INSTALLATION RESTORATION PROGRAM

PRELIMINARY ASSESSMENT/ SITE INSPECTION

VOLUME II APPENDICES A-H

223rd COMBAT COMMUNICATIONS SQUADRON
HOT SPRINGS AIR NATIONAL GUARD STATION
ARKANSAS AIR NATIONAL GUARD
HOT SPRINGS, ARKANSAS

JULY 1995

Prepared For

AIR NATIONAL GUARD READINESS CENTER
ANDREWS AFB, MARYLAND

Prepared By

Operational Technologies Corporation
4100 N.W. Loop 410, Suite 230
San Antonio, Texas 78229-4253
(210) 731-0000

1308-193

DISCLAIMER NOTICE

THIS DOCUMENT IS BEST QUALITY AVAILABLE. THE COPY FURNISHED TO DTIC CONTAINED A SIGNIFICANT NUMBER OF PAGES WHICH DO NOT REPRODUCE LEGIBLY.

APPENDIX A

HAZARD RANKING SYSTEM (HRS) "DATA REQUIREMENTS FOR FEDERAL FACILITY DOCKET SITES" PACKAGE

PRELIMINARY ASSESSMENT (PA) SITE INSPECTION (SI)
DATA REQUIREMENTS FOR FEDERAL FACILITY DOCKET SITES

Hot Springs ANGS, Arkansas

1. **Supply copies of all sampling data, on-site and off-site, including location map, detection limits (see definitions below), raw data sheets, QA/QC documents, date(s) sampled, analytical method(s) used, well or boring logs, and sampling technique(s).**

   All sampling data is provided in Appendix E of the PA/SI Report. Locations of samples and sampling techniques are provided in Section 5.0 of the PA/SI Report, while boring logs are provided in Appendix B.

2. **Locate and identify on a map all known or suspected sources (see definition below). Supply all information about source(s) such as: dates of operation, use, or spillage; amounts of material deposited, stored, or spilled; dimensions of source(s); known or suspected hazardous substances (see definition below), etc.**

   This information is provided in Sections 4.2 and 5.4 of the PA/SI Report.

3. **Provide a description of all aquifers beneath the site, including description of overlying materials, depth first encountered, thickness, and composition.**

   In general, few productive aquifers exist in northern and western Arkansas, therefore, public water supplies are usually derived from surface water sources. In contrast, alluvial aquifers are heavily used in eastern Arkansas for agricultural purposes. The exception to this is the numerous hot and cool natural springs which exist in a concentrated area in and around Hot Springs National Park, located virtually in the center of the city of Hot Springs. The famous Hot Springs consist of over forty springs which produce approximately 800,000 gallons per day of water at approximately 61°C. The localized aquifer which feeds these springs consists of Bigfork chert and Arkansas novaculite formations located north and northeast of the Station about 3-5 miles. The very permeable chert (fracture permeability) represents the recharge zone of the aquifer, lying northwest of the springs. The closest portion of this recharge zone is 1.9 miles from the Station. The water which leads to the hot springs infiltrates 4,500 to 7,500 feet in the chert, is heated and then travels through faults in the novaculite to reach the surface. The age of the hot springs water is estimated to be approximately 4,400 years.

   Productive water wells in the Hot Springs area are generally associated with either the Bigfork chert or Arkansas novaculite formations. Of the underlying Paleozoic formations, only the chert has good permeability, while the shale, sandstone, and novaculite in the area have both limited permeability and holding capacity. There are no other sources of groundwater in the area besides these consolidated rock formations. Groundwater storage is limited to fractures and fissures in the consolidated formations. Therefore, water wells generally provide yields suitable only for domestic supply, on the

order of 10 gallons per minute or less, at depths of around 100 feet or less. The quality of groundwater is generally good, except for the presence of excessive iron. Commonly, the depth to groundwater is approximately 20 feet below land surface (BLS),

4. **For each source, choose one description from Table 1 that describes the groundwater contaminant. Provide complete documentation (i.e., engineering diagrams, photographs [originals]) as to why the source meets that description and not any other in the Table.**

   A groundwater investigation has not yet been conducted, therefore, the status on groundwater contaminant has not been determined.

5. **Provide the location of all drinking water wells in all aquifers beneath the site in a 4-mile radius from the site (property boundary) by HRS distance ring and locate the wells within a one-mile radius on a 7.5-minute topographic map. Provide information on depth of well(s), screening interval(s), depth of aquifer(s) encountered, population served for multiple wells (i.e., municipal system), provide the number of wells, location of all wells (regardless of 4-mile limit), average annual pumpage of each well (regardless of 4-mile limit), and total population served by system. Include information on all standby wells.**

   Approximately 200+ wells exist within the 4-mile radius. Well logs were obtained for a 2-mile radius from the site. A copy of these well logs is provided herein. (See Figure A.1 for location of the wells.) (Source: Arkansas Geologic Commission)

6. **Provide information and location (on 7.5-minute topographic map) of wells within 4 miles that are used to irrigate five or more acres of commercial food or forage crops, or watering of commercial livestock, or ingredient in commercial food preparation, or supply for aquaculture, or supply for a major or designated water recreation area, excluding drinking water use.**

   Approximately 200+ wells exist within the 4-mile radius. Well logs were obtained for a 2-mile radius from the site. Most wells are located in recreational/resort areas outside of the Hot Springs city limits and around Lake Hamilton, southeast of the Station, and therefore, are most likely used for domestic supply purposes only. (See Figure A.1 for location of the wells.) (Source: Arkansas Geologic Commission)

7. **Provide average number of persons per residence for county (or counties) that site is located in per the U.S. Census Bureau.**

   The average number of persons per residence for Garland County is 2.32. (Source: 1990 Census from the State Data Center, University of Arkansas-Little Rock)

8. **Identify and locate all surface water bodies within two miles of site, marking off the drainage routed (shown on 7.5-minute topographic map) from each source to applicable surface water bodies. Provide the average annual cubic feet per second flow for each surface water body within 15 miles downriver or radius from the point**

of probable entry into surface water. For lakes, provide information on inflow and outflow.

See Figure A.2 for the location of all surface bodies of water within a 2-mile radius from the site. The average annual cubic feet per second flow (cfs) for the Ouachita River at Blakely Mountain Dam near Hot Springs is 1485 cfs and Ouachita River near Malvern is 2412 cfs. Information for Stokes Creek, Molly Creek and Hogan Creek were not obtained since these creeks are intermittent. (Source: Arkansas Soil and Water Conservation Commission October, 1987)

9. **For each source, choose one description from Table 2 that describes the surface water containment. Provide complete documentation (i.e., engineering diagrams, photographs [originals]) as to why the source meets that description and not any other in the Table.**

All sources: Evidence of hazardous substance migration from source area.

10. **Provide the number of acres in each drainage basin.**

The number of acres in the drainage basin for Lake Hamilton is 908,800 acres. (Source: Arkansas Soil and Water Conservation Commission October, 1987)

11. **From Table 3, choose the predominant soil group (surface soil) which comprises the largest total area within each drainage area.**

The predominant soil group is medium to coarse-textured soils with high infiltration rates. (Source: Section 3.3.3 of the Report)

12. **Provide the two-year, 24-hour rainfall.**

The two-year, 24-hour rainfall for the Hot Springs area is 4.2" $\pm$ 0.1". (Source: S. Climatic Data Center)

13. **From Table 4, choose the floodplain category of each source (supply FEMA floodplain map) and determine if each source meets the criteria from Table 5 (engineer's certification).**

The floodplain category that best describes this area is outside of the 500-year floodplain. (Source: FEMA Map)

14. **Provide the location of all drinking water intakes within 15 downstream miles (rivers) or 15-mile radius (lakes, bays, etc.). Provide information on population served. For multiple intakes (i.e., municipal system), provide information on the number of intakes, location of all intakes (regardless of 15-mile limit), and total population served by system. Include information on all standby intakes.**

The surface bodies of water 15-miles downstream are Lake Hamilton and Lake Catherine. These bodies of water are not suitable for drinking purposes therefore, there are no drinking water intakes. (Source: Little Rock Power and Light)

15. **Provide information and location of intakes within 15 miles downriver (radius in lake or bay) that are used to irrigate five or more acres of commercial food or forage crops, or watering of commercial livestock, or ingredient in commercial food preparation, or supply for aquaculture, or supply for a major or designated water recreation area, excluding drinking water use.**

The water from these bodies of water may be used to water peoples personal gardens. Other than this, the water is not used for the above purposes. (Source: Little Rock Power and Light)

16. **Provide any surface water body 15 miles downriver (radius in lakes or bay) used for drinking water.**

The surface bodies of water 15-miles downstream are Lake Hamilton and Lake Catherine. These bodies of water are not suitable for drinking purposes therefore, this question does not apply. (Source: Little Rock Power and Light)

17. **Provide the average human food chain production (pounds per year) for each surface water body 15 miles downriver or 15-mile radius in lake.**

Information for this question is not available at this time.

18. **Within a 4-mile radius from the site and 15 miles downriver, or radius in lake, identify all sensitive environments that exist. Provide original documentation (USF&W, Natural Heritage Database, State agencies, NOAA, etc.), multiple sensitive environments within a sensitive environment.**

There are a number of endangered or threatened species in the state of Arkansas, a few of which could potentially occur in the Garland County area. These include the red-cockaded woodpecker, the Indian bat, the bald eagle, the Arkansas fatmucket mussel, and the Florida panther (also known as cougar). The bald eagle has been known to winter at Lake Ouachita northwest of the Hot Springs area, and there have been confirmed nesting sites in Montgomery County, the county directly west of Garland County. Other than the bald eagle, there are no records of sightings of endangered or threatened species in the Hot Springs area, nor are there any critical habitats in the area. (Source: Section 3.6 of the PA/SI Report)

19. **What is the linear frontage of all wetlands 15 miles downriver or 15-mile radius in lake?**

Wetland maps are still under development by USF&W at this time. (Source: U.S. Fish and Wildlife) There are approximately 93,000 acres of wetlands in the Upper Ouachita Basin (a seven county area in which Garland County is in the northeast portion).

Garland County is in the uplands of this basin, and therefore no wetlands have been identified in the county. The 93,000 acres of wetlands occur primarily in downstream, lowland areas of the Upper Ouachita Basin. (Source: Section 3.6 of the PA/SI Report)

20. **Provide the location and number of persons residing, working, attending school, or day care within 200 feet. This includes both the Air and Army Guard.**

The number of people working within 200-feet of the site is 25 and during Unit Training Assembly (UTA) weekends, 153. (Source: PA/SI Report)

21. **Identify all terrestrial sensitive environments that exist on-site. Provide original documentation (USF&W, Natural Heritage Database, State agencies, NOAA, etc.) and locate each on a 7.5-minute topographic map. Note that there could be multiple sensitive environments within a sensitive environment.**

There are no terrestrial sensitive environments on-site. (Source: PA/SI Report)

22. **For each source, choose one description from Table 8 that describes the accessibility to a human population. Provide complete documentation (i.e., engineering diagrams, photographs [originals]) as to why the source meets that description and not any other in the Table.**

The best description for the accessibility to human population is surrounded by maintained fence.

23. **Provide the total number of people in following distance rings from source(s)?**

Ring Distance	Total Persons
• 0 - 1/4 mile	84
• 1/4 - 1/2 mile	318
• 1/2 - 1 mile	1,626
• 1 - 2 miles	9,868
• 2 - 3 miles	12,077
• 3 - 4 miles	11,191

Use 1990 Census data and/or actual house counts. Document how calculated.
(Source: 1990 Census (block group level population aggregates)
Prepared by: GEOQUEST Information Technologies, Inc.

24. **For each source, choose one description from Table 9 that describes the gaseous containment. Provide complete documentation (i.e., engineering diagrams, photographs [originals]), as to why the source meets that description and not any other in the Table. From Table 10, choose the appropriate description of each source type. For each source, choose one description from Table 11 that describes**

that particulate containment. Provide complete documentation (i.e., engineering diagrams, photographs [originals]) as to why the source meets that description and not any other in the Table.

Table 9: All situations except those specifically listed below.
Table 10: Contaminated soil; containers (not elsewhere specified)
Table 11: All situations except those specifically listed below.

25. **Provide the location and area (in acres) of all wetlands within 4 miles of the site.**

Wetland maps are still under development by USF&W at this time. (Source: U.S. Fish and Wildlife) There are approximately 93,000 acres of wetlands in the Upper Ouachita Basin (a seven county area in which Garland County is in the northeast portion). Garland County is in the uplands of this basin, and therefore no wetlands have been identified in the county. The 93,000 acres of wetlands occur primarily in downstream, lowland areas of the Upper Ouachita Basin. (Source: Section 3.6 of the PA/SI Report)

26. **Contact EPA Regional Office immediately if any radionuclides are present or suspected at site and supply all radiological information known to date.**

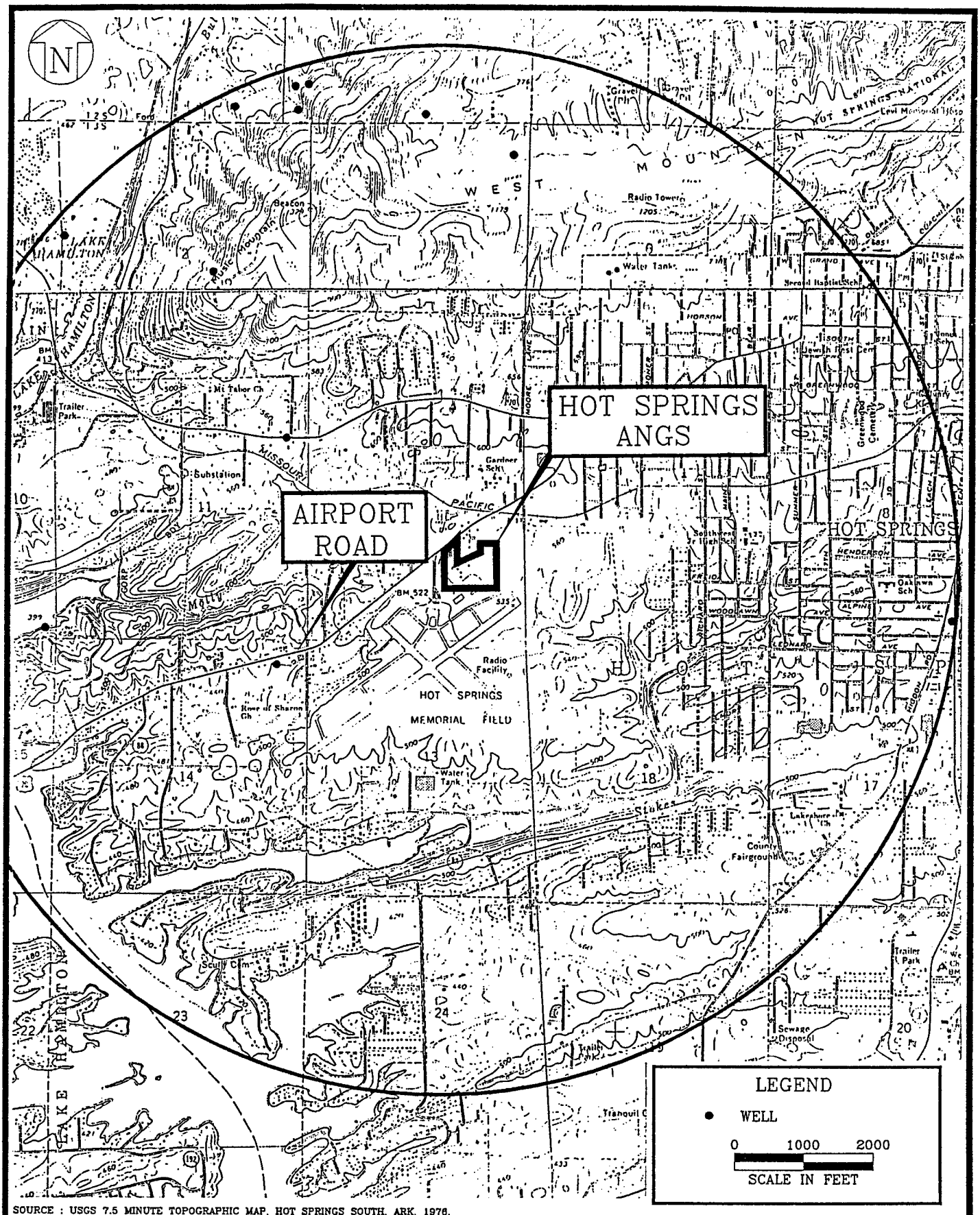
There are no radionuclides present or suspected at the site.

27. **For all of the above information, use primary data source and supply two copies or specify where copies may be obtained.**

28. **Provide any removals or remedial actions taken place at site.**

Two UST removals took place in 1989: a 2,000 gallon tank and a 1,000 gallon tank, both of which variously contained diesel and gasoline. (Source: PA/SI Report)

29. **If information relevant to a question already has been provided to the EPA, your answer may precisely cite the previous submittal by title, date, page, and paragraph number rather than resubmitting the information. To assist in your efforts, also enclosed is a copy of EPA's draft Preliminary Assessment Guidance.**



SOURCE : USGS 7.5 MINUTE TOPOGRAPHIC MAP, HOT SPRINGS SOUTH, ARK, 1976.

FIGURE A.1

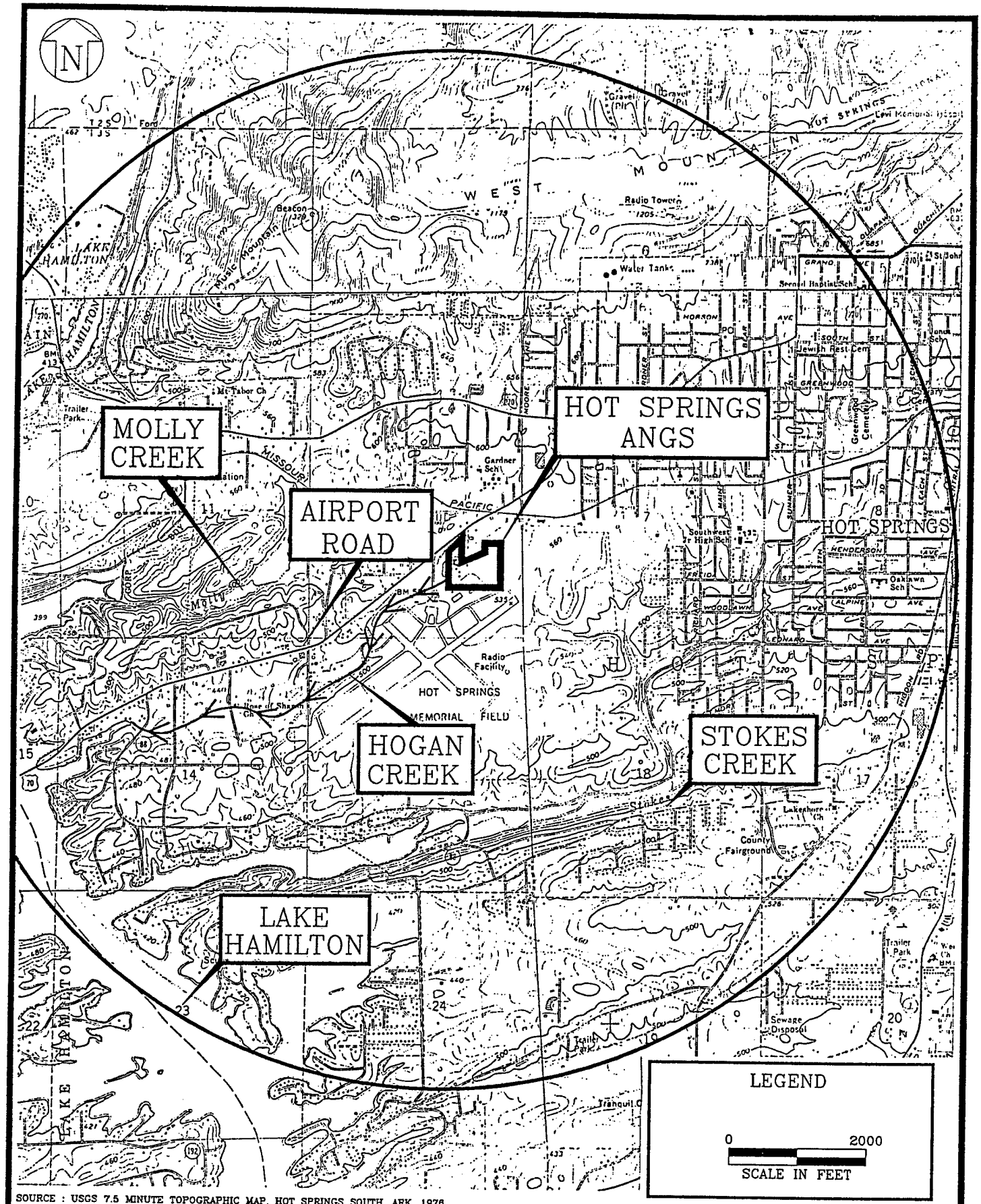
LOCATION OF WELLS WITHIN A 2-MILE RADIUS

223rd CBCS, Hot Springs ANGS
Hot Springs, Arkansas

P\HOTSPRNG\WELL

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

JULY 1995



SOURCE : USGS 7.5 MINUTE TOPOGRAPHIC MAP, HOT SPRINGS SOUTH, ARK, 1976.

FIGURE A.2

DRAINAGE ROUTE AND OTHER SURFACE BODIES OF WATER WITHIN A 2-MILE RADIUS

223rd CBCS, Hot Springs ANGS
Hot Springs, Arkansas

HOTSPRNG\WELL

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

JULY 1995

STATE OF ARKANSAS
REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION

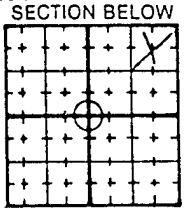
A

1 Contractor Name & Number: Meredith d West Drilling C# 1321
2 Driller Name & Number: Jack Meredith D# 2039
3 Pump Installer Name & Number: P#
4 Date Well Completed: 7-11-90 New Well ☑ Replace or Work-over ☐

5 COUNTY	6 FRACTION	7 SECTION	8 TOWNSHIP	9 RANGE
CARLAND	NE ¼ of NE	¼ of 14	3S	20W

LONGITUDE 10 ____ ° ____ ' ____ "
LATITUDE 11 ____ ° ____ ' ____ "

10 LOCATE WITH 'X' IN SECTION BELOW



B

1 DESCRIPTION OF FORMATION: DEPTHS IN FEET

	FROM	TO
CLAY SHALE		0-14
BLUE SHALE		14-30
SHALE & QUARTZ		
SEVERAL POCKETS OF		
CLAY & QUARTS 30 = 100 FT		

ATTACH ADDITIONAL SHEETS IF NECESSARY

2 TOTAL DEPTH OF WELL 140 ft
3 DEPTHS TO WATER PRODUCING FORMATIONS.
4 STATIC WATER LEVEL 22 Ft below land surface
5 YIELD 4 gallons per ☑ min ☐ hr
6 DIAMETER OF BORE HOLE 6 IN

C PUMP REPORT

1 TYPE PUMP: SUBMERSIBLE ☐ TURBINE ☐ JET ☐
2 SETTING DEPTH: FEET
3 BRAND NAME AND SERIAL NUMBERS:
4 RATED CAPACITY gallons per minute
5 TYPE LUBRICATION
6 DROP PIPE OR COLUMN PIPE SIZE
7 WIRE SIZE
8 PRESSURE TANK . . . SIZE, MAKE, MODEL
9 DATE OF INSTALLATION OR REPAIR
10 Is there an abandoned water well on the property?

D

1 LAND OWNER OR OTHER CONTACT PERSON:
NAME DAN CAIN
STREET ADDRESS TREASURE ISLE RD.
CITY HOT SPRINGS

2 CASING FROM 0 TO 20 W/ 6 "ID
FROM TO W/ "ID
TYPE CASING: PVC

3 SCREEN
TYPE: DIA SLOT/GA
SET FROM FT TO FT
TYPE: DIA SLOT/GA
SET FROM FT TO FT

4 GRAVEL PACK FROM FT TO FT

5 BACK FILLED WITH: CLAY SHALE
FROM 0 FT TO 10 FT

6 SEALED WITH: CONCRETE
FROM 10 FT TO 20 FT
FROM FT TO FT

7 DISINFECTED WITH: CLOROX

8 USE OF WELL:

DOMESTIC	☑	COMMERCIAL	☐
IRRIGATION	☐	MONITOR	☐
LIVESTOCK/POULTRY	☐	TEST WELL	☐
OIL/GAS SUPPLY	☐	SEMI-PUBLIC	☐
PUBLIC SUPPLY	☐	OTHER	

(A/C HEATPUMP TYPE WELLS)

SOURCE	☐	RETURN	☐
CLOSED LOOP	☐		

9 (For A/C only) Will system also be used for purposes other than Heating or Air Conditioning?
If yes, name use: yes ☐ no ☐

10 (For A/C open-loop only) Into what medium is water returned?

11 REMARKS WELL WOULD NOT CLEAN WITH AIR. BAD ROCK FORMATION INSTALLED INTER CASING

12 SIGNED Jackie H. Meredith DATE 7-11-91

WD-7 JAN 89 Arkansas Water Well Construction Commission, One Capitol Mall, Suite 2-C, Little Rock, AR 72201
CI-5945

GEOLOGY COPY

STATE OF ARKANSAS

REPORT OF WATER WELL CONSTRUCTION

New Well ✓ Work-over Well ____ Replacement Well ____

Owner of Well Gerald Wheeler

Contractor Fred A Smith c1014

Driller Name and No. Fred A Smith D2270

Date Well was Completed 6-10-85

1. Total Depth of Well 91 ft Ft.
2. Water Producing Formation: Ls w/ Quartz From 30-60 Ft. To 88' Ft.
3. Water Level Below Land Surface 20'
4. Gallons per Hour 35
5. Well Disinfected with Purex
6. Casing to 10 Ft.
7. Cased with 6" Diameter PVC Casing
8. Cemented from top ✓ Ft. to 10 Ft.
9. Use of Well: Domestic ✓ Irrigation ____ Municipal ____ Other ____

County Ga (in which well is located)

Well is near 270 W of Sunset Lodge Rd Road

Section 11 B B C Township T 3S Range R 20W

Directions for Reaching Well: 270 W-left on Sunset Lodge Rd to left (use permanent landmark) Buckle Lane-Right 2 blks 3rd house on left

Description and Color of Formation (sand, shale, sandstone, etc.)	Depths from	in feet to
Yellow sandrock	top	10
Brn sandrock	10	22
Hard & soft shale w/streaks of granite	22	91

Remarks:

Signed: Fred A Smith Date: 6-10-85

Form No. AWD-3

Mail to: Committee on Water Well Construction, 2915 So. Pine Street, Little Rock, Arkansas 72204

GEOLOGY COPY

STATE OF ARKANSAS

REPORT OF WATER WELL CONSTRUCTION

New Well X Work-over Well ____ Replacement Well ____

Owner of Well DICK RASNIC

Contractor BILL White c1143

Driller Name and No. DARRELL CASEY 2056

Date Well was Completed 6-20-85

1. Total Depth of Well 160 Ft.
2. Water Producing Formation: BLUE SANDSTONE From 20 Ft. To 160 Ft.
3. Water Level Below Land Surface 20 ft.
4. Gallons per Hour 660
5. Well Disinfected with H + H
6. Casing to 20 Ft.
7. Cased with 6" Diameter PVC Casing
8. Cemented from 0 Ft. to 20 Ft.
9. Use of Well: Domestic X Irrigation ____ Municipal ____ Other ____

County GARLAND (in which well is located)

Well is near South SHORE Rd Road

Section 33 Township T3S Range 20W

Directions for Reaching Well: 70 WEST to Hwy #192 to South shore Rd. (use permanent landmark)

Description and Color of Formation (sand, shale, sandstone, etc.)	Depths from	in feet to
OVERBURDEN	0	20
BLUE SANDSTONE	20	160

Remarks:

Signed: Darrell Casey Date: 7/2/85

Form No. AWD-3

Mail to: Committee on Water Well Construction, 2915 So. Pine Street, Little Rock, Arkansas 72204

GEOLOGY COPY

STATE OF ARKANSAS
REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION

A

1 Contractor Name & Number: BILL WHITE C# 1143
2 Driller Name & Number: BILL WHITE D# 2200
3 Pump Installer Name & Number: DARRELL CASEY P# 4201
4 Date Well Completed: 1-30-91 New Well ☒ Replace or Work-over ☐

10 LOCATE WITH 'X' IN SECTION BELOW

5 COUNTY	6 FRACTION	7 SECTION	8 TOWNSHIP	9 RANGE
GARLAND	¼ of ¼ of	8	T 3S	19 W

LONGITUDE 11 ° ' "
LATITUDE 11 ° ' "

B 1 DESCRIPTION OF FORMATION: DEPTHS IN FEET

	FROM	TO
Top Soil Red Clay	0	20
Gray Gravel	25	155
ATTACH ADDITIONAL SHEETS IF NECESSARY		

2 TOTAL DEPTH OF WELL 155 ft
3 DEPTHS TO WATER PRODUCING FORMATIONS. 145'
4 STATIC WATER LEVEL 30' Ft below land surface
5 YIELD 15 gallons per ☒ min ☐ hr
6 DIAMETER OF BORE HOLE 6 ¼ IN

C PUMP REPORT

1 TYPE PUMP: SUBMERSIBLE ☒ TURBINE ☐ JET ☐
2 SETTING DEPTH: 150 FEET
3 BRAND NAME AND SERIAL NUMBERS: GRUNDFOS ½ HP 220 Volt
4 RATED CAPACITY 10 gallons per minute
5 TYPE LUBRICATION
6 DROP PIPE OR COLUMN PIPE SIZE 1" PVC
7 WIRE SIZE 12 X 2
8 PRESSURE TANK . . . SIZE, MAKE, MODEL WELL RITE
9 DATE OF INSTALLATION OR REPAIR 1-31-91
10 Is there an abandoned water well on the property?

D 1 LAND OWNER OR OTHER CONTACT PERSON:
NAME GREG NUTT
STREET ADDRESS RT 1 Box 379-J
CITY HOT SPRINGS, Ark 71913

2 CASING FROM 0 TO 25 W/ 6 "ID
FROM TO W/ "ID
TYPE CASING: PVC

3 SCREEN
TYPE: DIA SLOT/GA
SET FROM FT TO FT
TYPE: DIA SLOT/GA
SET FROM FT TO FT

4 GRAVEL PACK FROM FT TO FT

5 BACK FILLED WITH: Gray Gravel
FROM 0 FT TO 20 FT

6 SEALED WITH: cement
FROM 20 FT TO 25 FT
FROM FT TO FT

7 DISINFECTED WITH: H+H

8 USE OF WELL:

DOMESTIC	☒	COMMERCIAL	☐
IRRIGATION	☐	MONITOR	☐
LIVESTOCK/POULTRY	☐	TEST WELL	☐
OIL/GAS SUPPLY	☐	SEMI-PUBLIC	☐
PUBLIC SUPPLY	☐	OTHER	

(A/C HEATPUMP TYPE WELLS)
SOURCE ☐ RETURN ☐
CLOSED LOOP ☐

9 (For A/C only) Will system also be used for purposes other than Heating or Air Conditioning?
If yes, name use: yes ☐ no ☐

10 (For A/C open-loop only) Into what medium is water returned?

11 REMARKS

12 SIGNED Bill White DATE 2/5/91

AWD-7 JAN 89 Arkansas Water Well Construction Commission, One Capitol Mall, Suite 2-C, Little Rock, AR 72201
ACI—5945

GEOLOGY COPY

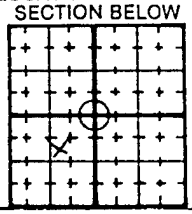
STATE OF ARKANSAS
REPORT OF WATER WELL
CONSTRUCTION

1 CONTRACTOR Name and number BL & L Drilling Co c. 1023
DRILLER Name and number Ralph Aldrich D. 2079

2 LOCATION / IDENTIFICATION DATE WELL COMPLETED 11-13-87 NEW WELL ☐ WORK-OVER ☐

(a) COUNTY	(b) FRACTION	(c) SECTION	(d) TOWNSHIP	(e) RANGE
Garland	NE ¼ of SW ¼ of	8	3S	19W

(f) LOCATE WITH 'X' IN SECTION BELOW



(g) SKETCH MAP

(h) OWNER OF WELL:
NAME Chuck Stotts
STREET ADDRESS 6805 Central Ave.
CITY Hot Springs AR.

(i) OPERATOR:
NAME
STREET ADDRESS
CITY

3 DESCRIPTION OF FORMATION: DEPTHS IN FEET

	FROM	TO
RED CLAY	0	16
GRAY SLATE	16	90

ATTACH ADDITIONAL SHEETS IF NECESSARY

4 TOTAL DEPTH OF WELL 90 ft

5 WATER PRODUCING FORMATION? 80

6 STATIC WATER LEVEL 30 Ft below land surface

7 WATER PRODUCTION RATE WELL PRODUCTS 15 gallons per ☒ min ☐ hr

8 DIAMETER OF BORE HOLE 5 7/8 IN

9 CASING FROM 0 TO 22 W/ 6 "ID
FROM TO W/ "ID
TYPE CASING PVC

10 SCREEN:
TYPE DIA SLOT/GA
SET BETWEEN ft and ft
TYPE DIA SLOT/GA
SET BETWEEN ft and ft

11 GRAVEL PACK FROM ft and ft

12 BACK FILLED WITH
FROM ft to ft

13 SEALED WITH Cement
FROM 2 ft to 22 ft
FROM ft to ft

14 DISINFECTED WITH: 70% Chlorine

15 USE OF WELL:
SOURCE WELL ☐ RETURN WELL ☐
A/C CLOSED LOOP ☐ A/C OPEN LOOP ☐

16 PURPOSE:
DOMESTIC ☒ MUNICIPAL ☐
COMMERCIAL ☐ TEST WELL ☐
OIL AND GAS ☐ MONITOR ☐
AGRI/IRRIGATION ☐ PUBLIC SUPPLY ☐
OTHER ☐

17 (For A/C only) WILL SYSTEM ALSO BE USED FOR PURPOSES OTHER THAN A/C? YES ☐ NO ☐
(IF YES NAME USE)

18 (For A/C only) INTO WHAT MEDIUM IS WATER RETURNED?

19 REMARKS:

20 SIGNED Larry L Rodland DATE 11-16-87

AWD-4 JAN 1986 Committee on Waterwell Construction, 2915 South Pine, Little Rock, AR 72204

GEOLOGY COPY

STATE OF ARKANSAS
REPORT OF WATER WELL CONSTRUCTION

1 CONTRACTOR Name and number: Meredith & West — C. 1321
DRILLER Name and number: Jack Meredith — D. 2039

2 LOCATION / IDENTIFICATION — DATE WELL COMPLETED 7-7-89 — NEW WELL ☑ — WORK-OVER ☐

(a) COUNTY	(b) FRACTION	(c) SECTION	(d) TOWNSHIP	(e) RANGE
Garland	SE ¼ of NW ¼ of	5	3S	19W

(f) LOCATE WITH 'X' IN SECTION BELOW — (g) SKETCH MAP

(h) OWNER OF WELL: Ark. Game & Fish
NAME
STREET ADDRESS Rt 1 Box 477
CITY Hot Springs

(i) OPERATOR: Jack Meredith
NAME
STREET ADDRESS
CITY

3 DESCRIPTION OF FORMATION: DEPTHS IN FEET

	FROM	TO
Clay Shale		0-8
Soft Blue Shale	8	15
Hard Shale	15	300

ATTACH ADDITIONAL SHEETS IF NECESSARY

9 CASING FROM 0 TO 20 WI PVC "ID 6 IN
FROM TO WI "ID
TYPE CASING PVC

10 SCREEN:
TYPE DIA SLOT/GA
SET BETWEEN ft and ft
TYPE DIA SLOT/GA
SET BETWEEN ft and ft

11 GRAVEL PACK FROM ft and ft

12 BACK FILLED WITH
FROM ft to ft

13 SEALED WITH Concrete
FROM 10 ft to 20 ft
FROM ft to ft

14 DISINFECTED WITH: Clorox

15 USE OF WELL:
SOURCE WELL ☑ RETURN WELL ☐
A/C CLOSED LOOP ☐ A/C OPEN LOOP ☐

16 PURPOSE:
DOMESTIC ☐ MUNICIPAL ☐
COMMERCIAL ☑ TEST WELL ☐
OIL AND GAS ☐ MONITOR ☐
AGRI/IRRIGATION ☐ PUBLIC SUPPLY ☐
OTHER ☐

17 (For A/C only) WILL SYSTEM ALSO BE USED FOR PURPOSES OTHER THAN A/C? YES ☐ NO ☐
(IF YES NAME USE)

18 (For A/C only) INTO WHAT MEDIUM IS WATER RETURNED?

19 REMARKS:

4 TOTAL DEPTH OF WELL 300 ft

5 WATER PRODUCING FORMATION? 175

6 STATIC WATER LEVEL [illegible] Ft below land surface

7 YIELD [illegible] gallons per ☑ min ☐ hr

8 DIAMETER OF BORE HOLE 6 IN

20 SIGNED Jack Meredith DATE 9-15-89

MOTOROLA 12V AWD-4 JAN 1988 — Arkansas Waterwell Construction Commission 2915 South Pine, Little Rock, AR 72204

GEOLOGY COPY

STATE OF ARKANSAS
REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION

✓

A
1 Contractor Name & Number: Meredith & West — C# 1321
2 Driller Name & Number: J Meredith — D# 2039
3 Pump Installer Name & Number: — P#
4 Date Well Completed: 4-3 89 — New Well ☐ Replace or Work-over ☐

10 LOCATE WITH 'X' IN SECTION BELOW

5 COUNTY	6 FRACTION	7 SECTION	8 TOWNSHIP	9 RANGE
	SE ¼ of NW ¼ of	5	33	19W

LONGITUDE 11 ____° ____' ____"
LATITUDE 11 ____° ____' ____"

B 1 DESCRIPTION OF FORMATION: DEPTHS IN FEET

	FROM	TO
Clay	0	8
Clay Shale	8	12
Blue Shale	12	220

ATTACH ADDITIONAL SHEETS IF NECESSARY

2 TOTAL DEPTH OF WELL 220 ft
3 DEPTHS TO WATER PRODUCING FORMATIONS. 80-220
4 STATIC WATER LEVEL 20 Ft below land surface
5 YIELD 6 gallons per ☑ min ☐ hr
6 DIAMETER OF BORE HOLE 6 IN

C PUMP REPORT
1 TYPE PUMP: SUBMERSIBLE ☐ TURBINE ☐ JET ☐
2 SETTING DEPTH: FEET
3 BRAND NAME AND SERIAL NUMBERS:
4 RATED CAPACITY gallons per minute
5 TYPE LUBRICATION
6 DROP PIPE OR COLUMN PIPE SIZE
7 WIRE SIZE
8 PRESSURE TANK . . . SIZE, MAKE, MODEL
9 DATE OF INSTALLATION OR REPAIR
10 Is there an abandoned water well on the property?

D 1 LAND OWNER OR OTHER CONTACT PERSON:
NAME Ark Game & Fish
STREET ADDRESS RT 1 Box 477
CITY Hot Springs 71913

2 CASING FROM 0 TO 20 W/ 6 "ID
FROM TO W/ "ID
TYPE CASING: PVC

3 SCREEN
TYPE: DIA SLOT/GA
SET FROM FT TO FT
TYPE: DIA SLOT/GA
SET FROM FT TO FT

4 GRAVEL PACK FROM FT TO FT

5 BACK FILLED WITH:
FROM FT TO FT

6 SEALED WITH: Concrete
FROM 10 FT TO 20 FT
FROM FT TO FT

7 DISINFECTED WITH: Clorox

8 USE OF WELL:
DOMESTIC ☑ COMMERCIAL ☐
IRRIGATION ☐ MONITOR ☐
LIVESTOCK/POULTRY ☐ TEST WELL ☐
OIL/GAS SUPPLY ☐ SEMI-PUBLIC ☐
PUBLIC SUPPLY ☐ OTHER

(A/C HEATPUMP TYPE WELLS)
SOURCE ☐ RETURN ☐
CLOSED LOOP ☐

9 (For A/C only) Will system also be used for purposes other than Heating or Air Conditioning?
If yes, name use: yes ☐ no☐

10 (For A/C open-loop only) Into what medium is water returned?

11 REMARKS

12 SIGNED J Meredith DATE

AWD-7 JAN 89 Arkansas Water Well Construction Commission, One Capitol Mall, Suite 2-C, Little Rock, AR 72201
ACI—5945

GEOLOGY COPY

STATE OF ARKANSAS
REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION

A

1 Contractor Name & Number: Meredith West Drilling C# 1321
2 Driller Name & Number: Jack Meredith D# 2039
3 Pump Installer Name & Number: P#
4 Date Well Completed: 2-4 93 New Well ☐ Replace or Work-over ☐

10 LOCATE WITH 'X' IN SECTION BELOW

5 COUNTY	6 FRACTION	7 SECTION	8 TOWNSHIP	9 RANGE
Garland	SE ¼ of NW ¼ of	3	3-S	20W

LONGITUDE 11 ° ' "
LATITUDE 11 ° ' "

B 1 DESCRIPTION OF FORMATION: DEPTHS IN FEET

	FROM	TO
Clay	0	3
Shale	3	37
Hard Fine Gray Shale	37	160
Mixed		
ATTACH ADDITIONAL SHEETS IF NECESSARY		

2 TOTAL DEPTH OF WELL 160 ft
3 DEPTHS TO WATER PRODUCING FORMATIONS. 47
4 STATIC WATER LEVEL 21 Ft below land surface
5 YIELD 5 gallons per ☒ min ☐ hr
6 DIAMETER OF BORE HOLE 6" IN

C PUMP REPORT

1 TYPE PUMP: SUBMERSIBLE ☐ TURBINE ☐ JET ☐
2 SETTING DEPTH: FEET
3 BRAND NAME AND SERIAL NUMBERS:
4 RATED CAPACITY gallons per minute
5 TYPE LUBRICATION
6 DROP PIPE OR COLUMN PIPE SIZE
7 WIRE SIZE
8 PRESSURE TANK . . . SIZE, MAKE, MODEL
9 DATE OF INSTALLATION OR REPAIR
10 Is there an abandoned water well on the property?

D 1 LAND OWNER OR OTHER CONTACT PERSON:
NAME Curtis Cash
STREET ADDRESS Thorton Ferry Rd
CITY Hot Springs

2 CASING FROM 0 TO 40 W/ 6" "ID
FROM TO W/ "ID
TYPE CASING: PVC

3 SCREEN
TYPE: DIA SLOT/GA
SET FROM FT TO FT
TYPE: DIA SLOT/GA
SET FROM FT TO FT

4 GRAVEL PACK FROM FT TO FT

5 BACK FILLED WITH: Shale
FROM 0 FT TO 30 FT

6 SEALED WITH: Concrete
FROM 30 FT TO 40 FT
FROM FT TO FT

7 DISINFECTED WITH: Chlorine Tab

8 USE OF WELL:

DOMESTIC	☑	COMMERCIAL	☐
IRRIGATION	☐	MONITOR	☐
LIVESTOCK/POULTRY	☐	TEST WELL	☐
OIL/GAS SUPPLY	☐	SEMI-PUBLIC	☐
PUBLIC SUPPLY	☐	OTHER	

(A/C HEATPUMP TYPE WELLS)

SOURCE	☐	RETURN	☐
CLOSED LOOP	☐		

9 (For A/C only) Will system also be used for purposes other than Heating or Air Conditioning?
If yes, name use: yes ☐ no ☐
10 (For A/C open-loop only) Into what medium is water returned?
11 REMARKS
12 SIGNED DATE 2-4-93

AWD-7 JAN 89 Arkansas Water Well Construction Commission, One Capitol Mall, Suite 2-C, Little Rock, AR 72201
ACI—5945

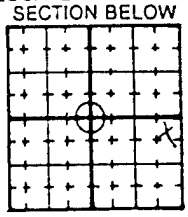
GEOLOGY COPY

STATE OF ARKANSAS
REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION

A

1 Contractor Name & Number: Meredith & West — C# 1321
2 Driller Name & Number: J Meredith — D# 2039
3 Pump Installer Name & Number: _____ — P#
4 Date Well Completed: 3-2-89 — New Well ☑ Replace or Work-over ☐

10 LOCATE WITH 'X' IN SECTION BELOW



5 COUNTY	6 FRACTION	7 SECTION	8 TOWNSHIP	9 RANGE
Garland	NE ¼ of NW ¼ of	3	3S	R20W

LONGITUDE 11 ____ ° ____ ' ____ " (doesn't like!?!) — LATITUDE 11 ____ ° ____ ' ____ "

B

1 DESCRIPTION OF FORMATION:

DEPTHS IN FEET	FROM	TO
Clay	0	5
Clay Shale	5	12
Blue Shale	12	80
Shale & Quartz	80	100

ATTACH ADDITIONAL SHEETS IF NECESSARY

2 TOTAL DEPTH OF WELL: 100 ft
3 DEPTHS TO WATER PRODUCING FORMATIONS: 85-87
4 STATIC WATER LEVEL: 25 Ft below land surface
5 YIELD: 9 gallons per ☑ min ☐ hr
6 DIAMETER OF BORE HOLE: 6 IN

C PUMP REPORT

1 TYPE PUMP: SUBMERSIBLE ☐ TURBINE ☐ JET ☐
2 SETTING DEPTH: FEET
3 BRAND NAME AND SERIAL NUMBERS:
4 RATED CAPACITY gallons per minute
5 TYPE LUBRICATION
6 DROP PIPE OR COLUMN PIPE SIZE
7 WIRE SIZE
8 PRESSURE TANK . . . SIZE, MAKE, MODEL
9 DATE OF INSTALLATION OR REPAIR
10 Is there an abandoned water well on the property?

D

1 LAND OWNER OR OTHER CONTACT PERSON:
NAME Don Moore
STREET ADDRESS 1
CITY Royal Ark 71968

2 CASING FROM 0 TO 25 W/ 6 "ID
FROM TO W/ "ID
TYPE CASING: PVC

3 SCREEN
TYPE: DIA SLOT/GA
SET FROM FT TO FT
TYPE: DIA SLOT/GA
SET FROM FT TO FT

4 GRAVEL PACK FROM FT TO FT
5 BACK FILLED WITH: _____
FROM FT TO FT
6 SEALED WITH: Cement
FROM 0 FT TO 10 FT
FROM FT TO FT
7 DISINFECTED WITH: Clorox
8 USE OF WELL:

DOMESTIC	☑	COMMERCIAL	☐
IRRIGATION	☐	MONITOR	☐
LIVESTOCK/POULTRY	☐	TEST WELL	☐
OIL/GAS SUPPLY	☐	SEMI-PUBLIC	☐
PUBLIC SUPPLY	☐	OTHER	

(A/C HEATPUMP TYPE WELLS)

SOURCE	☐	RETURN	☐
CLOSED LOOP	☐		

9 (For A/C only) Will system also be used for purposes other than Heating or Air Conditioning? If yes, name use: yes ☐ no ☐
10 (For A/C open-loop only) Into what medium is water returned?
11 REMARKS
12 SIGNED J Meredith DATE 3-10-89

AWD-7 JAN 89 Arkansas Water Well Construction Commission, One Capitol Mall, Suite 2-C, Little Rock, AR 72201
ACI-5945

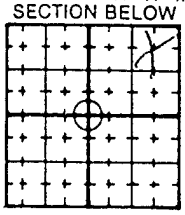
GEOLOGY COPY

STATE OF ARKANSAS
REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION

A

1 Contractor Name & Number: Mccad ithd West C# 1321
2 Driller Name & Number: Jack Meredith D# 2039
3 Pump Installer Name & Number: P#
4 Date Well Completed: 6-16-91 New Well ☑ Replace or Work-over ☐

10 LOCATE WITH 'X' IN SECTION BELOW



5 COUNTY	6 FRACTION	7 SECTION	8 TOWNSHIP	9 RANGE
Garland	NE ¼ of NE ¼ of	1	3	20

LONGITUDE 11 ____ ° ____ ' ____ "
LATITUDE 11 ____ ° ____ ' ____ "

B

1 DESCRIPTION OF FORMATION: DEPTHS IN FEET

	FROM	TO
clay	0	16
Shale	16	23
gravel spot	23	24
Black Shale	24	80

ATTACH ADDITIONAL SHEETS IF NECESSARY

2 TOTAL DEPTH OF WELL 80 ft
3 DEPTHS TO WATER PRODUCING FORMATIONS. 63
4 STATIC WATER LEVEL 8 Ft below land surface
5 YIELD 10 gallons per ☑ min ☐ hr
6 DIAMETER OF BORE HOLE 6 IN

C PUMP REPORT

1 TYPE PUMP: SUBMERSIBLE ☐ TURBINE ☐ JET ☐
2 SETTING DEPTH: FEET
3 BRAND NAME AND SERIAL NUMBERS:
4 RATED CAPACITY gallons per minute
5 TYPE LUBRICATION
6 DROP PIPE OR COLUMN PIPE SIZE
7 WIRE SIZE
8 PRESSURE TANK . . . SIZE, MAKE, MODEL
9 DATE OF INSTALLATION OR REPAIR
10 Is there an abandoned water well on the property?

D

1 LAND OWNER OR OTHER CONTACT PERSON:
NAME Bob Polegrino
STREET ADDRESS Kirkwood Dr
CITY H.S.

2 CASING FROM 0 TO 20 W/ 6" "ID
FROM 0 TO 80 W/ 4" "ID
TYPE CASING: PVC

3 SCREEN
TYPE: DIA SLOT/GA
SET FROM FT TO FT
TYPE: DIA SLOT/GA
SET FROM FT TO FT

4 GRAVEL PACK FROM FT TO FT
5 BACK FILLED WITH: Shale
FROM 0 FT TO 10 FT
6 SEALED WITH: Concrete
FROM 10 FT TO 20 FT
FROM FT TO FT
7 DISINFECTED WITH: Clorox
8 USE OF WELL:

DOMESTIC	☑	COMMERCIAL	☐
IRRIGATION	☐	MONITOR	☐
LIVESTOCK/POULTRY	☐	TEST WELL	☐
OIL/GAS SUPPLY	☐	SEMI-PUBLIC	☐
PUBLIC SUPPLY	☐	OTHER	

(A/C HEATPUMP TYPE WELLS)

SOURCE	☐	RETURN	☐
CLOSED LOOP	☐		

9 (For A/C only) Will system also be used for purposes other than Heating or Air Conditioning?
If yes, name use: yes ☐ no ☐
10 (For A/C open-loop only) Into what medium is water returned?
11 REMARKS
Gravel packed could get lake water
12 SIGNED Jackie Meredith DATE 9-2-91

AWD-7 JAN 89 ACI #5945 Arkansas Water Well Construction Commission, One Capitol Mall, Suite 2-C, Little Rock, AR 72201

GEOLOGY COPY

STATE OF ARKANSAS
REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION

A

1 Contractor Name & Number: Meredith West Drilling C# 1321
2 Driller Name & Number: Jack Meredith D# 2039
3 Pump Installer Name & Number: P#
4 Date Well Completed: 1-27-93 New Well ☒ Replace or Work-over ☐

10 LOCATE WITH 'X' IN SECTION BELOW

5 COUNTY	6 FRACTION	7 SECTION	8 TOWNSHIP	9 RANGE
Garland	SE ¼ of NW ¼ of	15	3-S	20W

LONGITUDE 11 ° ' "
LATITUDE 11 ° ' "

B 1 DESCRIPTION OF FORMATION: DEPTHS IN FEET

	FROM	TO
Clay	0	14
" Shale	14	18
Blue Shale	14	120
ATTACH ADDITIONAL SHEETS IF NECESSARY		

2 TOTAL DEPTH OF WELL 120 ft
3 DEPTHS TO WATER PRODUCING FORMATIONS. 40
4 STATIC WATER LEVEL Artesian Ft below land surface
5 YIELD 15 gallons per ☒ min ☐ hr
6 DIAMETER OF BORE HOLE 6" IN

C PUMP REPORT

1 TYPE PUMP: SUBMERSIBLE ☐ TURBINE ☐ JET ☐
2 SETTING DEPTH: FEET
3 BRAND NAME AND SERIAL NUMBERS:
4 RATED CAPACITY gallons per minute
5 TYPE LUBRICATION
6 DROP PIPE OR COLUMN PIPE SIZE
7 WIRE SIZE
8 PRESSURE TANK . . . SIZE, MAKE, MODEL
9 DATE OF INSTALLATION OR REPAIR
10 Is there an abandoned water well on the property?

