75
21)	1,2-Dichloropropane	14.33	670	681673	59.64	ug/L	55
22)	Trans-1,3-Dichloropropene	14.57	682	1424015	57.75	ug/L	93
23)	Trichloroethene	15.17	712	587025	48.63	ug/L	89
24)	Dibromochloromethane	15.61	734	486958	49.42	ug/L	79
25)	1,1,2-Trichloroethane	15.77	742	557668	52.64	ug/L	62
26)	Benzene	15.67	737	1829416	55.43	ug/L	100
27)	cis-1,3-Dichloropropene	15.81	744	654739	59.59	ug/L	100
28)	2-Chloroethylvinylether	16.88	798	399461	58.67	ug/L	80
29)	Bromoform	18.15	862	474875	45.76	ug/L	96
30)	*D5-Chlorobenzene	22.83	1097	1204539	50.00	ug/L	84
31)	4-Methyl-2-Pentanone	18.81	895	610656	69.44	ug/L	86
32)	2-Hexanone	20.34	972	468726	73.87	ug/L	97
33)	Tetrachloroethene	20.62	986	407195	47.30	ug/L	88
34)	1,1,2,2-Tetrachloroethane	20.44	977	1043903	56.54	ug/L	93
35)	Toluene	21.90	1050	1177742	54.74	ug/L	98
36)	D8-Toluene	21.70	1040	979426	51.28	ug/L	95
37)	Chlorobenzene	22.95	1103	1378333	51.82	ug/L	87
38)	Ethylbenzene	24.71	1191	700375	57.11	ug/L	92
39)	Xylene (m)	27.82	1347	932025	61.05	ug/L	98
40)	Styrene	27.58	1335	1854874	61.25	ug/L	100
41)	Xylenes (o , p)	28.48	1380	1869280	125.14	ug/L	98
42)	Bromofluorobenzene (BFB)	26.52	1282	846966	54.26	ug/L	63

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >J173::D3
Name: VOA 50 PPB STD 5ML
Misc: CH#1 5UL QC 7A V3

Id File: VOAID3::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V3:ERCO/ENSECO
Last Calibration: 870616 22:47

Operator ID: STEVE
Quant Time: 870617 13:24
Injected at: 870617 12:33

QUANT REPORT

Operator ID: STEVE Quant Rev: 4 Quant Time: 870617 13:24
Output File: ^J173::Q0 Injected at: 870617 12:33
Data File: >J173::D3 Dilution Factor: 1.00
Name: VOA 50 PPB STD 5ML
Misc: CH#1 5UL QC 7A V3

ID File: VOAID3::$$
Title: HSL VOLATILES:8FT1%SP1000:45-220@8/MIN:GCMS V3:ERCO/ENSECO
Last Calibration: 870616 22:47

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	10.17	362	274317	50.00	ug/L	93
2)	Chloromethane	2.03	37	237759	50.39	ug/L	98
3)	Bromomethane	3.01	76	400354	51.32	ug/L	92
4)	Vinyl Chloride	3.78	107	219616	49.50	ug/L	87
5)	Chloroethane	4.73	145	175720	51.67	ug/L	94
6)	Methylene Chloride	6.84	229	192847	42.68	ug/L	94
7)	Acetone	7.59	259	82104	48.55	ug/L	100
8)	Carbon Disulfide	8.36	290	761454	50.51	ug/L	100
9)	1,1-Dichloroethene	9.64	341	212795	48.42	ug/L	81
10)	1,1-Dichloroethane	10.97	394	531998	48.79	ug/L	87
11)	Trans-1,2-Dichloroethene	11.67	422	261500	50.66	ug/L	84
12)	Chloroform	12.29	447	631986	50.28	ug/L	95
13)	1,2-Dichloroethane	12.99	475	590148	50.45	ug/L	97
14)	D4-1,2-Dichloroethane	12.89	471	387076	49.52	ug/L	99
15)	*1,4-Difluorobenzene	20.43	772	571808	50.00	ug/L	100
16)	2-Butanone	12.92	472	132344	48.88	ug/L	96
17)	1,1,1-Trichloroethane	14.30	527	527507	48.78	ug/L	91
18)	Carbon Tetrachloride	14.67	542	472286	48.20	ug/L	98
19)	Vinyl Acetate	14.82	548	521946	59.28	ug/L	94
20)	Bromodichloromethane	15.22	564	599403	49.01	ug/L	79
21)	1,2-Dichloropropane	16.55	617	296266	48.11	ug/L	95
22)	Trans-1,3-Dichloropropene	16.83	628	710122	49.23	ug/L	96
23)	Trichloroethene	17.38	650	311214	47.87	ug/L	97
24)	Dibromochloromethane	18.03	676	298605	48.47	ug/L	97
25)	1,1,2-Trichloroethane	18.13	680	261855	48.87	ug/L	69
26)	Benzene	17.85	669	881362	50.08	ug/L	100
27)	cis-1,3-Dichloropropene	18.13	680	373590	49.24	ug/L	100
28)	2-Chloroethylvinylether	19.18	722	206118	48.40	ug/L	96
29)	Bromoform	20.73	784	235201	48.57	ug/L	99
30)	*D5-Chlorobenzene	25.32	967	646178	50.00	ug/L	79
31)	4-Methyl-2-Pentanone	21.19	802	340160	50.28	ug/L	91
32)	2-Hexanone	22.74	864	238490	50.62	ug/L	91
33)	Tetrachloroethene	23.04	876	235570	51.47	ug/L	95
34)	1,1,2,2-Tetrachloroethane	23.01	875	337365	54.36	ug/L	93
35)	Toluene	24.29	926	640609	51.54	ug/L	94
36)	D8-Toluene	24.12	919	503104	50.29	ug/L	96
37)	Chlorobenzene	25.44	972	804220	51.27	ug/L	82
38)	Ethylbenzene	27.40	1050	421279	52.16	ug/L	94
39)	Xylene (m)	31.64	1219	620542	54.48	ug/L	96
40)	Styrene	31.34	1207	1203380	54.21	ug/L	100
1)	Xylenes (o , p)	32.67	1260	1266244	109.01	ug/L	95
42)	Bromofluorobenzene (BFB)	29.93	1151	497267	50.18	ug/L	69