D 1 LAND OWNER OR OTHER CONTACT PERSON:
NAME Jack Brown
STREET ADDRESS Glazeypool Rd
CITY Hot Springs

2 CASING FROM 0 TO 20 W/ 6" "ID
FROM TO W/ "ID
TYPE CASING: PVC

3 SCREEN
TYPE: DIA SLOT/GA
SET FROM FT TO FT
TYPE: DIA SLOT/GA
SET FROM FT TO FT

4 GRAVEL PACK FROM FT TO FT

5 BACK FILLED WITH: Shale
FROM 0 FT TO 10 FT

6 SEALED WITH: Concrete
FROM 10 FT TO 20 FT
FROM FT TO FT

7 DISINFECTED WITH: Chlorine Tablets

8 USE OF WELL:

DOMESTIC	☒	COMMERCIAL	☐
IRRIGATION	☐	MONITOR	☐
LIVESTOCK/POULTRY	☐	TEST WELL	☐
OIL/GAS SUPPLY	☐	SEMI-PUBLIC	☐
PUBLIC SUPPLY	☐	OTHER	

(A/C HEATPUMP TYPE WELLS)

SOURCE	☐	RETURN	☐
CLOSED LOOP	☐		

9 (For A/C only) Will system also be used for purposes other than Heating or Air Conditioning?
If yes, name use: yes ☐ no ☐
10 (For A/C open-loop only) Into what medium is water returned?
11 REMARKS
12 SIGNED Jack Brown DATE 4-19-93

AWD-7 JAN 89 Arkansas Water Well Construction Commission, One Capitol Mall, Suite 2-C, Little Rock, AR 72201
ACI—5945

GEOLOGY COPY

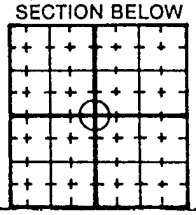
STATE OF ARKANSAS
REPORT OF WATER WELL
CONSTRUCTION

1 CONTRACTOR Name and number: Fred A. Smith C. 1014
DRILLER Name and number: Fred A Smith D. 2270

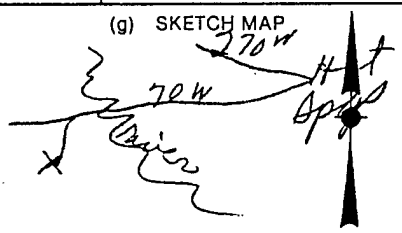
2 LOCATION / IDENTIFICATION — DATE WELL COMPLETED 6-23-87 — NEW WELL [X] — WORK-OVER [ ]

(a) COUNTY	(b) FRACTION ¼ of	(c) SECTION ¼ of	(d) TOWNSHIP	(e) RANGE
ga		15 DDD	T 3S	R 20 W

(f) LOCATE WITH 'X' IN SECTION BELOW



(g) SKETCH MAP



(h) OWNER OF WELL:
NAME Harold Fillard
STREET ADDRESS Rt 4 Box 620
CITY Hot Springs, Ar. 71913

(i) OPERATOR:
NAME Fred A Smith
STREET ADDRESS Rt 2 Box 514
CITY Mountain Pine Ar. 71956

3 DESCRIPTION OF FORMATION:	DEPTHS IN FEET FROM	TO
Red clay Top		8'
Brn. sandrock 8'		20'
Hard shale W/S of 20'		114'
granite		

ATTACH ADDITIONAL SHEETS IF NECESSARY

9 CASING FROM Top TO 12" W/ 6" "ID
FROM TO W/ "ID
TYPE CASING PVC

10 SCREEN: Closed system
TYPE DIA SLOT/GA
SET BETWEEN ft and ft
TYPE DIA SLOT/GA
SET BETWEEN ft and ft

11 GRAVEL PACK FROM ft and ft

12 BACK FILLED WITH
FROM ft to ft

13 SEALED WITH
FROM ft to ft
FROM ft to ft

14 DISINFECTED WITH Purex

15 USE OF WELL:
SOURCE WELL [ ] RETURN WELL [ ]
A/C CLOSED LOOP [ ] A/C OPEN LOOP [ ]

16 PURPOSE:
DOMESTIC [X] MUNICIPAL [ ]
COMMERCIAL [ ] TEST WELL [ ]
OIL AND GAS [ ] MONITOR [ ]
AGRI/IRRIGATION [ ] PUBLIC SUPPLY [ ]
OTHER [ ]

17 (For A/C only) WILL SYSTEM ALSO BE USED FOR PURPOSES OTHER THAN A/C? YES [ ] NO [ ]
(IF YES NAME USE)

18 (For A/C only) INTO WHAT MEDIUM IS WATER RETURNED?

19 REMARKS:

4 TOTAL DEPTH OF WELL 114 ft

5 WATER PRODUCING FORMATION? W/S

6 STATIC WATER LEVEL 25' Ft below land surface

7 WATER PRODUCTION RATE WELL PRODUCTS 18 gallons per [X] min [ ] hr

8 DIAMETER OF BORE HOLE 6" IN

20 SIGNED Fred A Smith DATE 7-15-87

AWD-4 JAN 1986 Committee on Waterwell Construction, 2915 South Pine, Little Rock, AR 72204

GEOLOGY COPY

STATE OF ARKANSAS
REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION

A

1 Contractor Name & Number: Meredith & West C# 1321

2 Driller Name & Number: J Meredith D# 2039

3 Pump Installer Name & Number: — P#

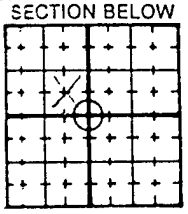
4 Date Well Completed: 1-28-84 New Well ☑ Replace or Work-over ☐

5 COUNTY	6 FRACTION	7 SECTION	8 TOWNSHIP	9 RANGE
Cleburne	S E ¼ of N W ¼ of	15	3 S	20 W

LONGITUDE 11 ____ ° ____ ' ____ "

LATITUDE 11 ____ ° ____ ' ____ "

10 LOCATE WITH 'X' IN SECTION BELOW



B

1 DESCRIPTION OF FORMATION: DEPTHS IN FEET

	FROM	TO
Soft Shale		15
Hard Blue Shale	15	80
Gray Rock	80	200

ATTACH ADDITIONAL SHEETS IF NECESSARY

2 TOTAL DEPTH OF WELL 200 ft

3 DEPTHS TO WATER PRODUCING FORMATIONS. 115-118

4 STATIC WATER LEVEL 16 Ft below land surface

5 YIELD 15 gallons per ☑ min ☐ hr

6 DIAMETER OF BORE HOLE 6 IN

C PUMP REPORT

1 TYPE PUMP: SUBMERSIBLE ☐ TURBINE ☐ JET ☐

2 SETTING DEPTH: FEET

3 BRAND NAME AND SERIAL NUMBERS:

4 RATED CAPACITY gallons per minute

5 TYPE LUBRICATION

6 DROP PIPE OR COLUMN PIPE SIZE

7 WIRE SIZE

8 PRESSURE TANK . . . SIZE, MAKE, MODEL

9 DATE OF INSTALLATION OR REPAIR

10 Is there an abandoned water well on the property?

D

1 LAND OWNER OR OTHER CONTACT PERSON:
NAME William Cattaneo
STREET ADDRESS 202 Spring Wood
CITY Hs 71913

2 CASING 6 FROM 20 TO W/ 6 "ID
FROM TO W/ "ID
TYPE CASING: PVC

3 SCREEN
TYPE: DIA SLOT/GA
SET FROM FT TO FT
TYPE: DIA SLOT/GA
SET FROM FT TO FT

4 GRAVEL PACK FROM FT TO FT

5 BACK FILLED WITH: ____
FROM FT TO FT

6 SEALED WITH: 10-20 Cement
FROM 10 FT TO 20 FT
FROM FT TO FT

7 DISINFECTED WITH: Clorox

8 USE OF WELL:

DOMESTIC	☐	COMMERCIAL	☐
IRRIGATION	☐	MONITOR	☐
LIVESTOCK/POULTRY	☐	TEST WELL	☐
OIL/GAS SUPPLY	☐	SEMI-PUBLIC	☐
PUBLIC SUPPLY	☐	OTHER	

(A/C HEATPUMP TYPE WELLS)

SOURCE	☐	RETURN	☐
CLOSED LOOP	☐		

9 (For A/C only) Will system also be used for purposes other than Heating or Air Conditioning?
If yes, name use: yes ☐ no ☐

10 (For A/C open-loop only) Into what medium is water returned?

11 REMARKS

J Meredith 3-10-84
12 SIGNED DATE

STATE OF ARKANSAS
REPORT OF WATER WELL CONSTRUCTION

1 CONTRACTOR Name and number: Herb Scantling County Water Service — C. 1080
DRILLER Name and number: Herb Scantling — D. 2146

2 LOCATION / IDENTIFICATION — DATE WELL COMPLETED 2-11-87 — NEW WELL ☑ — WORK-OVER ☐

(a) COUNTY	(b) FRACTION	(c) SECTION	(d) TOWNSHIP	(e) RANGE
Garland	¼ of ¼ of	15	3 S.	20 W.

(f) LOCATE WITH 'X' IN SECTION BELOW — (g) SKETCH MAP

(h) OWNER OF WELL:
NAME: Rusty Brown
STREET ADDRESS: Rt. 4
CITY: Hot Springs, Ark.

(i) OPERATOR:
NAME
STREET ADDRESS
CITY

3 DESCRIPTION OF FORMATION: DEPTHS IN FEET

	FROM	TO
Brown Shale	0	10
Blue Shale	10	100
ATTACH ADDITIONAL SHEETS IF NECESSARY		

9 CASING FROM 0 TO 21 W/ 6 "ID
FROM TO W/ "ID
TYPE CASING Prc

10 SCREEN:
TYPE DIA SLOT/GA
SET BETWEEN ft and ft
TYPE DIA SLOT/GA
SET BETWEEN ft and ft

11 GRAVEL PACK FROM ft and ft

12 BACK FILLED WITH
FROM ft to ft

13 SEALED WITH Cement
FROM 10 ft to 21 ft
FROM ft to ft

14 DISINFECTED WITH:

15 USE OF WELL:
SOURCE WELL ☑ — RETURN WELL ☐
A/C CLOSED LOOP ☐ — A/C OPEN LOOP ☐

16 PURPOSE:
DOMESTIC ☑ — MUNICIPAL ☐
COMMERCIAL ☐ — TEST WELL ☐
OIL AND GAS ☐ — MONITOR ☐
AGRI/IRRIGATION ☐ — PUBLIC SUPPLY ☐
OTHER ☐

17 (For A/C only) WILL SYSTEM ALSO BE USED FOR PURPOSES OTHER THAN A/C?
(IF YES NAME USE) YES ☐ NO ☐

18 (For A/C only) INTO WHAT MEDIUM IS WATER RETURNED?

19 REMARKS:

4 TOTAL DEPTH OF WELL: 100 ft

5 WATER PRODUCING FORMATION? 70 to 90 ft.

6 STATIC WATER LEVEL: 15 Ft below land surface

7 WATER PRODUCTION RATE WELL PRODUCTS: 1200 gallons per ☐ min ☑ hr

8 DIAMETER OF BORE HOLE: 6 IN

20 SIGNED: Geneva Scantling — DATE: 3-6-87

AWD-4 JAN 1986 Committee on Waterwell Construction, 2915 South Pine, Little Rock, AR 72204

GEOLOGY COPY

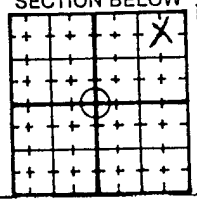
STATE OF ARKANSAS
REPORT OF WATER WELL CONSTRUCTION

1 CONTRACTOR Name and number: BILL WHITE — C. 1143
DRILLER Name and number: BILLY C. WHITE — D. 2299

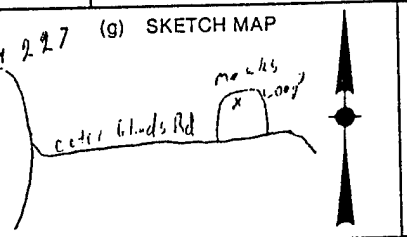
2 LOCATION / IDENTIFICATION — DATE WELL COMPLETED 4-10 87 — NEW WELL ☑ — WORK-OVER ☐

(a) COUNTY	(b) FRACTION ¼ of	(c) ¼ of	SECTION	(d) TOWNSHIP	(e) RANGE
CARLAND			35	T 2S	R 20W

(f) LOCATE WITH 'X' IN SECTION BELOW



(g) SKETCH MAP



(h) OWNER OF WELL: CARROLL MEEKS
NAME
STREET ADDRESS PO Box
CITY HOT SPRINGS, ARK 71914

(i) OPERATOR:
NAME
STREET ADDRESS
CITY

3 DESCRIPTION OF FORMATION: DEPTHS IN FEET

	FROM	TO
Top Soil Red Clay	0	21
Black Shale Quartz	21	105

ATTACH ADDITIONAL SHEETS IF NECESSARY

9 CASING FROM 0 TO 21 WI 6 "ID
FROM TO WI "ID
TYPE CASING PVC

10 SCREEN:
TYPE DIA SLOT/GA
SET BETWEEN ft and ft
TYPE DIA SLOT/GA
SET BETWEEN ft and ft

11 GRAVEL PACK FROM ft and ft

12 BACK FILLED WITH
FROM 0 ft to 11 ft Black Shale

13 SEALED WITH
FROM 11 ft to 21 ft cement

14 DISINFECTED WITH: H + H

15 USE OF WELL:
SOURCE WELL ☐ RETURN WELL ☐
A/C CLOSED LOOP ☐ A/C OPEN LOOP ☐

16 PURPOSE:
DOMESTIC ☑ MUNICIPAL ☐
COMMERCIAL ☐ TEST WELL ☐
OIL AND GAS ☐ MONITOR ☐
AGRI/IRRIGATION ☐ PUBLIC SUPPLY ☐
OTHER ☐

17 (For A/C only) WILL SYSTEM ALSO BE USED FOR PURPOSES OTHER THAN A/C? YES ☐ NO ☐
(IF YES NAME USE)

18 (For A/C only) INTO WHAT MEDIUM IS WATER RETURNED?

19 REMARKS:

4 TOTAL DEPTH OF WELL 105 ft

5 WATER PRODUCING FORMATION? Black Shale Quartz

6 STATIC WATER LEVEL 25 Ft below land surface

7 WATER PRODUCTION RATE / WELL PRODUCTS 2 gallons per ☑ min ☐ hr

8 DIAMETER OF BORE HOLE 6 IN

20 SIGNED Bill White DATE 4/28/87

AWD-4 JAN 1986 Committee on Waterwell Construction, 2915 South Pine, Little Rock, AR 72204

GEOLOGY COPY

STATE OF ARKANSAS

REPORT OF WATER WELL CONSTRUCTION

New Well ✓ Work-over Well ____ Replacement Well ____

Owner of Well Rogie Huckenson

Contractor Fred A Smith C 1014

Driller Name and No. Fred A Smith D2270

Date Well was Completed 8-25-84

County Ga (in which well is located)

Well is near Cedar Glades Road

Section 36ACd Township T2S Range R20W

Directions for Reaching Well: ____ (use permanent landmark)

1. Total Depth of Well 75' Ft.
2. Water Producing Formation: W/quartz From 30' Ft. To 62' Ft.
3. Water Level Below Land Surface 12'
4. Gallons per ~~Hour~~ 15 Gals min
5. Well Disinfected with Purex
6. Casing to 10' Ft.
7. Cased with 6" PS Diameter 25' Casing
8. Cemented from Top Ft. to 10' Ft.
9. Use of Well: ✓ Domestic ____ Irrigation ____ Municipal ____ Other

Description and Color of Formation (sand, shale, sandstone, etc.)	Depths from	in feet to
Clay & sandrock	Top	8'
Brn sandrock	8'	12'
light shale	12'	20'
blue shale mixed w/ stringers of granite	20'	75'

Remarks: ____

Signed Fred A Smith Date 10-22-84

Form No. AWD-3

Mail to: Committee on Water Well Construction, 2915 So. Pine Street, Little Rock, Arkansas 72204

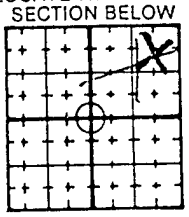
GEOLOGY COPY

STATE OF ARKANSAS
REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION

A

1 Contractor Name & Number: Meredith & West — C# 1321
2 Driller Name & Number: Jack Meredith — D# 2039
3 Pump Installer Name & Number: — P#
4 Date Well Completed: 4-10-91 — New Well ☑ — Replace or Work-over ☐

10 LOCATE WITH 'X' IN SECTION BELOW



5 COUNTY	6 FRACTION	7 SECTION	8 TOWNSHIP	9 RANGE
CARLAND	NE ¼ of NE ¼ of	35	2S	20

LONGITUDE 11 ____ ° ____ ' ____ "
LATITUDE 11 ____ ° ____ ' ____ "

B

1 DESCRIPTION OF FORMATION: DEPTHS IN FEET

	FROM	TO
Clay	0	10
Clay shale	10	16
Shale	16	42
11 mixed with quartz	42	120

ATTACH ADDITIONAL SHEETS IF NECESSARY

2 TOTAL DEPTH OF WELL: 120 ft
3 DEPTHS TO WATER PRODUCING FORMATIONS: 42
4 STATIC WATER LEVEL: 20 Ft below land surface
5 YIELD: 18 gallons per ☑ min ☐ hr
6 DIAMETER OF BORE HOLE: 6" IN

C PUMP REPORT

1 TYPE PUMP: SUBMERSIBLE ☐ TURBINE ☐ JET ☐
2 SETTING DEPTH: FEET
3 BRAND NAME AND SERIAL NUMBERS:
4 RATED CAPACITY gallons per minute
5 TYPE LUBRICATION
6 DROP PIPE OR COLUMN PIPE SIZE
7 WIRE SIZE
8 PRESSURE TANK . . . SIZE, MAKE, MODEL
9 DATE OF INSTALLATION OR REPAIR
10 Is there an abandoned water well on the property?

D

1 LAND OWNER OR OTHER CONTACT PERSON:
NAME JIM SMITH
STREET ADDRESS
CITY

2 CASING FROM 0 TO 20 W/ 6 "ID
FROM TO W/ "ID
TYPE CASING: PVC

3 SCREEN

TYPE:	DIA	SLOT/GA
SET FROM	FT TO	FT
TYPE:	DIA	SLOT/GA
SET FROM	FT TO	FT

4 GRAVEL PACK FROM FT TO FT
5 BACK FILLED WITH: Shale
FROM 0 FT TO 10 FT
6 SEALED WITH: Concrete
FROM 10 FT TO 20 FT
FROM FT TO FT
7 DISINFECTED WITH: Clorox
8 USE OF WELL:

DOMESTIC	☑	COMMERCIAL	☐
IRRIGATION	☐	MONITOR	☐
LIVESTOCK/POULTRY	☐	TEST WELL	☐
OIL/GAS SUPPLY	☐	SEMI-PUBLIC	☐
PUBLIC SUPPLY	☐	OTHER	

(A/C HEATPUMP TYPE WELLS)

SOURCE	☐	RETURN	☐
CLOSED LOOP	☐		

9 (For A/C only) Will system also be used for purposes other than Heating or Air Conditioning?
If yes, name use: yes ☐ no ☐
10 (For A/C open-loop only) Into what medium is water returned?
11 REMARKS
12 SIGNED Jack Meredith DATE 5-1-91

89 Arkansas Water Well Construction Commission, One Capitol Mall, Suite 2-C, Little Rock, AR 72201

GEOLOGY COPY

STATE OF ARKANSAS

REPORT OF WATER WELL CONSTRUCTION

New Well ✓ Work-over Well .... Replacement Well ....

Owner of Well Mike Stringer

Well Contractor Fred A Smith

Contractor License No. C1014

Driller Name and No. Fred A Smith D2270

Date Well was Completed 10-10-79

1. Total Depth of Well 98' Ft.
2. Water Producing Formation: White quartz From 30-58 Ft. & 88' To ... Ft.
3. Water Level Below Land Surface 12'
4. Gallons per ~~Hour~~ 12 Gal min
5. Well Disinfected with Purex
6. Casing to 10' Ft.
7. Cased with 6" Diameter 125 PVC Casing
8. Cemented from Top Ft. to 10 Ft.
9. Use of Well: Domestic Irrigation Municipal Other

This well is guaranteed against defective material or workmanship for a period of ....

County Ga (in which well is located)

Well is near Cedar Glades Rd Road

Section 36 dda Township T2S Range R20W

Directions for Reaching Well: Going W on Cedar Glades Rd from Hot Springs turn ... (use permanent landmark) road past Wild Cat Rd. Go approx 1 mile keeping to right - trailer. Rt #9 Bx 844C

Description and Color of Formation (sand, shale, sandstone, etc.)	Depths from	in feet to

Remarks: ....

Signed: .... Date: ....

Form No. AWD-2

Mail to: Committee on Water Well Construction, 2915 So. Pine Street, Little Rock, Arkansas 72204.

Geology Copy

√

STATE OF ARKANSAS

REPORT OF WATER WELL CONSTRUCTION

New Well ✓ Work-over Well ____ Replacement Well ____

Owner of Well Gerald Wheeler

Contractor Fred A Smith, c1014

Driller Name and No. Fred A Smith D2270

Date Well was Completed 11-9-83

1. Total Depth of Well 79 Ft.
2. Water Producing Formation: White quartz From 28' Ft. To 66' Ft.
3. Water Level Below Land Surface 20'
4. Gallons per ~~Hour~~ min 18 Gal
5. Well Disinfected with Purex
6. Casing to 80'-4"-160 PSI
7. Cased with 10'-6" Diameter 125 PSI Casing
8. Cemented from Top Ft. to 10' Ft.
9. Use of Well: Domestic Irrigation Municipal Other

County Ga (in which well is located)

Well is near Turkey Trot Lane Road

Section 35CCD Township T2S Range R20W

Directions for Reaching Well: Turn South from Cedar Glades Rd on Turkey Trot (use permanent landmark) Lane left on Baithwood Dr. go to end approx 2 blks on left.

Description and Color of Formation (sand, shale, sandstone, etc.)	Depths from	in feet to
Brn sandrock & city pit	Top	15'
Sandrock-shale & city pit Rest	15'	79'

Remarks:

Signed: Fred A Smith Date 11-18-83

Form No. AWD-3

Mail to: Committee on Water Well Construction, 2915 So. Pine Street, Little Rock, Arkansas 72204

GEOLOGY COPY

√

STATE OF ARKANSAS
REPORT OF WATER WELL
CONSTRUCTION

1 CONTRACTOR Name and number: BL&L DRILLING Co. C. 1023
DRILLER Name and number: RALPH ALDRICH D.

2 LOCATION / IDENTIFICATION — DATE WELL COMPLETED 7-15-87 — NEW WELL ☒ — WORK-OVER ☐

(a) COUNTY	(b) FRACTION	(c) SECTION	(d) TOWNSHIP	(e) RANGE
GARLAND	SW ¼ of NE ¼ of	35	2S	20W

(f) LOCATE WITH 'X' IN SECTION BELOW — (g) SKETCH MAP

(h) OWNER OF WELL:
NAME: HENTON ELMORE
STREET ADDRESS: GLAZY BEAU RD
CITY:

(i) OPERATOR:
NAME:
STREET ADDRESS:
CITY:

3 DESCRIPTION OF FORMATION: DEPTHS IN FEET

DESCRIPTION	FROM	TO
YELLOW CLAY & GRAVEL		8
GRAVEL	8	26
GRAY SLATE	26	54

ATTACH ADDITIONAL SHEETS IF NECESSARY

9 CASING FROM 0 TO 26 WI 6 "ID
FROM 0 TO 54 WI 4 "ID
TYPE CASING PVC

10 SCREEN:
TYPE PVC 4" DIA 010 SLOT~~/GA~~
SET BETWEEN ft and ft
TYPE DIA SLOT/GA
SET BETWEEN ft and ft

11 GRAVEL PACK FROM ft and ft

12 BACK FILLED WITH
FROM ft to ft

13 SEALED WITH CEMENT
FROM 2 ft to 26 ft
FROM ft to ft

14 DISINFECTED WITH: 70% CHLORINE

15 USE OF WELL:
SOURCE WELL ☐ RETURN WELL ☐
A/C CLOSED LOOP ☐ A/C OPEN LOOP ☐

16 PURPOSE:
DOMESTIC ☒ MUNICIPAL ☐
COMMERCIAL ☐ TEST WELL ☐
OIL AND GAS ☐ MONITOR ☐
AGRI/IRRIGATION ☐ PUBLIC SUPPLY ☐
OTHER ☐

17 (For A/C only) WILL SYSTEM ALSO BE USED FOR PURPOSES OTHER THAN A/C? YES ☐ NO ☐
(IF YES NAME USE)

18 (For A/C only) INTO WHAT MEDIUM IS WATER RETURNED?

19 REMARKS:

4 TOTAL DEPTH OF WELL 54 ft

5 WATER PRODUCING FORMATION? 40

6 STATIC WATER LEVEL 15 Ft below land surface

7 WATER PRODUCTION RATE WELL PRODUCTS 20 gallons per ☒ min ☐ hr

8 DIAMETER OF BORE HOLE 6 1/8 IN

20 SIGNED Larry L Ralph DATE 7-15 87

AWD-4 JAN 1986 Committee on Waterwell Construction, 2915 South Pine, Little Rock, AR 72204

GEOLOGY COPY

STATE OF ARKANSAS
REPORT OF WATER WELL CONSTRUCTION

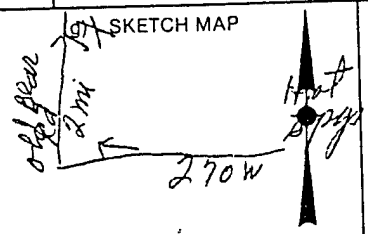
1 CONTRACTOR Name and number: Fred A. Smith — C. 1014
DRILLER Name and number: Fred A. Smith — D. 2270

2 LOCATION / IDENTIFICATION — DATE WELL COMPLETED 9-16-88 — NEW WELL ☑ — WORK-OVER ☐

(a) COUNTY	(b) FRACTION ¼ of	(c) SECTION ¼ of	(d) TOWNSHIP	(e) RANGE
Ga		36 ADD	T 2 S	R 20 W

(f) LOCATE WITH 'X' IN SECTION BELOW

(g) SKETCH MAP



(h) OWNER OF WELL:
NAME: Jeff McFee
STREET ADDRESS: Old Bear Rd
CITY: Royal Ar.

(i) OPERATOR:
NAME: Fred A Smith
STREET ADDRESS: Rt 2 Bx 514
CITY: Mountain Pine Ar 71956

3 DESCRIPTION OF FORMATION:

	DEPTHS IN FEET FROM	TO
Brn sandrock top		4'
light grey shale	4'	14'
dark hard shale with streaks granite & w/quartz	14'	68'

ATTACH ADDITIONAL SHEETS IF NECESSARY

9 CASING: FROM Top TO 16 W/ 6" "ID
FROM ____ TO ____ W/ ____ "ID
TYPE CASING: PVC

10 SCREEN:
TYPE ~~DIA~~ SLOT/GA
SET BETWEEN ft and ft
TYPE DIA SLOT/GA
SET BETWEEN ft and ft

11 GRAVEL PACK ~~FROM~~ ft and ft

12 BACK FILLED WITH
FROM ft to ft

13 SEALED WITH
FROM ~~ft to~~ ft
FROM ft to ft

14 DISINFECTED WITH: Purex

15 USE OF WELL: Closed system
SOURCE WELL ☐ RETURN WELL ☐
A/C CLOSED LOOP ☐ A/C OPEN LOOP ☐

16 PURPOSE:
DOMESTIC ☑ MUNICIPAL ☐
COMMERCIAL ☐ TEST WELL ☐
OIL AND GAS ☐ MONITOR ☐
AGRI/IRRIGATION ☐ PUBLIC SUPPLY ☐
OTHER ☐

17 (For A/C only) WILL SYSTEM ALSO BE USED FOR PURPOSES OTHER THAN A/C? YES ☐ NO ☐
(IF YES NAME USE)

18 (For A/C only) INTO WHAT MEDIUM IS WATER RETURNED?

19 REMARKS:

4 TOTAL DEPTH OF WELL 68' ft

5 WATER PRODUCING FORMATION? W/g

6 STATIC WATER LEVEL 21' Ft below land surface

7 YIELD 15 gallons per ☑ min ☐ hr

8 DIAMETER OF BORE HOLE 6" IN

20 SIGNED Fred A Smith DATE 11-1-88

AWD-4 JAN 1988 Arkansas Waterwell Construction Commission 2915 South Pine, Little Rock, AR 72204

GEOLOGY COPY

STATE OF ARKANSAS
REPORT OF WATER WELL CONSTRUCTION

WATER WELL COMMISSION

1 CONTRACTOR Name and number BILL WHITE 1143

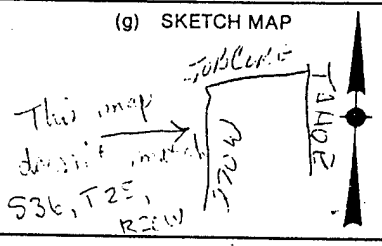
DRILLER Name and number BILLY C. WHITE D. 2299

2 LOCATION / IDENTIFICATION DATE WELL COMPLETED 5-3-89 NEW WELL ☒ WORK-OVER ☐

(a) COUNTY	(b) FRACTION ¼ of	(c) SECTION ¼ of	(d) TOWNSHIP	(e) RANGE
GARLAND		36	2S	20W

(f) LOCATE WITH 'X' IN SECTION BELOW

(g) SKETCH MAP



(h) OWNER OF WELL: ROBERT HALL
NAME
STREET ADDRESS Rt 1 Box 120
CITY HOT SL, ARK 71968

(i) OPERATOR:
NAME
STREET ADDRESS
CITY

3 DESCRIPTION OF FORMATION: DEPTHS IN FEET

	FROM	TO
Chunk Rock Soft Shell	0	20
Blue Shale & Quartz	20	105

ATTACH ADDITIONAL SHEETS IF NECESSARY

9 CASING FROM 0 TO 20 W/ 6 "ID
FROM TO W/ "ID
TYPE CASING PVC

10 SCREEN:
TYPE DIA SLOT/GA
SET BETWEEN ft and ft
TYPE DIA SLOT/GA
SET BETWEEN ft and ft

11 GRAVEL PACK FROM ft and ft

12 BACK FILLED WITH cuttings Shale
FROM 0 ft to 10 ft

13 SEALED WITH Cement
FROM 10 ft to 20 ft
FROM ft to ft

14 DISINFECTED WITH: H+H

15 USE OF WELL:
SOURCE WELL ☐ RETURN WELL ☐
A/C CLOSED LOOP ☐ A/C OPEN LOOP ☐

16 PURPOSE:
DOMESTIC ☒ MUNICIPAL ☐
COMMERCIAL ☑ TEST WELL ☐
OIL AND GAS ☐ MONITOR ☐
AGRI/IRRIGATION ☐ PUBLIC SUPPLY ☐
OTHER ☐

17 (For A/C only) WILL SYSTEM ALSO BE USED FOR PURPOSES OTHER THAN A/C? YES ☐ NO ☐
(IF YES NAME USE)

18 (For A/C only) INTO WHAT MEDIUM IS WATER RETURNED?

19 REMARKS:

4 TOTAL DEPTH OF WELL 105 ft

5 WATER PRODUCING FORMATION? Quartz

6 STATIC WATER LEVEL 24 Ft below land surface

7 WATER PRODUCTION RATE WELL PRODUCTS 5 gallons per ☒ min ☐ hr

8 DIAMETER OF BORE HOLE 6¼ IN

20 SIGNED Billie White DATE 5/3/89

AWD-4 JAN 1986 Committee on Waterwell Construction, 2915 South Pine, Little Rock, AR 72204

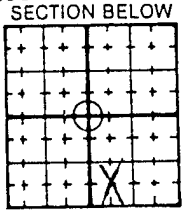
GEOLOGY COPY

STATE OF ARKANSAS
REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION

A

1 Contractor Name & Number: BILL WHITE C# 1143
2 Driller Name & Number: BILL WHITE D# 2300
3 Pump Installer Name & Number: _____ P# _____
4 Date Well Completed: 7-2291 New Well [X] Replace or Work-over [ ]

10 LOCATE WITH 'X' IN SECTION BELOW



5 COUNTY	6 FRACTION	7 SECTION	8 TOWNSHIP	9 RANGE
GARLAND	¼ of ¼ of	36	7 S	20 W

LONGITUDE 11 ____ ° ____ ' ____ "
LATITUDE 11 ____ ° ____ ' ____ "

B

1 DESCRIPTION OF FORMATION: DEPTHS IN FEET

	FROM	TO
Red Clay - Blue Shale	0	35
Blue Shale	35	125
ATTACH ADDITIONAL SHEETS IF NECESSARY		

2 TOTAL DEPTH OF WELL 125 ft
3 DEPTHS TO WATER PRODUCING FORMATIONS. 40 +/- T.D.
4 STATIC WATER LEVEL 20 Ft below land surface
5 YIELD 6 gallons per [X] min [ ] hr
6 DIAMETER OF BORE HOLE 6 1/4 IN

C PUMP REPORT

1 TYPE PUMP: SUBMERSIBLE [ ] TURBINE [ ] JET [ ]
2 SETTING DEPTH: FEET
3 BRAND NAME AND SERIAL NUMBERS:
4 RATED CAPACITY gallons per minute
5 TYPE LUBRICATION
6 DROP PIPE OR COLUMN PIPE SIZE
7 WIRE SIZE
8 PRESSURE TANK . . . SIZE, MAKE, MODEL
9 DATE OF INSTALLATION OR REPAIR
10 Is there an abandoned water well on the property?

D

1 LAND OWNER OR OTHER CONTACT PERSON:
NAME SANDY GIDEON
STREET ADDRESS 116 Rocky Reef Circle
CITY Hot Springs, Ark.

2 CASING FROM 0 TO 35 W/ 6 "ID
FROM ____ TO ____ W/ ____ "ID
TYPE CASING: PVC

3 SCREEN
TYPE: DIA SLOT/GA
SET FROM FT TO FT
TYPE: DIA SLOT/GA
SET FROM FT TO FT

4 GRAVEL PACK FROM FT TO FT

5 BACK FILLED WITH: Blue Shale
FROM 5 FT TO 125 FT

6 SEALED WITH: Cement
FROM 0 FT TO 5 FT
FROM ____ FT TO ____ FT

7 DISINFECTED WITH: H+H

8 USE OF WELL:

DOMESTIC	[X]	COMMERCIAL	[ ]
IRRIGATION	[ ]	MONITOR	[ ]
LIVESTOCK/POULTRY	[ ]	TEST WELL	[ ]
OIL/GAS SUPPLY	[ ]	SEMI-PUBLIC	[ ]
PUBLIC SUPPLY	[ ]	OTHER	

(A/C HEATPUMP TYPE WELLS)
SOURCE [ ] RETURN [ ]
CLOSED LOOP [ ]

9 (For A/C only) Will system also be used for purposes other than Heating or Air Conditioning?
If yes, name use: yes [ ] no [ ]

10 (For A/C open-loop only) Into what medium is water returned?

11 REMARKS

12 SIGNED Dave White DATE 7/25/91

AWD-7 JAN 89 Arkansas Water Well Construction Commission, One Capitol Mall, Suite 2-C, Little Rock, AR 72201
ACI - 5945

GEOLOGY COPY

STATE OF ARKANSAS

REPORT OF WATER WELL CONSTRUCTION

New Well ✓ Work-over Well .... Replacement Well ....

Owner of Well James Tittle

Well Contractor Fred A. Smith

Contractor License No. C 1014

Driller Name and No. Fred A Smith D 2270

Date Well was Completed 6-13-80

1. Total Depth of Well 61' Ft.
2. Water Producing Formation: From 25' Ft.
   W/quartz To 58' Ft.
3. Water Level Below Land Surface 15'
4. Gallons per Hour 40 Gal Min
5. Well Disinfected with [illegible]
6. Casing to 10' Ft.
7. Cased with 125 PVC Diameter 6" Casing
8. Cemented from top Ft. to 10' Ft.
9. Use of Well: Domestic ✓ Irrigation Municipal Other

This well is guaranteed against defective material or workmanship for a period of ....

County Ga (in which well is located)

Well is near Cedar Glades Rd Road

Section 36 BDA Township T2S Range R20W

Directions for Reaching Well: [illegible] on Cedar Glades Rd [illegible] (use permanent landmarks) [illegible]

Description and Color of Formation (sand, shale, sandstone, etc.)	Depths in feet from	to
yellow sandrock	Top	10'
brown sandrock & flint	10'	20'
Hard shale [illegible]	20'	41'
flint & W/quartz		

Remarks:

Signed: Fred A Smith Date: 6-20-80

Form No. AWD-2

Mail to: Committee on Water Well Construction, 2915 So. Pine Street, Little Rock, Arkansas 72204

Geology Copy

STATE OF ARKANSAS

REPORT OF WATER WELL CONSTRUCTION

New Well ✓ Work-over Well ______ Replacement Well ______

Owner of Well Jack Ott

Contractor Fred A Smith C1014

Driller Name and No. Fred A Smith D2270

Date Well was Completed 8-12-85

1. Total Depth of Well 85' Ft.
2. Water Producing Formation: W/q From 30' Ft. To 62' Ft.
3. Water Level Below Land Surface 20'
4. Gallons per Hour min 18 gal
5. Well Disinfected with Purex
6. Casing to Top-10 Ft.
7. Cased with 125 PVC Diameter 6" Casing
8. Cemented from Top Ft. to 10 Ft.
9. Use of Well: Domestic ✓ Irrigation Municipal Other

County Ga (in which well is located)

Well is near Cedar Glades Road

Section 36 DDd Township T2S Range R20W

Directions for Reaching Well: [illegible] Going W on Cedar Glades Rd [illegible] (use permanent landmarks) [illegible] 2nd place on right

Description and Color of Formation (sand, shale, sandstone, etc.)	Depths in feet from	to
yellow rock	Top	5'
Brn sandrock	5'	15'
grey shale	15'	25'
Hard shale w/S	25'	85'
[illegible] W/q		

Remarks:

Signed: Fred A Smith Date: 10-23-85

Form No. AWD-3

Mail to: Committee on Water Well Construction, 2915 So. Pine Street, Little Rock, Arkansas 72204

GEOLOGY COPY

APPENDIX B

BORING LOGS

KEY TO BORING LOG SYMBOLS

UNIFIED SOIL CLASSIFICATION SYSTEM – ASTM D2487

MAJOR DIVISIONS			SYMBOL/ GRAPHIC	DESCRIPTIONS
COARSE-GRAINED SOILS (>50% Smaller Than #200 Sieve)	GRAVELS (More than 50% of coarse fraction is larger than the #4 sieve size.)	Clean gravels with little or no fines	GW	Well-Graded Gravels, Gravel – Sand Mixtures
			GP	Poorly Graded Gravels, Gravels – Sand Mixtures
		Gravels with over 12% fines	GM	Silty Gravels, Poorly Graded Gravel-Sand-Clay Mixtures
			GC	Clayey Gravels, Poorly Graded Gravel-Sand-Clay Mixtures
	SANDS (More than 50% of coarse fraction is smaller than the #4 sieve size.)	Clean sands with little or no fines	SW	Well-Graded Sands, Gravelly Sands
			SP	Poorly Graded Sands, Gravelly Sands
		Sands with over 12% fines	SM	Silty Sands, Poorly Graded Sand-Silt Mixtures
			SC	Clayey Sands, Poorly Graded Sand-Clay Mixtures
FINE-GRAINED SOILS (>50% Smaller Than #200 Sieve)	SILTS AND CLAYS (Liquid limit less than 50)		ML	Inorganic Silts and Very Fine Sands, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity: Gravelly, Sandy or Silty Clays; Lean Clays
			OL	Organic Clays and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS (Liquid limit greater than 50)		MH	Inorganic Silts, Micaceous or Diatomacious Fine Sandy or Silty Soils, Elastic Silts
			CH	Inorganic Clays of High Plasticity Fat Clays
			OH	Organic Clays of Medium to High Plasticity, Organic Silts
HIGHLY ORGANIC SOILS			Pt	Peat and Other Highly Organic Soils

Shaded interval represents soil sample.
Blackened interval indicates portion of sample prepared for laboratory analysis.

Water Table Level

PID Photo-Ionization Detector readings (ppm)

	Asphaltic Concrete
	Portland Cement Concrete
	Cement Grout
	Boulders or Bedrock

FIGURE B.1

FORMS\KEYLOG

KEY TO BORING LOG
223rd CBCS, Hot Springs ANGS
Hot Springs, Arkansas

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

1995

ODS-001

Project No.: 1308-193
Logged By: Earl Parker
Verified By: Quin Baber, B&F Engineering
Drilled By: Joe Byrd

Driller: Dennis Young
Date Drilled: Feb. 25, 1994
Drilling Method: Hand Auger
Sampling Method: Hand Auger
Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
						Land Surface Elevation: 544.2'
0	NA	1.1	■		95	Clay, silty-sandy, dark brown with pebbly matrix, poorly sorted.
1						
2						
3						
4	NA	0.8	■		100	Clay, sandy, brown-gray, iron oxide stained; weathered sandstone pebbles.
5				Bedrock		Boring Terminated at 5.1'
6						

SOURCE: PRELIMINARY ASSESSMENT, OPTECH, 1993.

Log of Borings

223rd CBCS, Hot Springs ANGS
Hot Springs, Arkansas

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

JULY 1995
HOTSPRNG\ODS-001

ODS-002

Project No.: 1308-193
Logged By: Earl Parker
Verified By: Quin Baber, B&F Engineering
Drilled By: Joe Byrd

Date Drilled: Feb. 25, 1994
Drilling Method: Hand Auger
Sampling Method: Hand Auger
Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
						Land Surface Elevation: 544.6'
0						Asphaltic concrete.
1	NA	0.8			95	Clay, sandy, orange-brown with pebbly matrix consisting of pea size chert.
2				Bedrock		Boring Terminated at 1.8'
3						

ODS-003

Project No.: 1308-193
Logged By: Earl Parker
Verified By: Quin Baber, B&F Engineering
Drilled By: Joe Byrd

Date Drilled: Feb. 25, 1994
Drilling Method: Hand Auger
Sampling Method: Hand Auger
Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
						Land Surface Elevation: 544.9'
0	NA	4.0			60	Clay, silty-sandy, brown-gray, iron oxide stained with weathered sandstone pebbles.
1				Bedrock		Boring Terminated at 0.8'
2						
3						

Log of Borings

223rd CBCS, Hot Springs ANGS
Hot Springs, Arkansas

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

JULY 1995
HOTSPRNG\ODS-002

ODS-004

Project No.: 1308-193
Logged By: Earl Parker
Verified By: Quin Baber, B&F Engineering
Drilled By: Joe Byrd

Date Drilled: Feb. 25, 1994
Drilling Method: Hand Auger
Sampling Method: Hand Auger
Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
						Land Surface Elevation: 545.9'
0	NA	1.0	■	▨	90	Soil; clayey, black, high organic material; poorly sorted pea gravel.
1				Bedrock		Boring Terminated at 1.0'
2						
3						

Log of Borings
223rd CBCS, Hot Springs ANGS
Hot Springs, Arkansas

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

JULY 1995
HOTSPRNG\ODS-004

NEF–001

Project No.: 1308–193
Logged By: Earl Parker
Verified By: Quin Baber, B&F Engineering
Drilled By: Joe Byrd

Date Drilled: Feb. 24, 1994
Drilling Method: Hand Auger
Sampling Method: Hand Auger
Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
						Land Surface Elevation: 548.9'
0	NA	0.8			100	Clay, silty, brown with pebbly matrix consisting of chert and sandstone pebbles.
1						
2	NA	0.9			100	Clay, silty, orange–brown with pebbly matrix consisting of chert and sandstone pebbles.
3				Bedrock		Boring Terminated at 2.75'

NEF–002

Project No.: 1308–193
Logged By: Earl Parker
Verified By: Quin Baber, B&F Engineering
Drilled By: Joe Byrd

Date Drilled: Feb. 24, 1994
Drilling Method: Hand Auger
Sampling Method: Hand Auger
Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
						Land Surface Elevation: 554.9'
0	NA	1.1			100	Clay, silty, orange–brown with pebbly matrix consisting of shale and sandstone pebbles (some are weathered).
1						
2	NA	2.1			100	
3				Bedrock		Boring Terminated at 3.0'

Log of Borings
223rd CBCS, Hot Springs ANGS
Hot Springs, Arkansas

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

JULY 1995
HOTSPRNG\NEF-001

NEF–003

Project No.: 1308–193
Logged By: Earl Parker
Verified By: Quin Baber, B&F Engineering
Drilled By: Joe Byrd

Date Drilled: Feb. 24, 1994
Drilling Method: Hand Auger
Sampling Method: Hand Auger
Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
						Land Surface Elevation: 555.4'
0	NA	1.8	■		100	Clay, silty, brown with pebbly matrix consisting of chert and sandstone pebbles.
1						
2	NA	1.3	■		100	Clay, silty, orange–brown with pebbly matrix consisting of chert and sandstone pebbles.
3				Bedrock		Boring Terminated at 3.0'

NEF–004

Project No.: 1308–193
Logged By: Earl Parker
Verified By: Quin Baber, B&F Engineering
Drilled By: Joe Byrd

Date Drilled: Feb. 24, 1994
Drilling Method: Hand Auger
Sampling Method: Hand Auger
Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
						Land Surface Elevation: 556.7'
0	NA	0.9	■		100	Clay, silty, brown; with pebbly matrix of chert fragments.
1				Bedrock		Boring Terminated at 0.8'
2						
3						

Log of Borings
223rd CBCS, Hot Springs ANGS
Hot Springs, Arkansas

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

JULY 1995
HOTSPRNG\NEF-003

NEF–005

Project No.: 1308–193
Logged By: Earl Parker
Verified By: Quin Baber, B&F Engineering
Drilled By: Joe Byrd

Date Drilled: Feb. 24, 1994
Drilling Method: Hand Auger
Sampling Method: Hand Auger
Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
						Land Surface Elevation: 552.8'
0	NA	1.2			100	Clay, silty, orange–brown with pebbly matrix; pea size; pebbles of sandstone and shale.
1	NA	1.2			100	
2				Bedrock		Boring Terminated at 2.0'
3						

Log of Borings
223rd CBCS, Hot Springs ANGS
Hot Springs, Arkansas

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

JULY 1995
HOTSPRNG\NEF–005

CTS–001

Project No.: 1308–193
Logged By: Earl Parker
Verified By: Quin Baber, B&F Engineering
Drilling Co.: Anderson Drilling

Driller: Dennis Young
Date Drilled: Feb. 24, 1994
Drilling Method: Hollow Stem Auger
Sampling Method: California Style Sampler
Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
						Land Surface Elevation: 546.5'
0	8					(Fill material): Clay, sandy, dark brown; gravelly (poorly sorted).
1	24	7.4			100	Clay, sandy, gray–brown with pebbly matrix consisting of weathered sandstone pebbles.
	48					
2				Bedrock		Boring Terminated at 1.5'
3						

CTS–002

Project No.: 1308–193
Logged By: Earl Parker
Verified By: Quin Baber, B&F Engineering
Drilling Co.: Anderson Drilling

Driller: Dennis Young
Date Drilled: Feb. 24, 1994
Drilling Method: Hollow Stem Auger
Sampling Method: California Style Sampler
Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
						Land Surface Elevation: 546.4'
0	4					
	8	28.5			100	Clay, silty brown with pebbly matrix; pea–pebble size, consisting of sandstone and shale.
1	9					
	9					
2	22	4.7			100	
	50					
3				Bedrock		Boring Terminated at 2.75'

Log of Borings
223rd CBCS, Hot Springs ANGS
Hot Springs, Arkansas

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

JULY 1995
HOTSPRNG\CTS–001

CTS-003

Project No.: 1308-193
Logged By: Earl Parker
Verified By: Quin Baber, B&F Engineering
Drilling Co.: Anderson Drilling

Driller: Dennis Young
Date Drilled: Feb. 24, 1994
Drilling Method: Hollow Stem Auger
Sampling Method: California Style Sampler
Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
						Land Surface Elevation: 546.3'
0	10	25.0			75	(Fill material): Clay, loam, high organic material; dark brown; gravelly, poorly sorted.
1	4					
	5					
2	5	24.5			90	Clay, silty-sand brown, iron oxide stained with pebbly matrix, pea size; pebbles of quartz, sandstone and shale.
	18					
	50					
3						Bedrock
						Boring Terminated at 3.0'

Log of Borings
223rd CBCS, Hot Springs ANGS
Hot Springs, Arkansas

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

JULY 1995
HOTSPRNG\CTS-003

NWD-001

Project No.: 1308-193
Logged By: Earl Parker
Verified By: Quin Baber, B&F Engineering
Drilled By: Joe Byrd

Date Drilled: Feb. 25, 1994
Drilling Method: Hand Auger
Sampling Method: Hand Auger
Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
						Land Surface Elevation: 543.1'
0	NA	1.2	■	▨	90	Soil, clay, dark brown; root fragments, poorly sorted pebbles consisting of chert, sandstone and shale.
1				Bedrock		Boring Terminated at 0.8'
2						

NWD-002

Project No.: 1308-193
Logged By: Earl Parker
Verified By: Quin Baber, B&F Engineering
Drilled By: Joe Byrd

Date Drilled: Feb. 25, 1994
Drilling Method: Hand Auger
Sampling Method: Hand Auger
Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
						Land Surface Elevation: 542.5'
0	NA	0.8	■	▨	95	Soil, clay, dark brown; root fragments, poorly sorted pebbles consisting of chert and shale.
1						
2						
3	NA	1.0	■	▨	90	Clay, silty, brown with pebbly matrix consisting of chert, sandstone and shale.
4				Bedrock		Boring Terminated at 4.2'

Log of Borings
223rd CBCS, Hot Springs ANGS
Hot Springs, Arkansas

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

JULY 1995
HOTSPRNG\NWD-001

NWD-003

Project No.: 1308-193
Logged By: Earl Parker
Verified By: Quin Baber, B&F Engineering
Drilled By: Joe Byrd

Date Drilled: Feb. 25, 1994
Drilling Method: Hand Auger
Sampling Method: Hand Auger
Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
						Land Surface Elevation: 541.2'
0	NA	0.8			100	Soil, clay, dark brown, poorly sorted pebbles consisting of chert, shale and sandstone.
1						
2						
3						
4	NA	0.8			100	Clay, silty, gray-brown, iron oxide stained with weathered sandstone and shale zones.
5				Bedrock		Boring Terminated at 5.2'
6						

Log of Borings
223rd CBCS, Hot Springs ANGS
Hot Springs, Arkansas

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

JULY 1995
HOTSPRNG\NWD-003

NWD-004

Project No.: 1308-193
Logged By: Earl Parker
Verified By: Quin Baber, B&F Engineering
Drilled By: Joe Byrd

Date Drilled: Feb. 25, 1994
Drilling Method: Hand Auger
Sampling Method: Hand Auger
Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
						Land Surface Elevation: 539.5'
0	NA	0.8			90	Soil, clay, dark brown; root fragments, poorly sorted pebbles consisting of chert, sandstone and shale.
1				Bedrock		Boring Terminated at 1.0'
2						
3						

Log of Borings
223rd CBCS, Hot Springs ANGS
Hot Springs, Arkansas

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

JULY 1995
HOTSPRNG\NWD-004

DRILLING LOG

B&F ENGINEERING, INC.
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

HOLE NO. CTS-001

PROJECT: OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION

JOB NO. 7-2802-0101

DRILL DATE 2-24-94

SHEET 1 OF 1 SHEETS

DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
	(FILL MATERIAL): CLAY, SANDY, DK. BROWN; GRAVELLY (POORLY SORTED)			
1.0	CLAY, SANDY, GRAY-BROWN WITH PEBBLY MATRIX CONSISTING OF WEATHERED SANDSTONE PEBBLES	CL-GP		
2.0	B.O.H. 1.75'			
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				

DRILLING LOG

B&F ENGINEERING, INC.
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

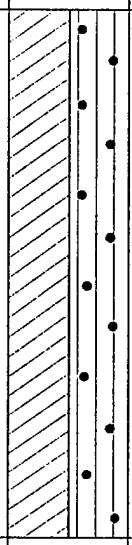
HOLE NO. CTS-002

PROJECT: OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION

JOB NO. 7-2802-0101

DRILL DATE 2-24-94

SHEET 1 OF 1 SHEETS

DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
	CLAY, SILTY BROWN WITH PEBBLY MATRIX; PEA-PEBBLE SIZE, CONSISTING OF SANDSTONE AND SHALE	CL-GM		
1.0				
2.0				
	B.O.H. 2.75'			
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				

DRILLING LOG

B&F ENGINEERING, INC.
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

HOLE NO. CTS-003

PROJECT: OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION

JOB NO. 7-2802-0101

DRILL DATE 2-24-94

SHEET 1 OF 1 SHEETS

DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
	(FILL MATERIAL): CLAY, LOAM, HIGH ORGANIC MATERIAL; DK. BROWN; GRAVELLY, POORLY SORTED	CL		
1.0				
	CLAY, SILTY-SANDY BROWN, IRON OXIDE STAINED WITH PEBBLY MATRIX, PEA SIZE; PEBBLES OF QUARTZ, SANDSTONE AND SHALE	CL-SM		
2.0				
3.0	B.O.H. 3.0'			
4.0				
5.0				
6.0				
7.0				
8.0				

DRILLING LOG

B&F ENGINEERING, INC.
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

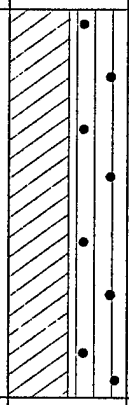
HOLE NO. NEF-005

PROJECT: OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION

JOB NO. 7-2802-0101

DRILL DATE 2-24-94

SHEET 1 OF 1 SHEETS

DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
	CLAY, SILTY, ORANGE-BROWN, WITH PEBBLY MATRIX; PEA SIZE; PEBBLES OF SANDSTONE AND SHALE	CL-GM		HAND AUGER
2.0	B.O.H. 2.0'			
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				

DRILLING LOG

B&F ENGINEERING, INC.
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

HOLE NO. NEF-004

PROJECT: OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION

JOB NO. 7-2802-0101

DRILL DATE 2-24-94

SHEET 1 OF 1 SHEETS

DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
	CLAY, SILTY, BROWN; WITH PEBBLY MATRIX CONSISTING OF CHERT FRAGMENTS	CL-GM		HAND AUGER
3.0	B.O.H. 3.0'			
4.0				
5.0				
6.0				
7.0				
8.0				

DRILLING LOG

B&F ENGINEERING, INC.
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

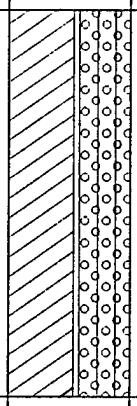
HOLE NO. NEF-003

PROJECT: OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION

JOB NO.: 7-2802-0101

DRILL DATE: 2-24-94

SHEET 1 OF 1 SHEETS

DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
	CLAY, SILTY-SANDY, BROWN; WITH PEBBLY MATRIX CONSISTING OF SHALE, SANDSTONE AND CHERT FRAGMENTS	CL-SM		HAND AUGER
2.0	B.O.H. 2.0'			
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				

DRILLING LOG

B&F ENGINEERING, INC.
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

HOLE NO. NEF-002

PROJECT: OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION

JOB NO. 7-2802-0101

DRILL DATE 2-24-94

SHEET 1 OF 1 SHEETS

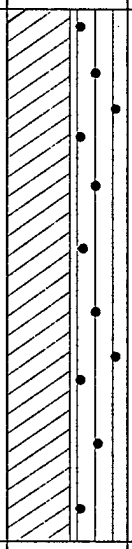
DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
	CLAY, SILTY, ORANGE-BROWN WITH PEBBLY MATRIX CONSISTING OF SHALE AND SANDSTONE PEBBLES (SOME ARE WEATHERED)	CL-GM		HAND AUGER
3.0	B.O.H. 3.0'			
4.0				
5.0				
6.0				
7.0				
8.0				

DRILLING LOG

B&F ENGINEERING, INC.
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

HOLE NO. NEF-001

PROJECT	JOB NO.	DRILL DATE	SHEET
OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION	7-2802-0101	2-24-94	1 OF 1 SHEETS

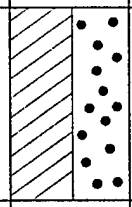
DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
	CLAY, SILTY, BROWN WITH PEBBLY MATRIX CONSISTING OF CHERT AND SANDSTONE PEBBLES	CL-GM		HAND AUGER
1.0				
2.0	CLAY, SILTY, ORANGE-BROWN WITH PEBBLY MATRIX CONSISTING OF CHERT AND SANDSTONE PEBBLES			
	B.O.H. 2.75'			
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				

DRILLING LOG

B&F ENGINEERING, INC.
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

HOLE NO. 00S-001

PROJECT	JOB NO.	DRILL DATE	SHEET
OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION	7-2802-0101	2-25-94	1 OF 1 SHEETS

DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
	SOIL; CLAYEY, BLACK, HIGH ORGANIC MATERIAL; POORLY SORTED PEA GRAVEL	CL-GP		HAND AUGER
1.0	B.O.H. 1.0'			
2.0				
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				

DRILLING LOG

B&F ENGINEERING, INC.
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

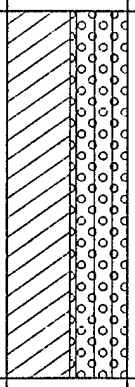
HOLE NO. 00S-002

PROJECT: OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION

JOB NO.: 7-2802-0101

DRILL DATE: 2-25-94

SHEET 1 OF 1 SHEETS

DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
	CLAY, SANDY, ORANGE-BROWN WITH PEBBLY MATRIX CONSISTING OF PEA SIZE CHERT	CL-SC		HAND AUGER
1.0				
2.0	B.O.H. 1.8'			
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				

DRILLING LOG

B&F ENGINEERING, INC.
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

HOLE NO. 00S-004

PROJECT: OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION

JOB NO.: 7-2802-0101

DRILL DATE: 2-25-94

SHEET 1 OF 1 SHEETS

DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
	CLAY, SILTY-SANDY, DK BROWN WITH PEBBLY MATRIX, POORLY SORTED			HAND AUGER
1.0	CLAY, SANDY, BROWN-GRAY, IRON OXIDE STAINED; WEATHERED SANDSTONE PEBBLES	CL-SC		
2.0				
3.0				
4.0	B.O.H. 4.0'			
5.0				
6.0				
7.0				
8.0				

DRILLING LOG

B&F ENGINEERING, INC.
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

HOLE NO. 00S-003

PROJECT: OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION

JOB NO.: 7-2802-0101

DRILL DATE: 2-25-94

SHEET 1 OF 1 SHEETS

DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
	CLAY, SILTY-SANDY, BROWN-GRAY, IRON OXIDE STAINED WITH WEATHERED SANDSTONE PEBBLES	CL-SM		HAND AUGER
1.0	B.O.H. 0.8'			
2.0				
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				

DRILLING LOG

B&F ENGINEERING, INC.
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

HOLE NO. NWD-001

PROJECT: OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION

JOB NO.: 7-2802-0101

DRILL DATE: 2-25-94

SHEET 1 OF 1 SHEETS

DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
	SOIL, CLAY, DK BROWN; ROOT FRAGMENTS, POORLY SORTED PEBBLES CONSISTING OF CHERT, SANDSTONE AND SHALE	CL		HAND AUGER
1.0	B.O.H. 0.8'			
2.0				
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				

DRILLING LOG

B&F ENGINEERING, INC.
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

HOLE NO. NWD-002

PROJECT: OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION

JOB NO.: 7-2802-0101

DRILL DATE: 2-25-94

SHEET 1 OF 1 SHEETS

DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
	SOIL, CLAY, DK BROWN; ROOT FRAGMENTS, POORLY SORTED PEBBLES CONSISTING OF CHERT AND SANDSTONE	CL		HAND AUGER
1.0	CLAY, SILTY, BROWN WITH PEBBLY MATRIX CONSISTING OF CHERT, SANDSTONE AND SHALE	CL-GM		
2.0				
3.0				
4.0	B.O.H. 4.2'			
5.0				
6.0				
7.0				
8.0				

DRILLING LOG

B&F ENGINEERING, INC.
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

HOLE NO. NWD-003

PROJECT: OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION

JOB NO. 7-2802-0101

DRILL DATE 2-25-94

SHEET 1 OF 1 SHEETS

DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
	SOIL, CLAY, DK BROWN, POORLY SORTED PEBBLES CONSISTING OF CHERT, SHALE AND SANDSTONE	CL-GP		HAND AUGER
1.0				
2.0	CLAY, SILTY, GRAY-BROWN, IRON OXIDE STAINED WITH WEATHERED SANDSTONE AND SHALE ZONES	CL-ML		
3.0				
4.0	B.O.H. 5.2'			
5.0				
6.0				
7.0				
8.0				

DRILLING LOG

B&F ENGINEERING, INC.
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

HOLE NO. NWD-004

PROJECT: OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION

JOB NO.: 7-2802-0101

DRILL DATE: 2-25-94

SHEET 1 OF 1 SHEETS

DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
	SOIL, CLAY, DK BROWN; ROOT FRAGMENTS, POORLY SORTED PEBBLES CONSISTING OF CHERT, SANDSTONE AND SHALE	CL-GP		HAND AUGER
1.0	B.O.H. 1.0'			
2.0				
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				

Appendix C
Field PID Results – Soil
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

Boring	Sample Interval (ft. BLS)	PID Reading* (ppm)	
		Upon Sample Retrieval	Ambient Temperature Headspace Analysis
NEF-005BH	0.0 - 1.0	1.2	0.0
NEF-005BH	1.0 - 2.0	1.2	1.1
CTS-003BH	0.0 - 1.5	25.0	13.4
CTS-003BH	1.5 - 3.0	24.5	7.8
CTS-002BH	0.0 - 1.5	28.5	6.1
CTS-002BH	1.5 - 3.0	4.7	4.7
CTS-001BH	0.0 - 1.5	7.4	4.3
NEF-004BH	0.0 - 1.0	0.9	0.8
NEF-003BH	0.0 - 1.0	1.8	0.7
NEF-003BH	1.0 - 2.0	1.3	1.6
NEF-002BH	0.0 - 1.0	1.1	1.2
NEF-002BH	2.0 - 3.0	2.1	1.1
NEF-001BH	0.0 - 1.0	0.8	0.7
NEF-001BH	1.75 - 2.75	0.9	1.1
NEF-003BH	2.0 - 3.0	1.3	1.1
ODS-004BH	0.0 - 1.0	1.0	0.9
ODS-002BH	1.0 - 1.8	0.8	N/A
ODS-001BH	0.0 - 0.1	1.1	3.4
ODS-001BH	4.0 - 5.0	0.8	1.0
ODS-003BH	0.0 - 0.8	4.0	N/A
NWD-001BH	0.0 - 0.8	1.2	1.9
NWD-002BH	0.0 - 1.0	0.8	N/A
NWD-002BH	3.0 - 4.2	1.0	5.9
NWD-003BH	0.0 - 1.0	0.8	0.9
NWD-003BH	4.2 - 5.2	0.8	1.0
NWD-004BH	0.0 - 1.0	0.8	0.8

PID – Photoionization Detector.
ppm – parts per million.
ft. BLS – feet below land surface.
NEF – Northeast and East Fence Line Area of Concern (AOC).
CTS – Current Temporary Waste Storage AOC.
ODS – Old Drum Storage AOC.
NWD – Northwest Ditch AOC.
BH – Borehole.
*PID calibrated with 100 ppm isobutylene.
N/A – No soil.

Appendix C
Field PID Results – Soil
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

Boring	Sample Interval (ft. BLS)	PID Reading* (ppm)	
		Upon Sample Retrieval	Ambient Temperature Headspace Analysis
NEF-005BH	0.0 - 1.0	1.2	0.0
NEF-005BH	1.0 - 2.0	1.2	1.1
CTS-003BH	0.0 - 1.5	25.0	13.4
CTS-003BH	1.5 - 3.0	24.5	7.8
CTS-002BH	0.0 - 1.5	28.5	6.1
CTS-002BH	1.5 - 3.0	4.7	4.7
CTS-001BH	0.0 - 1.5	7.4	4.3
NEF-004BH	0.0 - 1.0	0.9	0.8
NEF-003BH	0.0 - 1.0	1.8	0.7
NEF-003BH	1.0 - 2.0	1.3	1.6
NEF-002BH	0.0 - 1.0	1.1	1.2
NEF-002BH	2.0 - 3.0	2.1	1.1
NEF-001BH	0.0 - 1.0	0.8	0.7
NEF-001BH	1.75 - 2.75	0.9	1.1
NEF-003BH	2.0 - 3.0	1.3	1.1
ODS-004BH	0.0 - 1.0	1.0	0.9
ODS-002BH	1.0 - 1.8	0.8	N/A
ODS-001BH	0.0 - 0.1	1.1	3.4
ODS-001BH	4.0 - 5.0	0.8	1.0
ODS-003BH	0.0 - 0.8	4.0	N/A
NWD-001BH	0.0 - 0.8	1.2	1.9
NWD-002BH	0.0 - 1.0	0.8	N/A
NWD-002BH	3.0 - 4.2	1.0	5.9
NWD-003BH	0.0 - 1.0	0.8	0.9
NWD-003BH	4.2 - 5.2	0.8	1.0
NWD-004BH	0.0 - 1.0	0.8	0.8

PID – Photoionization Detector.
ppm – parts per million.
ft. BLS – feet below land surface.
NEF – Northeast and East Fence Line Area of Concern (AOC).
CTS – Current Temporary Waste Storage AOC.
ODS – Old Drum Storage AOC.
NWD – Northwest Ditch AOC.
BH – Borehole.
*PID calibrated with 100 ppm isobutylene.
N/A – No soil.

GC Screening Results – Soil
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

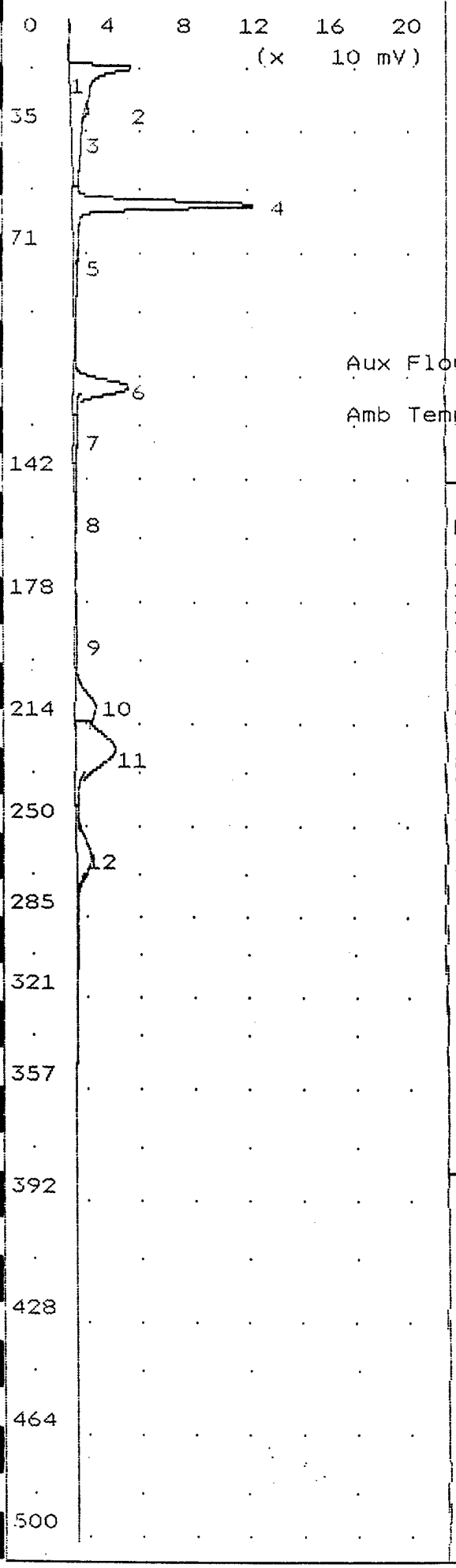
Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Volatile Concentrations				Total BTEX (ppb)
			Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	
50 PPB BTEX	STD	NA	50	50	50	150	300
NEF-005BH	0.0 - 1.0	10g	ND	0.9	2.1	8.1	11.1
NEF-005BH	1.0 - 2.0	10g	ND	1.0	2.6	11.5	15.1
AIR BLANK	NA	NA	ND	0.4	3.3	13.8	18.6
CTS-003BH	0.0 - 1.5	10g	ND	1.4	3.0	13.9	18.3
CTS-003BH	1.5 - 3.0	10g	ND	1.1	2.9	12.4	16.3
50 PPB BTEX	STD	NA	50	50	50	150	300
CTS-002BH	0.0 - 1.5	10g	ND	0.1	2.4	0.6	3.1
CTS-002BH	1.5 - 2.75	10g	ND	0.2	2.4	0.8	3.3
NEF-004BH	0.0 - 1.0	10g	ND	0.1	0.9	0.4	1.5
NEF-004BH	0.0 - 1.0	10g	ND	0.1	7.4	0.9	8.4
NEF-002BH	0.0 - 1.0	10g	ND	0.2	1.7	ND	1.9
50 PPB BTEX	RECAL	NA	9.7	7.0	18.7	55.0	90.4
50 PPB BTEX	RECAL	NA	50	50	50	150	300
NEF-003BH	0.0 - 1.0	10g	ND	1.6	6.7	3.9	12.2
NEF-003BH	2.0 - 3.0	10g	ND	12.7	25.1	16.5	54.3
AIR BLANK	NA	NA	ND	1.6	6.2	3.3	11.1
CTS-001BH	0.0 - 1.5	10g	ND	8.8	17.0	12.2	38.0
NEF-001BH	0.0 - 1.0	10g	ND	0.9	4.6	2.6	8.2
NEF-001BH	1.75 - 2.75	10g	ND	1.3	7.0	6.6	14.8
1 PPM BTEX	STD	NA	1,000	1,000	3,000	1,000	6,000
ODS-004BH	0.0 - 1.0	10g	ND	ND	20.7	ND	20.7

Appendix C (Concluded)
GC Screening Results – Soil
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Volatile Concentrations				Total BTEX (ppb)
			Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	
ODS-002BH	1.0 - 1.8	10g	27.7	ND	22.4	ND	50.3
ODS-001BH	0.0 - 1.0	10g	ND	ND	ND	ND	ND
ODS-001BH	4.0 - 5.0	10g	ND	ND	ND	ND	ND
ODS-003BH	0.0 - 0.8	10g	ND	ND	ND	ND	ND
1 PPM BTEX	Before Reintegration	NA	921	753	2,000	649	4,326
1 PPM BTEX	RECAL	NA	1,000	1,000	3,000	1,000	6,000
NWD-001BH	0.0 - 0.8	10g	ND	ND	ND	ND	ND
AIR BLANK	NA	NA	ND	ND	ND	ND	ND
NWD-001BH	UNKNOWN	10g	ND	ND	ND	ND	ND
NWD-004BH	0.0 - 1.0	10g	ND	ND	ND	ND	ND
NWD-003BH	0.0 - 1.0	10g	ND	ND	ND	ND	ND
NEF-001BH	1.75 - 2.75	10g	ND	ND	ND	ND	ND
NWD-002BH	3.0 - 4.2	10g	ND	ND	ND	ND	ND
1 PPM BTEX	Before Reintegration	NA	1,120	865	1,800	566	4,350
1 PPM BTEX	Reintegrated	NA	1,000	1,000	3,000	1,000	6,000
AIR BLANK	NA	NA	ND	ND	ND	ND	ND

GC – Gas Chromatograph.
g – grams.
ft. BLS – feet below land surface.
ND – Not Detected.
BH – Borehole.
CTS – Current Temporary Waste Storage Area of Concern (AOC).
NWD – Northwest Ditch AOC.
BTEX – Benzene, Toluene, Ethylbenzene, Xylenes.
PPM – parts per million.
PPB/ppb – parts per billion.
STD – BTEX Calibration Standard.
NEF – Northeast and East Fence Line AOC.
ODS – Old Drum Storage AOC.
RECAL – Recalibration of GC using BTEX Standard.
NA – Not Applicable.

Analysis #2 10S+ GC Function Analysis Report



Time Printed: Feb 24,94 11:41
Sample Time: Feb 24,94 11:20

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	31	C
Max Gain	10	
Analysis Time	500.0	sec

Peak Report

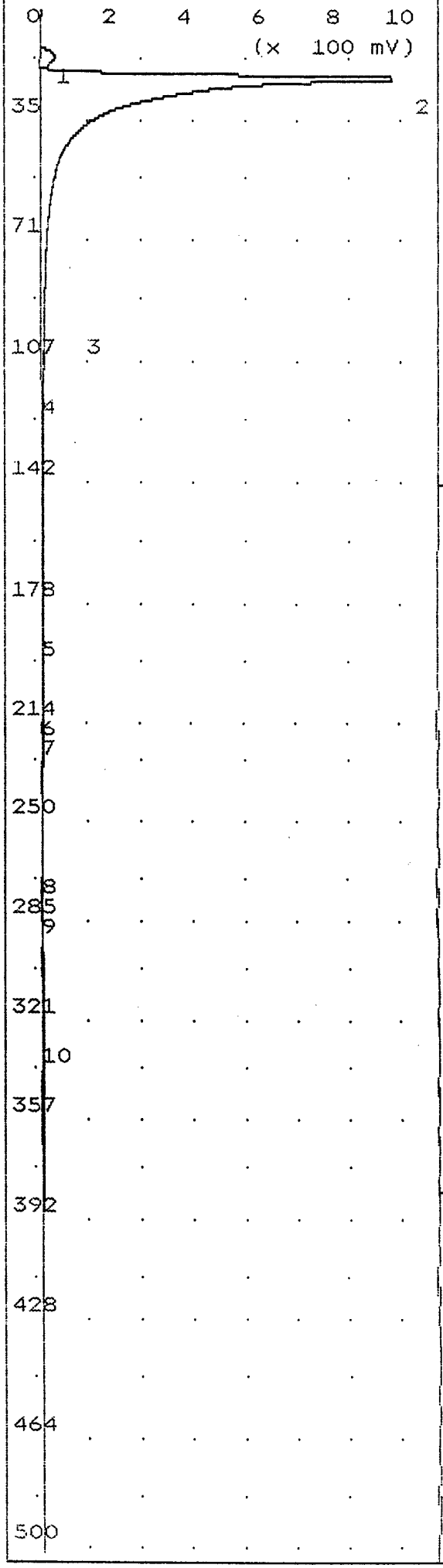
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	1.136 mVS	2.8
2	Unknown	319.8 mVS	14.6
3	Unknown	3.880 mVS	27.2
4	benzene	50.00 ppb	55.0
5	Unknown	1.510 mVS	68.9
6	toluene	50.00 ppb	108.0
7	Unknown	27.82 mVS	124.9
8	Unknown	29.07 mVS	149.8
9	Unknown	21.49 mVS	186.2
10	ethylbenzene	50.00 ppb	208.0
11	m-p-xylene	100.0 ppb	222.4
12	o-xylene	50.00 ppb	260.5

Notes

Operator: Mark Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

50 ppm betex std (initial cal.)

Analysis #4 10S+ GC Function Analysis Report



Time Printed: Feb 24,94 12:20
Sample Time: Feb 24,94 12:11

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	31	C
Max Gain	10	
Analysis Time	500.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	168.5	mVS	14.6
2	Unknown	8.894	VSec	20.7
3	toluene	0.910	ppb	99.8
4	Unknown	4.442	mVS	118.0
5	Unknown	12.53	mVS	183.2
6	ethylbenzene	2.082	ppb	211.2
7	m-p-xylene	3.609	ppb	223.4
8	o-xylene	4.534	ppb	263.4
9	Unknown	4.128	mVS	284.5
10	Unknown	8.883	mVS	328.2

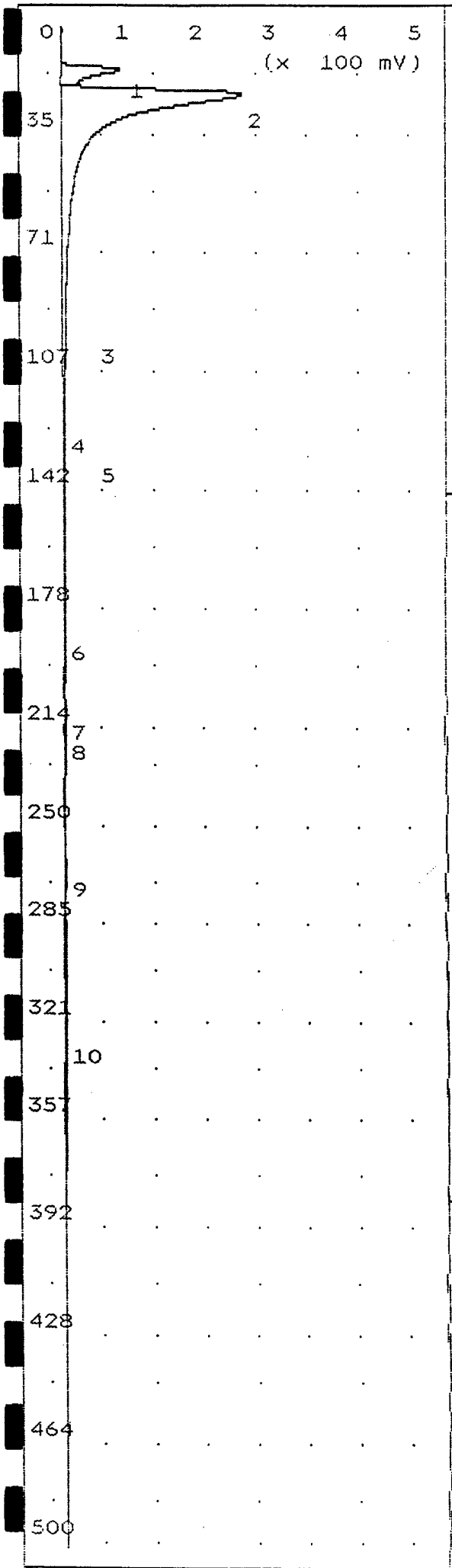
Notes

Operator: Mark Henson

Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

Sample: NEF 005 BH
Interval 1

Analysis #5 10S+ GC Function Analysis Report



Time Printed: Feb 24,94 12:41
Sample Time: Feb 24,94 12:32

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	31	C
Max Gain	10	
Analysis Time	500.0	sec

Peak Report

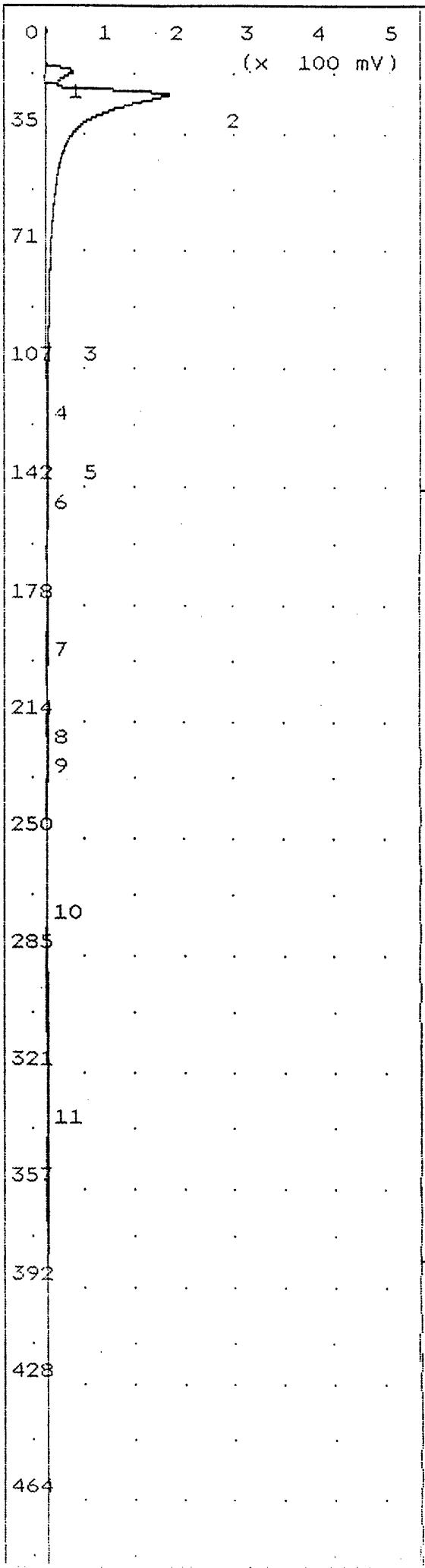
Pk	Compound Name	Area/Conc		R.T.
1	Unknown	280.7	mVS	13.8
2	Unknown	2.910	VSec	21.2
3	toluene	0.962	ppb	100.0
4	Unknown	4.849	mVS	119.3
5	Unknown	5.290	mVS	136.4
6	Unknown	14.52	mVS	185.6
7	ethylbenzene	2.579	ppb	211.4
8	m-p-xylene	4.511	ppb	223.6
9	o-xylene	7.032	ppb	263.7
10	Unknown	8.245	mVS	328.5

Notes

Operator: Mark Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

Sample: NEF 005 BH
Interval 2

Analysis #6 10S+ GC Function Analysis Report



Time Printed: Feb 24,94 12:57
Sample Time: Feb 24,94 12:44

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	10	
Analysis Time	500.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	150.2	mVS	14.0
2	Unknown	2.281	VSec	21.0
3	toluene	1.432	ppb	100.5
4	Unknown	4.995	mVS	118.5
5	Unknown	1.907	mVS	135.6
6	Unknown	2.559	mVS	144.6
7	Unknown	14.29	mVS	184.6
8	ethylbenzene	3.335	ppb	210.0
9	m-p-xylene	5.429	ppb	223.8
10	o-xylene	8.362	ppb	263.2
11	Unknown	9.723	mVS	327.4

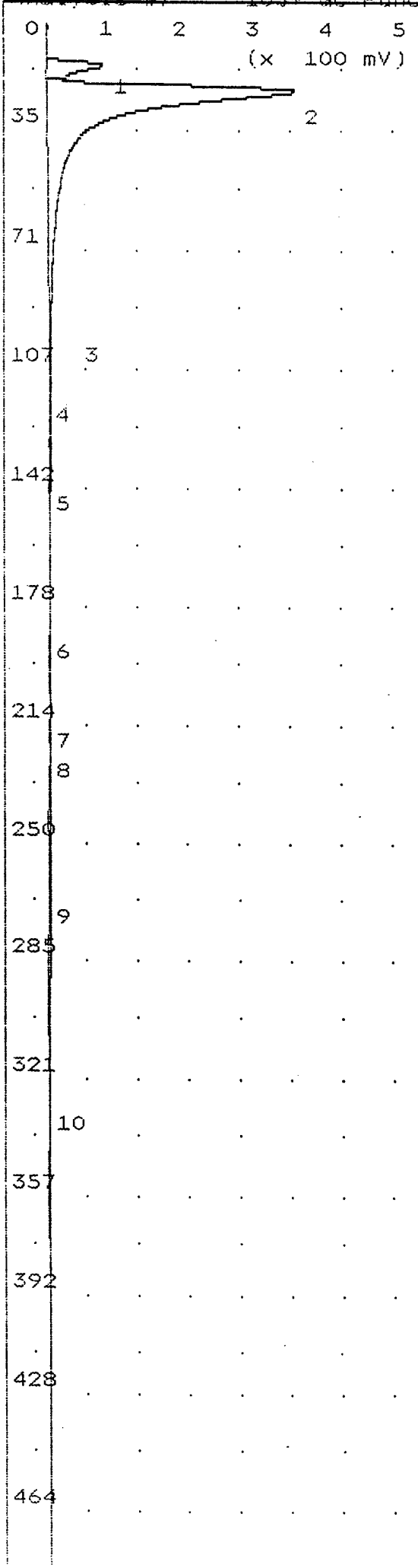
Notes

Operator: Mark Henson

Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

Sample: Air Blank

Analysis #7 10S+ GC Function Analysis Report



Time Printed: Feb 24,94 13:11
Sample Time: Feb 24,94 13:03

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	10	
Analysis Time	500.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	293.0	mVS	13.9
2	Unknown	3.405	VSec	21.4
3	toluene	1.388	ppb	100.0
4	Unknown	4.544	mVS	118.0
5	Unknown	0.389	mVS	137.0
6	Unknown	13.63	mVS	184.2
7	ethylbenzene	3.041	ppb	209.2
8	m-p-xylene	5.780	ppb	224.4
9	o-xylene	8.106	ppb	264.5
10	Unknown	5.812	mVS	331.4

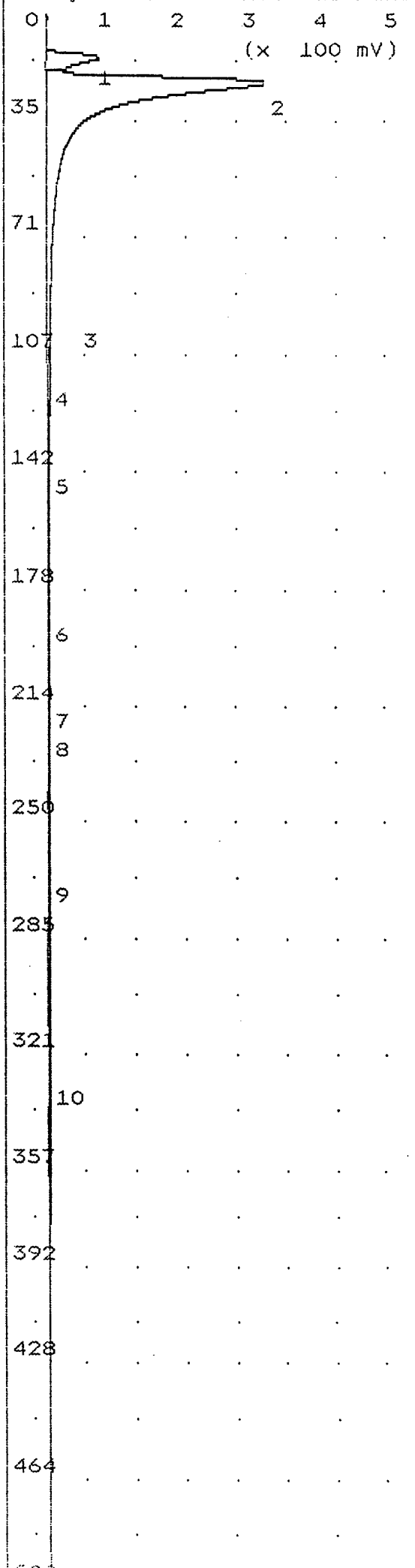
Notes

Operator: Mark Henson

Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

Sample: CTS-003 BH
int 1

Analysis #8 — 1051 GC Function Analysis Report



Time Printed: Feb 24,94 13:36
Sample Time: Feb 24,94 13:22

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	10	
Analysis Time	500.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	293.3 mVS	14.0
2	Unknown	3.537 VSec	21.4
3	toluene	1.116 ppb	100.8
4	Unknown	4.701 mVS	118.8
5	Unknown	5.685 mVS	137.8
6	Unknown	15.98 mVS	186.0
7	ethylbenzene	2.871 ppb	211.6
8	m-p-xylene	4.668 ppb	224.0
9	o-xylene	7.693 ppb	265.3
10	Unknown	10.84 mVS	329.3

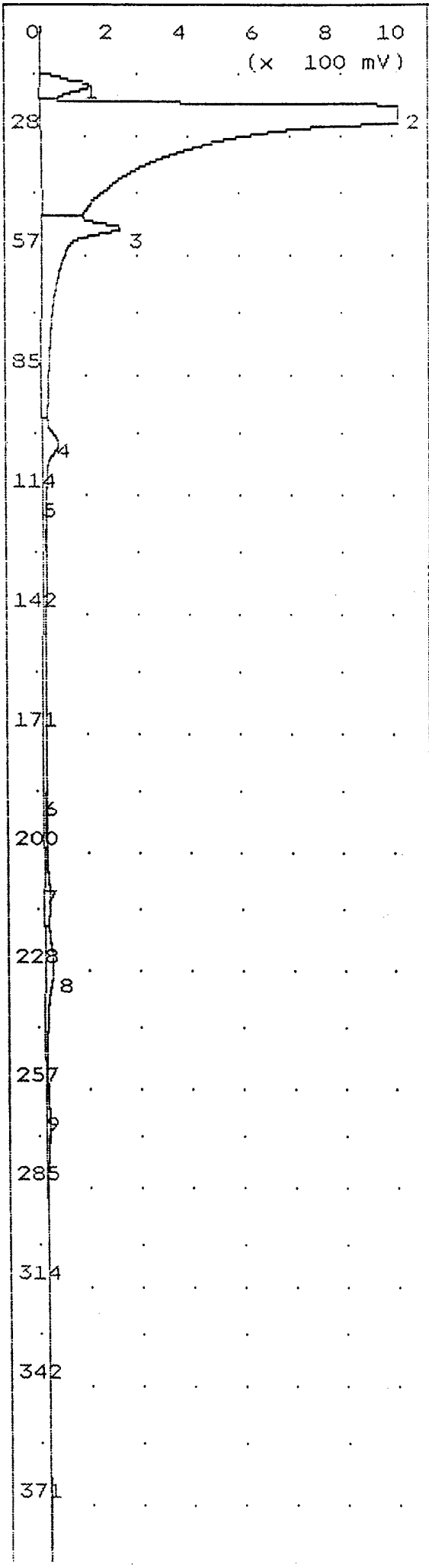
Notes

Operator: Mark Henson

Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

Sample: CTS-003 BH
int 2

Analysis #9 10S+ GC Function Analysis Report



Time Printed: Feb 24,94 13:57
Sample Time: Feb 24,94 13:43

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	10	
Analysis Time	400.0	sec

Peak Report

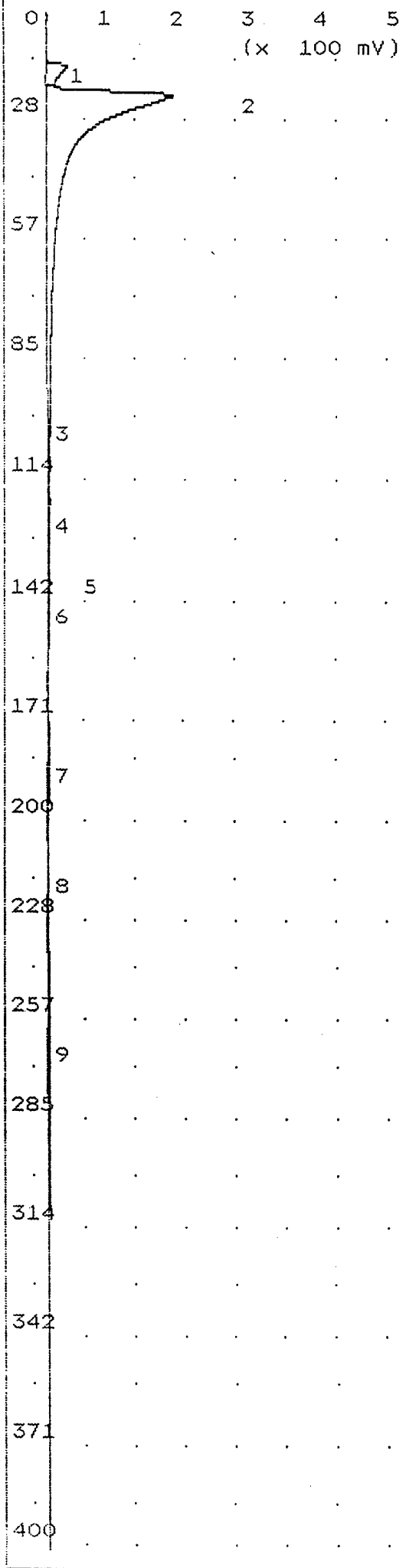
Pk	Compound Name	Area/Conc		R.T.
1	Unknown	521.6	mVS	14.6
2	Unknown	25.30	VSec	21.3
3	benzene	50.00	ppb	48.8
4	toluene	50.02	ppb	100.0
5	Unknown	5.065	mVS	116.2
6	Unknown	8.358	mVS	182.4
7	ethylbenzene	50.02	ppb	209.0
8	m-p-xylene	100.0	ppb	225.4
9	o-xylene	50.15	ppb	266.4

Notes

Operator: Mark Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

Sample: 50 ppb std

Analysis #10 Post GC Function Analysis Report



Time Printed: Feb 24,94 14:14
Sample Time: Feb 24,94 14:06

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	10	
Analysis Time	400.0	sec

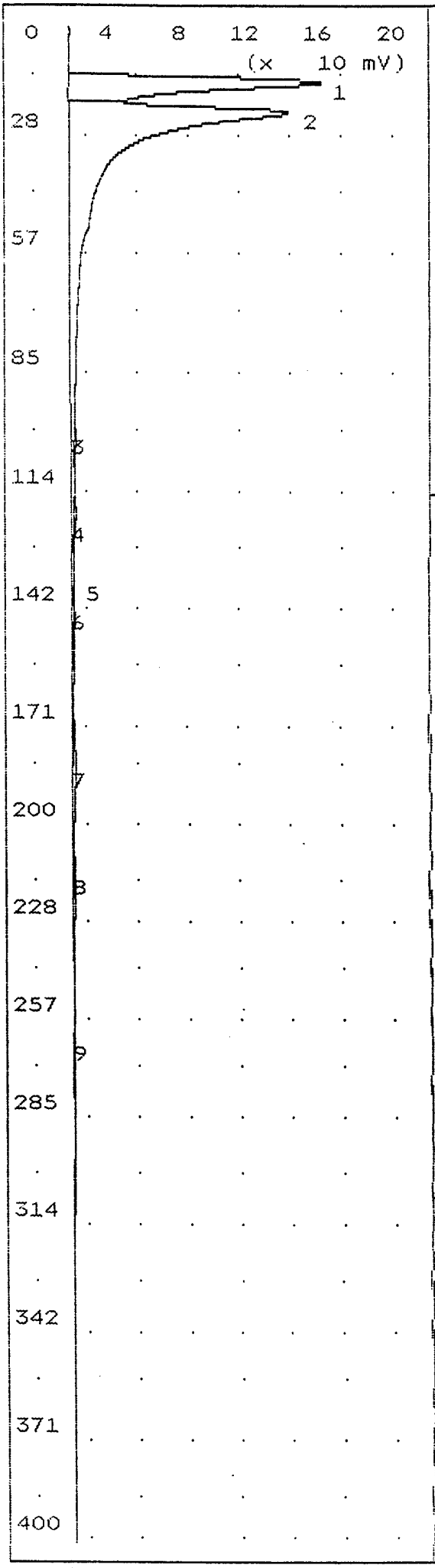
Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	106.0	mVS	13.8
2	Unknown	2.265	VSec	20.8
3	toluene	0.114	ppb	99.4
4	Unknown	6.214	mVS	117.6
5	Unknown	3.163	mVS	136.6
6	Unknown	3.039	mVS	144.8
7	Unknown	17.19	mVS	183.8
8	ethylbenzene	2.347	ppb	211.8
9	o-xylene	0.623	ppb	259.7

Notes

Operator: Mark Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

Sample: cts-002 bh
int 1



Time Printed: Feb 24,94 15:05
Sample Time: Feb 24,94 14:16

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	10	
Analysis Time	400.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	544.1 mVS	13.8
2	Unknown	1.518 VSec	21.2
3	toluene	0.179 ppb	99.2
4	Unknown	6.127 mVS	117.8
5	Unknown	2.114 mVS	135.2
6	Unknown	3.863 mVS	144.4
7	Unknown	18.02 mVS	185.4
8	ethylbenzene	2.352 ppb	211.4
9	o-xylene	0.804 ppb	259.7

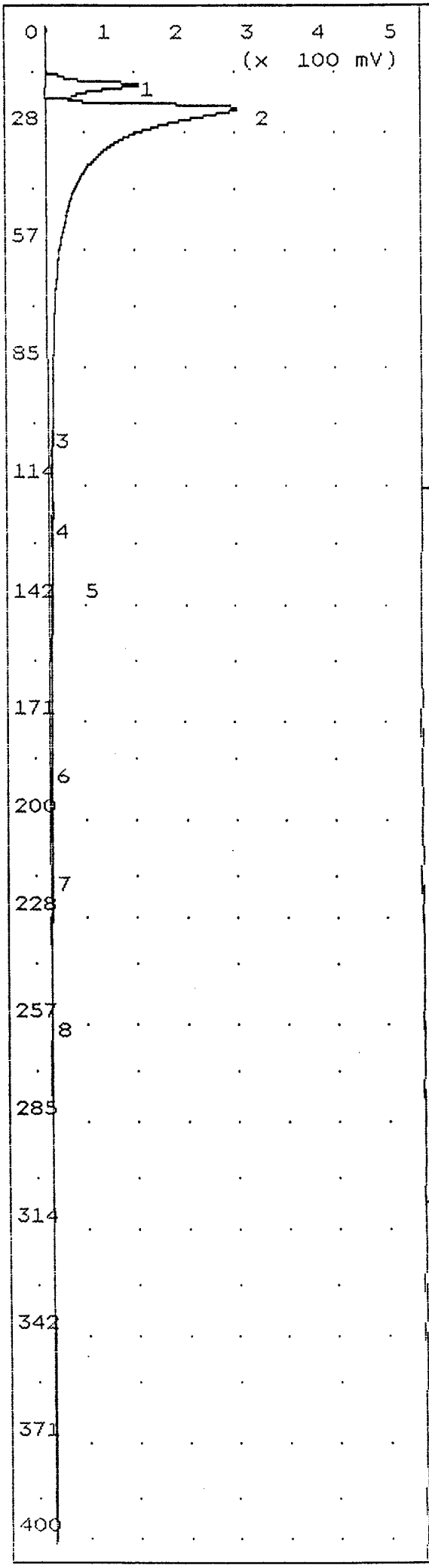
Notes

Operator: Mark Henson

Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

Sample: cts-002 bh
int 2

Analysis #13 10S+ GC Function Analysis Report



Time Printed: Feb 24,94 15:46
Sample Time: Feb 24,94 15:33

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	31	C
Max Gain	10	
Analysis Time	400.0	sec

Peak Report

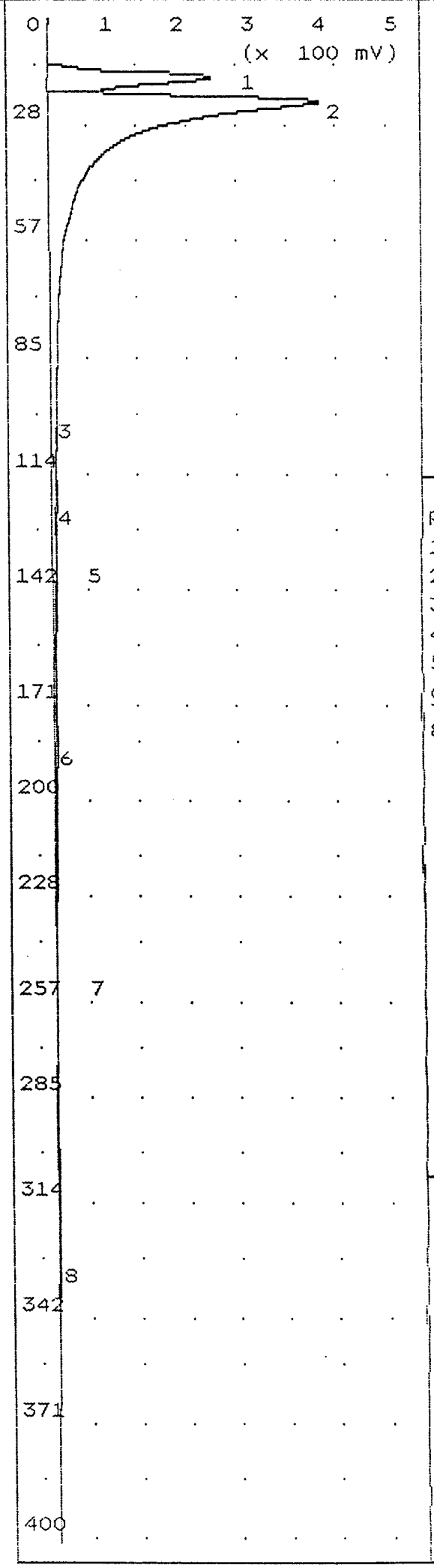
Pk	Compound Name	Area/Conc		R.T.
1	Unknown	402.6	mVS	14.9
2	Unknown	4.001	VSec	19.9
3	toluene	0.138	ppb	99.4
4	Unknown	8.653	mVS	118.4
5	Unknown	9.430	mVS	136.4
6	Unknown	19.51	mVS	184.6
7	ethylbenzene	0.942	ppb	210.2
8	o-xylene	0.423	ppb	257.3

Notes

Operator: Mark Henson

Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

Sample: nef-004 bh
int 1



Time Printed: Feb 24,94 16:10
Sample Time: Feb 24,94 16:02

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	31	C
Max Gain	10	
Analysis Time	400.0	sec

Peak Report

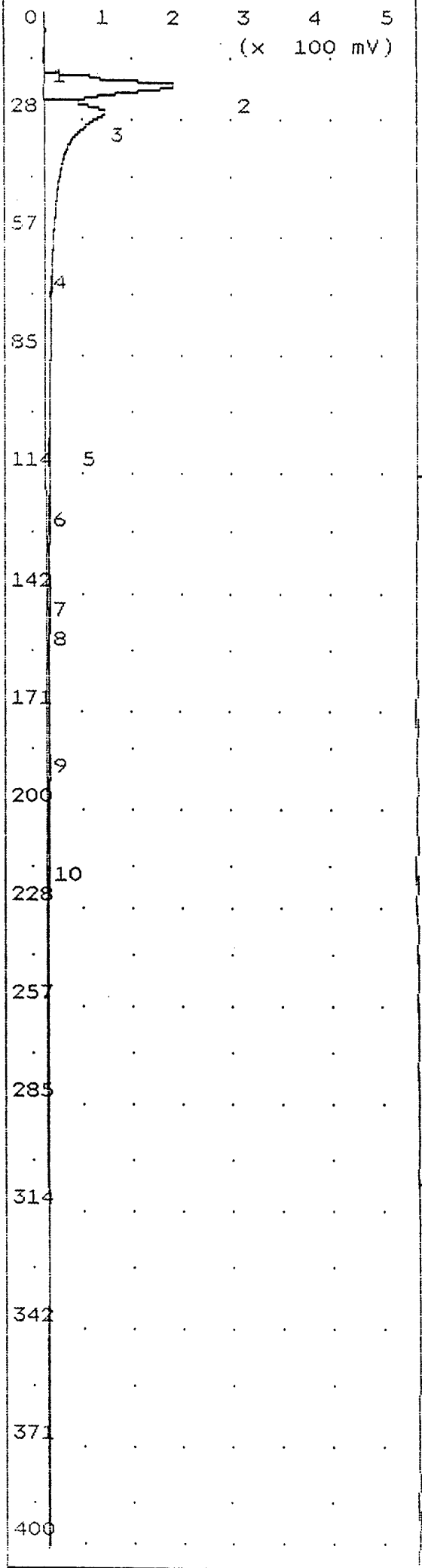
Pk	Compound Name	Area/Conc		R.T.
1	Unknown	880.3	mVS	14.0
2	Unknown	5.074	VSec	20.9
3	toluene	0.132	ppb	99.0
4	Unknown	7.985	mVS	117.8
5	Unknown	7.637	mVS	136.0
6	ethylbenzene	7.349	ppb	185.2
7	o-xylene	0.885	ppb	252.2
8	Unknown	0.239	mVS	328.2

Notes

Operator: Mark Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

Sample: nef-004 bh
0.0'-1.0' bls td

Analysis #15 10S+ GC Function Analysis Report



Time Printed: Feb 24,94 16:24
Sample Time: Feb 24,94 16:13

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	31	C
Max Gain	10	
Analysis Time	400.0	sec

Peak Report

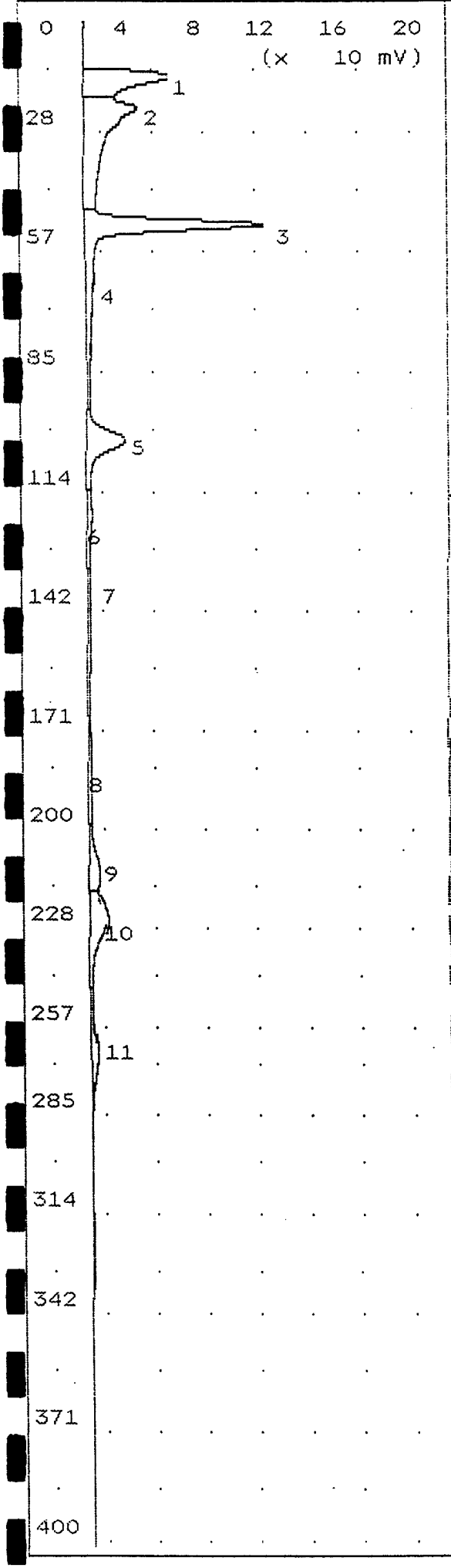
Pk	Compound Name	Area/Conc		R.T.
1	Unknown	0.582	mVS	4.8
2	Unknown	730.6	mVS	18.0
3	Unknown	2.058	VSec	24.9
4	Unknown	2.548	mVS	65.0
5	toluene	0.192	ppb	102.5
6	Unknown	11.64	mVS	121.6
7	Unknown	4.506	mVS	140.0
8	Unknown	6.866	mVS	147.8
9	Unknown	27.00	mVS	188.0
10	ethylbenzene	1.677	ppb	214.2

Notes

Operator: Mark Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

Sample: nef-002 bh
int 1

Analysis #16 10S+ GC Function Analysis Report



Time Printed: Feb 24,94 16:38
Sample Time: Feb 24,94 16:30

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	10	
Analysis Time	400.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	213.1 mVS	13.5
2	Unknown	317.5 mVS	21.0
3	benzene	9.742 ppb	48.9
4	Unknown	0.356 mVS	61.4
5	toluene	7.003 ppb	100.1
6	Unknown	39.18 mVS	117.3
7	Unknown	45.15 mVS	135.3
8	Unknown	35.62 mVS	183.4
9	ethylbenzene	18.68 ppb	208.8
10	m-p-xylene	41.90 ppb	225.2
11	o-xylene	13.06 ppb	265.8

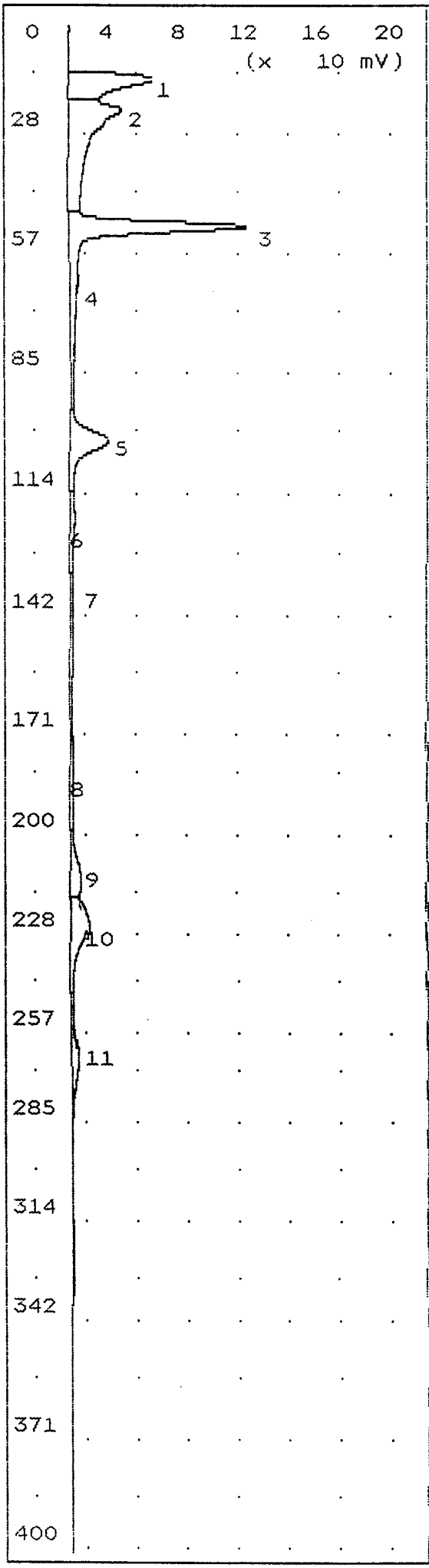
Notes

Operator: Mark Henson

Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

Sample: 50 ppb std recal.