* Compound is ISTD

Five

Enseco

CHAIN-OF-CUSTODY RECORD

SAMPLER: (Signature)

Phone 201 625-0634

Date Shipped 5/8/87

Airbill No. 718 058 153

Carrier FED EX

Cooler No.

SHIP TO:

Enseco-ERCO Lab
205 Alewife Brook Parkway
Cambridge, MA 02138
(617) 661-3111

ATTENTION:

SEND RESULTS TO:

Client Name L. E. CARPENTER

Company GEOENGINEERING, INC.

Address 100 PARD RD

DENVILLE NJ 07834

Phone 201 625-0634

PROJECT NAME L. E. CARPENTER PROJECT NO. P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Nancy C. Rothman		06/05/87	1:30 p.m.
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
	Susan D Chapnick 6/9/87	6/8/87	17:10
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

ANALYSIS REQUEST

Sample ID Number	Sample Description	Date/Time Sampled	Analysis Requested	Sample Condition Upon Receipt
	15 VOA Vials			
	1 Trip Blank			
Mw-1	VOA	6/8 - 1635	624	
Mw-2	VOA	6/8 - 1605	624	
Mw-3	VOA	6/8 - 1615	624	
Mw-4	VOA	6/8 - 1630	624	
Mw-5	VOA	6/8 - 1600	624	

Special Instructions/Comments:

Containers sent by Erco

NOTE: UNUSED PORTIONS OF NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

Expected Analytical T.A.T's: _____ Immediate Attention (200% surcharge) _____ RUSH (50-100% surcharge) _____ Standard

ERCO Booking Log Number: *(for lab use only)*

Client Retains White Copy Only

(Revised 1/87)

ENSECO INCORPORATED / ERCO DIVISION
SAMPLE RECEIVING : BOOKING FORM

Booking Log No: 4383
Date Received: 6/09/1987 Received By: An Shu King
Acct No: 906001
Date Logged: 6/09/1987
Program#:
Sampled: 6/06/1987 Client Contact: L.E.CARPENTER
CLP to be used?: N

Client Name: GeoEngineering
Address: 100 Ford Road
Denville
NJ 07834

Billing Acct#: 906001
Project #: SEE NOTE
Project Manager: Tom Copeland
Due Date: ~~6/30/1987~~ 7-9-87
PO Number:

ERCO ID	SEQ.	CLIENT IDENTIFYING LABEL	MATRIX	CONDITION	ANALYSIS	LAB
87-007836	01	MW-1	AQUEOUS	OK	624	VOA
87-007837	01	MW-2	AQUEOUS	OK	624	VOA
87-007838	01	MW-3	AQUEOUS	OK	624	VOA
87-007839	01	MW-4	AQUEOUS	OK	624	VOA
87-007840	01	MW-5	AQUEOUS	OK	624	VOA
87-007841	01	TRIP BLANK	AQUEOUS	OK	624	VOA

SPECIAL INSTRUCTIONS: PROJECT;L.E.CARPENTER. FED.EXP.

LAB:	RECEIVED IN LAB BY:	DATE:
VOA	[illegible]	6/9/87

Billing Information:

GeoEngineering

100 Ford Road
Denville
NJ 07834
Account Number: 906001

Logger's Signature: An Shu King
Program Manager: TR Copeland Date: 6/9/10:25AM