Analysis #16 10S+ GC Function Analysis Report



Time Printed: Feb 24,94 16:47
Sample Time: Feb 24,94 16:30

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	10	
Analysis Time	400.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	213.1 mVS	13.5
2	Unknown	317.5 mVS	21.0
3	benzene	50.00 ppb	48.9
4	Unknown	0.356 mVS	61.4
5	toluene	50.00 ppb	100.1
6	Unknown	39.18 mVS	117.3
7	Unknown	45.15 mVS	135.3
8	Unknown	35.62 mVS	183.4
9	ethylbenzene	50.00 ppb	208.8
10	m-p-xylene	100.0 ppb	225.2
11	o-xylene	50.00 ppb	265.8

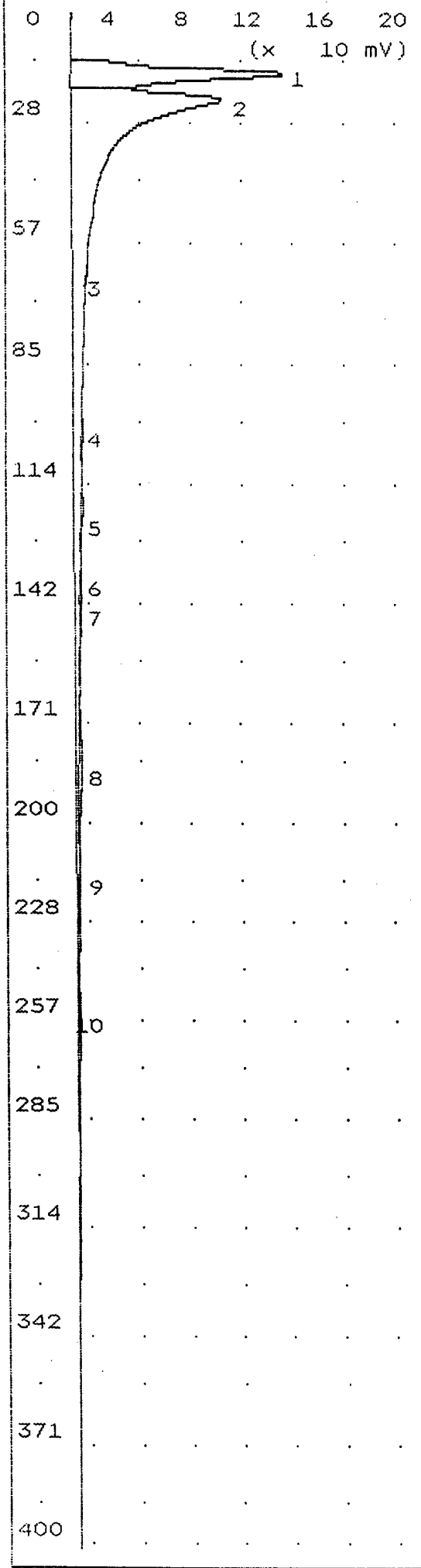
Notes

Operator: Mark Henson

Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

Sample: 50 ppb std recal.

Analysis #17 — 105+ GC Function Analysis Report



Time Printed: Feb 24,94 16:59
Sample Time: Feb 24,94 16:51

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	10	
Analysis Time	400.0	sec

Peak Report

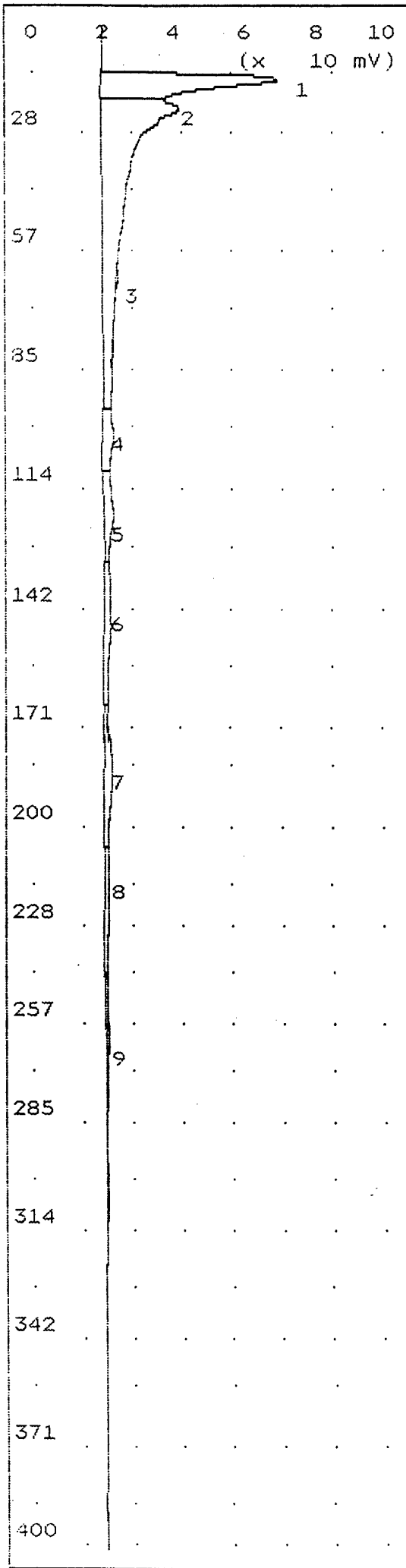
Pk	Compound Name	Area/Conc		R.T.
1	Unknown	444.6	mVS	14.8
2	Unknown	1.730	VSec	21.2
3	Unknown	2.179	mVS	61.3
4	toluene	1.589	ppb	99.3
5	Unknown	8.644	mVS	118.4
6	Unknown	3.694	mVS	136.5
7	Unknown	5.615	mVS	144.6
8	Unknown	22.83	mVS	183.6
9	ethylbenzene	6.711	ppb	211.2
10	o-xylene	3.922	ppb	254.6

Notes

Operator: Mark Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

Sample: nef-003 bh
1.0'- 2.0' bls

Analysis #18 10S+ GC Function Analysis Report



Time Printed: Feb 24,94 17:16
Sample Time: Feb 24,94 17:04

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	10	
Analysis Time	400.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	232.1	mVS	13.7
2	Unknown	477.8	mVS	20.9
3	Unknown	0.094	mVS	61.4
4	toluene	12.65	ppb	99.6
5	Unknown	45.71	mVS	118.4
6	Unknown	52.69	mVS	144.2
7	Unknown	56.01	mVS	185.6
8	ethylbenzene	25.13	ppb	211.0
9	o-xylene	16.47	ppb	261.3

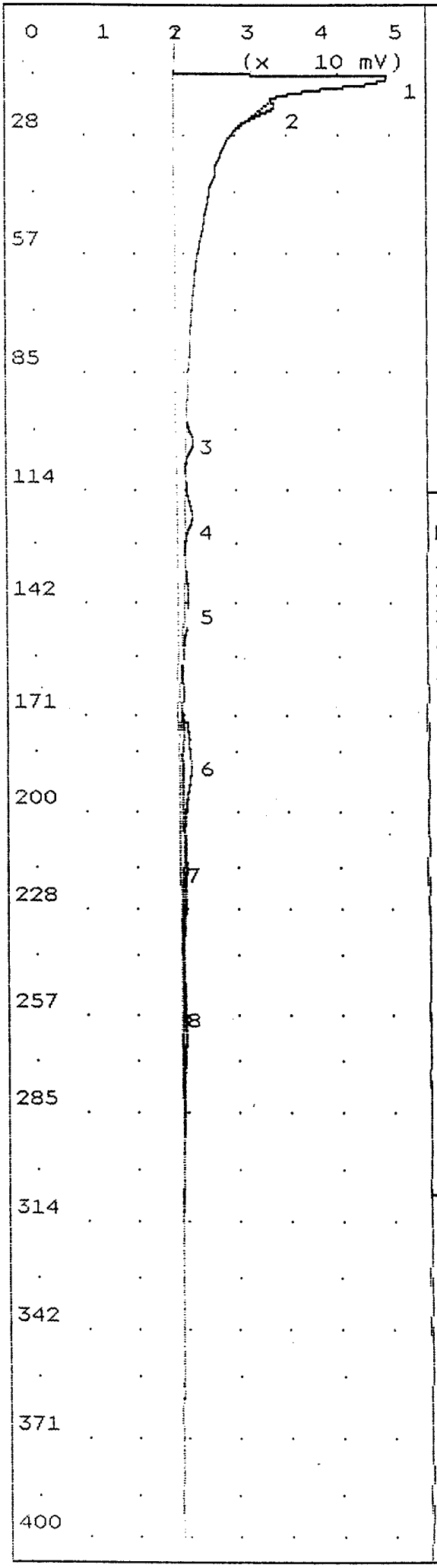
Notes

Operator: Mark Henson

Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

Sample: nef-003 bh
2.0'- 3.0' bls

Analysis #19 10S+ GC Function Analysis Report



Time Printed: Feb 24,94 17:28
Sample Time: Feb 24,94 17:19

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	10	
Analysis Time	400.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	623.7	mVS	12.8
2	Unknown	3.708	mVS	19.5
3	toluene	1.625	ppb	99.8
4	Unknown	7.027	mVS	118.9
5	Unknown	7.588	mVS	144.2
6	Unknown	20.00	mVS	185.4
7	ethylbenzene	6.185	ppb	213.0
8	o-xylene	3.291	ppb	258.4

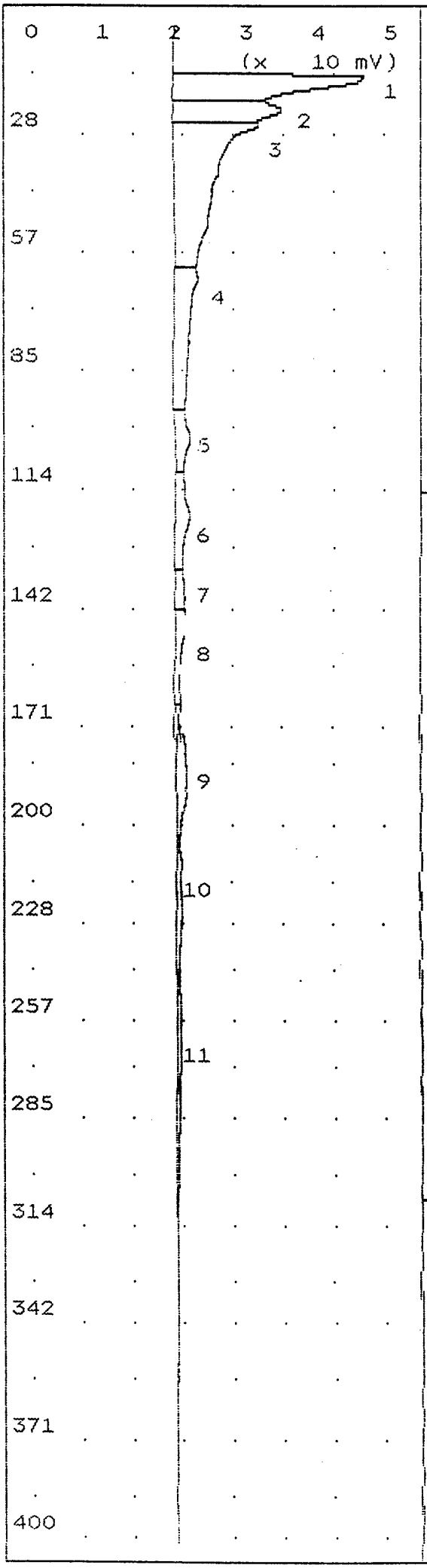
Notes

Operator: Mark Henson

Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

Sample: air blank

Analysis #20 10S+ GC Function Analysis Report



Time Printed: Feb 24,94 17:39
Sample Time: Feb 24,94 17:32

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	10	
Analysis Time	400.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	137.3 mVS	12.6
2	Unknown	72.67 mVS	20.6
3	Unknown	206.5 mVS	24.3
4	Unknown	76.43 mVS	61.5
5	toluene	8.766 ppb	100.0
6	Unknown	33.04 mVS	118.6
7	Unknown	11.60 mVS	137.0
8	Unknown	22.08 mVS	145.4
9	Unknown	42.09 mVS	186.8
10	ethylbenzene	17.01 ppb	211.0
11	o-xylene	12.19 ppb	260.0

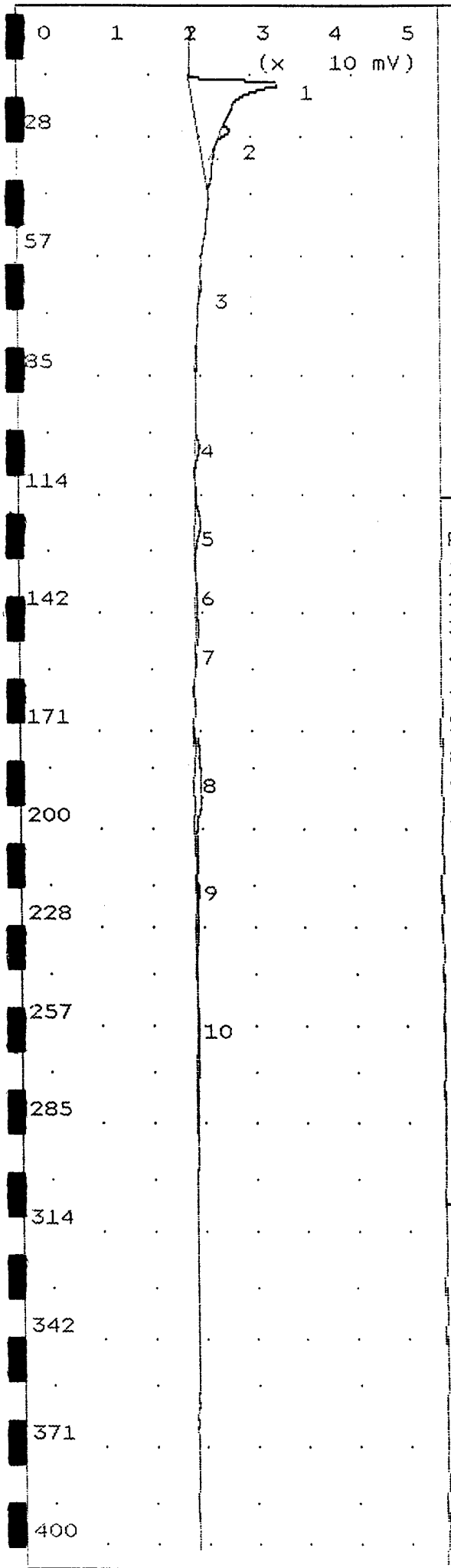
Notes

Operator: Mark Henson

Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

Sample: cts-001 bh
int 1

Analysis #21 10S+ GC Function Analysis Report



Time Printed: Feb 24,94 17:51
Sample Time: Feb 24,94 17:43

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	10	
Analysis Time	400.0	sec

Peak Report

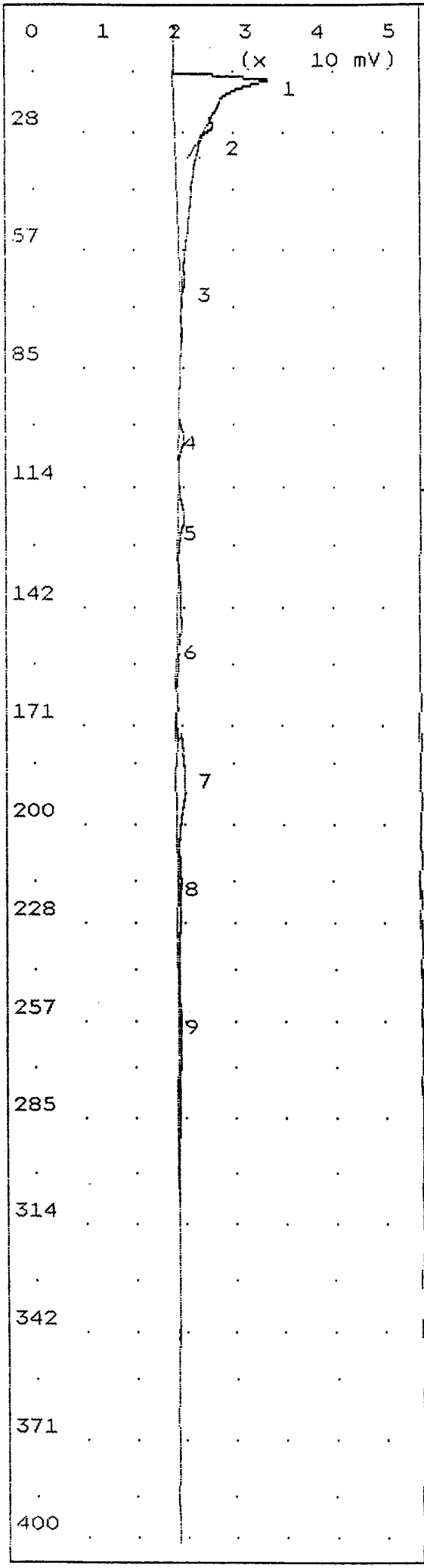
Pk	Compound Name	Area/Conc		R.T.
1	Unknown	105.5	mVS	14.0
2	Unknown	2.153	mVS	25.2
3	Unknown	0.526	mVS	62.1
4	toluene	0.873	ppb	100.5
5	Unknown	5.448	mVS	119.6
6	Unknown	2.426	mVS	137.7
7	Unknown	3.653	mVS	146.0
8	Unknown	15.86	mVS	187.0
9	ethylbenzene	4.642	ppb	213.4
10	o-xylene	2.638	ppb	258.6

Notes

Operator: Mark Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

Sample: nef-001 bh
int 1

Analysis #22 10S+ GC Function Analysis Report



Time Printed: Feb 24,94 18:11
Sample Time: Feb 24,94 17:56

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	10	
Analysis Time	400.0	sec

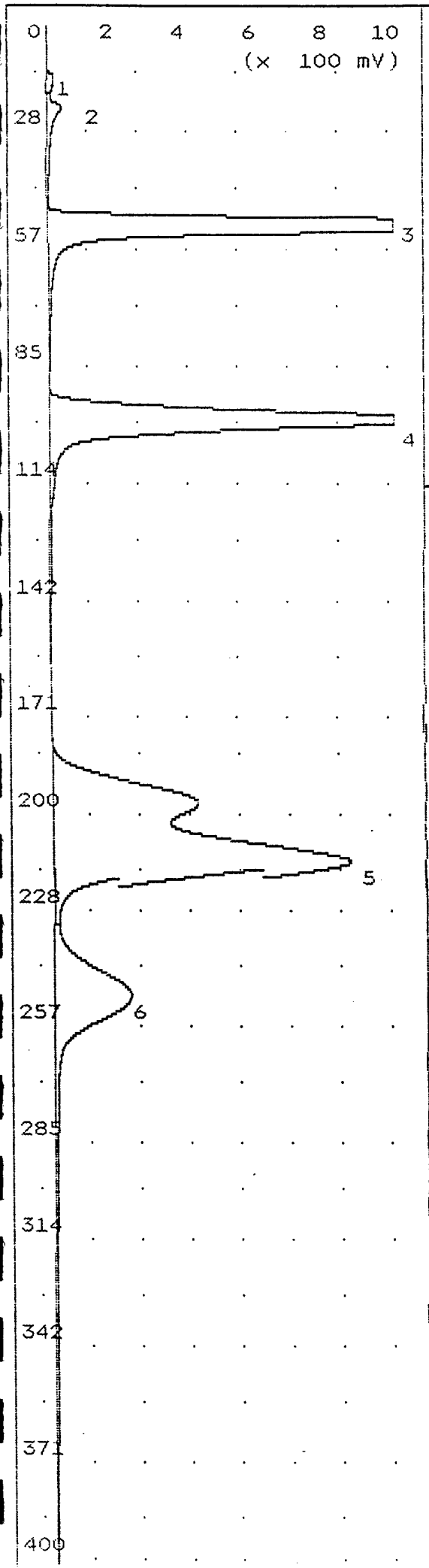
Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	179.6	mVS	13.8
2	Unknown	1.524	mVS	25.0
3	Unknown	0.847	mVS	62.0
4	toluene	1.263	ppb	100.4
5	Unknown	5.933	mVS	119.0
6	Unknown	6.697	mVS	145.4
7	Unknown	21.72	mVS	186.8
8	ethylbenzene	7.000	ppb	213.8
9	o-xylene	6.564	ppb	255.2

Notes

Operator: Mark Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, ARK

Sample: nef-001 bh
int 1.75-2.75



Time Printed: Feb 25,94 08:49
Sample Time: Feb 25,94 08:25

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	29	C
Max Gain	2	
Analysis Time	400.0	sec

Peak Report

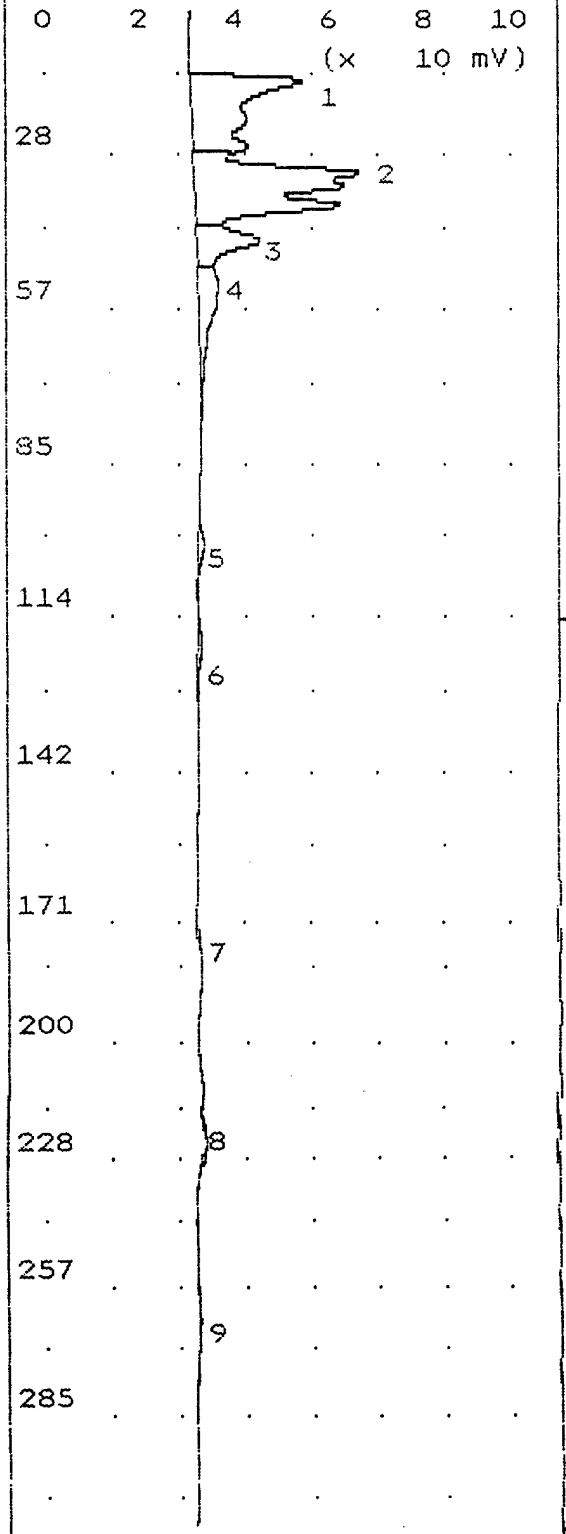
Pk	Compound Name	Area/Conc		R.T.
1	Unknown	83.49	mVS	13.9
2	Unknown	308.9	mVS	20.8
3	benzene	1.000	ppm	49.4
4	toluene	1.000	ppm	97.0
5	Unknown	15.27	VSec	209.8
6	ebenz/m,p xylene	3.001	ppm	248.0

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

1 ppm btex std (initial cal.)

Analysis #24 105+ GC Function Analysis Report



Time Printed: Feb 25,94 10:43
Sample Time: Feb 25,94 10:37

Method

Slope Up	2.000	mV/Sec
Slope Down	6.000	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	30	C
Max Gain	2	
Analysis Time	400.0	sec

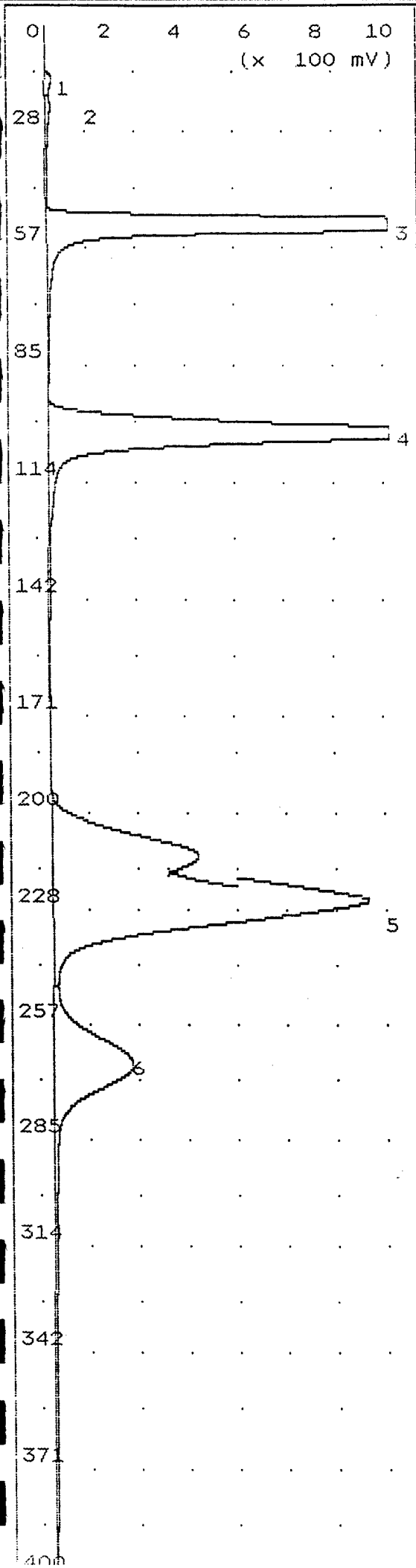
Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	191.5	mVS	13.2
2	Unknown	286.8	mVS	30.0
3	Unknown	63.51	mVS	42.8
4	Unknown	53.72	mVS	50.4
5	Unknown	5.865	mVS	98.2
6	Unknown	4.872	mVS	118.4
7	Unknown	14.00	mVS	180.8
8	Unknown	45.07	mVS	222.4
9	Unknown	14.00	mVS	263.7

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: ods-004 bn
int 1



Time Printed: Feb 25,94 11:11
Sample Time: Feb 25,94 10:47

Method

Slope Up	2.000	mV/Sec
Slope Down	6.000	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	31	C
Max Gain	2	
Analysis Time	400.0	sec

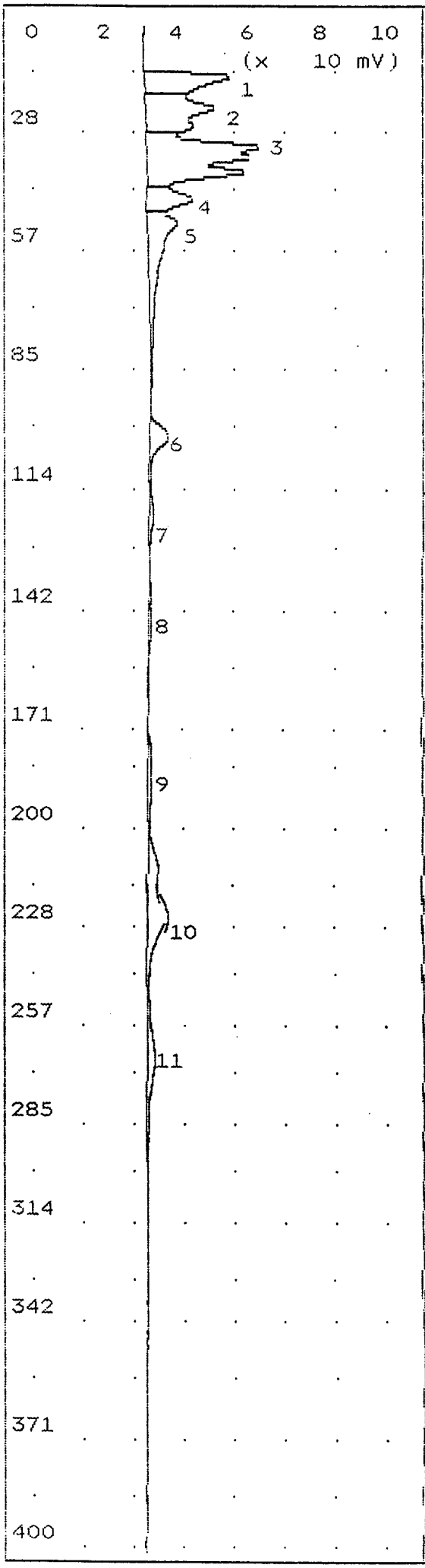
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	83.49 mVS	13.8
2	Unknown	150.6 mVS	20.3
3	benzene	1.000 ppm	49.4
4	toluene	1.000 ppm	100.1
5	ebenz/m,p xylene	3.000 PPM1	224.2
6	o-xylene	1.000 PPM1	265.0

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: 1 ppm btex std (initial cal. done over to show o-xylene @ 1ppm).



Time Printed: Feb 25,94 11:45
Sample Time: Feb 25,94 11:21

Method

Slope Up	1.500	mV/Sec
Slope Down	4.500	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	2	
Analysis Time	400.0	sec

Peak Report

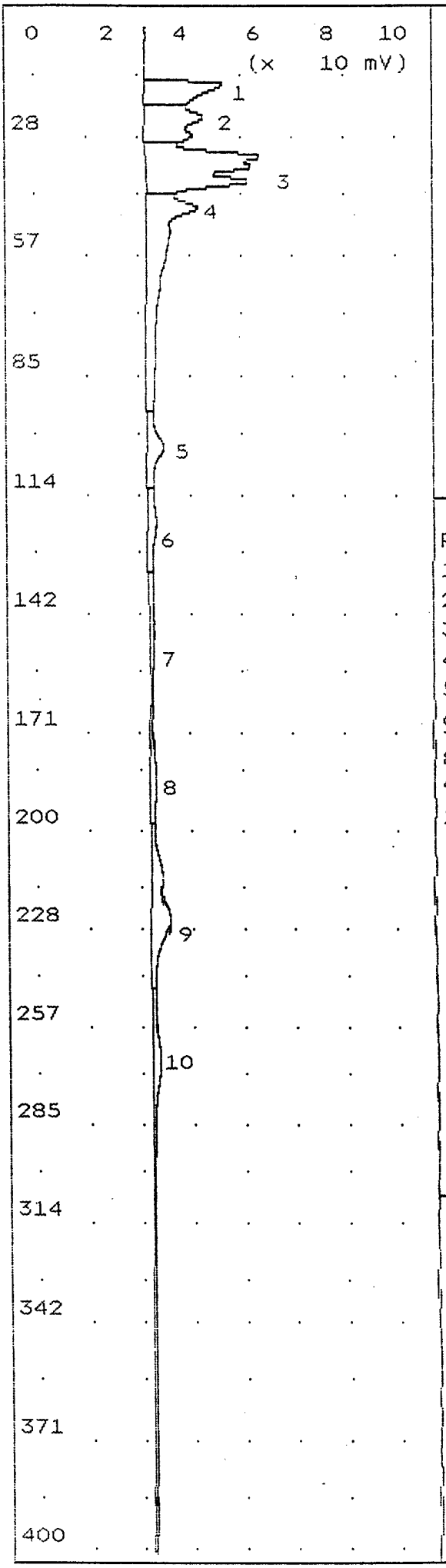
Pk	Compound Name	Area/Conc		R.T.
1	Unknown	101.8	mVS	13.1
2	Unknown	136.9	mVS	20.8
3	Unknown	266.1	mVS	30.2
4	Unknown	57.31	mVS	42.6
5	Unknown	96.97	mVS	48.6
6	Unknown	30.83	mVS	99.3
7	Unknown	9.088	mVS	117.6
8	Unknown	7.524	mVS	145.0
9	Unknown	17.25	mVS	183.8
10	ebenz/m,p xylene	20.69	ppb	225.0
11	Unknown	34.09	mVS	262.9

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: ods-004 bh
int 1 (2nd injection)

Analysis #27 10S+ GC Function Analysis Report



Time Printed: Feb 25,94 11:59
Sample Time: Feb 25,94 11:49

Method

Slope Up	0.100	mV/Sec
Slope Down	0.100	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	2	
Analysis Time	400.0	sec

Peak Report

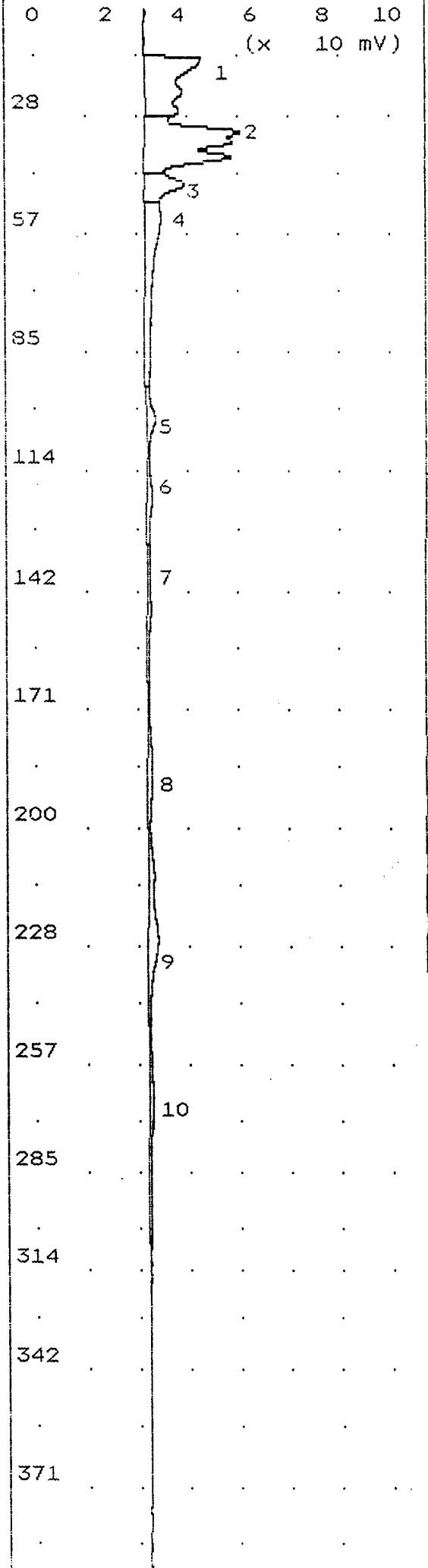
Pk	Compound Name	Area/Conc		R.T.
1	Unknown	98.43	mVS	13.7
2	Unknown	115.9	mVS	21.8
3	Unknown	270.4	mVS	31.3
4	benzene	27.67	ppb	43.6
5	Unknown	43.64	mVS	100.1
6	Unknown	32.89	mVS	117.8
7	Unknown	36.55	mVS	145.4
8	Unknown	37.94	mVS	181.6
9	ebenz/m,p xylene	22.44	ppb	225.0
10	Unknown	72.46	mVS	266.4

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: ods-002 bh
int 1

Analysis #28 10S+ GC Function Analysis Report



Time Printed: Feb 25,94 12:09
Sample Time: Feb 25,94 12:02

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	2	
Analysis Time	400.0	sec

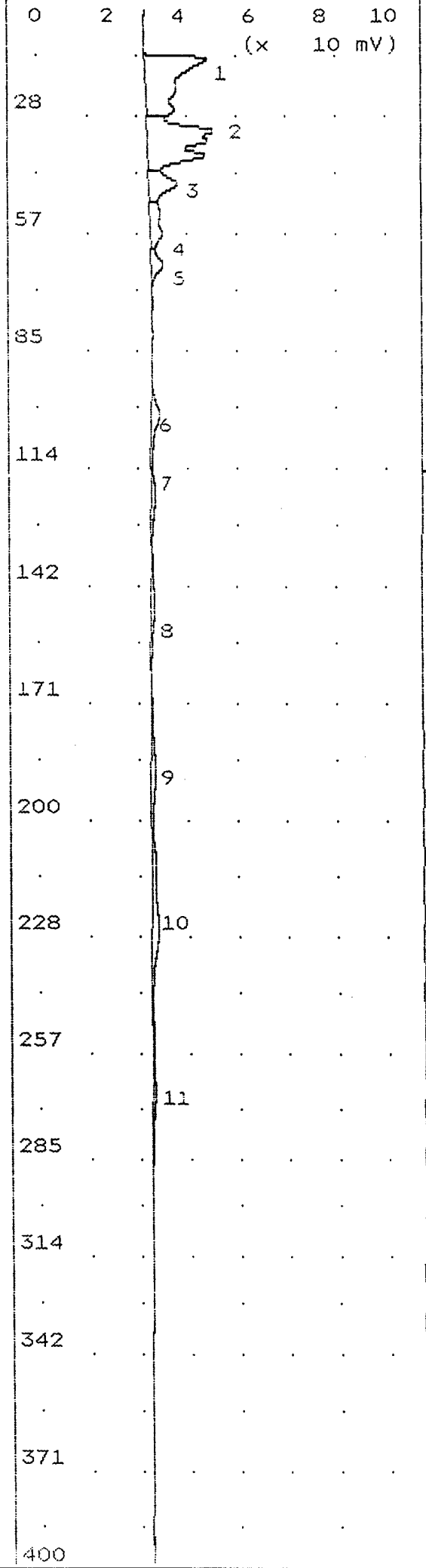
Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	161.1	mVS	12.5
2	Unknown	228.4	mVS	30.5
3	Unknown	53.67	mVS	43.0
4	Unknown	96.31	mVS	51.0
5	Unknown	23.72	mVS	100.1
6	Unknown	20.75	mVS	116.6
7	Unknown	21.84	mVS	136.6
8	Unknown	24.45	mVS	183.8
9	Unknown	60.00	mVS	224.8
10	Unknown	22.85	mVS	264.2

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: ods-001 bh
0.0-1.0



Time Printed: Feb 25,94 12:23
Sample Time: Feb 25,94 12:15

Method

Slope Up	2.500	mV/Sec
Slope Down	7.500	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	2	
Analysis Time	400.0	sec

Peak Report

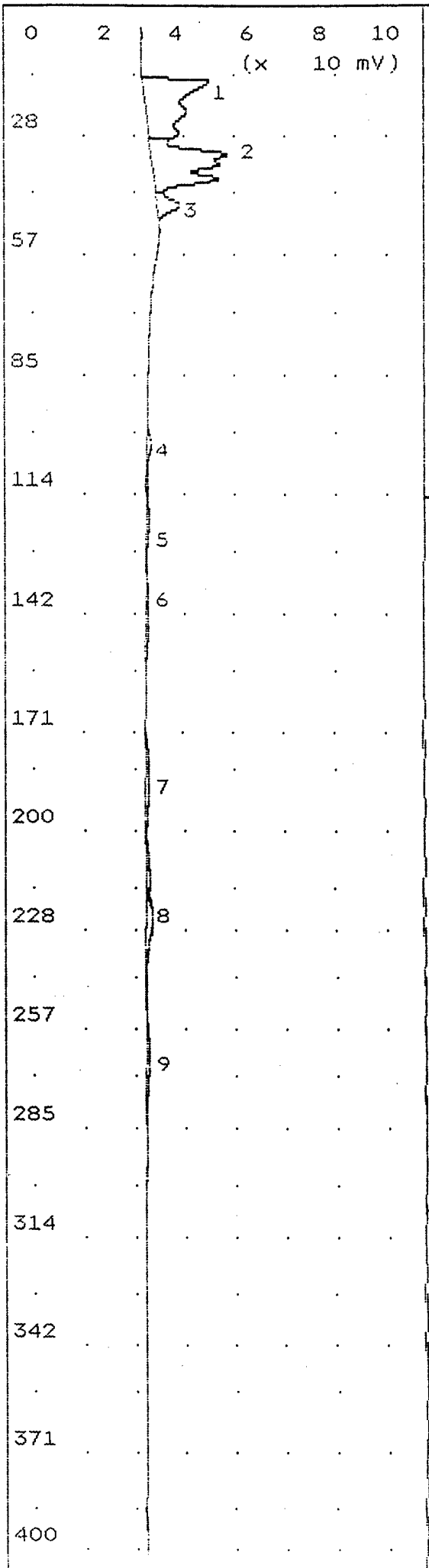
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	154.9 mVS	12.2
2	Unknown	159.0 mVS	30.1
3	Unknown	40.98 mVS	42.6
4	Unknown	30.96 mVS	54.6
5	Unknown	18.72 mVS	62.4
6	Unknown	16.45 mVS	98.6
7	Unknown	10.72 mVS	116.6
8	Unknown	15.27 mVS	145.8
9	Unknown	19.03 mVS	182.4
10	Unknown	41.03 mVS	222.2
11	Unknown	13.16 mVS	264.0

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: ods-001 bh
4.0-5.0 int 2
br 5.0

Analysis #30 10S+ GC Function Analysis Report



Time Printed: Feb 25,94 12:54
Sample Time: Feb 25,94 12:29

Method

Slope Up	3.000	mV/Sec
Slope Down	9.000	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	2	
Analysis Time	400.0	sec

Peak Report

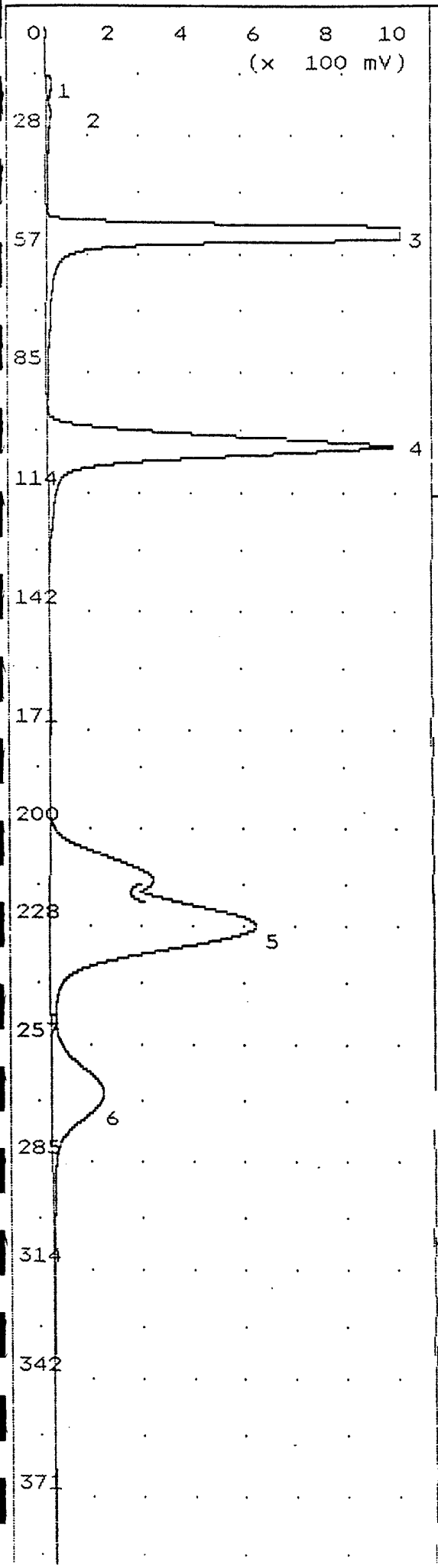
Pk	Compound Name	Area/Conc		R.T.
1	Unknown	170.7	mVS	13.2
2	Unknown	171.7	mVS	30.9
3	Unknown	24.77	mVS	43.4
4	Unknown	6.840	mVS	100.0
5	Unknown	6.178	mVS	117.8
6	Unknown	6.253	mVS	133.7
7	Unknown	12.40	mVS	183.2
8	Unknown	39.10	mVS	222.8
9	Unknown	13.30	mVS	263.7

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: ods-003 bh
0.0-0.8

Analysis #31 10S+ GC Function Analysis Report



Time Printed: Feb 25,94 14:26
Sample Time: Feb 25,94 12:57

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	31	C
Max Gain	2	
Analysis Time	400.0	sec

Peak Report

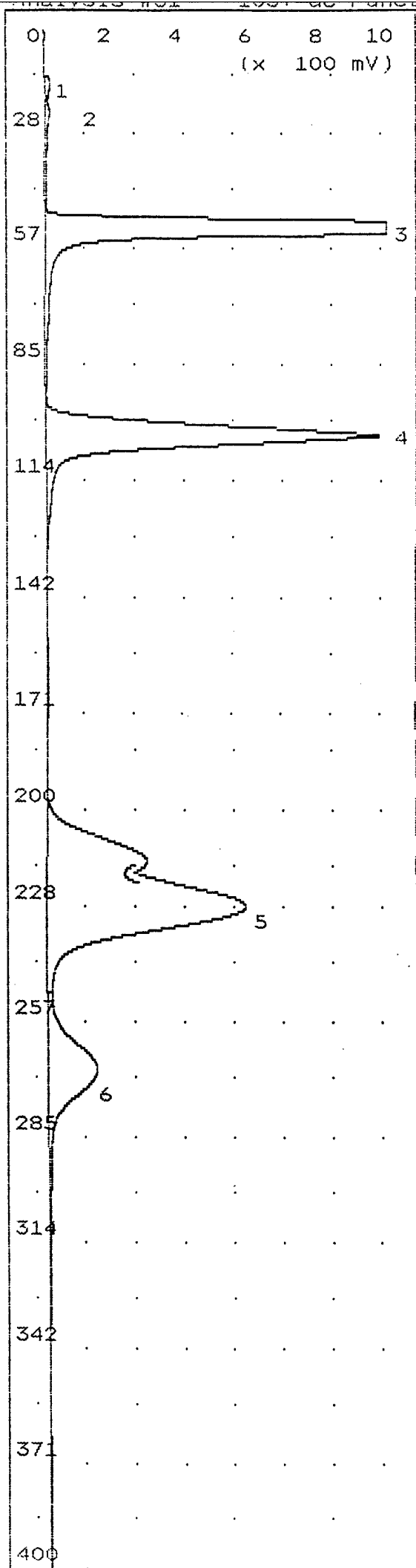
Pk	Compound Name	Area/Conc		R.T.
1	Unknown	82.62	mVS	14.2
2	Unknown	174.0	mVS	21.3
3	benzene	1.000	ppm	50.1
4	toluene	1.000	ppm	101.2
5	ebenz/m,p xylene	3.000	PPM1	226.6
6	o-xylene	1.003	PPM1	266.9

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: 1 ppm btex std recal.
~~before~~ after reintegration



Time Printed: Feb 25,94 14:58
Sample Time: Feb 25,94 12:57

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	31	C
Max Gain	2	
Analysis Time	400.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	82.62	mVS	14.2
2	Unknown	174.0	mVS	21.3
3	benzene	1.000	ppm	50.1
4	toluene	1.000	ppm	101.2
5	ebenz/m,p xylene	3.000	PPM1	226.6
6	o-xylene	1.003	PPM1	266.9

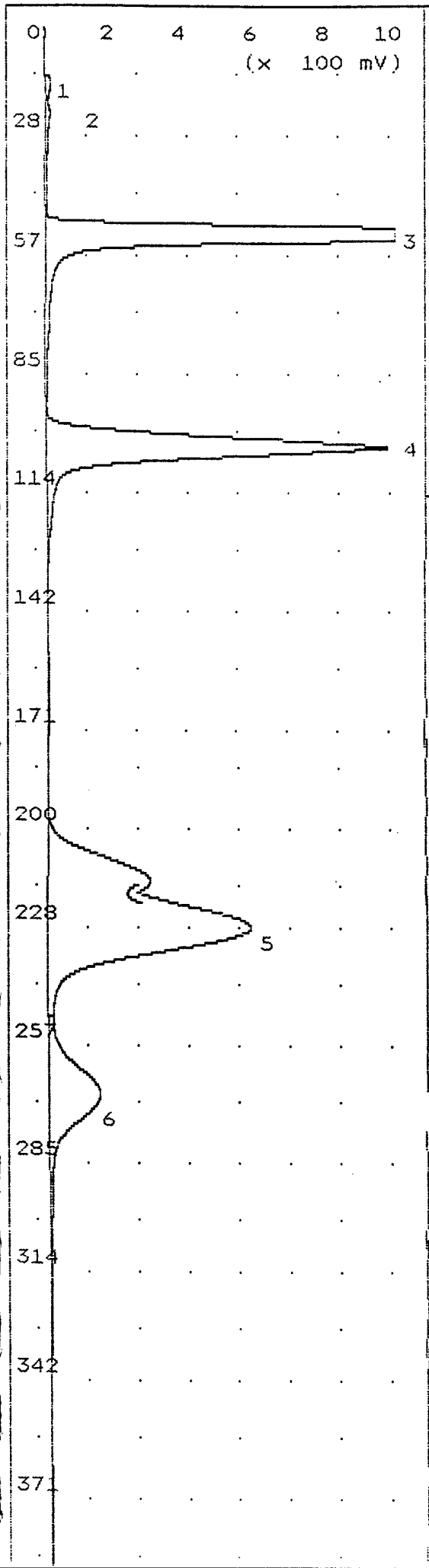
PPM1 = Alarm 1 PPM2 = Alarm2

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: 1 ppm btex std recal.
after reintegration

Analysis #31 10S+ GC Function Analysis Report



Time Printed: Feb 25,94 14:23
Sample Time: Feb 25,94 12:57

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	31	C
Max Gain	2	
Analysis Time	400.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	82.62	mVS	14.2
2	Unknown	174.0	mVS	21.3
3	benzene	921.0	ppb	50.1
4	toluene	752.8	ppb	101.2
5	ebenz/m,p xylene	2.003	PPM1	226.6
6	o-xylene	649.0	ppb	266.9

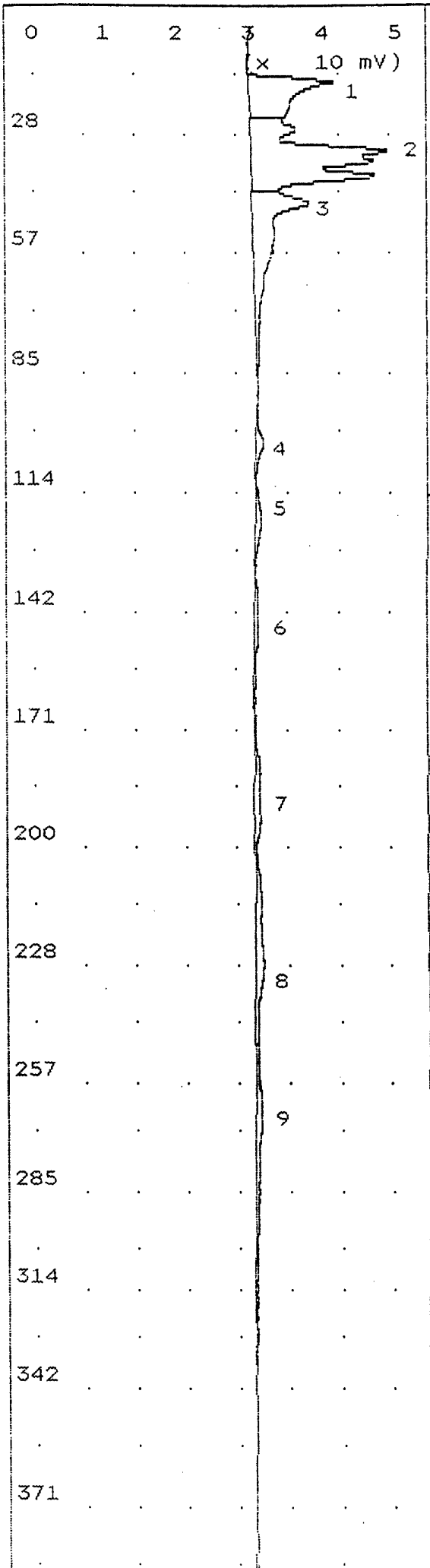
PPM1 = Alarm 1 PPM2 = Alarm2

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: 1 ppm btex std recal.
before reintegration

Analysis #32 10S+ GC Function Analysis Report



Time Printed: Feb 25,94 15:18
Sample Time: Feb 25,94 15:06

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	2	
Analysis Time	400.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	73.29	mVS	13.6
2	Unknown	179.2	mVS	30.6
3	Unknown	85.19	mVS	43.1
4	Unknown	5.131	mVS	100.0
5	Unknown	6.983	mVS	116.4
6	Unknown	7.493	mVS	143.6
7	Unknown	15.81	mVS	185.6
8	Unknown	29.87	mVS	225.8
9	Unknown	22.77	mVS	266.1

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: nwd-001 bh int 1

APPENDIX D

SITE INSPECTION DERIVED WASTE MANAGEMENT

Table 1
Site Inspection Derived Waste
Drum Containing Soil Cuttings From
CTS-001BH, CTS-002BH, and CTS-003BH Boreholes
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

Analyte	Maximum Concentration in Soil Cuttings (mg/kg)	Action Level Concentration* (mg/kg)
VOCs		
m,p-Xylenes	.01085	10
Methylene Chloride†	.00961	NA
Acetone†	.39291	NA
o-Xylene	.00532	10
Metals		
Antimony	12.34	NA
Arsenic	10.21	100
Beryllium	0.86	NA
Cadmium	1.55	10
Chromium	16.31	100
Copper	23.48	2,000
Lead	26.93	100
Mercury	0.12	4
Nickel	23.46	NA
Selenium	9.44	20
Zinc	74.55	10,000
SVOCs		
Bis(2-ethylhexyl)phthalate†	0.66793	NA
TPH	21.25	100

CTS – Current Temporary Waste Storage Area of Concern (AOC).
BH – Borehole.
mg/kg – milligrams per kilogram.
NA – Not available.
VOCs – Volatile Organic Compounds.
SVOCs – Semivolatile Organic Compounds.
TPH – Total Petroleum Hydrocarbons.
*The applicable action level for VOCs in soil is 10 mg/kg total benzene, toluene, ethylbenzene, and xylenes (BTEX). Similarly for TPH in soil the action level is 100 mg/kg TPH. The action levels for metals in soil are derived from an estimate of the concentration in soil which, upon performing a TCLP analysis, would not exceed Federal Primary Drinking Water Standards (FPDWS). Therefore, those values are obtained by multiplying FPDWS MCLs by 2000. This factor represents a combination of the 20x dilution factor employed in TCLP analysis and a 100x dilution factor representing dilution of a contaminant in groundwater.
†Suspected laboratory contaminant.

Table 2
Site Inspection Derived Waste
Drum Containing Soil Cuttings From
NWD-002BH, NWD-003BH, NWD-004BH, ODS-002BH, and ODS-004BH Boreholes
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

Analyte	Maximum Concentration in Soil Cuttings (mg/kg)	Standard Concentration (mg/kg)
VOCs		
Methylene Chloride†	0.01933	NA
Metals		
Antimony	3.68	NA
Arsenic	13.48	100
Beryllium	0.91	NA
Cadmium	0.75	10
Chromium	14.87	100
Copper	23.53	2,000
Lead	31.28	100
Mercury	0.22	4
Nickel	13.7	NA
Selenium	0.98	20
Zinc	39.75	10,000
SVOCs		
Pyrene	0.96666	NA

NWD – Northwest Ditch Area of Concern (AOC).
ODS – Old Drum Storage AOC.
BH – Borehole.
mg/kg – milligrams per kilogram.
NA – Not available.
VOCs – Volatile Organic Compounds.
SVOCs – Semivolatile Organic Compounds.
TPH – Total Petroleum Hydrocarbons.
*The applicable action level for VOCs in soil is 10 mg/kg total benzene, toluene, ethylbenzene, and xylenes (BTEX). Similarly for TPH in soil the action level is 100 mg/kg TPH. The action levels for metals in soil are derived from an estimate of the concentration in soil which, upon performing a TCLP analysis, would not exceed Federal Primary Drinking Water Standards (FPDWS). Therefore, those values are obtained by multiplying FPDWS MCLs by 2000. This factor represents a combination of the 20x dilution factor employed in TCLP analysis and a 100x dilution factor representing dilution of a contaminant in groundwater.
†Suspected laboratory contaminant.

APPENDIX E

ANALYTICAL REPORTS

Appendix E
Summary of Volatile Organic Compounds Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

(Results in micrograms per kilogram unless otherwise noted.)

Location No.: / Sample Date: / Lab Sample No.:	NEF-005 INT 1 2/24/94 9402010531	NEF-005 INT 2 2/24/94 9402010532	CTS-003 INT 1 2/24/94 9402010533	CTS-003 INT 2 2/24/94 9402010534	CTS-002 INT 1 2/24/94 9402010535	CTS-002 INT 2 2/24/94 9402010536
Volatile Organics **Matrix**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
Chloromethane	10U	10U	10U	10U	10U	10U
Bromomethane	10U	10U	10U	10U	10U	10U
Vinyl Chloride	10U	10U	10U	10U	10U	10U
Chloroethane	10U	10U	10U	10U	10U	10U
Methylene Chloride	5U	5U	9.42	9.61	5U	5U
Acetone	100U	100U	100U	100U	392.91	122.46
Carbon Disulfide	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene (total)	5U	5U	5U	5U	5U	5U
Chloroform	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U
2-Butanone	100U	100U	100U	100U	100U	100U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U
Carbon Tetrachloride	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U
Dibromochloromethane	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U
Benzene	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U
4-Methyl-2-Pentanone	50U	50U	50U	50U	50U	50U
2-Hexanone	50U	50U	50U	50U	50U	50U
Tetrachloroethene	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U
Styrene	5U	5U	5U	5U	5U	5U
Xylenes (total)	7.38	7.85	7.40	7.25	5U	16.17

NEF – Northeast and East Fence Line Area of Concern (AOC).
CTS – Current Temporary Waste Storage AOC.
INT – Interval.
U – Compound analyzed for but not detected. Number indicates detection limit.

Appendix E
Summary of Volatile Organic Compounds Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

(Results in micrograms per kilogram unless otherwise noted.)

Location No.: / Sample Date: / Lab Sample No.:	CTS-001 INT 1 2/24/94 9402010537	NEF-004 INT 1 2/24/94 9402010538	NEF-003 INT 1 2/24/94 9402010539	NEF-003 INT 2 2/24/94 9402010540	NEF-002 INT 1 2/24/94 9402010541	NEF-002 INT 2 2/24/94 9402010542
Volatile Organics Matrix	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
Chloromethane	10U	10U	10U	10U	10U	10U
Bromomethane	10U	10U	10U	10U	10U	10U
Vinyl Chloride	10U	10U	10U	10U	10U	10U
Chloroethane	10U	10U	10U	10U	10U	10U
Methylene Chloride	9.40	17.02	5U	5U	15.69	5U
Acetone	100U	100U	299.35	100U	100U	100U
Carbon Disulfide	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene (total)	5U	5U	5U	5U	5U	5U
Chloroform	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U
2-Butanone	100U	100U	100U	100U	100U	100U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U
Carbon Tetrachloride	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U
Dibromochloromethane	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U
Benzene	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U
4-Methyl-2-Pentanone	50U	50U	50U	50U	50U	50U
2-Hexanone	50U	50U	50U	50U	50U	50U
Tetrachloroethene	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U
Styrene	5U	5U	5U	5U	5U	5U
Xylenes (total)	5U	5U	5U	5U	5U	5U

CTS – Current Temporary Waste Storage Area of Concern (AOC).
NEF – Northeast and East Fence Line AOC.
INT – Interval.
U – Compound analyzed for but not detected. Number indicates detection limit.

Appendix E
Summary of Volatile Organic Compounds Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

(Results in micrograms per kilogram unless otherwise noted.)

Location No.: / Sample Date: / Lab Sample No.:	NEF-001 INT 1 2/24/94 9402010543	NEF-001 INT 2 2/24/94 9402010544	ODS-004BH INT 1 2/24/94 9402010551	ODS-002BH INT 1 2/25/94 9402010552	ODS-001BH INT 1 2/25/94 9402010553	ODS-001BH INT 2 2/25/94 9402010554
Volatile Organics — Matrix	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
Chloromethane	10U	10U	10U	10U	10U	10U
Bromomethane	10U	10U	10U	10U	10U	10U
Vinyl Chloride	10U	10U	10U	10U	10U	10U
Chloroethane	10U	10U	10U	10U	10U	10U
Methylene Chloride	15.42	15.77	17.53	17.80	16.04	17.56
Acetone	100U	100U	100U	100U	100U	100U
Carbon Disulfide	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene (total)	5U	5U	5U	5U	5U	5U
Chloroform	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U
2-Butanone	100U	100U	100U	100U	100U	100U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U
Carbon Tetrachloride	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U
Dibromochloromethane	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U
Benzene	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U
4-Methyl-2-Pentanone	50U	50U	50U	50U	50U	50U
2-Hexanone	50U	50U	50U	50U	50U	50U
Tetrachloroethene	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U
Styrene	5U	5U	5U	5U	5U	5U
Xylenes (total)	5U	5U	5U	5U	5U	5U

NEF – Northeast Fence Line Area of Concern (AOC).
ODS – Old Drum Storage AOC.
BH – Borehole.
INT – Interval.
U – Compound analyzed for but not detected. Number indicates detection limit.

Appendix E
Summary of Volatile Organic Compounds Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

(Results in micrograms per kilogram unless otherwise noted.)

Location No.: / Sample Date: / Lab Sample No.:	ODS-003BH INT 1 2/25/94 9402010555	NWD-001BH INT 1 2/25/94 9402010556	NWD-002BH INT 1 2/25/94 9402010557	NWD-002 INT 2 2/25/94 9402010558	NWD-003BH INT 1 2/25/94 9402010559	NWD-003BH INT 2 2/25/94 9402010560
Volatile Organics Matrix	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
Chloromethane	10U	10U	10U	10U	10U	10U
Bromomethane	10U	10U	10U	10U	10U	10U
Vinyl Chloride	10U	10U	10U	10U	10U	10U
Chloroethane	10U	10U	10U	10U	10U	10U
Methylene Chloride	17.09	16.84	16.41	17.79	5U	18.23
Acetone	100U	341.50	100U	100U	100U	100U
Carbon Disulfide	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene (total)	5U	5U	5U	5U	5U	5U
Chloroform	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U
2-Butanone	100U	100U	100U	100U	100U	100U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U
Carbon Tetrachloride	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U
Dibromochloromethane	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U
Benzene	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U
4-Methyl-2-Pentanone	50U	50U	50U	50U	50U	50U
2-Hexanone	50U	50U	50U	50U	50U	50U
Tetrachloroethene	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U
Styrene	5U	5U	5U	5U	5U	5U
Xylenes (total)	5U	5U	5U	5U	5U	5U

ODS – Old Drum Storage Area of Concern (AOC).
NWD – Northwest Ditch AOC.
BH – Borehole.
INT – Interval.
U – Compound analyzed for but not detected. Number indicates detection limit.

Appendix E
Summary of Volatile Organic Compounds Detected in Soil/Water Samples
223rd CBCSQ, Hot Springs ANGS, Hot Springs, Arkansas

(Results in micrograms per kilogram unless otherwise noted.)

Location No.: / Sample Date: / Lab Sample No.:	NWD-004BH INT 1 2/25/94 9402010561	CTS-004 SF 2/25/94 9402010562	NWD-006 SD 2/25/94 9402010563	NWD-005 SW 2/25/94 9402010564
Volatile Organics **Matrix**	**Soil**	**Soil**	**Soil**	**Water**
Chloromethane	10U	10U	10U	10U
Bromomethane	10U	10U	10U	10U
Vinyl Chloride	10U	10U	10U	10U
Chloroethane	10U	10U	10U	10U
Methylene Chloride	19.33	5U	18.14	224.39
Acetone	100U	100U	100U	100U
Carbon Disulfide	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U
1,1-Dichloroethane	5U	5U	5U	5U
1,2-Dichloroethene (total)	5U	5U	5U	5U
Chloroform	5U	5U	5U	12.75
1,2-Dichloroethane	5U	5U	5U	5U
2-Butanone	100U	100U	100U	100U
1,1,1-Trichloroethane	5U	5U	5U	5U
Carbon Tetrachloride	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	8.49
Dibromochloromethane	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U
Benzene	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U
4-Methyl-2-Pentanone	50U	50U	50U	50U
2-Hexanone	50U	50U	50U	50U
Tetrachloroethene	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U
Toluene	5U	5U	5U	5.26
Chlorobenzene	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U
Styrene	5U	5U	5U	5U
Xylenes (total)	5U	5U	5U	5U

NWD – Northwest Ditch Area of Concern (AOC).
CTS – Current Temporary Waste Storage AOC.
BH – Borehole.
INT – Interval.
SF – Surface soil.
SD – Sediment.
SW – Surface Water.
U – Compound analyzed for but not detected. Number indicates detection limit.

Appendix E
Summary of Metal/TPH Analytes Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

(Results in milligrams per kilogram for soil or milligrams per liter for water unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:	NEF-005, INT 1 2/24/94 9402010531	NEF-005, INT 2 2/24/94 9402010532	CTS-003, INT 1 2/24/94 9402010533	CTS-003, INT 2 2/24/94 9402010534	CTS-002, INT 1 2/24/94 9402010535
Metals Matrix	Soil	Soil	Soil	Soil	Soil
Antimony	9.90	13.15	3U	3U	10.26
Arsenic	12.40	10.44	5.32	2.93	5.63
Beryllium	0.34U	0.44	0.44	0.33	0.50
Cadmium	1.13	1.40	1.53	1.55	0.90
Chromium	17.68	27.73	6.94	9.53	14.83
Copper	19.07	15.19	21.85	5.82	15.41
Lead	24.59	17.04	11.38	17.29	17.67
Mercury	0.15	0.10	0.12	0.11	0.09
Nickel	7.94	5.75	6.22	6.46	18.02
Selenium	12.31	16.14	0.20U	6.82	9.44
Silver	0.70U	0.71	0.70U	0.70U	0.70U
Thallium	10U	10U	10U	10U	10U
Zinc	29.31	22.50	22.92	25.76	16.75

Lab Sample ID No.:	9402010531	9402010532	9402010533	9402010534	9402010535
Total Petroleum Hydrocarbons (TPH)	10U	10U	21.25	11.62	10U

NEF – Northeast and East Fence Line Area of Concern (AOC).
CTS – Current Temporary Waste Storage AOC.
INT – Interval.
U – Compound analyzed for but not detected. Number indicates detection limit.

Appendix E
Summary of Metal/TPH Analytes Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

(Results in milligrams per kilogram for soil or milligrams per liter for water unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:	CTS-002, INT 2 2/24/94 9402010536	CTS-001, INT 1 2/24/94 9402010537	NEF-004 INT 1 2/24/94 9402010538	NEF-003, INT 1 2/24/94 9402010539	NEF-003, INT 2 2/24/94 9402010540
Metals **Matrix**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
Antimony	12.34	3U	10.26	10.64	16.37
Arsenic	8.40	10.21	10.92	4.48	16.16
Beryllium	0.86	0.26	0.51	0.34	0.34
Cadmium	0.68	0.57	0.50U	0.50U	0.50U
Chromium	16.31	8.61	14.28	11.19	11.60
Copper	23.48	9.19	14.51	6.14	5.37
Lead	26.93	15.87	45.31	22.06	25.57
Mercury	0.11	0.11	0.13	0.15	0.12
Nickel	23.46	7.86	13.47	6.37	7.06
Selenium	0.73	0.26	0.20U	1.53	1.21
Silver	0.70U	0.70U	0.70U	0.70U	0.70U
Thallium	10U	10U	10U	10U	10U
Zinc	74.55	27.27	75.33	25.38	26.92

Lab Sample ID No.:	9402010536	9402010537	9402010538	9402010539	9402010540
Total Petroleum Hydrocarbons (TPH)	10U	10U	10U	10U	10U

CTS – Current Temporary Waste Storage Area of Concern (AOC).
NEF – Northeast and East Fence Line AOC.
INT – Interval.
U – Compound analyzed for but not detected. Number indicates detection limit.

Appendix E
Summary of Metal/TPH Analytes Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

(Results in milligrams per kilogram for soil or milligrams per liter for water unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:	NEF-002, INT 1 2/24/94 9402010541	NEF-002, INT 2 2/24/94 9402010542	NEF-001, INT 1 2/24/94 9402010543	NEF-001, INT 2 2/24/94 9402010544	ODS-004, INT 1 2/25/94 9401020551
Metals — Matrix	Soil	Soil	Soil	Soil	Soil
Antimony	11.47	6.05	3U	6.01	3.68
Arsenic	13.34	14.72	6.99	12.13	6.66
Beryllium	0.58	0.77	0.22	0.37	0.50
Cadmium	1.15	0.56	0.53	0.62	0.75
Chromium	22.63	22.08	5U	23.71	12.95
Copper	26.80	20.37	10.47	5.44	10.07
Lead	59.83	23.00	27.62	22.81	21.03
Mercury	0.07	0.19	0.12	0.16	0.05
Nickel	14.87	24.21	3.36	8.62	13.70
Selenium	2.63	3.56	5.20	2.20	0.20U
Silver	0.70U	0.73	0.70U	0.70U	0.70U
Thallium	10U	10U	10U	10U	10U
Zinc	161.33	99.57	38.58	43.04	39.75

Lab Sample ID No.:	9402010541	9402010542	9402010543	9402010544	9401020551
Total Petroleum Hydrocarbons (TPH)	10U	10U	10U	10U	10U

NEF – Northeast and East Fence Line Area of Concern (AOC).
ODS – Old Drum Storage AOC.
INT – Interval.
U – Compound analyzed for but not detected. Number indicates detection limit.

Appendix E
Summary of Metal/TPH Analytes Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

(Results in milligrams per kilogram for soil or milligrams per liter for water unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:	ODS-002, INT 1 2/25/94 9402010552	ODS-001, INT 1 2/25/94 9402010553	ODS-001, INT 2 2/25/94 9402010554	ODS-003, INT 1 2/25/94 9402010555	NWD-001, INT 1 2/25/94 9402010556
Metals Matrix	Soil	Soil	Soil	Soil	Soil
Antimony	3U	3U	3U	3U	5.31
Arsenic	10.17	3.07	6.23	8.10	10.44
Beryllium	0.26	0.24	0.51	0.96	0.50
Cadmium	0.72	0.95	0.50U	1.00	0.50U
Chromium	8.88	5U	11.83	10.08	10.93
Copper	6.26	26.19	11.76	10.88	10.40
Lead	11.00	28.55	37.70	42.35	32.09
Mercury	0.08	0.06	0.06	0.04	0.06
Nickel	4.07	3.69	8.86	8.81	12.06
Selenium	0.20U	0.20U	0.20U	0.20U	0.20U
Silver	0.70U	0.70U	0.70U	0.70U	0.70U
Thallium	10U	10U	10U	10U	10U
Zinc	10.40	143.81	38.84	156.77	87.46

Lab Sample ID No.:	9402010552	9402010553	9402010554	9402010555	9402010556
Total Petroleum Hydrocarbons (TPH)	10U	10U	10U	10U	10U

ODS – Old Drum Storage Area of Concern (AOC).
NWD – Northwest Ditch AOC.
INT – Interval.
U – Compound analyzed for but not detected. Number indicates detection limit.

Appendix E
Summary of Metal/TPH Analytes Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

(Results in milligrams per kilogram for soil or milligrams per liter for water unless otherwise noted.)

Location No.: / Sample Date: / Lab Sample No.:	NWD-002, INT 1 2/25/94 9402010557	NWD-002, INT 2 2/25/94 9402010558	NWD-003, INT 1 2/25/94 9402010559	NWD-003, INT 2 2/25/94 9402010560	NWD-004, INT 1 2/25/94 9402010561
Metals / Matrix	Soil	Soil	Soil	Soil	Soil
Antimony	3U	3U	3U	3U	3U
Arsenic	6.94	12.22	12.44	10.54	13.48
Beryllium	0.36	0.58	0.36	0.35	0.91
Cadmium	0.50U	0.50U	0.50U	0.50U	0.50U
Chromium	8.72	14.87	11.54	10.51	5.75
Copper	6.34	23.53	9.01	5.41	10.24
Lead	20.23	31.28	29.98	12.00	12.08
Mercury	0.03	0.09	0.04	0.04	0.22
Nickel	8.15	9.68	8.48	8.71	4.80
Selenium	0.20U	0.20U	0.70	0.47	0.98
Silver	0.70U	0.70U	0.70U	0.70U	0.70U
Thallium	10U	10U	10U	10U	10U
Zinc	30.44	38.64	36.41	25.77	16.89

Lab Sample ID No.:	9402010557	9402010558	9402010559	9402010560	9402010561
Total Petroleum Hydrocarbons (TPH)	10U	10U	10U	10U	10U

NWD – Northwest Ditch Area of Concern (AOC).
INT – Interval.

U – Compound analyzed for but not detected. Number indicates detection limit.

Appendix E
Summary of Metal/TPH Analytes Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

(Results in milligrams per kilogram for soil or milligrams per liter for water unless otherwise noted.)

Location No.: / Sample Date: / Lab Sample No.:	CTS-004 SF 2/25/94 9402010562	NWD-006 SD 2/25/94 9402010563	NWD-005 SW 2/25/94 9402010572
Metals / **Matrix**	**Soil**	**Soil**	**Water**
Antimony	3U	3U	0.03U
Arsenic	9.72	9.77	0.002
Beryllium	0.33	0.40	0.007
Cadmium	5.18	6.04	0.03
Chromium	20.69	67.08	0.09
Copper	40.46	24.42	0.02
Lead	54.89	476.70	0.12
Mercury	0.06	0.09	0.006
Nickel	10.20	11.32	0.02U
Selenium	0.20U	0.2U	0.002U
Silver	0.70U	0.70U	0.02
Thallium	10U	10U	0.11
Zinc	601.59	416.40	0.11

Lab Sample ID No.:	9402010562	9402010563	9402010572
Total Petroleum Hydrocarbons (TPH)	10U	10U	1,300 ppb

CTS – Current Temporary Waste Storage Area of Concern (AOC).
NWD – Northwest Ditch AOC.
SF – Surface soil.
SD – Sediment.
SW – Surface Water.
U – Compound analyzed for but not detected. Number indicates detection limit.
ppb – parts per billion.

Appendix E
Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:	NEF-005, INT 1 2/24/94 9402010531	NEF-005, INT 2 2/24/94 9402010532	CTS-003, INT 1 2/24/94 9402010533	CTS-003, INT 2 2/24/94 94020100534	CTS-002, INT 1 2/24/94 9402010535
Semivolatile Organics **Matrix**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
Phenol	660U	660U	660U	660U	660U
bis(2-Chloroethyl)Ether	660U	660U	660U	660U	660U
2-Chlorophenol	660U	660U	660U	660U	660U
1,3-Dichlorobenzene	660U	660U	660U	660U	660U
1,4-Dichlorobenzene	660U	660U	660U	660U	660U
Benzyl Alcohol	1,300U	1,300U	1,300U	1,300U	1,300U
1,2-Dichlorobenzene	660U	660U	660U	660U	660U
2-Methylphenol	660U	660U	660U	660U	660U
bis(2-Chloroisopropyl)Ether	660U	660U	660U	660U	660U
4-Methylphenol	660U	660U	660U	660U	660U
N-Nitroso-Di-n-Propylamine	660U	660U	660U	660U	660U
Hexachloroethane	660U	660U	660U	660U	660U
Nitrobenzene	660U	660U	660U	660U	660U
Isophorone	660U	660U	660U	660U	660U
2-Nitrophenol	660U	660U	660U	660U	660U
2,4-Dimethylphenol	660U	660U	660U	660U	660U
Benzoic Acid	3,300U	3,300U	3,300U	3,300U	3,300U
bis(2-Chloroethoxy)Methane	660U	660U	660U	660U	660U
2,4-Dichlorophenol	660U	660U	660U	660U	660U
1,2,4-Trichlorobenzene	660U	660U	660U	660U	660U
Naphthalene	660U	660U	660U	660U	660U
4-Chloroaniline	1,300U	1,300U	1,300U	1,300U	1,300U
Hexachlorobutadiene	660U	660U	660U	660U	660U
4-Chloro-3-Methylphenol	1,300U	1,300U	1,300U	1,300U	1,300U
2-Methylnaphthalene	660U	660U	660U	660U	660U
Hexachlorocyclopentadiene	660U	660U	660U	660U	660U
2,4,6-Trichlorophenol	660U	660U	660U	660U	660U
2,4,5-Trichlorophenol	660U	660U	660U	660U	660U
2-Chloronaphthalene	660U	660U	660U	660U	660U
2-Nitroaniline	3,300U	3,300U	3,300U	3,300U	3,300U

Appendix E (Concluded)

Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Location No.: / Sample Date: / Lab Sample No.:	NEF-005, INT 1 2/24/94 9402010531	NEF-005, INT 2 2/24/94 9402010532	CTS-003, INT 1 2/24/94 9402010533	CTS-003, INT 2 2/24/94 94020100534	CTS-002, INT 1 2/24/94 9402010535
Semivolatile Organics **Matrix**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
Dimethylphthalate	660U	660U	660U	660U	660U
Acenaphthylene	660U	660U	660U	660U	660U
2,6-Dinitrotoluene	660U	660U	660U	660U	660U
3-Nitroaniline	3,300U	3,300U	3,300U	3,300U	3,300U
Acenaphthene	660U	660U	660U	660U	660U
2,4-Dinitrophenol	3,300U	3,300U	3,300U	3,300U	3,300U
4-Nitrophenol	3,300U	3,300U	3,300U	3,300U	3,300U
Dibenzofuran	660U	660U	660U	660U	660U
2,4-Dinitrotoluene	660U	660U	660U	660U	660U
Diethylphthalate	660U	660U	660U	660U	660U
4-Chlorophenyl-phenylether	660U	660U	660U	660U	660U
Fluorene	660U	660U	660U	660U	660U
4-Nitroaniline	3,300U	3,300U	3,300U	3,300U	3,300U
4,6-Dinitro-2-Methylphenol	3,300U	3,300U	3,300U	3,300U	3,300U
N-Nitrosodiphenylamine	660U	660U	660U	660U	660U
4-Bromophenyl-phenylether	660U	660U	660U	660U	660U
Hexachlorobenzene	660U	660U	660U	660U	660U
Pentachlorophenol	3,300U	3,300U	3,300U	3,300U	3,300U
Phenanthrene	660U	660U	660U	660U	660U
Anthracene	660U	660U	660U	660U	660U
Di-n-Butylphthalate	660U	660U	660U	660U	660U
Fluoranthene	660U	660U	660U	660U	660U
Pyrene	660U	660U	660U	660U	660U
Butylbenzylphthalate	660U	660U	660U	660U	660U
3,3'-Dichlorobenzidine	1,300U	1,300U	1,300U	1,300U	1,300U
Benzo(a)Anthracene	660U	660U	660U	660U	660U
Chrysene	660U	660U	660U	660U	660U
bis(2-Ethylhexyl)Phthalate	660U	660U	667.93	660U	660U
Di-n-Octyl Phthalate	660U	660U	660U	660U	660U
Benzo(b)Fluoranthene	660U	660U	660U	660U	660U
Benzo(k)Fluoranthene	660U	660U	660U	660U	660U
Benzo(a)Pyrene	660U	660U	660U	660U	660U
Indeno(1,2,3-cd)Pyrene	660U	660U	660U	660U	660U
Dibenzo(a,h)Anthracene	660U	660U	660U	660U	660U
Benzo(g,h,i)Perylene	660U	660U	660U	660U	660U

NEF – Northeast and East Fence Line Area of Concern (AOC).
CTS – Current Temporary Waste Storage AOC.
INT – Interval.
U – Compound analyzed for but not detected. Number indicates detection limit.

Appendix E
Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Location No.:	CTS-002, INT 2	CTS-001, INT 1	NEF-004, INT 1	NEF-003, INT 1	NEF-003, INT 2
Sample Date:	2/24/94	2/24/94	2/24/94	2/24/94	2/24/94
Lab Sample No.:	9402010536	9402010537	9402010538	9402010539	9402010540
Semivolatile Organics — Matrix	Soil	Soil	Soil	Soil	Soil
Phenol	660U	660U	660U	660U	660U
bis(2-Chloroethyl)Ether	660U	660U	660U	660U	660U
2-Chlorophenol	660U	660U	660U	660U	660U
1,3-Dichlorobenzene	660U	660U	660U	660U	660U
1,4-Dichlorobenzene	660U	660U	660U	660U	660U
Benzyl Alcohol	1,300U	1,300U	1,300U	1,300U	1,300U
1,2-Dichlorobenzene	660U	660U	660U	660U	660U
2-Methylphenol	660U	660U	660U	660U	660U
bis(2-Chloroisopropyl)Ether	660U	660U	660U	660U	660U
4-Methylphenol	660U	660U	660U	660U	660U
N-Nitroso-Di-n-Propylamine	660U	660U	660U	660U	660U
Hexachloroethane	660U	660U	660U	660U	660U
Nitrobenzene	660U	660U	660U	660U	660U
Isophorone	660U	660U	660U	660U	660U
2-Nitrophenol	660U	660U	660U	660U	660U
2,4-Dimethylphenol	660U	660U	660U	660U	660U
Benzoic Acid	3,300U	3,300U	3,300U	3,300U	3,300U
bis(2-Chloroethoxy)Methane	660U	660U	660U	660U	660U
2,4-Dichlorophenol	660U	660U	660U	660U	660U
1,2,4-Trichlorobenzene	660U	660U	660U	660U	660U
Naphthalene	660U	660U	660U	660U	660U
4-Chloroaniline	1,300U	1,300U	1,300U	1,300U	1,300U
Hexachlorobutadiene	660U	660U	660U	660U	660U
4-Chloro-3-Methylphenol	1,300U	1,300U	1,300U	1,300U	1,300U
2-Methylnaphthalene	660U	660U	660U	660U	660U
Hexachlorocyclopentadiene	660U	660U	660U	660U	660U
2,4,6-Trichlorophenol	660U	660U	660U	660U	660U
2,4,5-Trichlorophenol	660U	660U	660U	660U	660U
2-Chloronaphthalene	660U	660U	660U	660U	660U
2-Nitroaniline	3,300U	3,300U	3,300U	3,300U	3,300U

Appendix E (Concluded)

Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Location No.: / Sample Date: / Lab Sample No.: / Semivolatile Organics / Matrix	CTS-002, INT 2 2/24/94 9402010536 Soil	CTS-001, INT 1 2/24/94 9402010537 Soil	NEF-004, INT 1 2/24/94 9402010538 Soil	NEF-003, INT 1 2/24/94 9402010539 Soil	NEF-003, INT 2 2/24/94 9402010540 Soil
Dimethylphthalate	660U	660U	660U	660U	660U
Acenaphthylene	660U	660U	660U	660U	660U
2,6-Dinitrotoluene	660U	660U	660U	660U	660U
3-Nitroaniline	3,300U	3,300U	3,300U	3,300U	3,300U
Acenaphthene	660U	660U	660U	660U	660U
2,4-Dinitrophenol	3,300U	3,300U	3,300U	3,300U	3,300U
4-Nitrophenol	3,300U	3,300U	3,300U	3,300U	3,300U
Dibenzofuran	660U	660U	660U	660U	660U
2,4-Dinitrotoluene	660U	660U	660U	660U	660U
Diethylphthalate	660U	660U	660U	660U	660U
4-Chlorophenyl-phenylether	660U	660U	660U	660U	660U
Fluorene	660U	660U	660U	660U	660U
4-Nitroaniline	3,300U	3,300U	3,300U	3,300U	3,300U
4,6-Dinitro-2-Methylphenol	3,300U	3,300U	3,300U	3,300U	3,300U
N-Nitrosodiphenylamine	660U	660U	660U	660U	660U
4-Bromophenyl-phenylether	660U	660U	660U	660U	660U
Hexachlorobenzene	660U	660U	660U	660U	660U
Pentachlorophenol	3,300U	3,300U	3,300U	3,300U	3,300U
Phenanthrene	660U	660U	660U	660U	660U
Anthracene	660U	660U	660U	660U	660U
Di-n-Butylphthalate	660U	660U	660U	660U	660U
Fluoranthene	660U	660U	660U	660U	660U
Pyrene	660U	660U	660U	660U	660U
Butylbenzylphthalate	660U	660U	660U	660U	660U
3,3'-Dichlorobenzidine	1,300U	1,300U	1,300U	1,300U	1,300U
Benzo(a)Anthracene	660U	660U	660U	660U	660U
Chrysene	660U	660U	660U	660U	660U
bis(2-Ethylhexyl)Phthalate	660U	660U	660U	660U	660U
Di-n-Octyl Phthalate	660U	660U	660U	660U	660U
Benzo(b)Fluoranthene	660U	660U	660U	660U	660U
Benzo(k)Fluoranthene	660U	660U	660U	660U	660U
Benzo(a)Pyrene	660U	660U	660U	660U	660U
Indeno(1,2,3-cd)Pyrene	660U	660U	660U	660U	660U
Dibenzo(a,h)Anthracene	660U	660U	660U	660U	660U
Benzo(g,h,i)Perylene	660U	660U	660U	660U	660U

CTS – Current Temporary Waste Storage Area of Concern (AOC).
NEF – Northeast and East Fence Line AOC.
INT – Interval.
U – Compound analyzed for but not detected. Number indicates detection limit.

Appendix E
Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Location No.:	NEF-002, INT 1	NEF-002, INT 2	NEF-001, INT 1	NEF-001, INT 2	ODS-004, INT 1
Sample Date:	2/24/94	2/24/94	2/24/94	2/24/94	2/25/94
Lab Sample No.:	9402010541	9402010542	9402010543	9402010544	9402010551
Semivolatile Organics / Matrix	Soil	Soil	Soil	Soil	Soil
Phenol	660U	660U	660U	660U	660U
bis(2-Chloroethyl)Ether	660U	660U	660U	660U	660U
2-Chlorophenol	660U	660U	660U	660U	660U
1,3-Dichlorobenzene	660U	660U	660U	660U	660U
1,4-Dichlorobenzene	660U	660U	660U	660U	660U
Benzyl Alcohol	1,300U	1,300U	1,300U	1,300U	1,300U
1,2-Dichlorobenzene	660U	660U	660U	660U	660U
2-Methylphenol	660U	660U	660U	660U	660U
bis(2-Chloroisopropyl)Ether	660U	660U	660U	660U	660U
4-Methylphenol	660U	660U	660U	660U	660U
N-Nitroso-Di-n-Propylamine	660U	660U	660U	660U	660U
Hexachloroethane	660U	660U	660U	660U	660U
Nitrobenzene	660U	660U	660U	660U	660U
Isophorone	660U	660U	660U	660U	660U
2-Nitrophenol	660U	660U	660U	660U	660U
2,4-Dimethylphenol	660U	660U	660U	660U	660U
Benzoic Acid	3,300U	3,300U	3,300U	3,300U	3,300U
bis(2-Chloroethoxy)Methane	660U	660U	660U	660U	660U
2,4-Dichlorophenol	660U	660U	660U	660U	660U
1,2,4-Trichlorobenzene	660U	660U	660U	660U	660U
Naphthalene	660U	660U	660U	660U	660U
4-Chloroaniline	1,300U	1,300U	1,300U	1,300U	1,300U
Hexachlorobutadiene	660U	660U	660U	660U	660U
4-Chloro-3-Methylphenol	1,300U	1,300U	1,300U	1,300U	1,300U
2-Methylnaphthalene	660U	660U	660U	660U	660U
Hexachlorocyclopentadiene	660U	660U	660U	660U	660U
2,4,6-Trichlorophenol	660U	660U	660U	660U	660U
2,4,5-Trichlorophenol	660U	660U	660U	660U	660U
2-Chloronaphthalene	660U	660U	660U	660U	660U
2-Nitroaniline	3,300U	3,300U	3,300U	3,300U	3,300U

Appendix E (Concluded)
Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas
(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Location No.: / Sample Date: / Lab Sample No.:	NEF-002, INT 1 2/24/94 9402010541	NEF-002, INT 2 2/24/94 9402010542	NEF-001, INT 1 2/24/94 9402010543	NEF-001, INT 2 2/24/94 9402010544	ODS-004, INT 1 2/25/94 9402010551
Semivolatile Organics — Matrix	Soil	Soil	Soil	Soil	Soil
Dimethylphthalate	660U	660U	660U	660U	660U
Acenaphthylene	660U	660U	660U	660U	660U
2,6-Dinitrotoluene	660U	660U	660U	660U	660U
3-Nitroaniline	3,300U	3,300U	3,300U	3,300U	3,300U
Acenaphthene	660U	660U	660U	660U	660U
2,4-Dinitrophenol	3,300U	3,300U	3,300U	3,300U	3,300U
4-Nitrophenol	3,300U	3,300U	3,300U	3,300U	3,300U
Dibenzofuran	660U	660U	660U	660U	660U
2,4-Dinitrotoluene	660U	660U	660U	660U	660U
Diethylphthalate	660U	660U	660U	660U	660U
4-Chlorophenyl-phenylether	660U	660U	660U	660U	660U
Fluorene	660U	660U	660U	660U	660U
4-Nitroaniline	3,300U	3,300U	3,300U	3,300U	3,300U
4,6-Dinitro-2-Methylphenol	3,300U	3,300U	3,300U	3,300U	3,300U
N-Nitrosodiphenylamine	660U	660U	660U	660U	660U
4-Bromophenyl-phenylether	660U	660U	660U	660U	660U
Hexachlorobenzene	660U	660U	660U	660U	660U
Pentachlorophenol	3,300U	3,300U	3,300U	3,300U	3,300U
Phenanthrene	660U	660U	660U	660U	660U
Anthracene	660U	660U	660U	660U	660U
Di-n-Butylphthalate	660U	660U	660U	660U	660U
Fluoranthene	660U	660U	660U	660U	660U
Pyrene	660U	660U	660U	660U	660U
Butylbenzylphthalate	660U	660U	660U	660U	660U
3,3'-Dichlorobenzidine	1,300U	1,300U	1,300U	1,300U	1,300U
Benzo(a)Anthracene	660U	660U	660U	660U	660U
Chrysene	660U	660U	660U	660U	660U
bis(2-Ethylhexyl)Phthalate	660U	660U	660U	660U	660U
Di-n-Octyl Phthalate	660U	660U	660U	660U	660U
Benzo(b)Fluoranthene	660U	660U	660U	660U	660U
Benzo(k)Fluoranthene	660U	660U	660U	660U	660U
Benzo(a)Pyrene	660U	660U	660U	660U	660U
Indeno(1,2,3-cd)Pyrene	660U	660U	660U	660U	660U
Dibenzo(a,h)Anthracene	660U	660U	660U	660U	660U
Benzo(g,h,i)Perylene	660U	660U	660U	660U	660U

NEF – Northeast and East Fence Line Area of Concern (AOC).
ODS – Old Drum Storage AOC.
INT – Interval.
U – Compound analyzed for but not detected. Number indicates detection limit.

Appendix E
Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:	ODS-002, INT 1 2/25/94 9402010552	ODS-001, INT 1 2/25/94 9402010553	ODS-001, INT 2 2/25/94 9402010554	ODS-003, INT 1 2/25/94 9402010555	NWD-001, INT 1 2/25/94 9402010556
Semivolatile Organics **Matrix**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
Phenol	660U	660U	660U	660U	660U
bis(2-Chloroethyl)Ether	660U	660U	660U	660U	660U
2-Chlorophenol	660U	660U	660U	660U	660U
1,3-Dichlorobenzene	660U	660U	660U	660U	660U
1,4-Dichlorobenzene	660U	660U	660U	660U	660U
Benzyl Alcohol	1,300U	1,300U	1,300U	1,300U	1,300U
1,2-Dichlorobenzene	660U	660U	660U	660U	660U
2-Methylphenol	660U	660U	660U	660U	660U
bis(2-Chloroisopropyl)Ether	660U	660U	660U	660U	660U
4-Methylphenol	660U	660U	660U	660U	660U
N-Nitroso-Di-n-Propylamine	660U	660U	660U	660U	660U
Hexachloroethane	660U	660U	660U	660U	660U
Nitrobenzene	660U	660U	660U	660U	660U
Isophorone	660U	660U	660U	660U	660U
2-Nitrophenol	660U	660U	660U	660U	660U
2,4-Dimethylphenol	660U	660U	660U	660U	660U
Benzoic Acid	3,300U	3,300U	3,300U	3,300U	3,300U
bis(2-Chloroethoxy)Methane	660U	660U	660U	660U	660U
2,4-Dichlorophenol	660U	660U	660U	660U	660U
1,2,4-Trichlorobenzene	660U	660U	660U	660U	660U
Naphthalene	660U	660U	660U	660U	660U
4-Chloroaniline	1,300U	1,300U	1,300U	1,300U	1,300U
Hexachlorobutadiene	660U	660U	660U	660U	660U
4-Chloro-3-Methylphenol	1,300U	1,300U	1,300U	1,300U	1,300U
2-Methylnaphthalene	660U	660U	660U	660U	660U
Hexachlorocyclopentadiene	660U	660U	660U	660U	660U
2,4,6-Trichlorophenol	660U	660U	660U	660U	660U
2,4,5-Trichlorophenol	660U	660U	660U	660U	660U
2-Chloronaphthalene	660U	660U	660U	660U	660U
2-Nitroaniline	3,300U	3,300U	3,300U	3,300U	3,300U

Appendix E (Concluded)

Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Location No.: / Sample Date: / Lab Sample No.:	ODS-002, INT 1 2/25/94 9402010552	ODS-001, INT 1 2/25/94 9402010553	ODS-001, INT 2 2/25/94 9402010554	ODS-003, INT 1 2/25/94 9402010555	NWD-001, INT 1 2/25/94 9402010556
Semivolatile Organics — Matrix	Soil	Soil	Soil	Soil	Soil
Dimethylphthalate	660U	660U	660U	660U	660U
Acenaphthylene	660U	660U	660U	660U	660U
2,6-Dinitrotoluene	660U	660U	660U	660U	660U
3-Nitroaniline	3,300U	3,300U	3,300U	3,300U	3,300U
Acenaphthene	660U	660U	660U	660U	660U
2,4-Dinitrophenol	3,300U	3,300U	3,300U	3,300U	3,300U
4-Nitrophenol	3,300U	3,300U	3,300U	3,300U	3,300U
Dibenzofuran	660U	660U	660U	660U	660U
2,4-Dinitrotoluene	660U	660U	660U	660U	660U
Diethylphthalate	660U	660U	660U	660U	660U
4-Chlorophenyl-phenylether	660U	660U	660U	660U	660U
Fluorene	660U	660U	660U	660U	660U
4-Nitroaniline	3,300U	3,300U	3,300U	3,300U	3,300U
4,6-Dinitro-2-Methylphenol	3,300U	3,300U	3,300U	3,300U	3,300U
N-Nitrosodiphenylamine	660U	660U	660U	660U	660U
4-Bromophenyl-phenylether	660U	660U	660U	660U	660U
Hexachlorobenzene	660U	660U	660U	660U	660U
Pentachlorophenol	3,300U	3,300U	3,300U	3,300U	3,300U
Phenanthrene	660U	2,229.82	660U	4,649.25	660U
Anthracene	660U	660U	660U	1,070.88	660U
Di-n-Butylphthalate	660U	660U	660U	660U	660U
Fluoranthene	660U	4,029.46	660U	7,725.69	660U
Pyrene	660U	6,411.72	660U	11,182.02	1,055.08
Butylbenzylphthalate	660U	660U	660U	660U	660U
3,3'-Dichlorobenzidine	1,300U	1,300U	1,300U	1,300U	1,300U
Benzo(a)Anthracene	660U	1,735.02	660U	3,223.47	660U
Chrysene	660U	2,711.77	660U	5,126.32	660U
bis(2-Ethylhexyl)Phthalate	660U	1,266.64	660U	660U	660U
Di-n-Octyl Phthalate	660U	660U	660U	660U	660U
Benzo(b)Fluoranthene	660U	1,266.28	660U	1,982.48	660U
Benzo(k)Fluoranthene	660U	1,084.57	660U	1,621.02	660U
Benzo(a)Pyrene	660U	1,094.21	660U	1,754.39	660U
Indeno(1,2,3-cd)Pyrene	660U	797.54	660U	1,010.57	660U
Dibenzo(a,h)Anthracene	660U	660U	660U	660U	660U
Benzo(g,h,i)Perylene	660U	1,037.09	660U	1,381.32	660U

ODS – Old Drum Storage Area of Concern (AOC).
NWD – Northwest Ditch AOC.
INT – Interval.
U – Compound analyzed for but not detected. Number indicates detection limit.

Appendix E
Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:	NWD-002, INT 1 2/25/94 9402010557	NWD-002, INT 2 2/25/94 9402010558	NWD-003, INT 1 2/25/94 9402010559	NWD-003, INT 2 2/25/94 9402010560	NWD-004, INT 1 2/25/94 9402010561
Semivolatile Organics Matrix	Soil	Soil	Soil	Soil	Soil
Phenol	660U	660U	660U	660U	660U
bis(2-Chloroethyl)Ether	660U	660U	660U	660U	660U
2-Chlorophenol	660U	660U	660U	660U	660U
1,3-Dichlorobenzene	660U	660U	660U	660U	660U
1,4-Dichlorobenzene	660U	660U	660U	660U	660U
Benzyl Alcohol	1,300U	1,300U	1,300U	1,300U	1,300U
1,2-Dichlorobenzene	660U	660U	660U	660U	660U
2-Methylphenol	660U	660U	660U	660U	660U
bis(2-Chloroisopropyl)Ether	660U	660U	660U	660U	660U
4-Methylphenol	660U	660U	660U	660U	660U
N-Nitroso-Di-n-Propylamine	660U	660U	660U	660U	660U
Hexachloroethane	660U	660U	660U	660U	660U
Nitrobenzene	660U	660U	660U	660U	660U
Isophorone	660U	660U	660U	660U	660U
2-Nitrophenol	660U	660U	660U	660U	660U
2,4-Dimethylphenol	660U	660U	660U	660U	660U
Benzoic Acid	3,300U	3,300U	3,300U	3,300U	3,300U
bis(2-Chloroethoxy)Methane	660U	660U	660U	660U	660U
2,4-Dichlorophenol	660U	660U	660U	660U	660U
1,2,4-Trichlorobenzene	660U	660U	660U	660U	660U
Naphthalene	660U	660U	660U	660U	660U
4-Chloroaniline	1,300U	1,300U	1,300U	1,300U	1,300U
Hexachlorobutadiene	660U	660U	660U	660U	660U
4-Chloro-3-Methylphenol	1,300U	1,300U	1,300U	1,300U	1,300U
2-Methylnaphthalene	660U	660U	660U	660U	660U
Hexachlorocyclopentadiene	660U	660U	660U	660U	660U
2,4,6-Trichlorophenol	660U	660U	660U	660U	660U
2,4,5-Trichlorophenol	660U	660U	660U	660U	660U
2-Chloronaphthalene	660U	660U	660U	660U	660U
2-Nitroaniline	3,300U	3,300U	3,300U	3,300U	3,300U

Appendix E (Concluded)
Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas
(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Location No.: / Sample Date: / Lab Sample No.:	NWD-002, INT 1 2/25/94 9402010557	NWD-002, INT 2 2/25/94 9402010558	NWD-003, INT 1 2/25/94 9402010559	NWD-003, INT 2 2/25/94 9402010560	NWD-004, INT 1 2/25/94 9402010561
Semivolatile Organics / Matrix	Soil	Soil	Soil	Soil	Soil
Dimethylphthalate	660U	660U	660U	660U	660U
Acenaphthylene	660U	660U	660U	660U	660U
2,6-Dinitrotoluene	660U	660U	660U	660U	660U
3-Nitroaniline	3,300U	3,300U	3,300U	3,300U	3,300U
Acenaphthene	660U	660U	660U	660U	660U
2,4-Dinitrophenol	3,300U	3,300U	3,300U	3,300U	3,300U
4-Nitrophenol	3,300U	3,300U	3,300U	3,300U	3,300U
Dibenzofuran	660U	660U	660U	660U	660U
2,4-Dinitrotoluene	660U	660U	660U	660U	660U
Diethylphthalate	660U	660U	660U	660U	660U
4-Chlorophenyl-phenylether	660U	660U	660U	660U	660U
Fluorene	660U	660U	660U	660U	660U
4-Nitroaniline	3,300U	3,300U	3,300U	3,300U	3,300U
4,6-Dinitro-2-Methylphenol	3,300U	3,300U	3,300U	3,300U	3,300U
N-Nitrosodiphenylamine	660U	660U	660U	660U	660U
4-Bromophenyl-phenylether	660U	660U	660U	660U	660U
Hexachlorobenzene	660U	660U	660U	660U	660U
Pentachlorophenol	3,300U	3,300U	3,300U	3,300U	3,300U
Phenanthrene	660U	660U	660U	660U	660U
Anthracene	660U	660U	660U	660U	660U
Di-n-Butylphthalate	660U	660U	660U	660U	660U
Fluoranthene	660U	660U	660U	660U	660U
Pyrene	966.66	660U	660U	660U	660U
Butylbenzylphthalate	660U	660U	660U	660U	660U
3,3'-Dichlorobenzidine	1,300U	1,300U	1,300U	1,300U	1,300U
Benzo(a)Anthracene	660U	660U	660U	660U	660U
Chrysene	660U	660U	660U	660U	660U
bis(2-Ethylhexyl)Phthalate	660U	660U	660U	660U	660U
Di-n-Octyl Phthalate	660U	660U	660U	660U	660U
Benzo(b)Fluoranthene	660U	660U	660U	660U	660U
Benzo(k)Fluoranthene	660U	660U	660U	660U	660U
Benzo(a)Pyrene	660U	660U	660U	660U	660U
Indeno(1,2,3-cd)Pyrene	660U	660U	660U	660U	660U
Dibenzo(a,h)Anthracene	660U	660U	660U	660U	660U
Benzo(g,h,i)Perylene	660U	660U	660U	660U	660U

NWD – Northwest Ditch Area of Concern (AOC).
INT – Interval.

U – Compound analyzed for but not detected. Number indicates detection limit.

Appendix E
Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples
223rd CBCS, Hot Springs ANGS, Hot Springs, Arkansas

(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Location No.:	CTS-004 SF	NWD-006 SD	NWD-005 SW
Sample Date:	2/25/94	2/25/94	2/25/94
Lab Sample No.:	9402010562	9402010563	9402010572
Semivolatile Organics **Matrix**	**Soil**	**Soil**	**Water**
Phenol	660U	660U	10U
bis(2-Chloroethyl)Ether	660U	660U	10U
2-Chlorophenol	660U	660U	10U
1,3-Dichlorobenzene	660U	660U	10U
1,4-Dichlorobenzene	660U	660U	10U
Benzyl Alcohol	1,300U	1,300U	20U
1,2-Dichlorobenzene	660U	660U	10U
2-Methylphenol	660U	660U	10U
bis(2-Chloroisopropyl)Ether	660U	660U	10U
4-Methylphenol	660U	660U	10U
N-Nitroso-Di-n-Propylamine	660U	660U	10U
Hexachloroethane	660U	660U	10U
Nitrobenzene	660U	660U	10U
Isophorone	660U	660U	10U
2-Nitrophenol	660U	660U	10U
2,4-Dimethylphenol	660U	660U	10U
Benzoic Acid	3,300U	3,300U	50U
bis(2-Chloroethoxy)Methane	660U	660U	10U
2,4-Dichlorophenol	660U	660U	10U
1,2,4-Trichlorobenzene	660U	660U	10U
Naphthalene	2,681.25	660U	10U
4-Chloroaniline	1,300U	1,300U	20U
Hexachlorobutadiene	660U	660U	10U
4-Chloro-3-Methylphenol	1,300U	1,300U	20U
2-Methylnaphthalene	1,034.18	660U	10U
Hexachlorocyclopentadiene	660U	660U	10U
2,4,6-Trichlorophenol	660U	660U	10U
2,4,5-Trichlorophenol	660U	660U	10U
2-Chloronaphthalene	660U	660U	10U
2-Nitroaniline	3,300U	3,300U	50U

Appendix E (Concluded)

Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples 223rd CBCS, Hot Springs ANGS, Hot Springs. Arkansas

(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Location No.: / Sample Date: / Lab Sample No.: / Semivolatile Organics / Matrix	CTS-004 SF 2/25/94 9402010562	NWD-006 SD 2/25/94 9402010563	NWD-005 SW 2/25/94 9402010572
	Soil	Soil	Water
Dimethylphthalate	660U	660U	10U
Acenaphthylene	660U	660U	10U
2,6-Dinitrotoluene	660U	660U	10U
3-Nitroaniline	3,300U	3,300U	50U
Acenaphthene	5,651.72	2,024.26	10U
2,4-Dinitrophenol	3,300U	3,300U	50U
4-Nitrophenol	3,300U	3,300U	50U
Dibenzofuran	2,362.84	1,441.40	10U
2,4-Dinitrotoluene	660U	660U	10U
Diethylphthalate	660U	660U	10U
4-Chlorophenyl-phenylether	660U	660U	10U
Fluorene	5,459.81	2,686.78	10U
4-Nitroaniline	3,300U	3,300U	50U
4,6-Dinitro-2-Methylphenol	3,300U	3,300U	50U
N-Nitrosodiphenylamine	660U	660U	10U
4-Bromophenyl-phenylether	660U	660U	10U
Hexachlorobenzene	660U	660U	10U
Pentachlorophenol	3,300U	3,300U	50U
Phenanthrene	65,689.27	50,467.88	10U
Anthracene	20,106.44	50,122.49	10U
Di-n-Butylphthalate	660U	660U	10U
Fluoranthene	75,269.06	59,393.35	10U
Pyrene	114,371.61	84,561.55	10U
Butylbenzylphthalate	660U	660U	10U
3,3'-Dichlorobenzidine	1,300U	1,300U	20U
Benzo(a)Anthracene	26,676.08	18,938.94	10U
Chrysene	37,808.93	29,882.09	10U
bis(2-Ethylhexyl)Phthalate	2,308.51	2,916.73	1,553.96
Di-n-Octyl Phthalate	660U	660U	10U
Benzo(b)Fluoranthene	15,830.59	14,886.15	10U
Benzo(k)Fluoranthene	11,433.92	11,080.74	10U
Benzo(a)Pyrene	14,026.74	13,424.02	10U
Indeno(1,2,3-cd)Pyrene	7,684.55	9,180.39	10U
Dibenzo(a,h)Anthracene	660U	660U	10U
Benzo(g,h,i)Perylene	9,523.44	11,321.52	10U

CTS – Current Temporary Waste Storage Area of Concern (AOC).
NWD – Northwest Ditch AOC.
SF – Surface soil.
SD – Sediment.
SW – Surface Water.
U – Compound analyzed for but not detected. Number indicates detection limit.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

LABORATORY ANALYSES
HOT SPRINGS, ARKANSAS ANGS
OPERATIONAL TECHNOLOGIES CORPORATION

MARCH 15, 1994 REPORT REVISIONS
MARCH 17, 1994

PREPARED BY:

Environmental Services Company, Inc.
13715 West Markham
Little Rock, Arkansas 72211
501-221-2565

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date Of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/24/94
Time Of Sample: 0940

Type Of Sample : SOIL
Sample Collected From: NEF-005, INT 1
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 9402010031
Work Order No.: 5719
Purchase Order:

Analysis / Quality Assurance

Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Duplicates		% Spike Recovery
03/09	1700	LAC	Antimony	9.8980		MG/KG			7041	SW-846	1.0030	1.0350	98.2 *
03/12	1600	LAC	Silver	< 0.7000		MG/KG			7760	SW-846	21.8340	22.4550	96.9 *
03/09	0930	LAC	Chromium	17.6770		MG/KG			7190	SW-846	30.8730	32.0950	89.0 *
[illegible]/10	1200	LAC	Selenium	12.3050		MG/KG			7740	SW-846	36.4060	33.1860	129.2 *
03/08	1530	LAC	Copper	19.0710		MG/KG			7210	SW-846	28.3410	29.3240	99.6 *
03/08	0800	LAC	Zinc	29.3120		MG/KG			7950	SW-846	2.1050	2.1120	68.6 *
03/08	1500	LAC	Nickel	7.9370		MG/KG			7520	SW-846	1.3400	1.3940	98.5 *
03/09	1915	LAC	Beryllium	0.3350		MG/KG			7090	SW-846	21.9650	22.5600	98.8 *
03/09	0900	LAC	Thallium	< 10.0000		MG/KG			7840	SW-846	25.6930	27.6580	88.1 *
03/11	1130	LAC	Lead	24.5910		MG/KG			7420	SW-846	36.0920	37.1850	70.2 *
03/08	1430	LAC	Cadmium	1.1340		MG/KG			7130	SW-846	1.1[illegible]	1.1670	104.0 *
[illegible]/11	1[illegible]	LAC	Arsenic	12.3950		MG/KG			[illegible]	SW-846	[illegible]	[illegible]	103.1 *
[illegible]/12	1530	LAC	Mercury	0.1514	T	MG/KG			7471	SW-846	15.1500	14.9500	93.6

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature ____________
Environmental Services Co., Inc.

Signature ____________
Environmental Services Co., Inc.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 3644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/24/94
Time Of Sample: 1015

Type Of Sample : SOIL
Sample Collected From: NEF-005, INT 2
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 94020102532
Work Order No.: 5719
Purchase Order:

Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Laboratory Duplicates		% Spike Recovery
02/25	1200	LAC	Antimony		13.1460		MG/KG			7041	SW-846	1.0350	1.0350	98.2 *
03/12	0900	LAC	Silver		0.7060		MG/KG			7760	SW-846	21.8540	22.4550	96.9 *
[illegible]	0953	LAC	Chromium		27.7290		MG/KG			7190	SW-846	30.8730	32.6950	89.0 *
03/12	1200	LAC	Selenium		16.1350		MG/KG			7740	SW-846	35.4010	37.1850	129.2 *
[illegible]	1030	LAC	Copper		15.1560		MG/KG			7210	SW-846	28.5410	29.3290	99.6 *
03/04	0800	LAC	Zinc		22.5000		MG/KG			7950	SW-846	2.1050	2.1120	68.6 *
03/08	1500	LAC	Nickel		5.7500		MG/KG			7520	SW-846	1.3400	1.3940	98.5 *
03/09	1015	LAC	Beryllium		0.4390		MG/KG			7090	SW-846	21.9650	22.5680	98.8 *
03/07	0900	LAC	Thallium	<	10.0000		MG/KG			7840	SW-846	25.8950	27.6580	68.1 *
03/11	1130	LAC	Lead		17.0420		MG/KG			7420	SW-846	36.0720	37.1350	76.2 *
03/08	1430	LAC	Cadmium		1.3960		MG/KG			7130	SW-846	1.1450	1.1620	106.0 *
03/11	1630	LAC	Arsenic		10.4380		MG/KG			7060	SW-846	30.6550	34.1440	108.1 *
03/12	1330	LAC	Mercury	T	0.0999		MG/KG			7471	SW-846	26.1500	26.9500	93.6 *

* The data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature _____
Environmental Services Co., Inc.

Signature James D Berry, Jr.
Environmental Services Co., Inc.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5634
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr., N.
Memphis, [illegible]
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/24/94
Time Of Sample: 1109

Type Of Sample : SOIL
Sample Collected From: CTS-003, INF 1
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 9402010533
Work Order No.: 5719
Purchase Order:

Analysis | Quality Assurance

Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Edition of SW	Duplicates		% Spike Recovery
[illegible]	[illegible]	LAC	Antimony	< 3.0000		MG/KG			7041	SW-846	1.0030	1.0350	98.2 *
[illegible]/13	1400	LAC	Silver	< 0.7000		MG/KG			7760	SW-846	21.5340	22.4550	96.9 *
[illegible]	[illegible]	LAC	Chromium	6.9330		MG/KG			7190	SW-846	[illegible]	[illegible]	89.0 *
[illegible]/10	1300	LAC	Selenium	< 0.2000		MG/KG			7740	SW-846	36.4060	33.1860	129.2 *
[illegible]/08	1530	LAC	Copper	21.8490		MG/KG			7210	SW-846	26.3410	29.3240	99.6 *
[illegible]/08	2000	LAC	Zinc	22.9200		MG/KG			7950	SW-846	2.1050	2.1120	68.6 *
[illegible]/08	1500	LAC	Nickel	6.2190		MG/KG			7520	SW-846	1.3400	1.3940	98.5 *
[illegible]/09	1615	LAC	Beryllium	0.4410		MG/KG			7090	SW-846	21.9650	22.5680	98.8 *
[illegible]	[illegible]	LAC	Thallium	< 10.0000		MG/KG			7840	SW-846	25.8950	27.6580	88.1 *
[illegible]	[illegible]	LAC	Lead	11.3750		MG/KG			7421	SW-846	[illegible]	[illegible]	70.2 *
[illegible]/08	1430	LAC	Cadmium	1.5340		MG/KG			7130	SW-846	1.1450	1.1620	106.0 *
[illegible]/11	1630	LAC	Arsenic	5.3190		MG/KG			7060	SW-846	34.6550	34.1440	108.1 *
[illegible]/12	1330	LAC	Mercury T	0.1211		MG/KG			7471	SW-846	26.1500	26.9500	93.6 *

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature ______________________
Environmental Services Co., Inc.

Signature ______________________
Environmental Services Co., Inc.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Control Number: 9402010534

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/24/94
Time Of Sample: 1120

Type Of Sample : SOIL
Sample Collected From: CTS-003, INT 2
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Work Order No.: 5719
Purchase Order:

Analysis / Quality Assurance

Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Duplicates		% Spike Recovery
03/09	1200	LAC	Antimony	0.3460		MG/KG			7041	SW-846	1.0030	1.0350	98.2 *
03/12	1600	LAC	Silver	0.7000	<	MG/KG			7760	SW-846	21.8340	22.4550	96.9 *
03/09	0730	LAC	Chromium	9.5270		MG/KG			7190	SW-846	30.6730	32.0950	89.0 *
03/10	1200	LAC	Selenium	6.8240		MG/KG			7740	SW-846	36.4060	33.1860	129.2 *
03/08	1530	LAC	Copper	5.8180		MG/KG			7210	SW-846	28.3410	29.3240	99.6 *
03/08	0800	LAC	Zinc	25.7600		MG/KG			7950	SW-846	2.1050	2.1120	68.6 *
03/08	1500	LAC	Nickel	6.4550		MG/KG			7520	SW-846	1.3400	1.3940	98.5 *
03/09	1015	LAC	Beryllium	0.3270		MG/KG			7090	SW-846	21.9650	22.5680	98.8 *
03/09	0900	LAC	Thallium	10.0000	<	MG/KG			7840	SW-846	25.8950	27.6580	88.1 *
03/11	1130	LAC	Lead	17.2910		MG/KG			7420	SW-846	36.0920	37.1850	70.2 *
03/08	1430	LAC	Cadmium	1.5450		MG/KG			7130	SW-846	1.1450	1.1620	106.0 *
03/11	1630	LAC	Arsenic	2.9320		MG/KG			7060	SW-846	30.6550	34.1440	108.1 *
03/12	1330	LAC	Mercury	0.1105	T	MG/KG			7471	SW-846	26.1500	26.9500	93.6 *

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature ________ Environmental Services Co., Inc.

Signature ________ Environmental Services Co., Inc.

Environmental Services Co., Inc.
1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: [illegible]

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Control Number: 9402010535

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/24/94
Time Of Sample: 1145

Type Of Sample : SOIL
Sample Collected From: CTS-002, INT 1
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Work Order No.: 5719
Purchase Order:

Analysis

Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Duplicates (Quality Assurance)		% Spike Recovery
03/09	1200	LAC	Antimony	10.2610		MG/KG			7041	SW-846	1.0030	1.0350	98.2 *
03/12	1600	LAC	Silver	0.7000	<	MG/KG			7760	SW-846	21.8340	22.4550	96.9 *
03/09	0930	LAC	Chromium	14.8320		MG/KG			7190	SW-846	30.8730	32.0950	89.0 *
03/10	1200	LAC	Selenium	9.4370		MG/KG			7740	SW-846	36.4060	33.1860	129.2 *
03/09	1530	LAC	Copper	15.4100		MG/KG			7210	SW-846	23.3410	29.3240	99.6 *
[illegible]	0900	LAC	Zinc	61.7540		MG/KG			7950	SW-846	2.1050	2.1120	68.6 *
03/08	1500	LAC	Nickel	18.0220		MG/KG			7520	SW-846	1.3400	1.3940	98.5 *
03/09	1015	LAC	Beryllium	0.5040		MG/KG			7090	SW-846	21.9650	22.5680	98.8 *
03/09	0900	LAC	Thallium	10.0000	<	MG/KG			7040	SW-846	[illegible]	[illegible]	83.1 *
03/11	1130	LAC	Lead	17.6690		MG/KG			7420	SW-846	36.0920	37.1850	70.2 *
03/08	1430	LAC	Cadmium	0.8960		MG/KG			7130	SW-846	1.1450	1.1620	106.0 *
03/11	1630	LAC	Arsenic	5.6340		MG/KG			7060	SW-846	30.6550	34.1440	108.1 *
03/12	1330	LAC	Mercury	0.0906	T	MG/KG			7471	SW-846	26.1500	26.9500	93.6 *

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature
Environmental Services Co., Inc.

Signature
Environmental Services Co., Inc.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Client Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/24/94
Time Of Sample: 1200

Type Of Sample : SOIL
Sample Collected From: CTS-002, INT 2
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 9402010536
Work Order No.: 5719
Purchase Order :

Analysis / Quality Assurance

Date	Time	By	Parameter	Notes	Concentration	Units	Quantity	Units	Method	Edition or Ref.	Duplicates		% Spike Recovery
03/09	1200	LAC	Antimony		12.3410	MG/KG			7041	SW-846	1.0030	1.0350	98.2 *
03/12	1400	LAC	Silver	<	0.7000	MG/KG			7760	SW-846	21.8340	22.4550	96.9 *
03/09	0930	LAC	Chromium		16.3100	MG/KG			7190	SW-846	30.8730	32.0950	89.0 *
03/10	1200	LAC	Selenium		0.7270	MG/KG			7740	SW-846	36.4060	33.1860	129.2 *
03/08	1530	LAC	Copper		23.4770	MG/KG			7210	SW-846	28.3410	29.3240	99.6 *
03/08	0800	LAC	Zinc		74.5460	MG/KG			7950	SW-846	2.1050	2.1120	68.6 *
03/08	1500	LAC	Nickel		23.4550	MG/KG			7520	SW-846	1.3400	1.3940	98.5 *
03/09	1015	LAC	Beryllium		0.8640	MG/KG			7090	SW-846	21.9650	22.5680	98.8 *
03/09	0900	LAC	Thallium	<	10.0000	MG/KG			7840	SW-846	25.8950	27.6580	88.1 *
03/11	1130	LAC	Lead		26.9320	MG/KG			7420	SW-846	36.0920	37.1850	70.2 *
03/08	1430	LAC	Cadmium		0.6820	MG/KG			7130	SW-846	1.1450	1.1620	106.0 *
03/11	1630	LAC	Arsenic		8.4030	MG/KG			7060	SW-846	30.6550	34.1440	108.1 *
[illegible]	1330	LAC	Mercury	T	0.1127	MG/KG			7471	SW-846	26.1500	26.9500	93.6 *

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature ____________________
Environmental Services Co., Inc.

Signature ____________________
Environmental Services Co., Inc.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Received Date: 02/24/94
Time Of Sample: 1225

Type Of Sample : SOIL
Sample Collected From: CTS-001, INT 1
Sample Collected By : E.W. PARKER
Delivered To Lab By : FED EX

Control Number: 940202105037
Work Order No.: 5719
Purchase Order:

Analysis

Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance Duplicates		% Spike Recovery
03/09	1200	LAC	Antimony	<	3.00000		MG/KG			7041	SW-846	1.00030	1.03350	98.2 *
03/12	1600	LAC	Silver	<	0.70000		MG/KG			7760	SW-846	21.83340	22.45550	96.9 *
03/09	0930	LAC	Chromium		8.61200		MG/KG			7190	SW-846	30.87300	32.09500	89.0 *
03/10	1200	LAC	Selenium		0.25500		MG/KG			7740	SW-846	56.44040	53.18640	129.2 *
03/03	1530	LAC	Copper		9.19200		MG/KG			7210	SW-846	28.34100	29.32400	99.6 *
03/08	0800	LAC	Zinc		27.27100		MG/KG			7950	SW-846	2.10500	2.11200	68.6 *
03/08	1500	LAC	Nickel		7.84000		MG/KG			7520	SW-846	1.34000	1.39400	98.5 *
03/09	1015	LAC	Beryllium		0.26200		MG/KG			7090	SW-846	21.96500	22.56800	98.8 *
03/09	0900	LAC	Thallium	<	10.00000		MG/KG			7840	SW-846	25.89500	27.65600	88.1 *
03/11	1130	LAC	Lead		15.87300		MG/KG			7420	SW-846	36.09200	37.18500	70.2 *
03/03	1430	LAC	Cadmium		0.56800		MG/KG			7130	SW-846	1.14500	1.16200	106.0 *
03/11	1630	LAC	Arsenic		10.20700		MG/KG			7060	SW-846	30.65500	34.14400	108.1 *
03/12	1330	LAC	Mercury	T	0.10065		MG/KG			7471	SW-846	26.15000	26.96000	93.6 *

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature _____
Environmental Services Co., Inc.

Signature _____
Environmental Services Co., Inc.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/24/94
Time Of Samole: 1430

Type Of Sample : SOIL
Sample Collected From: NEF-004, INT 1
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 9402010538
Work Order No.: 5719
Purchase Order:

Analysis

Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance Duplicates		% Spike Recovery
03/09	1200	LAC	Antimony		10.2550		MG/KG			7041	SW-846	1.0030	1.0350	98.2 *
03/12	1600	LAC	Silver	<	0.7000		MG/KG			7760	SW-846	21.8340	22.4550	96.9 *
03/09	0930	LAC	Chromium		14.2750		MG/KG			7190	SW-846	30.8730	32.0950	89.0 *
03/10	1200	LAC	Selenium	<	0.2000		MG/KG			7740	SW-846	36.4060	33.1860	129.2 *
03/08	1530	LAC	Copper		14.5100		MG/KG			7210	SW-846	28.3410	29.3240	99.6 *
03/08	0800	LAC	Zinc		75.3330		MG/KG			7950	SW-846	2.1050	2.1120	68.6 *
03/08	1500	LAC	Nickel		13.4710		MG/KG			7520	SW-846	1.3400	1.3940	98.5 *
03/09	1015	LAC	Beryllium		0.5100		MG/KG			7090	SW-846	21.9650	22.5680	98.8 *
03/09	0900	LAC	Thallium	<	10.0000		MG/KG			7840	SW-846	25.8950	27.6580	88.1 *
03/11	1130	LAC	Lead		45.3140		MG/KG			7420	SW-846	36.0920	37.1850	70.2 *
03/08	1430	LAC	Cadmium	<	0.5000		MG/KG			7130	SW-846	1.1450	1.1620	106.0 *
03/11	1630	LAC	Arsenic		10.9220		MG/KG			7060	SW-846	30.6550	34.1440	108.1 *
03/12	1330	LAC	Mercury	T	0.1250		MG/KG			7471	SW-846	26.1500	26.9500	93.6 *

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature

Signature James O. Brewer, Jr.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/24/94
Time Of Sample: 1445

Type Of Sample : SOIL
Sample Collected From: NEF-003, INT 1
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 9402010539
Work Order No.: 5719
Purchase Order:

Analysis

Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance Duplicates		% Spike Recovery
03/09	1200	LAC	Antimony		10.6370		MG/KG			7041	SW-846	1.0030	1.0350	98.2 *
03/12	1600	LAC	Silver	<	0.7000		MG/KG			7760	SW-846	21.8340	22.4550	96.9 *
03/09	0930	LAC	Chromium		11.1930		MG/KG			7190	SW-846	30.8730	32.0950	89.0 *
03/10	1200	LAC	Selenium		1.5300		MG/KG			7740	SW-846	36.4060	33.1860	129.2 *
03/08	1530	LAC	Copper		6.1440		MG/KG			7210	SW-846	28.3410	29.3240	99.6 *
03/08	0800	LAC	Zinc		25.3760		MG/KG			7950	SW-846	2.1050	2.1120	68.6 *
03/08	1500	LAC	Nickel		6.3730		MG/KG			7520	SW-846	1.3400	1.3940	98.5 *
03/09	1015	LAC	Beryllium		0.3430		MG/KG			7090	SW-846	21.9650	22.5680	98.8 *
03/09	0900	LAC	Thallium	<	10.0000		MG/KG			7840	SW-846	25.8950	27.6580	88.1 *
03/11	1130	LAC	Lead		22.0590		MG/KG			7420	SW-846	36.0920	37.1850	70.2 *
03/08	1430	LAC	Cadmium	<	0.5000		MG/KG			7130	SW-846	1.1450	1.1620	106.0 *
03/11	1630	LAC	Arsenic		4.4770		MG/KG			7060	SW-846	30.6550	34.1440	108.1 *
03/12	1330	LAC	Mercury	T	0.1524		MG/KG			7471	SW-846	26.1500	26.9500	93.6 *

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature _____
Environmental Services Co., Inc.

Signature _____
Environmental Services Co., Inc.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/24/94
Time Of Sample: 1500

Type Of Sample : SOIL
Sample Collected From: NEF-003, INT 2
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 9402010540
Work Order No.: 5719
Purchase Order:

Analysis												Quality Assurance		
Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Duplicates		% Spike Recovery
03/09	1200	LAC	Antimony		16.3700		MG/KG			7041	SW-846	1.0030	1.0350	98.2 *
03/12	1600	LAC	Silver	<	0.7000		MG/KG			7760	SW-846	21.8340	22.4550	96.9 *
03/09	0930	LAC	Chromium		11.6000		MG/KG			7190	SW-846	30.8730	32.0950	89.0 *
03/10	1200	LAC	Selenium		1.2140		MG/KG			7740	SW-846	1.5000	1.4870	129.2 *
03/08	1530	LAC	Copper		5.3650		MG/KG			7210	SW-846	28.3410	29.3240	99.6 *
03/08	0800	LAC	Zinc		26.9180		MG/KG			7950	SW-846	2.1050	2.1120	68.6 *
03/08	1500	LAC	Nickel		7.0550		MG/KG			7520	SW-846	1.3400	1.3940	98.5 *
03/09	1015	LAC	Beryllium		0.3430		MG/KG			7090	SW-846	1.0040	1.0050	98.8 *
03/09	0900	LAC	Thallium	<	10.0000		MG/KG			7840	SW-846	25.8950	27.6580	88.1 *
03/11	1130	LAC	Lead		25.5710		MG/KG			7420	SW-846	36.0920	37.1850	70.2 *
03/08	1430	LAC	Cadmium	<	0.5000		MG/KG			7130	SW-846	1.1450	1.1620	106.0 *
03/11	1630	LAC	Arsenic		16.1590		MG/KG			7060	SW-846	30.6550	34.1440	108.1 *
03/12	1330	LAC	Mercury	T	0.1187		MG/KG			7471	SW-846	26.1500	26.9500	93.6 *

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. [illegible] filed with ADPC&E.

Signature ____________
Environmental Services Co., Inc.

Signature ____________

Environmental Services Co., Inc.

1315 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1744 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/24/94
Time Of Sample: 1520

Type Of Sample : SOIL
Sample Collected From: NEF-002, INT 1
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 9402010541
Work Order No.: 5719
Purchase Order:

Analysis

Samp.	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.
03/09	1200	LAC	Antimony		11.4740		MG/KG			7041	SW-846
03/12	1600	LAC	Silver	<	0.7000		MG/KG			7760	SW-846
03/07	0930	LAC	Chromium		22.6280		MG/KG			7190	SW-846
03/10	1200	LAC	Selenium		2.6260		MG/KG			7740	SW-846
03/08	1530	LAC	Copper		26.7950		MG/KG			7210	SW-846
03/13	0900	LAC	Zinc		161.3250		MG/KG			7950	SW-846
03/06	1545	LAC	Nickel		14.8720		MG/KG			7520	SW-846
03/09	1015	LAC	Beryllium		0.5770		MG/KG			7090	SW-846
03/07	0900	LAC	Thallium	<	10.0000		MG/KG			7840	SW-846
03/11	1130	LAC	Lead		59.8290		MG/KG			7420	SW-846
03/03	1430	LAC	Cadmium		1.1540		MG/KG			7130	SW-846
03/11	1630	LAC	Arsenic		13.3390		MG/KG			7060	SW-846
03/12	1330	LAC	Mercury	T	0.0710		MG/KG			7471	SW-846

Quality Assurance

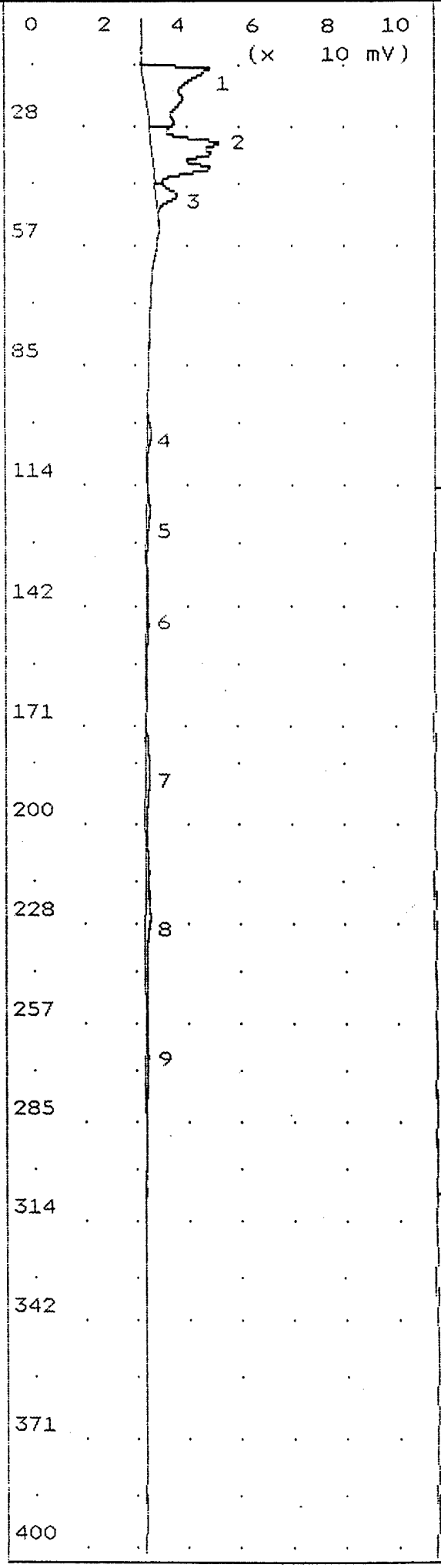
Duplicates		% Spike Recovery
1.5100	1.4740	96.3 *
21.6450	19.5690	97.6 *
40.9070	37.1960	86.1 *
1.5600	1.4670	129.2 *
35.7600	30.5290	131.6 *
2.5500	2.3840	68.6 *
1.5550	1.5560	118.3 *
1.0040	1.0050	98.8 *
28.0520	25.9600	102.4 *
38.8960	35.7450	80.7 *
1.0330	1.0430	101.1 *
34.5690	32.8130	107.2 *
28.2300	28.6100	107.6

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPCE.

Signature _____
Environmental Services Co., Inc.

Signature _____
Environmental Services Co., Inc.



Time Printed: Feb 25,94 15:39
Sample Time: Feb 25,94 15:22

Method

Slope Up	2.000	mV/Sec
Slope Down	6.000	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	2	
Analysis Time	400.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	155.2 mVS	12.5
2	Unknown	146.1 mVS	30.5
3	Unknown	22.21 mVS	43.0
4	Unknown	7.246 mVS	100.1
5	Unknown	7.112 mVS	118.4
6	Unknown	7.415 mVS	143.4
7	Unknown	14.83 mVS	181.2
8	Unknown	28.07 mVS	225.0
9	Unknown	10.89 mVS	265.3

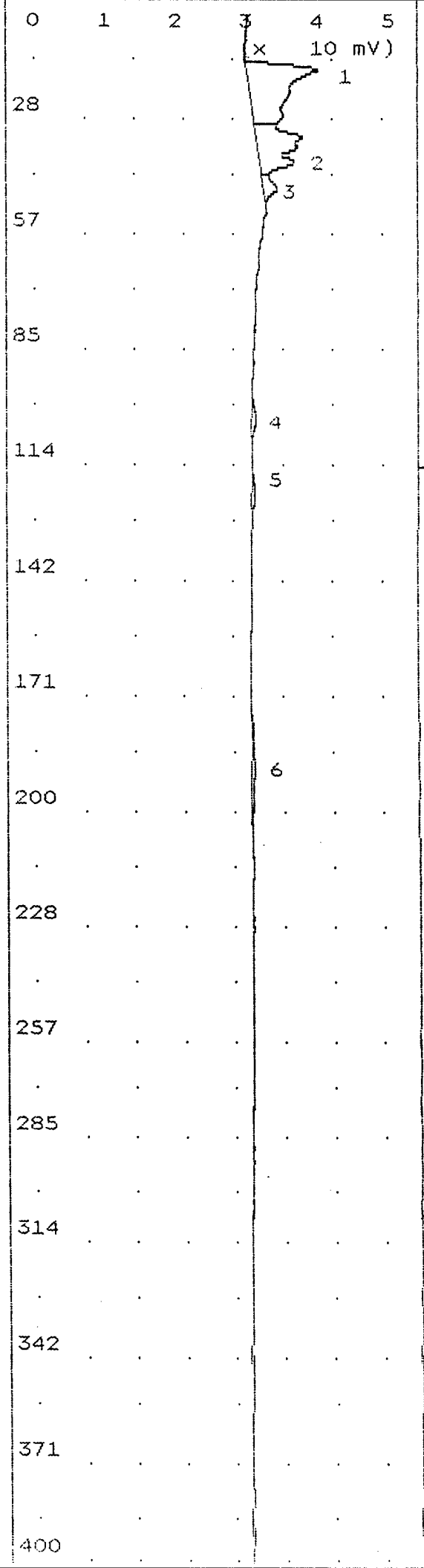
Notes

Operator: Mark D. Henson

Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: air blank

decontaminatd syringe with reage nt grade deionized water and let air dry



Time Printed: Feb 25,94 17:00
Sample Time: Feb 25,94 16:52

Method

Slope Up	2.000	mV/Sec
Slope Down	6.000	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	2	
Analysis Time	400.0	sec

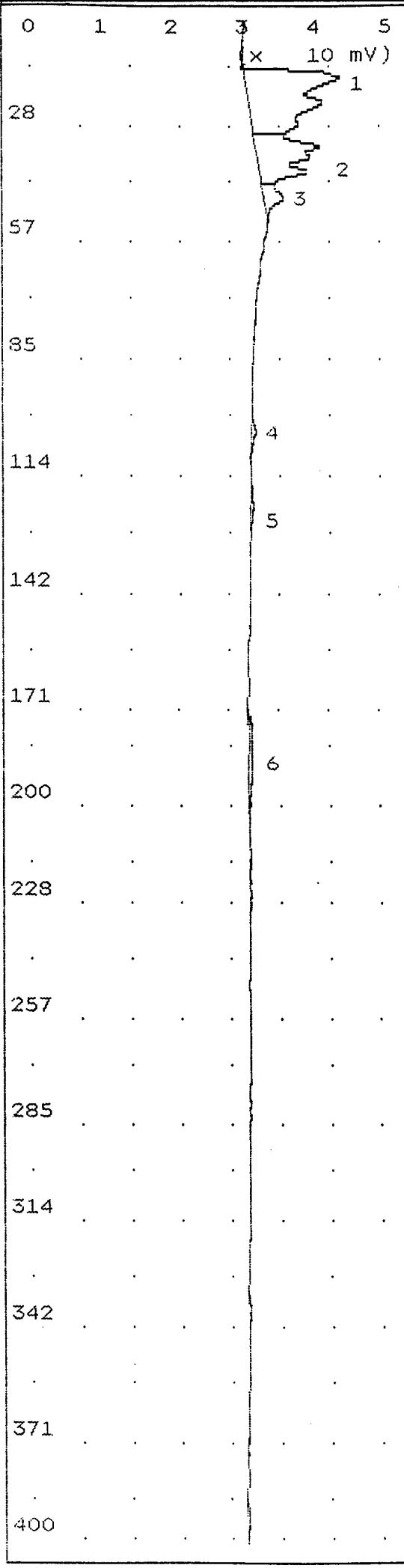
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	91.16 mVS	14.0
2	Unknown	54.28 mVS	31.1
3	Unknown	8.673 mVS	43.5
4	Unknown	2.966 mVS	100.9
5	Unknown	2.013 mVS	115.2
6	Unknown	6.456 mVS	185.6

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: nwd-001 bh
int 2



Time Printed: Feb 25,94 17:15
Sample Time: Feb 25,94 17:05

Method

Slope Up	2.000	mV/Sec
Slope Down	6.000	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	2	
Analysis Time	400.0	sec

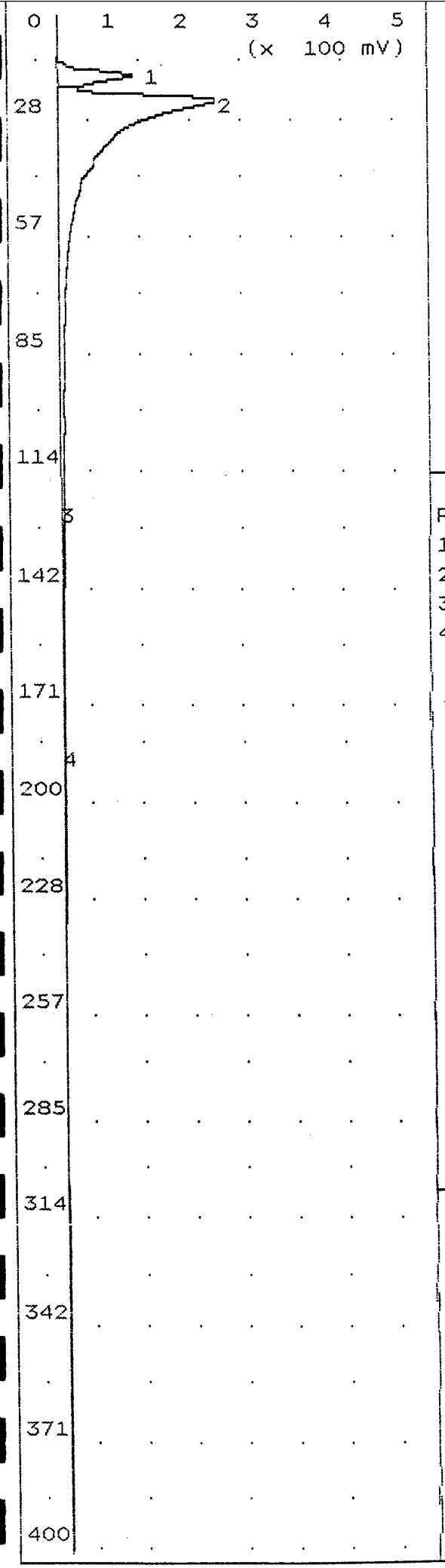
Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	143.8	mVS	14.4
2	Unknown	72.97	mVS	31.4
3	Unknown	12.76	mVS	43.7
4	Unknown	2.853	mVS	100.9
5	Unknown	2.734	mVS	119.3
6	Unknown	6.425	mVS	184.6

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: nwd-004 bh
int 1



Time Printed: Feb 25,94 17:28
Sample Time: Feb 25,94 17:17

Method

Slope Up	0.100	mV/Sec
Slope Down	0.100	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	2	
Analysis Time	400.0	sec

Peak Report

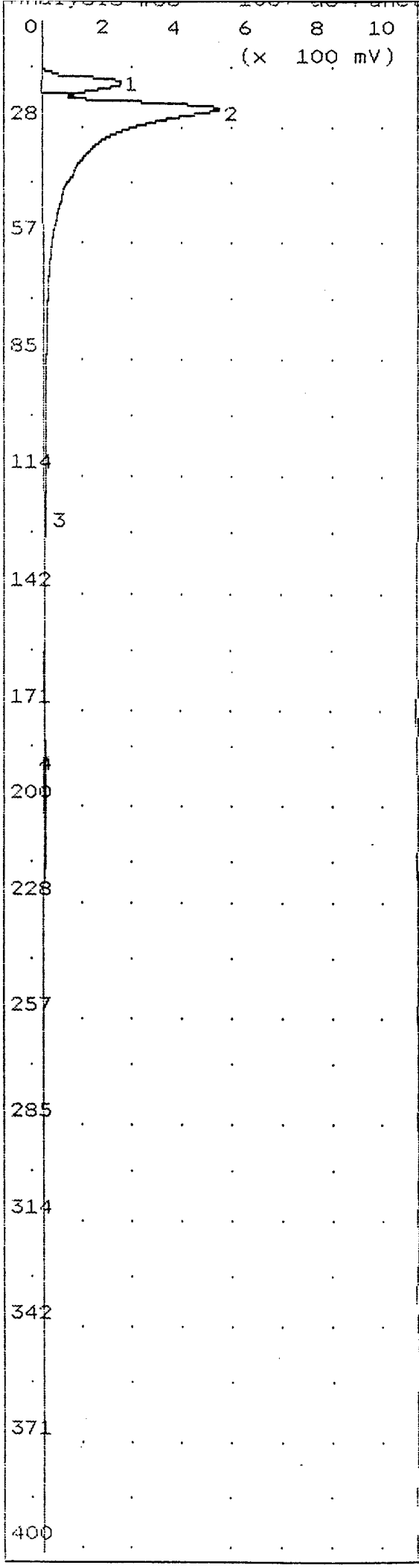
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	334.7 mVS	15.7
2	Unknown	3.505 VSec	21.8
3	Unknown	9.093 mVS	118.4
4	Unknown	6.192 mVS	183.8

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: nwd-003 bh
int 1

decontaminated syringe with two separate vials of mthanol headspace.



Time Printed: Feb 25,94 17:40
Sample Time: Feb 25,94 17:31

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	2	
Analysis Time	400.0	sec

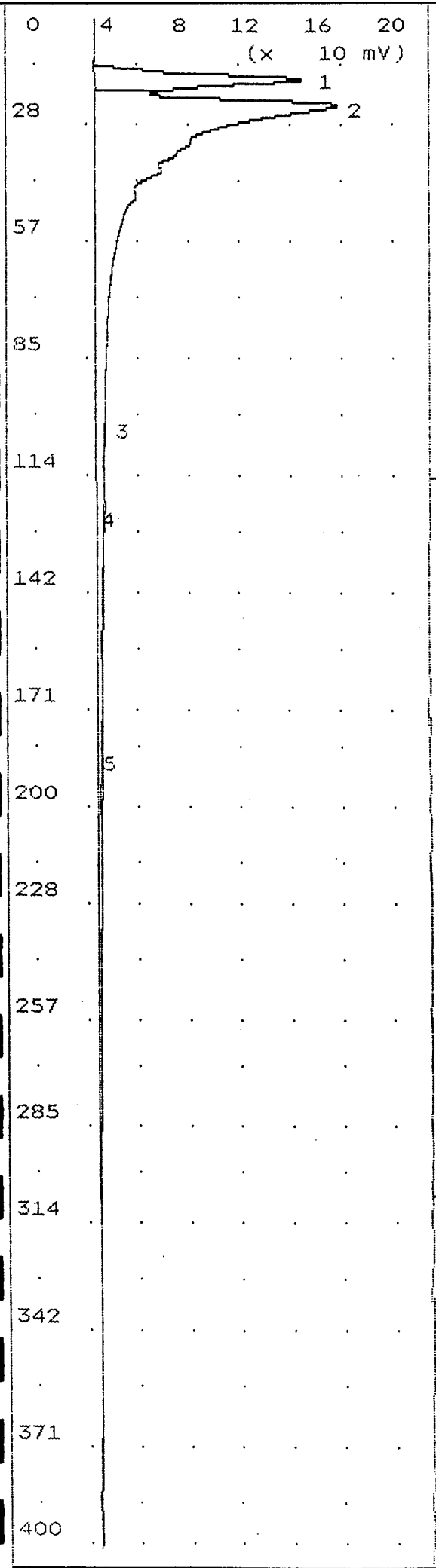
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	835.4 mVS	15.8
2	Unknown	6.145 VSec	22.1
3	Unknown	4.628 mVS	118.0
4	Unknown	10.43 mVS	186.6

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: nef-001 bh
int 2



Time Printed: Feb 25,94 17:54
Sample Time: Feb 25,94 17:44

Method

Slope Up	0.100	mV/Sec
Slope Down	0.100	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	2	
Analysis Time	400.0	sec

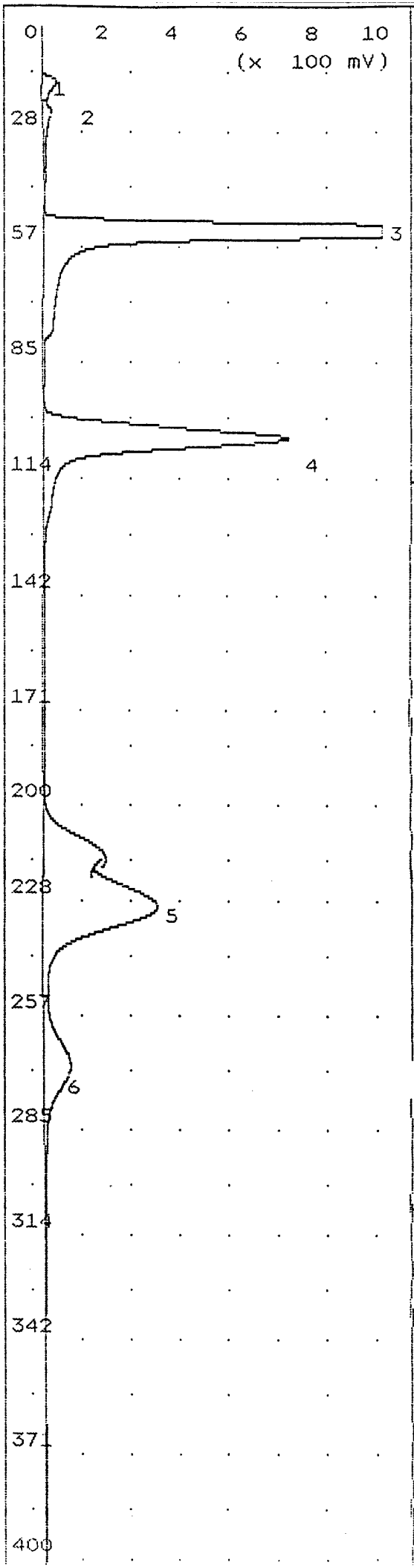
Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	405.9	mVS	15.6
2	Unknown	2.594	VSec	22.0
3	Unknown	4.331	mVS	101.3
4	Unknown	10.28	mVS	118.9
5	Unknown	9.001	mVS	184.8

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: nwd-002 bh
int 2



Time Printed: Feb 25,94 18:06
Sample Time: Feb 25,94 17:59

Method

Slope Up	1.500	mV/Sec
Slope Down	4.500	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	2	
Analysis Time	400.0	sec

Peak Report

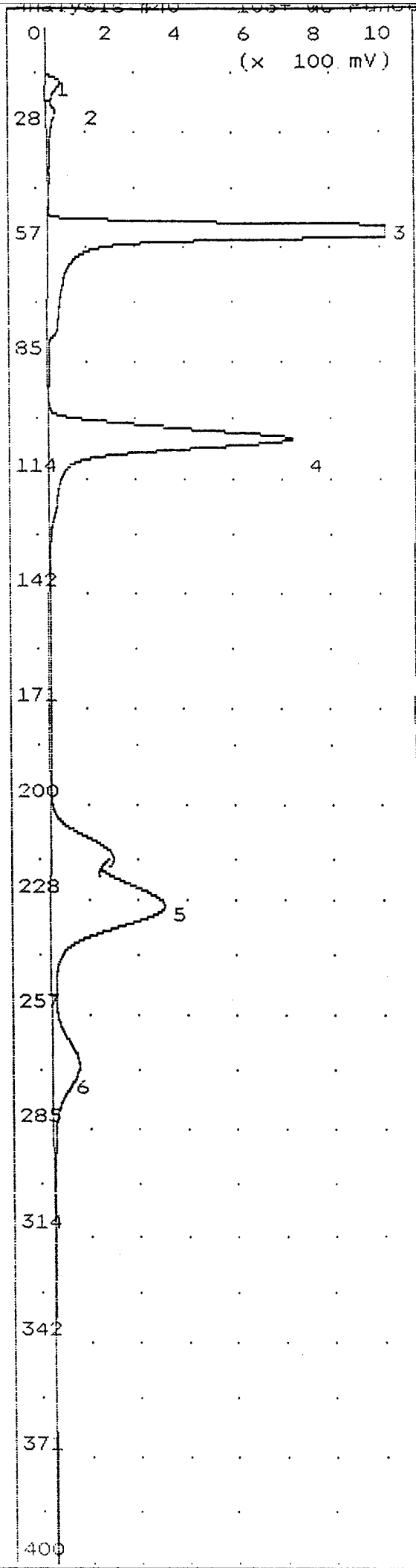
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	165.8 mVS	14.5
2	Unknown	276.9 mVS	21.7
3	benzene	1.121 PPM1	51.3
4	toluene	865.0 ppb	102.5
5	ebenz/m,p xylene	1.799 PPM1	228.0
6	o-xylene	565.5 ppb	267.7

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: 1 ppm btex std recal.
before reintegration



Time Printed: Feb 25,94 18:10
Sample Time: Feb 25,94 17:59

Method

Slope Up	1.500	mV/Sec
Slope Down	4.500	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	2	
Analysis Time	400.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	165.8 mVS	14.5
2	Unknown	277.0 mVS	21.7
3	benzene	1.000 PPM1	51.3
4	toluene	1.000 PPM1	102.5
5	ebenz/m,p xylene	3.000 PPM1	228.0
6	o-xylene	1.002 PPM1	267.7

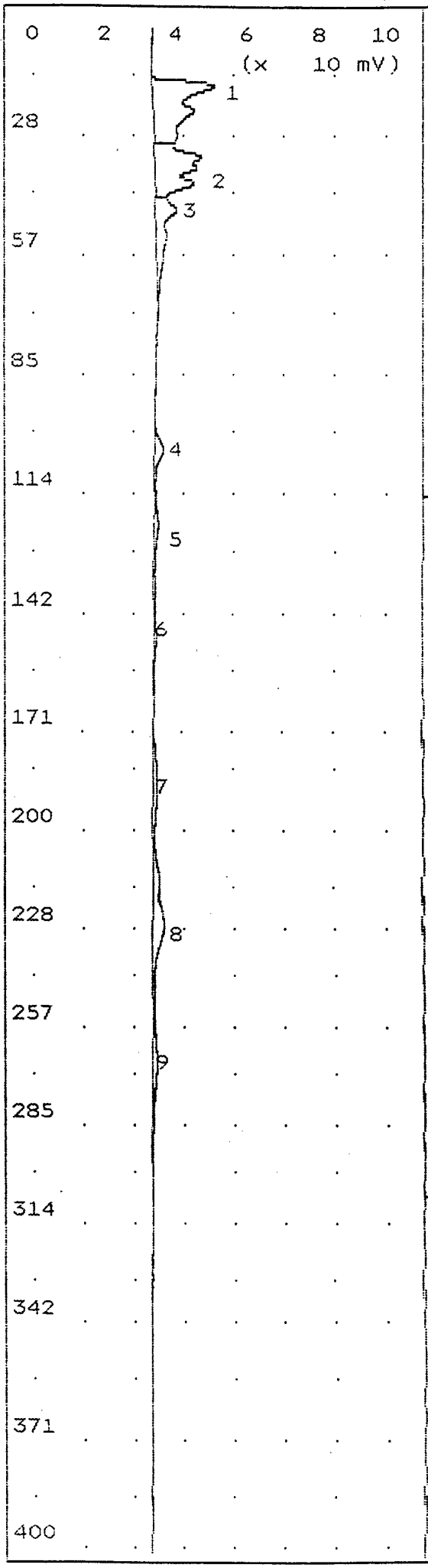
PPM1 = Alarm 1 PPM2 = Alarm2

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: 1 ppm btex std recal.
reintegrated

Analysis #41 10S+ GC Function Analysis Report



Time Printed: Feb 25,94 18:20
Sample Time: Feb 25,94 18:13

Method

Slope Up	2.000	mV/Sec
Slope Down	6.000	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	33	C
Max Gain	2	
Analysis Time	400.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	157.7 mVS	14.4
2	Unknown	118.9 mVS	31.8
3	Unknown	58.42 mVS	44.6
4	Unknown	15.01 mVS	101.7
5	Unknown	11.10 mVS	119.2
6	Unknown	9.029 mVS	140.4
7	Unknown	17.12 mVS	186.0
8	Unknown	72.29 mVS	225.4
9	Unknown	23.34 mVS	263.7

Notes

Operator: Mark D. Henson
Site: 223rd CCSQ
Arkansas ANGS
Hot Springs, AR

sample: air blank

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/24/94
Time Of Sample: 1540

Type Of Sample : SOIL
Sample Collected From: NEF-002, INT 2
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 940203010542

Work Order No.: 5719
Purchase Order:

Analysis

Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.
03/09	1200	LAC	Antimony		6.0500		MG/KG			7041	SW-846
03/12	1600	LAC	Silver		0.7300		MG/KG			7760	SW-846
03/09	0930	LAC	Chromium		22.0600		MG/KG			7190	SW-846
03/10	1200	LAC	Selenium		3.5160		MG/KG			7740	SW-846
03/08	1530	LAC	Copper		20.3650		MG/KG			7210	SW-846
03/08	0800	LAC	Zinc		99.5710		MG/KG			7950	SW-846
03/08	1540	LAC	Nickel		24.2060		MG/KG			7520	SW-846
03/07	1015	LAC	Beryllium		0.7730		MG/KG			7090	SW-846
03/09	0900	LAC	Thallium	<	10.0000		MG/KG			7840	SW-846
[illegible]	[illegible]	LAC	Lead		23.0040		MG/KG			[illegible]	SW-846
03/08	1430	LAC	Cadmium		0.5500		MG/KG			7130	SW-846
03/11	1630	LAC	Arsenic		14.7160		MG/KG			7060	SW-846
[illegible]	1530	LAC	Mercury	T	0.1865		MG/KG			7471	SW-846

Quality Assurance

Duplicates		% Spike Recovery
1.5100	1.4740	96.3 *
21.6450	19.5690	97.6 *
40.9090	37.1960	86.1 *
1.5000	1.4870	129.2 *
35.7600	30.5250	131.6 *
2.5560	2.5660	68.6 *
1.5050	1.5560	118.3 *
1.0040	1.0050	98.8 *
28.0520	25.9600	102.4 *
30.6960	35.7430	80.7 *
1.0360	1.0430	101.1 *
34.5690	32.8130	107.2 *
28.2300	[illegible]	107.4 *

* (a) data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. (b) PLAN filed with ADPC&E.

Reviewed by: _____
Environmental Services, Inc.

Submitted by: Thomas O. Berson, Jr.
Environmental Services, Inc.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/24/94
Time Of Sample: 1550

Type Of Sample : SOIL
Sample Collected From: NEF-001, INT 1
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 9402010543
Work Order No.: 5719
Purchase Order:

Analysis

Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance Duplicates		% Spike Recovery
03/09	1200	LAC	Antimony	<	3.0000		MG/KG			7041	SW-846	1.5100	1.4740	96.3 *
03/12	1600	LAC	Silver	<	0.0700		MG/KG			7760	SW-846	21.6450	19.5690	97.6 *
03/09	0930	LAC	Chromium	<	5.0000		MG/KG			7190	SW-846	40.9090	37.1960	86.1 *
03/10	1200	LAC	Selenium		5.2000		MG/KG			7740	SW-846	1.5800	1.4870	129.2 *
03/08	1530	LAC	Copper		10.4650		MG/KG			7210	SW-846	35.7600	30.5290	131.6 *
03/08	0800	LAC	Zinc		38.5840		MG/KG			7950	SW-846	2.5560	2.5880	68.6 *
03/08	1500	LAC	Nickel		3.3630		MG/KG			7520	SW-846	1.5550	1.5560	118.3 *
03/09	1015	LAC	Beryllium		0.2210		MG/KG			7090	SW-846	1.0040	1.0050	98.8 *
03/09	0900	LAC	Thallium	<	10.0000		MG/KG			7840	SW-846	28.0520	25.9800	102.4 *
03/11	1130	LAC	Lead		27.6110		MG/KG			7420	SW-846	38.8960	35.7450	80.7 *
03/08	1430	LAC	Cadmium		0.5310		MG/KG			7130	SW-846	1.0380	1.0430	101.1 *
03/11	1630	LAC	Arsenic		6.9860		MG/KG			7060	SW-846	34.5890	32.8130	107.2 *
03/12	1330	LAC	Mercury	T	0.1208		MG/KG			7471	SW-846	28.2300	28.6100	107.6 *

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature _____ Environmental Services Co., Inc.

Signature James O Brown, Jr. Environmental Services Co., Inc.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/24/94
Time Of Sample: 1600

Type Of Sample : SOIL
Sample Collected From: NBF-001. INT 2
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 9402010544
Work Order No.: 5/19
Purchase Order:

Analysis											Quality Assurance		
Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Duplicates		% Spike Recovery
03/09	1200	LAC	Antimony		6.0140	MG/KG			7041	SW-846	1.5100	1.4740	96.3
03/12	1600	LAC	Silver	<	0.7000	MG/KG			7760	SW-846	21.6450	19.5690	97.6
03/09	0930	LAC	Chromium		23.7100	MG/KG			7190	SW-846	40.9090	37.1960	86.1
03/10	1200	LAC	Selenium		2.2000	MG/KG			7740	SW-846	1.5000	1.4870	129.2
03/08	1530	LAC	Copper		5.4380	MG/KG			7210	SW-846	35.7600	30.5290	131.6
03/08	0400	LAC	Zinc		43.0420	MG/KG			7950	SW-846	2.5560	2.5580	68.6
03/08	1500	LAC	Nickel		8.6180	MG/KG			7520	SW-846	1.5550	1.5560	118.3
03/09	1015	LAC	Beryllium		0.3690	MG/KG			7090	SW-846	1.0040	1.0050	98.8
03/09	0900	LAC	Thallium	<	10.0000	MG/KG			7840	SW-846	28.0520	25.9800	102.4
03/11	1130	LAC	Lead		22.8110	MG/KG			7420	SW-846	38.8760	35.7450	80.7
03/08	1430	LAC	Cadmium		0.6220	MG/KG			7130	SW-846	1.0380	1.0430	101.1
03/11	1630	LAC	Arsenic		12.1310	MG/KG			7060	SW-846	34.5890	32.8130	107.2
03/12	1330	LAC	Mercury T		0.1647	MG/KG			7471	SW-846	[illegible]	[illegible]	107.6 *

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature ____________________
Environmental Services Co., Inc.

Signature ____________________
Environmental Services Co., Inc.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/25/94
Time Of Sample: 0940

Type Of Sample : SOIL
Sample Collected From: ODS 004 BH INT 1
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 9402010551
Work Order No.:
Purchase Order:

Analysis

Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance Duplicates		% Spike Recovery
03/09	1200	LAC	Antimony		3.6780		MG/KG			7041	SW-846	1.5100	1.4740	96.3 *
03/12	1600	LAC	Silver	<	0.7000		MG/KG			7760	SW-846	21.6450	19.5690	97.6 *
03/09	0930	LAC	Chromium		12.9450		MG/KG			7190	SW-846	40.9090	37.1960	86.1 *
03/10	1200	LAC	Selenium	<	0.2000		MG/KG			7740	SW-846	1.5800	1.4870	129.2 *
03/08	1530	LAC	Copper		10.0690		MG/KG			7210	SW-846	35.7600	30.5290	131.6 *
03/08	0800	LAC	Zinc		39.7490		MG/KG			7950	SW-846	2.5560	2.5880	68.6 *
03/08	1500	LAC	Nickel		13.7220		MG/KG			7520	SW-846	1.5550	1.5560	118.3 *
03/09	1015	LAC	Beryllium		0.5020		MG/KG			7090	SW-846	1.0040	1.0050	98.8 *
03/09	0900	LAC	Thallium	<	10.0000		MG/KG			7840	SW-846	28.0520	25.9800	102.4 *
03/11	1130	LAC	Lead		21.0310		MG/KG			7420	SW-846	38.8960	35.7450	80.7 *
03/08	1430	LAC	Cadmium		0.7530		MG/KG			7130	SW-846	1.0380	1.0430	101.1 *
03/11	1630	LAC	Arsenic		6.6550		MG/KG			7060	SW-846	34.5890	32.8130	107.2 *
03/12	1330	LAC	Mercury	T	0.0472		MG/KG			7471	SW-846	28.2300	28.6100	107.6 *

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature _____ Environmental Services Co., Inc.

Signature _____ Environmental Services Co., Inc.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/25/94
Time Of Sample: 0950

Type Of Sample : SOIL
Sample Collected From: OOS 002 BH INT 1
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 940201056Z
Work Order No.:
Purchase Order:

Analysis

Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.
03/07	1200	LAC	Antimony	<	3.00000		MG/KG			7041	SW-846
03/12	1620	LAC	Silver	<	0.70000		MG/KG			7760	SW-846
03/09	0930	LAC	Chromium		8.80240		MG/KG			7190	SW-846
03/10	1200	LAC	Selenium	<	0.20000		MG/KG			7740	SW-846
03/11	1530	LAC	Copper		6.25560		MG/KG			7210	SW-846
03/08	0600	LAC	Zinc		10.3950		MG/KG			7950	SW-846
03/11	1500	LAC	Nickel		4.07000		MG/KG			7520	SW-846
03/09	1015	LAC	Beryllium		0.25560		MG/KG			7090	SW-846
03/09	0900	LAC	Thallium	<	10.00000		MG/KG			7840	SW-846
03/11	1130	LAC	Lead		11.00000		MG/KG			7420	SW 846
03/08	1430	LAC	Cadmium		0.7210		MG/KG			7130	SW-846
03/11	1630	LAC	Arsenic		10.1740		MG/KG			7060	SW-846
03/12	1330	LAC	Mercury	T	0.0002		MG/KG			74/1	SW-846

Quality Assurance

Duplicates		% Spike Recovery
1.5100	1.4740	96.3 *
21.6450	19.5690	97.6 *
40.9090	37.1960	86.1 *
1.5660	1.4570	129.2 *
35.7600	30.5290	131.6 *
2.5560	2.5830	68.6 *
1.5530	1.5560	118.3 *
1.0040	1.0050	98.8 *
25.0520	25.9600	102.4 *
36.8900	35.7450	80.7 *
1.0330	1.0430	101.1 *
34.5690	32.8130	107.2 *
23.2300	28.6100	107.6 *

* QC data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature _____
Environmental Services Co., Inc.

Signature _____
Environmental Services Co., Inc.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/25/94
Time Of Sample: 1010

Type Of Sample : SOIL
Sample Collected From: ODS 001 SH INT 1
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 940200105-5
Work Order No.:
Purchase Order:

Analysis

Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance Duplicates		% Spike Recovery
03/09	1200	LAC	Antimony	<	3.00000		MG/KG			7041	SW-846	1.5100	1.4740	96.3 *
03/12	1600	LAC	Silver	<	0.70000		MG/KG			7760	SW-846	21.6450	19.5690	97.6 *
03/09	0930	LAC	Chromium	<	5.00000		MG/KG			7190	SW-846	40.9090	37.1960	86.1 *
03/10	1200	LAC	Selenium	<	0.20000		MG/KG			7740	SW-846	1.5600	1.4870	129.2 *
03/08	1530	LAC	Copper		26.1910		MG/KG			7210	SW-846	35.7600	30.5290	131.6 *
03/08	0900	LAC	Zinc		143.8100		MG/KG			7950	SW-846	2.5560	2.5830	68.6 *
03/08	1500	LAC	Nickel		3.6910		MG/KG			7520	SW-846	1.5550	1.5560	118.3 *
03/09	1015	LAC	Beryllium		0.2360		MG/KG			7090	SW-846	1.0040	1.0050	98.8 *
03/09	0900	LAC	Thallium	<	10.0000		MG/KG			7840	SW-846	23.0520	25.9300	102.4 *
03/11	1130	LAC	Lead		28.5460		MG/KG			7420	SW-846	29.8760	35.7450	80.7 *
03/08	1430	LAC	Cadmium		0.9520		MG/KG			7130	SW-846	1.0330	1.0430	101.1 *
03/11	1630	LAC	Arsenic		3.0690		MG/KG			7060	SW-846	34.5690	32.8130	107.2 *
03/12	1330	LAC	Mercury	T	0.0636		MG/KG			7471	SW-846	28.7300	26.6100	107.6 *

* Data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature _____
Environmental Services Co., Inc.

Signature James D. Berry Jr.
Environmental Services Co., Inc.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/25/94
Time Of Sample: 1120

Type Of Sample : SOIL
Sample Collected From: OOs 001 BH 1NT 2
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 940200105S4
Work Order No.:
Purchase Order:

Analysis

Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance Duplicates		% Spike Recovery
03/09	1200	LAC	Antimony	<	3.0000		MG/KG			7041	SW-846	1.5100	1.4740	96.3 *
03/12	1600	LAC	Silver	<	0.7000		MG/KG			7760	SW-846	21.6450	19.5690	97.6 *
03/07	0930	LAC	Chromium		11.8300		MG/KG			7190	SW-846	40.9090	37.1960	86.1 *
03/10	1130	LAC	Selenium	<	0.2000		MG/KG			7740	SW-846	1.3600	1.4870	129.2 *
03/08	1530	LAC	Copper		11.7630		MG/KG			7210	SW-846	35.7600	38.5290	131.6 *
03/04	0941	LAC	Zinc		38.8400		MG/KG			7950	SW-846	2.5700	2.5630	68.6 *
03/10	1500	LAC	Nickel		8.8620		MG/KG			7520	SW-846	1.5500	1.5560	118.3 *
03/07	1015	LAC	Beryllium		0.5130		MG/KG			7090	SW-846	1.0040	1.0050	98.8 *
03/07	0903	LAC	Thallium	<	10.0000		MG/KG			7840	SW-846	28.0520	25.9800	102.4 *
03/11	1130	LAC	Lead		37.7010		MG/KG			7420	SW-846	38.6960	35.7450	80.7 *
03/08	1430	LAC	Cadmium	<	0.5000		MG/KG			7130	SW-846	1.0930	1.0430	101.1 *
03/11	1630	LAC	Arsenic		6.2260		MG/KG			7060	SW-846	34.5690	32.8130	107.2 *
03/12	1330	LAC	Mercury	T	0.0554		MG/KG			7471	SW-846	23.2300	23.6100	107.6 *

* All data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature _____
Environmental Services Co., Inc.

Signature _____
Environmental Services Co., Inc.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/25/94
Time Of Sample: 1140

Type Of Sample : SOIL
Sample Collected From: ODS 003 BH INT 1
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 9402010555
Work Order No.:
Purchase Order:

Analysis

Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance Duplicates		% Spike Recovery
[illegible]	1200	LAC	Antimony	< 3.0000		MG/KG			7041	SW-846	1.5100	1.4740	96.3 *
03/12	1600	LAC	Silver	< 0.7000		MG/KG			7760	SW-846	21.6450	19.5690	97.6 *
03/09	0930	LAC	Chromium	10.0300		MG/KG			7190	SW-846	40.9090	37.1960	86.1 *
03/10	1200	LAC	Selenium	< 0.2000		MG/KG			7740	SW-846	1.5800	1.4870	129.2 *
03/08	1530	LAC	Copper	10.8770		MG/KG			7210	SW-846	35.7600	30.5290	131.6 *
[illegible]	[illegible]	LAC	Zinc	156.7730		MG/KG			[illegible]	SW-846	[illegible]	2.5600	68.6 *
[illegible]	1500	LAC	Nickel	8.8050		MG/KG			7520	SW-846	1.5550	1.5560	118.3 *
03/09	1015	LAC	Beryllium	0.9560		MG/KG			7090	SW-846	1.0040	1.0050	98.8 *
03/09	0900	LAC	Thallium	< 10.0000		MG/KG			7840	SW-846	28.0520	25.9800	102.4 *
03/11	1130	LAC	Lead	42.3510		MG/KG			7420	SW-846	38.8960	35.7450	80.7 *
03/08	1430	LAC	Cadmium	0.9960		MG/KG			7130	SW-846	1.0380	1.0430	101.1 *
03/11	1630	LAC	Arsenic	8.0980		MG/KG			7060	SW-846	34.5890	32.8130	107.2 *
03/12	1330	LAC	Mercury	0.0368	T	MG/KG			7471	SW-846	28.2300	28.6100	107.6 *

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature ______________________
Environmental Services Co., Inc.

Signature ______________________
Environmental Services Co., Inc.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2165 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/25/94
Time Of Sample: 1210

Type Of Sample : SOIL
Sample Collected From: NWD 001 84 INT 1
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 9402010556
Work Order No.:
Purchase Order:

Analysis

Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance Duplicates		% Spike Recovery
03/09	1200	LAC	Antimony		5.3190		MG/KG			7041	SW-846	1.5100	1.4740	96.3 *
03/12	1600	LAC	Silver	<	0.7000		MG/KG			7760	SW-846	21.6450	19.5690	97.6 *
03/07	0930	LAC	Chromium		10.9370		MG/KG			7190	SW-846	40.9070	37.1960	86.1 *
03/04	1300	LAC	Selenium	<	0.2000		MG/KG			7740	SW-846	1.1410	1.3790	112.7 *
03/03	1530	LAC	Copper		10.4010		MG/KG			7210	SW-846	31.7600	30.5290	131.6 *
03/03	0600	LAC	Zinc		37.4560		MG/KG			7950	SW-846	2.5960	2.5830	68.6 *
03/03	1500	LAC	Nickel		12.0570		MG/KG			7520	SW-846	1.5050	1.5560	118.3 *
03/07	1015	LAC	Beryllium		0.5020		MG/KG			7090	SW-846	15.1690	14.7620	71.0 *
03/07	0900	LAC	Thallium	<	10.0000		MG/KG			7840	SW-846	22.8840	22.6350	91.1 *
03/11	1130	LAC	Lead		32.0920		MG/KG			7420	SW-846	38.6960	35.7450	90.7 *
03/04	1430	LAC	Cadmium	<	0.5000		MG/KG			7130	SW-846	1.0350	1.0430	101.1 *
03/11	1630	LAC	Arsenic		10.4350		MG/KG			7060	SW-846	34.5090	32.8130	107.2 *
03/02	1330	LAC	Mercury	T	0.0573		MG/KG			7471	SW-846	28.2300	28.6100	107.6 *

* Data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with current EPA or minimum of 10% spiked and duplicate samples is run on each parameter where applicable for quality assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature
Environmental Services Co., Inc.

Signature
Environmental Services Co., Inc.

Environmental Services Co., Inc.

1715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/25/94
Time Of Sample: 1225

Type Of Sample : SOIL
Sample Collected From: NWD 002 BH INT 1
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 9402010557
Work Order No.:
Purchase Order:

Analysis

Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance Duplicates		% Spike Recovery
[illegible]	1200	LAC	Antimony	<	3.00000		MG/KG			7041	SW-846	1.0110	0.9950	92.7 *
03/12	1640	LAC	Silver	<	0.70000		MG/KG			7760	SW-846	20.7470	19.8020	97.9 *
03/09	0930	LAC	Chromium		8.7210		MG/KG			7190	SW-846	40.9750	39.4250	84.1 *
[illegible]	0700	LAC	Selenium	<	0.20000		MG/KG			7740	SW-846	1.1410	1.3790	112.7 *
[illegible]	1530	LAC	Copper		6.3360		MG/KG			7210	SW-846	3.4340	3.4520	121.7 *
[illegible]	0620	LAC	Zinc		30.4390		MG/KG			7950	SW-846	630.1100	601.5870	122.0 *
[illegible]	1500	LAC	Nickel		8.1490		MG/KG			7520	SW-846	1.5470	1.5520	98.8 *
03/04	1015	LAC	Beryllium		0.3630		MG/KG			7090	SW-846	15.1040	14.7820	71.0 *
[illegible]	0700	LAC	Thallium	<	10.00000		MG/KG			7840	SW-846	22.6340	22.6350	91.1 *
03/11	1130	LAC	Lead		20.2340		MG/KG			7420	SW-846	83.0710	78.6510	99.6 *
03/03	1430	LAC	Cadmium	<	0.50000		MG/KG			7130	SW-846	1.3070	1.3130	102.3 *
03/11	1650	LAC	Arsenic		6.9440		MG/KG			7060	SW-846	33.0060	35.2980	112.3 *
[illegible]	1330	LAC	Mercury	T	0.0262		MG/KG			7471	SW-846	24.5100	25.1500	96.0

* Data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature _____
Environmental Services Co., Inc.

Signature _____
Environmental Services Co., Inc.

[redacted] Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/25/94
Time Of Sample: 1250

Type Of Sample : SOIL
Sample Collected From: NMD 002 BH INT 2
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 9402010568
Work Order No.:
Purchase Order:

Analysis

Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance Duplicates		% Spike Recovery
03/09	1200	LAC	Antimony	<	3.0000		MG/KG			7041	SW-846	1.0110	0.9950	92.7 *
03/12	1600	LAC	Silver	<	0.7000		MG/KG			7760	SW-846	20.7470	19.8020	97.9 *
03/09	0930	LAC	Chromium		14.8710		MG/KG			7190	SW-846	40.9750	39.4250	84.1 *
03/10	1200	LAC	Selenium	<	0.2000		MG/KG			7740	SW-846	1.1410	1.3790	112.7 *
03/08	1530	LAC	Copper		23.5280		MG/KG			7210	SW-846	3.4340	3.4520	121.7 *
03/08	0630	LAC	Zinc		38.6360		MG/KG			7950	SW-846	636.1100	601.5870	122.0 *
03/08	1500	LAC	Nickel		9.6750		MG/KG			7520	SW-846	1.5470	1.5520	98.8 *
03/09	1015	LAC	Beryllium		0.5040		MG/KG			7060	SW-846	15.1040	14.7820	71.0 *
03/09	0900	LAC	Thallium	<	10.0000		MG/KG			7840	SW-846	22.6840	22.6390	91.1 *
03/11	1130	LAC	Lead		31.2790		MG/KG			7420	SW-846	83.0710	78.6510	99.6 *
03/22	1430	LAC	Cadmium	<	0.5000		MG/KG			7130	SW-846	1.3070	1.3130	102.3 *
03/11	1630	LAC	Arsenic		12.2190		MG/KG			7060	SW-846	33.0090	35.2900	112.3 *
03/12	1330	LAC	Mercury	T	0.0920		MG/KG			7471	SW-846	24.5100	25.1500	96.0 *

* The data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for quality assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA Plan filed with ADPC&E.

Signature _____
Environmental Services Co., Inc.

Signature Thomas M. Brown, Jr.
Environmental Services Co., Inc.

Environmental Services Co., Inc.

1515 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9532 Fax: 372-9534

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/25/94
Time Of Sample: 1300

Type Of Sample : SOIL
Sample Collected From: NWD 003 B4 INT 1
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 9402010559
Work Order No.:
Purchase Order:

Analysis

Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance Duplicates		% Spike Recovery
03/09	1200	LAC	Antimony	<	3.0000		MG/KG			7041	SW-846	1.0110	0.9950	92.7 *
03/12	1600	LAC	Silver	<	0.7000		MG/KG			7760	SW-846	20.7470	19.8020	97.9 *
03/07	0930	LAC	Chromium		11.5400		MG/KG			7190	SW-846	40.9750	39.4250	84.1 *
03/10	1200	LAC	Selenium		0.7040		MG/KG			7740	SW-846	1.1410	1.3790	112.7 *
03/08	1530	LAC	Copper		9.0100		MG/KG			7210	SW-846	3.4340	3.4520	121.7 *
03/08	0900	LAC	Zinc		36.4070		MG/KG			7950	SW-846	636.1100	601.5870	122.0 *
03/08	1500	LAC	Nickel		8.4790		MG/KG			7520	SW-846	1.5470	1.5520	98.8 *
03/07	1015	LAC	Beryllium		0.3610		MG/KG			7090	SW-846	15.1040	14.7820	71.0 *
03/09	0900	LAC	Thallium	<	10.0000		MG/KG			7840	SW-846	22.6840	22.6390	91.1 *
03/11	1130	LAC	Lead		29.9780		MG/KG			7420	SW-846	83.0710	78.6510	99.6 *
03/10	1430	LAC	Cadmium	<	0.5000		MG/KG			7130	SW-846	1.3070	1.3130	102.3 *
03/11	1630	LAC	Arsenic		12.4350		MG/KG			7060	SW-846	33.0080	35.2980	112.3 *
03/12	1330	LAC	Mercury	T	0.0446		MG/KG			7471	SW-846	24.5100	25.1900	96.0 *

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature _____
Environmental Services Co., Inc.

Signature _____
Environmental Services Co., Inc.

[redacted] Environmental Services Co., Inc. [redacted]

1515 West Markham
P.O. Box 5544
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/25/94
Time Of Sample: 1530

Type Of Sample : SOIL
Sample Collected From: NWD 003 EH INT 1/2
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 940203105601
Work Order No.:
Purchase Order:

Analysis

Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance Duplicates		% Spike Recovery
03/09	1200	LAC	Antimony	<	3.0000		MG/KG			7041	SW-846	1.0110	0.7950	92.7 *
03/12	1600	LAC	Silver	<	0.7000		MG/KG			7760	SW-846	20.7470	19.8000	97.9 *
03/09	0930	LAC	Chromium		10.5100		MG/KG			7190	SW-846	40.9750	39.4250	84.1 *
03/10	1200	LAC	Selenium		0.4660		MG/KG			7740	SW-846	1.1410	1.3790	112.7 *
03/08	1530	LAC	Copper		5.4120		MG/KG			7210	SW-846	3.4340	3.4500	121.7 *
03/08	0600	LAC	Zinc		25.7650		MG/KG			7950	SW-846	636.1100	601.5870	122.0 *
03/08	1500	LAC	Nickel		8.7060		MG/KG			7520	SW-846	1.5470	1.9530	98.8 *
03/10	1015	LAC	Beryllium		0.3530		MG/KG			7090	SW-846	15.1040	14.7630	71.0 *
03/09	0900	LAC	Thallium	<	10.0000		MG/KG			7840	SW-846	22.6840	22.6390	91.1 *
03/11	1130	LAC	Lead		11.9960		MG/KG			7420	SW-846	83.0710	78.6510	99.6 *
03/08	1430	LAC	Cadmium	<	0.5000		MG/KG			7130	SW-846	1.3070	1.3130	102.3 *
03/11	1630	LAC	Arsenic		10.5370		MG/KG			7060	SW-846	33.0000	35.2960	112.3 *
03/12	1330	LAC	Mercury	T	0.0370		MG/KG			7471	SW-846	24.5100	25.1500	96.0 *

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature _____
Environmental Services Co., Inc.

Signature _____
Environmental Services Co., Inc.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/25/94
Time Of Sample: 1410

Type Of Sample : SOIL
Sample Collected From: NWD 004 BH INT 1
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 9402010561
Work Order No.:
Purchase Order:

Analysis

Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.
03/09	1200	LAC	Antimony	<	3.0000		MG/KG			7041	SW-846
03/12	1600	LAC	Silver	<	0.7000		MG/KG			7760	SW-846
03/09	0930	LAC	Chromium		5.7460		MG/KG			7190	SW-846
03/10	1200	LAC	Selenium		0.9780		MG/KG			7740	SW-846
03/08	1530	LAC	Copper		10.2370		MG/KG			7210	SW-846
03/08	0830	LAC	Zinc		16.8910		MG/KG			7950	SW-846
03/08	1520	LAC	Nickel		4.0000		MG/KG			7520	SW-846
03/09	1015	LAC	Beryllium		0.9090		MG/KG			7090	SW-846
03/09	0900	LAC	Thallium	<	10.0000		MG/KG			7840	SW-846
03/11	1150	LAC	Lead		12.0780		MG/KG			7420	SW-846
03/09	1430	LAC	Cadmium	<	0.5000		MG/KG			7130	SW-846
03/11	1610	LAC	Arsenic		13.4600		MG/KG			7060	SW-846
03/12	1330	LAC	Mercury	T	0.2154		MG/KG			7471	SW-846

Quality Assurance

Duplicates		% Spike Recovery
1.0110	0.9950	92.7 *
20.7470	19.6020	97.9 *
40.9750	39.4250	84.1 *
1.1410	1.3790	112.7 *
3.4340	3.4520	121.7 *
636.1100	601.5870	122.0 *
1.5470	1.5520	98.8 *
15.1040	14.7620	71.0 *
22.8940	22.6390	91.1 *
83.0710	78.6510	99.6 *
1.3070	1.3130	102.3 *
33.0690	35.2980	112.3 *
24.5100	25.1500	96.0 *

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature _____
Environmental Services Co., Inc.

Signature _____
Environmental Services Co., Inc.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/25/94
Time Of Sample:

Type Of Sample : SOIL
Sample Collected From: CTS 004 SF
Sample Collected By : EARL PARKER
Delivered To Lab By : FED

Control Number: 9402010562
Work Order No.:
Purchase Order:

Analysis

Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance Duplicates		% Spike Recovery
03/09	1200	LAC	Antimony	<	3.0000		MG/KG			7041	SW-846	1.0110	0.9950	92.7
03/12	1600	LAC	Silver	<	0.7000		MG/KG			7760	SW-846	20.7470	19.8020	97.9
03/09	0930	LAC	Chromium		20.6930		MG/KG			7190	SW-846	40.9750	39.4250	84.1
03/10	1200	LAC	Selenium	<	0.7000		MG/KG			7740	SW-846	1.1410	1.3790	112.7
03/08	1530	LAC	Copper		40.4560		MG/KG			7210	SW-846	3.4340	3.4520	121.7
03/08	0800	LAC	Zinc		601.5870		MG/KG			7950	SW-846	636.1100	601.5870	122.0
03/08	1500	LAC	Nickel		10.2010		MG/KG			7520	SW-846	1.5470	1.5520	98.8
03/09	1015	LAC	Beryllium		0.3290		MG/KG			7090	SW-846	15.1040	14.7820	71.0
03/09	0900	LAC	Thallium	<	10.0000		MG/KG			7840	SW-846	22.8840	22.6390	91.1
03/11	1130	LAC	Lead		54.8910		MG/KG			7420	SW-846	83.0710	78.6510	99.6
03/08	1430	LAC	Cadmium		5.1830		MG/KG			7130	SW-846	1.3070	1.3130	102.3
03/11	1630	LAC	Arsenic		9.7150		MG/KG			7060	SW-846	33.0080	35.2980	112.3
03/12	1330	LAC	Mercury	T	0.0641		MG/KG			7471	SW-846	24.5100	25.1500	96.0 *

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature _____
Environmental Services Co., Inc.

Signature James D Brown, Jr.
Environmental Services Co., Inc.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94
Customer Name : OPERATIONAL TECHNOLOGIES
Invoice Date: 02/25/94
Time Of Sample: 1555

Type Of Sample : SOIL
Sample Collected From: NWD 006 SD
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 9402010563
Work Order No.:
Purchase Order:

Analysis

Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance Duplicates		% Spike Recovery
02/09	1200	LAC	Antimony	<	3.0000		MG/KG			7041	SW-846	1.0110	0.9950	92.7 *
02/22	1600	LAC	Silver	<	0.7000		MG/KG			7760	SW-846	30.7470	19.8020	97.9 *
03/09	0930	LAC	Chromium		67.0000		MG/KG			7190	SW-846	40.9750	39.4250	84.1 *
03/10	1200	LAC	Selenium	<	0.2000		MG/KG			7740	SW-846	1.1410	1.3790	112.7 *
02/24	1530	LAC	Copper		23.4200		MG/KG			7210	SW-846	3.4840	3.4520	121.7 *
03/08	0800	LAC	Zinc		416.4000		MG/KG			7950	SW-846	636.1100	601.5870	122.0 *
03/08	1700	LAC	Nickel		11.3200		MG/KG			7520	SW-846	1.5470	1.5520	98.8 *
03/09	1015	LAC	Beryllium		0.4000		MG/KG			7090	SW-846	15.1040	14.7820	71.0 *
03/07	0900	LAC	Thallium	<	10.0000		MG/KG			7840	SW-846	22.3840	22.6390	91.1 *
03/11	1130	LAC	Lead		476.7000		MG/KG			7420	SW-846	83.0710	78.6510	99.6 *
03/03	1430	LAC	Cadmium		6.0400		MG/KG			7130	SW-846	1.3070	1.3130	102.3 *
03/11	1650	LAC	Arsenic		9.7650		MG/KG			7060	SW-846	33.0630	35.2960	112.3 *
03/12	1330	LAC	Mercury	T	0.0897		MG/KG			7471	SW-846	24.5100	25.1500	96.0 *

* ("*" data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with AUFORE.

Signature _____
Environmental Services Co., Inc.

Signature _____
Environmental Services Co., Inc.

Environmental Services Co., Inc.

13715 West Markham
P.O. Box 5644
Little Rock, AR 72215
Phone: (501) 221-2565 Fax: 221-1341

1107 Century
Springdale, AR 72764
Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.
Memphis, TN 38134
Phone: (901) 372-9332 Fax: 372-9334

Date Of Report: 03/18/94
Customer Name : OPERATIONAL TECHNOLOGIES
Sample Date: 02/25/94
Time Of Sample: 1450

Type Of Sample : WATER
Sample Collected From: NWD 005 SW
Sample Collected By : EARL PARKER
Delivered To Lab By : FED EX

Control Number: 9402010572
Work Order No.:
Purchase Order:

Analysis

Date	Time	By	Parameter		Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance Duplicates		% Spike Recovery
03/18	1500	LAC	Lead		0.1190		MG/L			239.1	EPA	1.1720	1.2370	105.8 *
03/08	1500	LAC	Nickel	<	0.0150		MG/L			249.1	EPA	1.0810	1.0810	106.0 *
03/02	1330	RFB	Selenium	<	0.0020		MG/L			270.2	EPA	0.5100	0.5050	101.5 *
03/09	0900	LAC	Thallium		0.1110		MG/L			279.1	EPA	0.8020	0.8330	74.5 *
03/08	0800	LAC	Total Zinc		0.1050		MG/L			289.1	EPA	1.0350	1.0290	101.8 *
03/09	1015	LAC	Beryllium		0.0070		MG/L			210.1	EPA	1.0440	1.0590	104.1 *
03/08	1430	LAC	Cadmium		0.0280		MG/L			213.1	EPA	1.0730	1.0770	106.2 *
03/09	0930	LAC	Chromium		0.0870		MG/L			218.1	EPA	1.0000	1.0100	97.6 *
03/09	1700	LAC	Copper,Tot		0.0171		MG/L			220.2	EPA	1.4000	1.2730	123.9 *
03/14	0900	LAC	Mercury T		0.0060		MG/L			245.1	EPA	0.0294	0.0319	105.6
03/09	1200	LAC	Antimony T	<	0.0300		MG/L			204.2	EPA	0.9710	1.1500	93.1 *
03/12	1600	LAC	Silver T		0.0220		MG/L			272.2	EPA	1.2290	1.2540	121.3 *
03/03	1330	RFB	Arsenic T	<	0.0020		MG/L			206.2	EPA	0.9670	0.9880	97.8 *

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature _____
Environmental Services Co., Inc.

Signature James O Brown, Jr.
Environmental Services Co., Inc.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010531
Sample Type: GRAB SOIL
Sample Location: NEF-005, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 02-28-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
m-, p-Xylenes	7.38

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	126.40%
Toluene-d_8	104.71%
Bromofluorobenzene	89.69%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1040
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010532
Sample Type: GRAB SOIL
Sample Location: NEF-005, INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 02-28-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
m-, p-Xylenes	7.85
2-Butanone	< 100.00

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	128.16%
Toluene-d_8	115.85%
Bromofluorobenzene	96.00%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1114
Chemist: HJV

Data release authorized by: _____

Data release authorized by: James D. Brown Jr.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010533
Sample Type: GRAB SOIL
Sample Location: CTS-003, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 02-28-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Methylene Chloride	9.42
2-Butanone	< 100.00
m-, p-Xylenes	7.40

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	129.05%
Toluene-d_8	98.55%
Bromofluorobenzene	83.28%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1148
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010534
Sample Type: GRAB SOIL
Sample Location: CTS-003, INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 02-28-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Methylene Chloride	9.61
m-, p-Xylenes	7.25

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	111.89%
Toluene-d_8	88.52%
Bromofluorobenzene	82.01%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1222
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010535
Sample Type: GRAB SOIL
Sample Location: CTS-002, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 02-28-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Acetone	392.91
2-Hexanone	< 50.00

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	115.98%
Toluene-d_8	85.35%
Bromofluorobenzene	86.28%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1255
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010536
Sample Type: GRAB SOIL
Sample Location: CTS-002, INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 02-28-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Acetone	122.46
m-, p-Xylenes	10.85
o-Xylene	5.32

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	107.78%
Toluene-d_8	104.24%
Bromofluorobenzene	78.37%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1329
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010537
Sample Type: GRAB SOIL
Sample Location: CTS-001, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 02-28-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Methylene Chloride	9.40

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	120.47%
Toluene-d_8	103.00%
Bromofluorobenzene	82.93%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1403
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010538
Sample Type: GRAB SOIL
Sample Location: NEF-004, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 02-28-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Methylene Chloride	17.02

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	126.15%
Toluene-d_8	102.64%
Bromofluorobenzene	81.51%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1449
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010539
Sample Type: GRAB SOIL
Sample Location: NEF-003, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 02-28-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Acetone	299.35

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	123.33%
Toluene-d_8	102.21%
Bromofluorobenzene	86.23%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1523
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010540
Sample Type: GRAB SOIL
Sample Location: NEF-003, INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 02-28-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Acetone	< 100.00

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	122.30%
Toluene-d_8	92.47%
Bromofluorobenzene	78.47%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1556
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010541
Sample Type: GRAB SOIL
Sample Location: NEF-002, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 02-28-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Methylene Chloride	15.69

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	122.26%
Toluene-d_8	91.47%
Bromofluorobenzene	81.44%

The lab blank was monitored for all analytes of interest. The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1630
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010542
Sample Type: GRAB SOIL
Sample Location: NEF-002, INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 02-28-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
No VOC Target Analytes detected.	

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	117.50%
Toluene-d_8	105.37%
Bromofluorobenzene	79.62%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1704
Chemist: HJV

Data release authorized by: _____

Data release authorized by: James O'Brien Jr. _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010543
Sample Type: GRAB SOIL
Sample Location: NEF-001, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 02-28-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Methylene Chloride	15.42

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	118.55%
Toluene-d_8	99.19%
Bromofluorobenzene	83.49%

The lab blank was monitored for all analytes of interest. The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1737
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010544
Sample Type: GRAB SOIL
Sample Location: NEF-001, INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 02-28-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Methylene Chloride	15.77

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	112.29%
Toluene-d_8	98.85%
Bromofluorobenzene	82.42%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1811
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010551
Sample Type: GRAB SOIL
Sample Location: ODS-004 BH, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 02-28-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Methylene Chloride	17.53

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	102.18%
Toluene-d_8	112.47%
Bromofluorobenzene	82.40%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 2139
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010552
Sample Type: GRAB SOIL
Sample Location: ODS-002 BH, INT 1

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 02-28-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Methylene Chloride	17.80

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	98.76%
Toluene-d_8	121.37%
Bromofluorobenzene	83.06%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 2212
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010553
Sample Type: GRAB SOIL
Sample Location: ODS-001 BH, INT 1

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 02-28-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Methylene Chloride	16.04

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	111.55%
Toluene-d_8	102.36%
Bromofluorobenzene	103.23%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 2246
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010554
Sample Type: GRAB SOIL
Sample Location: ODS-001 BH, INT 2

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 02-28-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Methylene Chloride	17.56

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	115.69%
Toluene-d_8	119.79%
Bromofluorobenzene	85.18%

The lab blank was monitored for all analytes of interest. The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 2319
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010555
Sample Type: GRAB SOIL
Sample Location: ODS-003 BH, INT 1

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 02-28-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Methylene Chloride	17.09

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	117.30%
Toluene-d_8	116.99%
Bromofluorobenzene	77.56%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 2353
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010556
Sample Type: GRAB SOIL
Sample Location: NWD-001 BH, INT 1

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-01-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Acetone	341.50
Methylene Chloride	16.84

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	109.58%
Toluene-d_8	105.06%
Bromofluorobenzene	86.00%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 0026
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010557
Sample Type: GRAB SOIL
Sample Location: NWD-002 BH, INT 1

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-01-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Methylene Chloride	16.41

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	124.82%
Toluene-d_8	109.57%
Bromofluorobenzene	87.69%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 0100
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010558
Sample Type: GRAB SOIL
Sample Location: NWD-002 BH, INT 2

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-01-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Methylene Chloride	17.79

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	107.12%
Toluene-d_8	109.19%
Bromofluorobenzene	82.71%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 0133
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010559
Sample Type: GRAB SOIL
Sample Location: NWD-003 BH, INT 1

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-01-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Acetone	< 100.00

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	108.83%
Toluene-d_8	111.29%
Bromofluorobenzene	95.84%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1230
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010560
Sample Type: GRAB SOIL
Sample Location: NWD-003 BH, INT 2

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-01-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Acetone	< 100.00
Methylene Chloride	18.23

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	113.52%
Toluene-d_8	102.42%
Bromofluorobenzene	83.16%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1303
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010561
Sample Type: GRAB SOIL
Sample Location: NWD-004 BH, INT 1

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-01-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Methylene Chloride	19.33

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	116.55%
Toluene-d_8	109.97%
Bromofluorobenzene	78.03%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1337
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010562
Sample Type: GRAB SOIL
Sample Location: CTS-004 SF

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-01-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Acetone	< 100.00

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	99.91%
Toluene-d_8	110.23%
Bromofluorobenzene	80.71%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1411
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010563
Sample Type: GRAB SOIL
Sample Location: NWD-006 SD

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-01-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Methylene Chloride	18.14

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	116.31%
Toluene-d_8	100.31%
Bromofluorobenzene	86.88%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1445
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010572
Sample Type: GRAB WATER
Sample Location: NWD-005 SW

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-01-94
Date Reported: 03-02-94

ANALYTICAL RESULTS

VOC Target Compounds	Results $\mu g\ kg^{-1}$ (ppb)
Acetone	< 100.00
Methylene Chloride	224.39
Chloroform	12.75
Trichloroethene	8.49
Toluene	5.26

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
1,2 - Dichloroethane-d_4	101.25%
Toluene-d_8	100.33%
Bromofluorobenzene	86.80%

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA Method 624.

Time of Analysis: 1632
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010531
Sample Type: Soil
Sample Location: NEF-005 INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-04-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)
Bis (2-ethylhexyl) phthalate	< 660.00

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	122.43
Phenol-d_5	137.66
Nitrobenzene-d_5	91.79
2-Fluorobiphenyl	62.45
2,4,6-Tribromophenol	65.57
p-Terphenyl-d_{14}	116.80

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 1804
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010532
Sample Type: Soil
Sample Location: NEF-005 INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-04-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)

No Semi-volatile Target Compounds detected.

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	132.13
Phenol-d_5	133.11
Nitrobenzene-d_5	111.91
2-Fluorobiphenyl	61.13
2,4,6-Tribromophenol	89.88
p-Terphenyl-d_{14}	114.73

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 1903
Chemist: HJV

Data release authorized by: _____

Data release authorized by: James E. Brown, Jr.

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010533
Sample Type: Soil
Sample Location: CTS-003 INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-04-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)
Bis (2-ethylhexyl) phthalate	667.93
Pyrene	< 660.00

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	83.95
Phenol-d_5	82.17
Nitrobenzene-d_5	90.39
2-Fluorobiphenyl	79.57
2,4,6-Tribromophenol	31.84
p-Terphenyl-d_{14}	182.05

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2001
Chemist: HJV

Data release authorized by: _____

Data release authorized by: James D Berry, Jr.

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010534
Sample Type: Soil
Sample Location: CTS-003 INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-04-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)
Bis (2-ethylhexyl) phthalate	< 660.00

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	106.28
Phenol-d_5	99.66
Nitrobenzene-d_5	92.22
2-Fluorobiphenyl	73.81
2,4,6-Tribromophenol	43.21
p-Terphenyl-d_{14}	179.50

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2059
Chemist: HJV

Data release authorized by: _____

Data release authorized by: James O'Bivens Jr. _____

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010535
Sample Type: Soil
Sample Location: CTS-002 INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-04-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)
Pyrene	< 660.00

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	83.04
Phenol-d_5	78.60
Nitrobenzene-d_5	75.48
2-Fluorobiphenyl	64.08
2,4,6-Tribromophenol	32.69
p-Terphenyl-d_{14}	141.61

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2157
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010536
Sample Type: Soil
Sample Location: CTS-002 INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)
Bis (2-ethylhexyl) phthalate	< 660.00

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	43.96
Phenol-d_5	51.47
Nitrobenzene-d_5	85.03
2-Fluorobiphenyl	70.37
2,4,6-Tribromophenol	11.37
p-Terphenyl-d_{14}	125.61

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 1945
Chemist: HJV

Data release authorized by: _____

Data release authorized by: James O'Brien, Jr.

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010537
Sample Type: Soil
Sample Location: CTS-001 INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)
Bis (2-ethylhexyl) phthalate	< 660.00

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	48.39
Phenol-d_5	59.95
Nitrobenzene-d_5	87.76
2-Fluorobiphenyl	68.01
2,4,6-Tribromophenol	9.66
p-Terphenyl-d_{14}	146.81

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2043
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010538
Sample Type: Soil
Sample Location: NEF-004 INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)

No Semi-volatile Target Compounds detected.

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	50.50
Phenol-d_5	42.28
Nitrobenzene-d_5	71.50
2-Fluorobiphenyl	58.39
2,4,6-Tribromophenol	9.62
p-Terphenyl-d_{14}	146.43

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 1241
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010539
Sample Type: Soil
Sample Location: NEF-003 INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)
Butylbenzyl phthalate	< 660.00
Bis (2-ethylhexyl) phthalate	< 660.00

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	86.65
Phenol-d_5	87.52
Nitrobenzene-d_5	94.03
2-Fluorobiphenyl	73.90
2,4,6-Tribromophenol	21.64
p-Terphenyl-d_{14}	171.63

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2239
Chemist: HJV

Data release authorized by: _____

Data release authorized by: James O'Brien Jr.

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010540
Sample Type: Soil
Sample Location: NEF-003 INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)

No Semi-volatile Target Compounds detected.

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	96.30
Phenol-d_5	150.87
Nitrobenzene-d_5	162.02
2-Fluorobiphenyl	81.77
2,4,6-Tribromophenol	110.03
p-Terphenyl-d_{14}	134.41

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2337
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010541
Sample Type: Soil
Sample Location: NEF-002 INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)
Pyrene	< 660.00

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	122.49
Phenol-d_5	103.51
Nitrobenzene-d_5	149.15
2-Fluorobiphenyl	75.95
2,4,6-Tribromophenol	76.00
p-Terphenyl-d_{14}	139.25

The lab blank was monitored for all analytes of interest. The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 0035
Chemist: HJV

Data release authorized by: _____

Data release authorized by: James R. Brown Jr.

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010542
Sample Type: Soil
Sample Location: NEF-002 INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-09-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)

No Semi-volatile Target Compounds detected.

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	76.79
Phenol-d_5	92.69
Nitrobenzene-d_5	65.68
2-Fluorobiphenyl	38.17
2,4,6-Tribromophenol	29.91
p-Terphenyl-d_{14}	92.55

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 1837
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010543
Sample Type: Soil
Sample Location: NEF-001 INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)

No Semi-volatile Target Compounds detected.

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	
Phenol-d_5	
Nitrobenzene-d_5	41.76
2-Fluorobiphenyl	35.86
2,4,6-Tribromophenol	
p-Terphenyl-d_{14}	98.83

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 0133
Chemist: HJV

Data release authorized by: _____

Data release authorized by: James O. Brinson Jr.

specsv.jwp

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010544
Sample Type: Soil
Sample Location: NEF ~~002~~ INT 2
(sleeve marked "001")

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)

No Semi-volatile Target Compounds detected.

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	83.95
Phenol-d_5	75.14
Nitrobenzene-d_5	88.64
2-Fluorobiphenyl	68.36
2,4,6-Tribromophenol	31.82
p-Terphenyl-d_{14}	165.30

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 0231
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010551
Sample Type: Soil
Sample Location: ODS-004 BH INT 1

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-09-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)
Bis (2-ethylhexyl) phthalate	< 660.00

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	89.00
Phenol-d_5	104.42
Nitrobenzene-d_5	96.54
2-Fluorobiphenyl	62.92
2,4,6-Tribromophenol	41.47
p-Terphenyl-d_{14}	114.92

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 1934
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010552
Sample Type: Soil
Sample Location: ODS-002 BH INT 1

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-08-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)

No Semi-volatile Target Compounds detected.

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	98.92
Phenol-d_5	101.15
Nitrobenzene-d_5	99.03
2-Fluorobiphenyl	78.11
2,4,6-Tribromophenol	25.82
p-Terphenyl-d_{14}	127.28

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 1943
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010553
Sample Type: Soil
Sample Location: ODS-001 BH INT 1

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-08-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)
Acenaphthene	< 660.00
Phenanthrene	2229.82
Anthracene	< 660.00
Fluoranthene	4029.46
Pyrene	6411.72
Benzo(a)anthracene	1735.02
Chrysene	2711.77
Bis (2-ethylhexyl) phthalate	1266.64
Benzo(b)fluoranthene	1266.28
Benzo(k)fluoranthene	1084.57
Benzo(a)pyrene	1094.21
Indeno(1,2,3-c,d)pyrene	797.54
Benzo(g,h,i)perylene	1037.09

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	75.16
Phenol-d_5	82.04
Nitrobenzene-d_5	80.32
2-Fluorobiphenyl	57.04
2,4,6-Tribromophenol	49.63
p-Terphenyl-d_{14}	116.48

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2040
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010554
Sample Type: Soil
Sample Location: ODS-001 BH INT 2

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-08-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)
Butylbenzyl phthalate	< 660.00
Bis (2-ethylhexyl) phthalate	< 660.00

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	91.15
Phenol-d_5	92.85
Nitrobenzene-d_5	92.40
2-Fluorobiphenyl	71.89
2,4,6-Tribromophenol	56.68
p-Terphenyl-d_{14}	138.30

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2138
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010555
Sample Type: Soil
Sample Location: ODS-003 BH INT 1

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-08-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)
Bis (2-ethylhexyl) phthalate	< 660.00
Pyrene	11182.02
Fluoranthene	7725.69
Phenanthrene	4649.25
Benzo(a)anthracene	3223.47
Chrysene	5126.32
Benzo(b)fluoranthene	1982.48
Acenaphthene	< 660.00
Anthracene	1070.88
Benzo(k)fluoranthene	1621.02
Fluorene	< 660.00
Benzo(a)pyrene	1754.39
Indeno(1,2,3-c,d)pyrene	1010.57
Benzo(g,h,i)perylene	1381.32

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	98.92
Phenol-d_5	100.30
Nitrobenzene-d_5	102.45
2-Fluorobiphenyl	81.68
2,4,6-Tribromophenol	56.41
p-Terphenyl-d_{14}	149.25

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2235
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010556
Sample Type: Soil
Sample Location: NWD-001 BH INT 1

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-08-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)
Phenanthrene	< 660.00
Flouranthene	< 660.00
Pyrene	1055.08
Benzo(a)anthracene	< 660.00
Chrysene	< 660.00
Bis (2-ethylhexyl) phthalate	< 660.00
Benzo(b)fluoranthene	< 660.00

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	102.51
Phenol-d_5	105.22
Nitrobenzene-d_5	89.23
2-Fluorobiphenyl	71.33
2,4,6-Tribromophenol	54.71
p-Terphenyl-d_{14}	136.67

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2333
Chemist: HJV

Data release authorized by: _____

Data release authorized by: James O Brown, Jr.

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010557
Sample Type: Soil
Sample Location:NWD-002 BH INT 1

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-08-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)
Phenanthrene	< 660.00
Fluoranthene	< 660.00
Pyrene	966.66
Benzo(a)anthracene	< 660.00
Chrysene	< 660.00
Bis (2-ethylhexyl) phthalate	< 660.00

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	97.70
Phenol-d_5	93.77
Nitrobenzene-d_5	90.13
2-Fluorobiphenyl	70.99
2,4,6-Tribromophenol	47.28
p-Terphenyl-d_{14}	138.02

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 0030
Chemist: HJV

Data release authorized by: _____

Data release authorized by: James J. Brown Jr.

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010558
Sample Type: Soil
Sample Location: NWD-002 BH INT 2

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-09-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)

No Semi-volatile Target Compounds detected.

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	107.08
Phenol-d_5	110.58
Nitrobenzene-d_5	109.37
2-Fluorobiphenyl	76.76
2,4,6-Tribromophenol	100.78
p-Terphenyl-d_{14}	158.28

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2031
Chemist: HJV

Data release authorized by: _____

Data release authorized by: Donna L. Baron Jr. _____

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010559
Sample Type: Soil
Sample Location: NWD-003 BH INT 1

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-09-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)
Fluoranthene	< 660.00
Pyrene	< 660.00

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	104.02
Phenol-d_5	106.14
Nitrobenzene-d_5	114.37
2-Fluorobiphenyl	77.74
2,4,6-Tribromophenol	105.42
p-Terphenyl-d_{14}	163.57

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2139
Chemist: HJV

Data release authorized by: _____

Data release authorized by: James O'Brien Jr.

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010560
Sample Type: Soil
Sample Location: NWD-003 BH INT 2

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-09-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)

No Semi-volatile Target Compounds detected.

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	98.88
Phenol-d_5	106.69
Nitrobenzene-d_5	91.34
2-Fluorobiphenyl	61.32
2,4,6-Tribromophenol	65.44
p-Terphenyl-d_{14}	144.20

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2226
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

specsv.jwt

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010561
Sample Type: Soil
Sample Location: NWD-004 BH INT 1

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-09-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)
Pyrene	< 660.00

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	106.00
Phenol-d_5	105.01
Nitrobenzene-d_5	97.89
2-Fluorobiphenyl	82.19
2,4,6-Tribromophenol	94.68
p-Terphenyl-d_{14}	168.36

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2324
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010562
Sample Type: Soil
Sample Location: CTS-004 SF

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-10-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)
Bis (2-ethylhexyl) phthalate	2308.51
Pyrene	114371.61
Fluoranthene	75269.06
Phenanthrene	65689.27
Benzo(a)anthracene	26676.08
Chrysene	37808.93
Benzo(b)fluoranthene	15830.59
Acenaphthene	5651.72
Anthracene	20106.44
Benzo(k)fluoranthene	11433.92
Fluorene	5459.81
Benzo(a)pyrene	14026.74
Indeno(1,2,3-c,d)pyrene	7684.55
Benzo(g,h,i)perylene	9523.44
Naphthalene	2681.25
2-Methylnaphthalene	1034.18
Dibenzofuran	2362.84

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	93.53
Phenol-d_5	103.22
Nitrobenzene-d_5	99.80
2-Fluorobiphenyl	71.99
2,4,6-Tribromophenol	64.04
p-Terphenyl-d_{14}	162.40

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 0021
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010563
Sample Type: Soil
Sample Location: NWD-006 SD

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-10-94
Date Reported: 03-10-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)
Bis (2-ethylhexyl) phthalate	2916.73
Pyrene	84561.55
Fluoranthene	59393.35
Phenanthrene	50467.88
Benzo(a)anthracene	18938.94
Chrysene	29882.09
Benzo(b)fluoranthene	14886.15
Acenaphthene	2024.26
Anthracene	50122.49
Benzo(k)fluoranthene	11080.74
Fluorene	2686.78
Benzo(a)pyrene	13424.02
Indeno(1,2,3-c,d)pyrene	9180.39
Benzo(g,h,i)perylene	11321.52
Naphthalene	< 660.00
2-Methylnaphthalene	< 660.00
Dibenzofuran	1441.40
Dibenzo(a,h)anthracene	4426.92

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	102.32
Phenol-d_5	110.11
Nitrobenzene-d_5	94.12
2-Fluorobiphenyl	68.69
2,4,6-Tribromophenol	95.94
p-Terphenyl-d_{14}	132.18

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.
Time of Analysis: 0119
Chemist: HJV

Data release authorized by: _____

Data release authorized by: James O'Berry Jr.

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: Operational Technologies
Control Number: 9402010572
Sample Type: Water
Sample Location: NWD-005 SW

Date Sampled: 02-25-94
Date Received: 02-25-94
Date of Analysis: 03-14-94
Date Reported: 03-14-94

ANALYTICAL RESULTS

Semi-Volatile Target Compounds	Results $\mu g kg^{-1}$ (ppb)
Bis (2-ethylhexyl) phthalate	1553.96

QUALITY ASSURANCE RESULTS

System Monitoring Compounds	% Recovery
2-Fluorophenol	84.19
Phenol-d_5	62.54
Nitrobenzene-d_5	93.48
2-Fluorobiphenyl	70.57
2,4,6-Tribromophenol	72.02
p-Terphenyl-d_{14}	164.02

The lab blank was monitored for all analytes of interest.
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 1508
Chemist: HJV

Data release authorized by: _____

Data release authorized by: _____

specsv.jwb

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010531
Sample Type: GRAB SOIL
Sample Location: NEF-005, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-03-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.00

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 09:06
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: James D. Brown Jr.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010532
Sample Type: GRAB SOIL
Sample Location: NEF-005, INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-03-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	<10.00

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 10:14
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: James D. Berry, Jr. _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010533
Sample Type: GRAB SOIL
Sample Location: CTS-003, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-03-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	21.25

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 10:45
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010534
Sample Type: GRAB SOIL
Sample Location: CTS-003, INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-03-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	11.62

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 12:37
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: James O'Brien Jr.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010535
Sample Type: GRAB SOIL
Sample Location: CTS-002, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-03-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 13:27
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: James O Brown, Jr.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010536
Sample Type: GRAB SOIL
Sample Location: CTS-002, INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-03-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 13:59
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: James B. Brown, Jr.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010537
Sample Type: GRAB SOIL
Sample Location: CTS-001, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-03-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 13:27
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: James E. Brown, Jr.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010538
Sample Type: GRAB SOIL
Sample Location: NEF-004, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-03-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 15:05
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: James E Brown, Jr.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010539
Sample Type: GRAB SOIL
Sample Location: NEF-003, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-03-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 15:35
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: James O Brown, Jr.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010540
Sample Type: GRAB SOIL
Sample Location: NEF-003, INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-03-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 16:00
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010541
Sample Type: GRAB SOIL
Sample Location: NEF-002, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 07:21
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010542
Sample Type: GRAB SOIL
Sample Location: NEF-002, INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 09:32
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: James A Brown Jr.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010543
Sample Type: GRAB SOIL
Sample Location: NEF-001, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 10:03
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: James D. Brown, Jr.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010544
Sample Type: GRAB SOIL
Sample Location: NEF-001, INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 10:35
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: James O Brown Jr.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010551
Sample Type: GRAB SOIL
Sample Location: ODS-004, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 11:13
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: James E. Brown Jr.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010552
Sample Type: GRAB SOIL
Sample Location: ODS-002, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 12:17
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010553
Sample Type: GRAB SOIL
Sample Location: ODS-001, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 12:46
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: James O'Brien Jr.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010554
Sample Type: GRAB SOIL
Sample Location: ODS-001, BH, INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 13:21
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: James C. Brown, Jr.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010555
Sample Type: GRAB SOIL
Sample Location: ODS-003, BH, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 12:18
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: James O'Brien

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010555
Sample Type: GRAB SOIL
Sample Location: ODS-003, BH, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-09-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	63.49 %
(Duplicate)	85.15 %
RPD	0.29 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 12:18
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010556
Sample Type: GRAB SOIL
Sample Location: NWD-001, BH, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-09-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	63.49 %
(Duplicate)	85.15 %
RPD	0.29 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 13:50
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: James O Berson Jr.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010557
Sample Type: GRAB SOIL
Sample Location: NWD-002, BH, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 13:02
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: James D Brown Jr.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010558
Sample Type: GRAB SOIL
Sample Location: NWD-002, BH, INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 14:42
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010559
Sample Type: GRAB SOIL
Sample Location: NWD-003, BH, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY	
Matrix Spike (300 µl)	95.50	%
(Duplicate)	80.43	%
RPD	0.17	%

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 14:53
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: James D Brown Jr.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010560
Sample Type: GRAB SOIL
Sample Location: NWD-003, BH, INT 2

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 15:28
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: James O'Brien Jr.

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010561
Sample Type: GRAB SOIL
Sample Location: NWD-004, BH, INT 1

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 16:24
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010562
Sample Type: GRAB SOIL
Sample Location: CTS-004 SF

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-09-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	63.49 %
(Duplicate)	85.15 %
RPD	0.29 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 14:50
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010563
Sample Type: GRAB SOIL
Sample Location: NWD-006 SD

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-09-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS $mgKg^{-1}$ (ppm)
Total Petroleum Hydrocarbons	< 10.0

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	63.49 %
(Duplicate)	85.15 %
RPD	0.29 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 15:18
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: Donna O'Brien Jr. _____

Environmental Services Company, Inc.

1107 CENTURY
SPRINGDALE ARKANSAS 72764
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:
13715 W. MARKHAM - P.O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH
MEMPHIS, TN 38134
(901) 372-9332
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES
Control Number: 9402010572
Sample Type: GRAB WATER
Sample Location: NWD-005 SW

Date Sampled: 02-24-94
Date Received: 02-25-94
Date of Analysis: 03-07-94
Date Reported: 03-15-94

ANALYTICAL RESULTS

Target Analyte	RESULTS μgL^{-1} (ppb)
Total Petroleum Hydrocarbons	1,300

QUALITY ASSURANCE RESULTS

	% RECOVERY
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 17:18
Chemist: HJV

Data Release Authorized By: _____

Data Release Authorized By: _____

Environmental Services Company, Inc.

CORPORATE OFFICE:
13715 W. MARKHAM – P. O. BOX 5644
LITTLE ROCK, ARKANSAS 72215
(501) 221-2565 – FAX. NO. (501) 221-1841

1107 CENTURY
SPRINGDALE, ARKANSAS 72764
(501) 750-1170 – FAX. NO. (501) 750-1172

DATE: 4-12-94

TO: Dave Stevens

FROM: Vicky

NUMBER OF PAGES INCLUDING THIS PAGE: 3

Your CN# 9402010592 is our #3-0023 at the bottom of each page. Hope this helps.

2-0515 (SPK OLD)		.261	1/5	.1047	.5233	104.9%
RB		.031		.0005		<0.002
2-0524		.027		—		<0.002
2-0524 (SPK)		.254	1/5	.1015	.5075	.5154
2-0524 (SPK OLD)		.261	1/5	.1047	.5233	103.1%
3-0023 2-0572		.030		.0001		<0.002

MJP 1230 3/8/94

,9997 METALS

50.19 ELEMENT Sn DATE 3-2-94 TIME 1330 BY RAB

	SAMPLE ID.	SPK. VALUE	ABSORBENCE READING	INITIAL DILUTION	DILUTION	Q.A. CONC.	FINAL CONC.
	,002		,032				
	,025		,088				
	,100		,250				
	Blank		,026				
	QMR D	(23)	~~,026~~ ,131	2X	,0458	,0229	99.6 %
Spgdl CW#	RB LR CN#		,028		—		<0.002
	9402010233		,028		—		<0.002
	2-0233 (SPK)		~~,000~~ ,255	1/5	,1020	,5098	,5075
	2-0233 (SPK DUP)		~~,000~~ ,263	1/5	,1010	,5052	101.5%
3-0007	2-0054		~~,002~~ ,027		—		<0.002
3-0016	2-0224		~~,004~~ ,032		,0010		<0.002
3-0017	2-0226		,041		,0051		,005
3-0019	2-0377		,030		,0001		<0.002
3-0020	2-0378		,024		—		<0.002
3-0021	2-0379		,030		,0001		<0.002
	RB		,024		—		<0.002
3-0022	2-0515		,030		,0001		<0.002
	2-0515 (SPK)		,262	1/5	,1051	,5256	,5245
	2-0515 (SPK DUP)		,261	1/5	,1047	,5233	104.9 %
	RB		,031		,0005		<0.002
	2-0524		,027		—		<0.002
	2-0524 (SPK)		,254	1/5	,1015	,5075	,5054
	2-0524 (SPK DUP)		,261	1/5	,1047	,5233	103.1 %
3-0023	2-0572		,030		,0001		<0.002

.9999

METALS

ELEMENT As DATE 3-3-94 TIME 1330 BY PW

SAMPLE ID.	SPK. VALUE	ABSORBENCE READING	INITIAL DILUTION	DILUTION	Q.A. CONC.	FINAL CONC.
.002		.056				
.025		.103				
.100		.246				
Blank		.041				
DMR 13	(280)	.301	1/2	.1283	.2566	91.7%
RB		.041		—		<0.002
LR CV# 94@20100036		.055		—		<0.002
2-0024 (Spk)		.242	1/10	.0977	.9775	.9749
2-0024 (Spk Dup)		.241	1/10	.0972	.9723	92.5%
2-0151		.037		—		<0.002
RB		.038		—		<0.002
2-0137		.044		—		<0.002
2-0137 (Spk)		.240	1/10	.0967	.9671	.9775
2-0137 (Spk Dup)		.244	1/10	.0988	.9879	97.8%
RB		.047		—		<0.002
2-0515		.037		—		<0.002
2-0515 (Spk)		.247	1/10	.1003	1.0034	1.0008
2-0518 (Spk Dup)		.246	1/10	.0998	.9982	100.1%
RB		.047		—		<0.002
2-0524		.047		—		<0.002
2-0524 (Spk)		.243	1/10	.0982	.9827	.9801
2-0524 (Spk Dup)		.242	1/10	.0977	.9775	98.0%
2-0572		.040		—		<0.002
.002		.059				
.025		.102				
.100		.241				

-552 Sb ~~CFC~~ 3/9

-572 Pb, As
↑ ↑ RFB

~~VOL 1~~ ~~2005~~
3/18

572 1624 Bis 2 ethyl
1553

210 731 0007

Metal Digestion Log Worksheet

RCRA Metals

Date: 03/01/94
Time: 0800
Analyst: LAC

Method: EPA SW-846 Method 3050A Digestion, followed by the appropriate 7000 Series GFAA Methods

Control Number	Matrix	Sample Volume/Weight	Spike	Final ~~Extract~~ Volume	Comments
Blank	H_2O	50 ml		50 ml	
9402010531	Soil	2.69g			
02-532		2.40g			
02-533		2.38g			
02-534		2.75g			
02-534		2.29g	X		1 ppm AMS (spk)
02-534		2.22g	X		1 ppm AMS (spkdup)
02-535		2.68g			
02-536		2.20g			
02-537		2.29g			
02-538		2.55g			
02-539		3.06g			
02-540		2.19g			
02-540D		2.34g			
02-542		2.33g			
02-543		2.26g			
02-544		2.41g			
02-544		2.31g	X		1 ppm AMS (spk)
02-544		2.55g	X		1 ppm AMS (spkdup)
02-551		2.19g			
02-552		2.15g			
02-553		2.10g			
02-554		2.24g			
02-556		2.51g			
02-557		2.99g			
02-558		2.62g			
02-559		2.31g			
02-560		2.63g			
02-561	↓	2.55g		↓	

Metal Digestion Log Worksheet

RCRA Metals

Date: 02/28/94
Time: 1030
Analyst: LAC

Method: EPA SW-846 Method 3050A Digestion,
followed by the appropriate 7000 Series GFAA Methods

Control Number	Matrix	Sample Volume/Weight	Spike	Final Extract Volume	Comments
Blank	H_2O	50 ml		50 ml	
940200524	↑	↑		↑	
02-524			X		spk 1ppm AMS
02-524			X		spk dup 1ppm AMS
02-572	↓	↓		↓	

Metal Digestion Log Worksheet

RCRA Metals

Date: 03/01/94
Time: 0800
Analyst: LAC

Method: EPA SW-846 Method 3050A Digestion, followed by the appropriate 7000 Series GFAA Methods

Control Number	Matrix	Sample Volume/Weight	Spike	~~Extract~~ Final Volume	Comments
9402010562	soil	2.74g		50 ml	
02-562	↑	2.41g	X	↑	1ppm AMS (spk)
02-562	↕	2.52g	X	↕	1ppm AMS (spk dup)
02-563	↕	2.50g		↕	
02-555	↓	2.51g		↓	

METALS PREPARATION LOG

DATE: 03/11/94
TIME: 1600
ANALYST: LAC

Hg Digestions

DIGESTION METHOD

CONTROL NUMBER	SAMPLE MATRIX	SAMPLE VOLUME OR WGT.	FINAL VOLUME DIGEST	COMMENTS
Blank	H_2O	100ml	100ml	
9402010531	soil	2.15g		
D2-531 spk		2.57g		25ppb ~~Ams~~ Hg
D2-531 sdup		2.03g		25ppb ~~Ams~~ Hg
D2-532		2.94g		
D2-533		2.50g		
D2-534		~~2.80~~g		
D2-535		2.10g		
D2-536		2.26g		
D2-537		2.41g		
D2-538		2.25g		
D2-539		2.28g		
D2-540		2.34g		
D2-541		2.27g		
D2-541 sp		2.08g		25ppb ~~Ams~~ Hg
D2-541 sdup		3.06g		25 ppb ~~Ams~~ Hg
D2-542		2.10g		
D2-543		3.09g		
D2-544		2.34g		

Sample Matrix: W = Water T = TCLP S = Soil O = Oil
MS= Matrix Spike MSD = Matrix Spike Dup MB = Method Blank
LCS = Lab Control Standard

HNO_3 Acid Mfg./Lot ____/____ Vol. Used ____
HCL Acid Mfg./Lot ____/____ Vol. Used ____
H_2O_2 Mfg./Lot ____/____ Vol. Used ____
H_2SO_4 Mfg./Lot ____/____ Vol. Used ____
Spike Standard Solution No. ____ Solution Concentration ____

METALS PREPARATION LOG

DATE: 03/11/94
TIME: 1600
ANALYST: LAC

DIGESTION METHOD Hg Digestions

CONTROL NUMBER	SAMPLE MATRIX	SAMPLE VOLUME OR WGT.	FINAL VOLUME DIGEST	COMMENTS
02-551	Soil	2.18g	100ml	
02-552		2.67g		
02-553		2.08g		
02-554		2.21g		
02-555		2.24g		
02-556		3.01g		
02-557		2.24g		
02-557 Sp		3.35g		25 ppb Hg
02-557 Sdup		2.32g		25 ppb Hg
02-558		2.81g		
02-559		2.29g		
02-560		2.95g		
02-561		2.04g		
02-562		4.02g		
02-563		2.18g		

Sample Matrix: W = Water T = TCLP S = Soil O = Oil
MS = Matrix Spike MSD = Matrix Spike Dup. MB = Method Blank
LCS = Lab Control Standard

HNO_3 Acid Mfg./Lot ____/____ Vol. Used ____
HCL Acid Mfg./Lot ____/____ Vol. Used ____
H_2O_2 Mfg./Lot ____/____ Vol. Used ____
H_2SO_4 Mfg./Lot ____/____ Vol. Used ____

Varian SpectrAA 10/20 System Report

OPERATOR 001
DATE 03.10.94
BATCH 1

PROGRAM 21 Se

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK HEIGHT
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	1.0
WAVELENGTH (nm)	196.0
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	ON

FURNACE PARAMETERS

TEP O.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
	95	5.0	3.0	NORMAL	NO
	95	50.0	3.0	NORMAL	NO
3	135	5.0	3.0	NORMAL	NO
4	135	5.0	3.0	NORMAL	NO
	800	5.0	3.0	NORMAL	NO
6	800	8.0	0.0	NORMAL	NO
7	2400	0.8	0.0	NORMAL	YES
	2400	1.0	0.0	NORMAL	YES
	2500	3.0	3.0	NORMAL	NO

Se
furnace
03/10/94
1600
LAC

SAMPLER PARAMETERS

	VOLUMES (uL) SOLUTION	BLANK	MODIFIER
BLANK	--	20	5
TANDARD 1	4	16	5
TANDARD 2	10	10	5
STANDARD 3	20	0	5
AMPLE	20	0	5

RECALIBRATION RATE 0
RESLOPE RATE 0

ULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

SAMPLER PARAMETERS

VOLUMES (uL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	5
STANDARD 1	4	16	5
STANDARD 2	10	10	5
STANDARD 3	20	0	5
SAMPLE	20	0	5

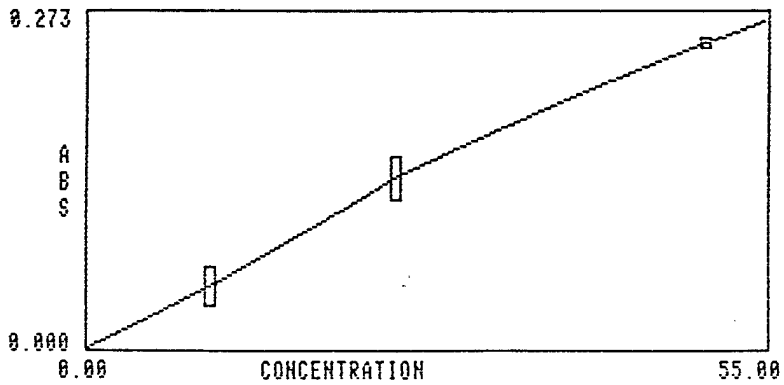
RECALIBRATION RATE 0

RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

SAMPLE	CONC	%RSD	MEAN ABS	READINGS	
BLANK	0.00		0.224	0.348	0.100
BLANK	0.00		-0.018	-0.011	-0.026
STANDARD 1	10.00	25.7	0.051	0.042	0.060
STANDARD 2	25.00	11.7	0.139	0.128	0.151
STANDARD 3	50.00	0.5	0.248	0.247	0.249

r=0.9966



0 03.01	11.63	76.4	0.060	0.092	0.028	ppm
25.00	18.52	7.5	0.099	0.105	0.094	
02.531 1/50	13.24	64.1	0.069	0.038	0.100	0.6620
02.532 1/25	15.49	32.7	0.082	0.100	0.063	0.7745
02.533	2.70	99.9	0.014	0.029	-0.001	<0.0100
~~02.534 1/50~~	~~8.25~~	~~76.6~~	~~0.042~~	~~0.065~~	~~0.019~~	~~<0.0100~~ rediluted/reran

mg/kg

12.305

16.135

0.042

BLANK	--	20	5
STANDARD 1	4	16	5
STANDARD 2	10	10	5
STANDARD 3	20	0	5
SAMPLE	20	0	5

RECALIBRATION RATE 0
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

SAMPLE	CONC	%RSD	MEAN ABS	READINGS		
BLANK	0.00		-0.023	-0.016	-0.031	
02.534.1 1/100	13.61	38.4	0.071	0.052	0.090	130.3%
02.534.1 1/100	14.86	3.8	0.078	0.080	0.076	
02.535 1/25	20.23	44.8	0.110	0.075	0.144	~~0.0015~~ 0.5058
~~02.536~~	~~4.02~~	~~26.7~~	~~0.021~~	~~0.024~~	~~0.017~~	> redilute/rerun
~~02.537~~	~~6.67~~	~~25.2~~	~~0.034~~	~~0.040~~	~~0.028~~	rep sorry <0.0100
~~02.538~~ OK	~~6.24~~	~~58.3~~	~~0.032~~	~~0.019~~	~~0.045~~	
02.539 1/5	18.73	20.7	0.100	0.086	0.115	0.0937
02.540 1/5	10.63	2.3	0.054	0.055	0.054	0.0532
02.541 1/5	24.58	18.0	0.137	0.119	0.154	0.1229
02.542 1/5	32.77	10.4	0.176	0.163	0.189	0.1639
02.543 1/5	47.01	23.4	0.237	0.197	0.276	0.2351
~~02.554~~	~~OVER~~	~~21.2~~	~~0.307~~	~~0.261~~	~~0.353~~	> redilute/rerun
~~02.554.1~~	~~OVER~~	~~10.7~~	~~0.315~~	~~0.339~~	~~0.291~~	
~~02.544.1~~	~~33.19~~	~~28.1~~	~~0.178~~	~~0.213~~	~~0.143~~	
02.551	1.42	99.9	0.007	0.014	0.000	<0.010
02.552	-2.19	33.1	-0.011	-0.009	-0.014	<0.010
02.553	-2.96	33.3	-0.015	-0.012	-0.019	<0.010
02.554	-1.25	15.1	-0.006	-0.006	-0.007	<0.010
02.555	-1.33	99.9	-0.007	0.006	-0.019	<0.010
02.556	-3.26	24.6	-0.017	-0.014	-0.020	<0.010
02.557	-2.02	99.9	-0.010	-0.001	-0.020	<0.010

mg/kg

29.716
33.469
9.437

0.039
1.530
1.214
2.626
3.516
5.2002

0.046
0.047
0.048
0.045
0.040
0.040
0.033

SAMPLE	CONC	%RSD	MEAN ABS	READINGS		
02.558	-0.76	99.9	-0.004	-0.015	0.008	<0.010
02.559 1/5	6.50	21.0	0.033	0.028	0.038	0.0325
02.560	24.50	1.2	0.136	0.135	0.137	0.0245
02.561	49.99	5.2	0.248	0.239	0.257	0.0499
02.562	13.88	19.1	0.072	0.082	0.063	0.0139
~~02.562.1~~	~~16.51~~	~~29.6~~	~~0.087~~	~~0.069~~	~~0.106~~	0.0165 redilute/rerun
02.562.1 1/100	11.41	16.2	0.059	0.052	0.065	~~0.0004~~ 1.141 112.7%
02.563	8.26	5.7	0.042	0.044	0.040	<0.010
~~02.244~~	~~OVER~~	~~14.2~~	~~0.455~~	~~0.407~~	~~0.501~~	dilute/rerun
02.244 1/2	16.67	12.0	0.088	0.096	0.081	0.0333
02.536	11.18	83.8	0.057	0.023	0.091	0.0112
02.537	12.21	33.6	0.063	0.078	0.048	0.0122
02.538 1/5	12.12	49.2	0.063	0.084	0.041	0.~~0012~~ 3030
02.544 1/10	19.47	14.0	0.105	0.115	0.095	~~0.1955~~ 0.1947
02.544.1	15.80 1/100	19.6	0.083	0.095	0.072	1.580
02.544.1	14.87 1/100	19.2	0.078	0.067	0.088	1.487

129.290

0.038
0.~~040~~
0.466
0.978
0.2536

23.672
0.040

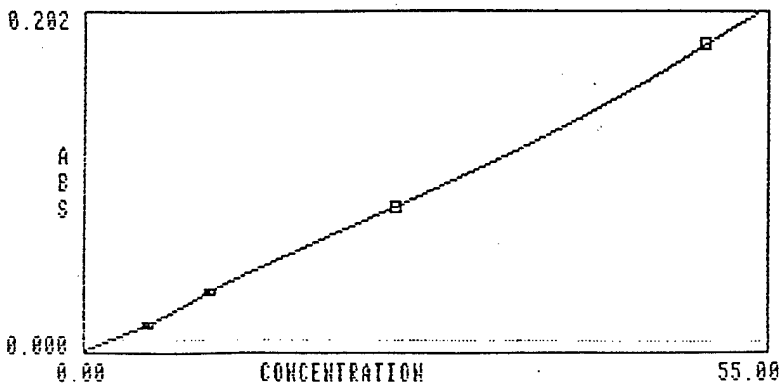
0.727
0.255
~~0.200~~ 6.824
2.202
4.486
36.406
33.186

PROGRAM 1 Hg

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	4
SLIT WIDTH (nm)	0.5
WAVELENGTH (nm)	253.7
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	90
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

BLANK	0.00		0.000	0.000	-0.000	-0.000
STANDARD 1	5.00	0.0	0.015	0.015	0.015	0.015
STANDARD 2	10.00	0.3	0.034	0.034	0.035	0.034
STANDARD 3	25.00	1.0	0.084	0.085	0.084	0.084
STANDARD 4	50.00	1.0	0.183	0.183	0.182	0.185

r=0.9993



Hg
VGA
03/12/94
1330
LAC

0.00 CONCENTRATION 55.00

0 03.11	1.47	5.8	0.004	0.005	0.004	0.004	mg/kg
10.00	10.52	0.2	0.036	0.036	0.036	0.036	
02.531	2.76	3.6	0.008	0.008	0.008	0.008	~~0.274~~ 0.1514
02.531.25	26.15	0.2	0.088	0.089	0.088	0.089	1.199 93.6%
02.531.25	26.95	0.3	0.091	0.091	0.091	0.091	1.049
02.532	2.41	3.0	0.007	0.007	0.007	0.007	~~0.207~~ 0.0999
02.533	2.72	2.0	0.008	0.008	0.008	0.008	~~0.282~~ 0.1211
02.534	2.71	0.0	0.008	0.008	0.008	0.008	0.204 0.1105
02.535	1.65	4.0	0.005	0.005	0.005	0.005	~~0.275~~ 0.0906
02.536	2.34	2.2	0.007	0.007	0.007	0.007	~~0.241~~ 0.1127
02.537	2.30	0.0	0.007	0.007	0.007	0.007	~~0.232~~ 0.1065
02.538	2.39	2.6	0.007	0.007	0.007	0.007	~~0.261~~ 0.1250
02.539	2.93	0.0	0.009	0.009	0.009	0.009	~~0.260~~ 0.1524
02.540	2.47	8.2	0.007	0.008	0.007	0.007	0.240 0.1187
02.541	1.33	5.2	0.004	0.004	0.004	0.004	~~0.267~~ 0.0710
~~02.541.25~~	~~1.88~~	~~3.6~~	~~0.005~~	~~0.005~~	~~0.005~~	~~0.005~~	~~0.291~~ reran
~~02.541.25~~	~~1.74~~	~~2.8~~	~~0.005~~	~~0.005~~	~~0.005~~	~~0.005~~	wrong sample reran 107.6%
02.541.25	28.23	0.0	0.095	0.095	0.095	0.095	1.118
02.541.25	28.61	0.6	0.097	0.096	0.097	0.097	1.133
02.542	3.40	1.5	0.010	0.010	0.010	0.010	~~0.274~~ 0.1865
02.543	3.04	2.2	0.009	0.009	0.009	0.009	~~0.199~~ 0.1208
02.544	3.34	0.0	0.010	0.010	0.010	0.010	0.247 0.1647
02.551	0.92	6.0	0.003	0.003	0.003	0.003	~~0.256~~ 0.0472
02.552	1.93	0.0	0.006	0.006	0.006	0.006	~~0.208~~ 0.0802
02.553	1.21	3.5	0.004	0.003	0.004	0.003	~~0.263~~ 0.0636
02.554	1.02	3.5	0.003	0.003	0.003	0.003	~~0.272~~ 0.05540
02.555	0.99	5.2	0.003	0.003	0.003	0.003	~~0.261~~ 0.0368
02.556	1.10	3.3	0.003	0.003	0.003	0.003	~~0.186~~ 0.0573
02.557	0.51	17.5	0.001	0.002	0.001	0.001	~~0.257~~ 96.0% 0.0262
02.557.25	24.51	0.8	0.083	0.082	0.083	0.083	0.843
02.557.25	25.15	0.6	0.085	0.084	0.085	0.085	0.865
02.558	2.19	2.9	0.006	0.007	0.006	0.006	~~0.210~~ 0.0920
02.559	0.90	6.1	0.003	0.003	0.003	0.003	~~0.248~~ 0.0446
02.560	0.91	8.3	0.003	0.003	0.003	0.003	~~0.203~~ 0.0370
02.561	4.04	0.5	0.012	0.012	0.012	0.012	~~0.267~~ 0.2154
02.562	1.63	2.9	0.005	0.005	0.005	0.005	~~0.197~~ 0.0641
02.563	1.34	8.4	0.004	0.004	0.004	0.004	~~0.335~~ 0.0897
0	0.42	23.8	0.001	0.001	0.002	0.001	

PROGRAM 1 Hg

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	4
SLIT WIDTH (nm)	0.5
WAVELENGTH (nm)	253.7
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	60
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

[illegible]	0.00		0.054	0.054	0.054	0.054
ANK	0.00		0.002	0.002	0.002	0.002
[illegible]ARD 1	5.00	3.0	0.008	0.007	0.008	0.008
[illegible] ARD 2	10.00	2.9	0.009	0.009	0.009	0.009

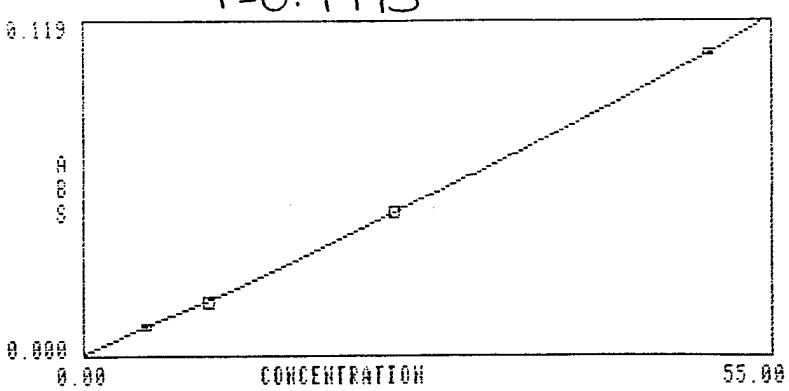
[illegible]	0.00		-0.013	-0.013	-0.013	-0.013
ANK	0.00		0.000	-0.000	0.000	0.000
ANDARD 1	5.00	7.5	0.001	0.001	0.001	0.001
[illegible] ARD 2	10.00	3.2	0.002	0.002	0.002	0.002
[illegible]ARD 3	25.00	3.8	0.003	0.003	0.003	0.003

Hg
VGA
03/14/94
0900
LAC

ANK	0.00		0.011	0.011	0.011	0.011
[illegible]	0.00		0.001	0.000	0.001	0.001
ANDARD 1	5.00	2.0	0.010	0.009	0.010	0.010
ANDARD 2	10.00	4.1	0.019	0.018	0.019	0.019
[illegible] ARD 3	25.00	1.6	0.050	0.049	0.050	0.050
[illegible] ARD 4	50.00	0.4	0.108	0.108	0.108	0.108

r=0.9993

r=0.9993



470
550
451 TCP

0 03.13	7.35	12.6	0.014	0.016	0.014	0.012	
10.00	11.48	0.0	0.021	0.021	0.021	0.021	
.431	3.98	5.3	0.008	0.008	0.008	0.007	<0.005
02.431.25	26.50	90.1% 2.0	0.053	0.051	0.053	0.055	0.0265
02.431.25	29.43	1.9	0.060	0.059	0.059	0.061	0.0294
.470	6.96	7.2	0.013	0.014	0.013	0.012	0.0070
.524	4.66	0.7	0.009	0.009	0.009	0.009	<0.005
02.547	4.47	9.0	0.009	0.009	0.008	0.008	<0.005
.548	4.55	1.4	0.009	0.009	0.009	0.009	<0.005
.549	4.98	0.0	0.009	0.009	0.010	0.009	<0.005
02.550	5.57	0.8	0.011	0.011	0.011	0.011	
03.094	5.95	0.0	0.011	0.011	0.011	0.011	0.0060
.572	5.99	105.6% 2.3	0.011	0.011	0.011	0.012	0.0060
02.572.25	29.40	2.5	0.060	0.058	0.059	0.061	0.0294
02.572.25	31.85	1.2	0.065	0.064	0.065	0.066	0.0319
~~.119~~	~~10.34~~	~~3.8~~	~~0.019~~	~~0.020~~	~~0.019~~	~~0.019~~	
~~.120~~	~~12.74~~	~~1.6~~	~~0.024~~	~~0.024~~	~~0.024~~	~~0.024~~	
~~03.121~~	~~8.49~~	~~0.4~~	~~0.016~~	~~0.016~~	~~0.016~~	~~0.016~~	
~~.122~~	~~10.68~~	~~1.2~~	~~0.020~~	~~0.020~~	~~0.020~~	~~0.020~~	
~~.123~~	~~11.32~~	~~0.3~~	~~0.021~~	~~0.021~~	~~0.021~~	~~0.021~~	
~~03.124~~	~~11.08~~	~~1.4~~	~~0.021~~	~~0.020~~	~~0.021~~	~~0.021~~	
~~03.125~~	~~8.99~~	~~2.6~~	~~0.017~~	~~0.017~~	~~0.017~~	~~0.016~~	
.175	7.81	0.4	0.015	0.015	0.015	0.015	0.0078
.515	8.19	83.6% 0.0	0.015	0.015	0.015	0.015	0.0082
02.515.25	35.07	1.2	0.073	0.072	0.072	0.074	0.0351
.515.25	36.41	1.3	0.076	0.075	0.076	0.077	0.0364
~~.515.200~~	~~OVER~~	~~2.1~~	~~0.123~~	~~0.121~~	~~0.125~~	~~0.126~~	diluted / reran
02.515.200 1b	37.65	3.9	0.079	0.076	0.079	0.082	
03.094	12.79	88.7% 3.9	0.024	0.025	0.024	0.023	0.0128
.094.200 1b	38.03	1.3	0.080	0.078	0.080	0.080	
03.118	14.62	97.9% 0.0	0.028	0.029	0.028	0.026	0.0146
03.118.200 1b	42.09	1.5	0.089	0.088	0.089	0.091	
~~.119~~	~~0.54~~	~~17.6~~	~~0.001~~	~~0.001~~	~~0.001~~	~~0.001~~	> reran
~~.119~~	~~0.82~~	~~18.3~~	~~0.002~~	~~0.001~~	~~0.002~~	~~0.002~~	
0	-0.48	9.5	-0.001	-0.001	-0.001	-0.001	
.00	9.55	2.6	0.018	0.017	0.018	0.018	
2.120	5.49	1.2	0.010	0.010	0.010	0.011	
02.121	1.63	5.5	0.003	0.003	0.003	0.003	
02.122	-1.74	0.0	0.003	0.003	0.003	0.003	
2.122	3.61	4.8	0.007	0.007	0.007	0.007	
2.123	3.88	0.0	0.007	0.007	0.007	0.007	
2.124	3.72	0.9	0.007	0.007	0.007	0.007	

02.~~[illegible]~~	1.63	5.5	0.003	0.003	0.003	0.003
~~02.119~~	~~1.74~~	~~0.0~~	~~0.003~~	~~0.003~~	~~0.003~~	~~0.003~~
02.122	3.61	4.8	0.007	0.007	0.007	0.007
02.123	3.88	0.0	0.007	0.007	0.007	0.007
02.124	3.72	0.9	0.007	0.007	0.007	0.007
02.125	1.11	12.2	0.002	0.002	0.002	0.002
02.119	0.98	0.0	0.002	0.002	0.002	0.002
~~[illegible]~~	~~5.34~~	~~3.4~~	~~0.010~~	~~0.010~~	~~0.010~~	~~0.011~~
02.120	5.78	3.6	0.011	0.011	0.011	0.011
02.121	1.47	14.0	0.003	0.003	0.002	0.003
02.122	3.38	0.9	0.006	0.007	0.006	0.006
02.123	3.59	0.0	0.007	0.007	0.007	0.007
02.124	3.11	2.1	0.006	0.006	0.006	0.006
02.125	1.03	8.7	0.002	0.002	0.002	0.002
03.119	0.89	8.8	0.002	0.002	0.002	0.002
3.120	4.52	1.4	0.009	0.009	0.008	0.009
3.121	1.27	13.1	0.002	0.003	0.003	0.002
03.122	3.22	1.7	0.006	0.006	0.006	0.006
03.123	2.93	1.9	0.006	0.005	0.006	0.006
3.124	2.42	0.0	0.005	0.005	0.005	0.005
03.125	0.03	99.9	0.000	0.000	0.000	-0.000
02.451.200	53.73	2.2	0.118	0.115	0.118	0.120
3.451	10.59	102. 0.3	0.020	0.020	0.020	0.020

119	120	121	122	123	124	125
0.98	5.49	1.63	3.61	3.88	3.72	1.11
0.89	5.78	1.47	3.38	3.59	3.11	1.03
	~~4.52~~	~~1.27~~	~~3.22~~	~~2.93~~	~~2.42~~	~~0.03~~
↓	↓	↓	↓	↓	↓	↓
0.935	5.635	1.550	3.495	3.735	3.415	1.070

SAMPLE 20 0 3

RECALIBRATION RATE 0
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT YES PRE INJECT NO
TEMPERATURE 70
INJECT RATE 1

PROGRAM 1 As

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK HEIGHT
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.5
WAVELENGTH (nm)	193.7
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	ON

As
furnace
03/11/94
1630
LAC

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	95	5.0	3.0	NORMAL	NO
2	95	50.0	3.0	NORMAL	NO
3	130	5.0	3.0	NORMAL	NO
4	140	5.0	3.0	NORMAL	NO
5	800	10.0	3.0	NORMAL	NO
6	800	5.0	3.0	NORMAL	NO
7	800	2.0	0.0	NORMAL	YES
8	2500	0.9	0.0	NORMAL	YES
9	2500	2.0	0.0	NORMAL	YES
10	2600	3.0	3.0	NORMAL	NO

SAMPLER PARAMETERS

	VOLUMES (uL) SOLUTION	BLANK	MODIFIER
BLANK	--	20	5
STANDARD 1	4	16	5
STANDARD 2	12	8	5

10	2600	3.0	3.0	NORMAL	NO

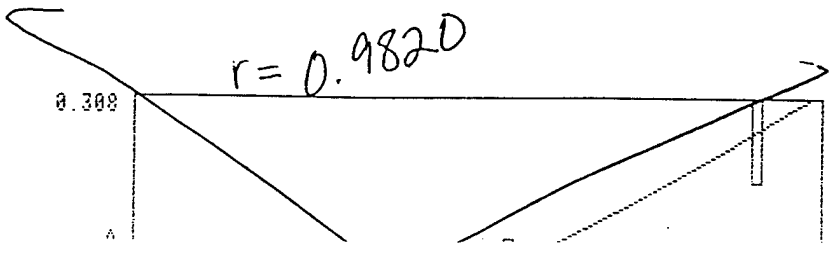
SAMPLER PARAMETERS
VOLUMES (uL)

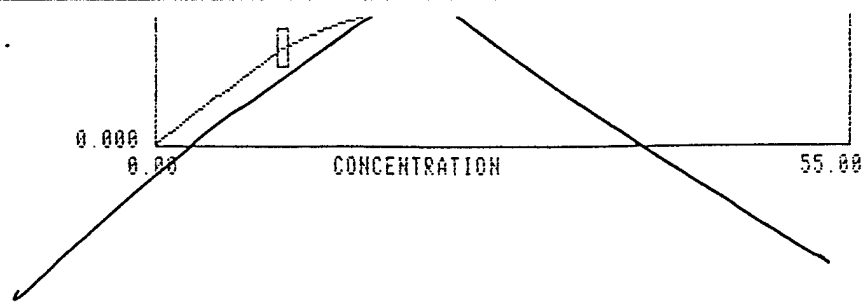
	SOLUTION	BLANK	MODIFIER
BLANK	--	20	5
STANDARD 1	4	16	5
STANDARD 2	12	8	5
STANDARD 3	20	0	5
SAMPLE	20	0	5

RECALIBRATION RATE 0
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT YES PRE INJECT NO
TEMPERATURE 70
INJECT RATE 1

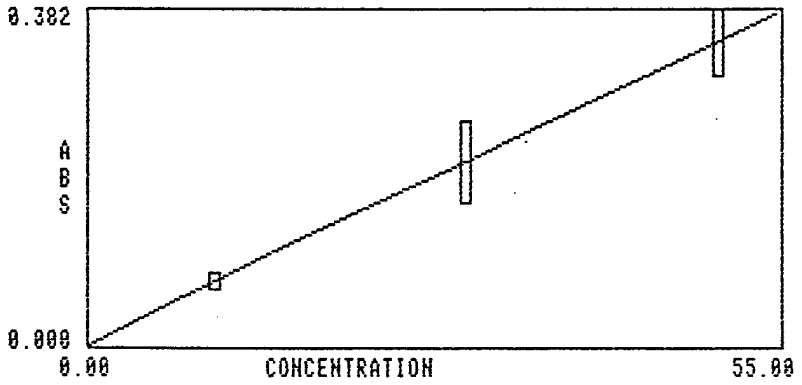
SAMPLE	CONC	%RSD	MEAN ABS	READINGS	
BLANK	0.00		-0.077	-0.089	-0.065
BLANK	0.00		-0.035	-0.047	-0.024
BLANK	0.00		0.002	0.010	-0.006
BLANK	0.00		0.013	0.016	0.010
BLANK	0.00		-0.019	-0.015	-0.024
STANDARD 1	10.00	15.2	0.091	0.101	0.082
STANDARD 2	30.00	15.5	0.154	0.171	0.138
STANDARD 3	50.00	15.7	0.280	0.249	0.311





PLE	CONC	%RSD	MEAN ABS	READINGS	
NK	0.00		-0.017	-0.023	-0.012
NK	0.00		0.009	0.006	0.012
NDARD 1	10.00	8.3	0.073	0.069	0.078
NDARD 2	30.00	20.2	0.209	0.180	0.239
NDARD 3	50.00	10.2	0.348	0.322	0.373

r=1.000



.01	-1.14	13.6	-0.008	-0.008	-0.009
00	25.39	6.1	0.179	0.172	0.187
~~31 '15~~	~~OVER~~	~~25.9~~	~~2.953~~	~~2.413+~~	~~3.494+~~
~~32 '150~~	~~6.26~~	~~5.2~~	~~0.046~~	~~0.045~~	~~0.044~~
~~33 '150~~	~~4.07~~	~~43.1~~	~~0.030~~	0.039	0.021
34 '125	12.90	3.8	0.094	0.092	0.097

} rediluted 1/2 eran

2.932 mg/kg

LE	CONC	%RSD	MEAN ABS	READINGS

0 03.01	-1.14	13.6	-0.008	-0.008	-0.009	
25.00	25.39	6.1	0.179	0.172	0.187	
~~02.531 '15~~	~~OVER~~	~~25.9~~	~~2.953~~	~~2.4131~~	~~3.4947~~	rediluted / reran
~~02.532 '150~~	~~6.26~~	~~5.2~~	~~0.046~~	~~0.048~~	~~0.044~~	
~~02.533 '150~~	~~4.07~~	~~43.1~~	~~0.030~~	~~0.039~~	~~0.021~~	
02.534 '125	12.90	3.8	0.094	0.092	0.097	2.932 mg/kg

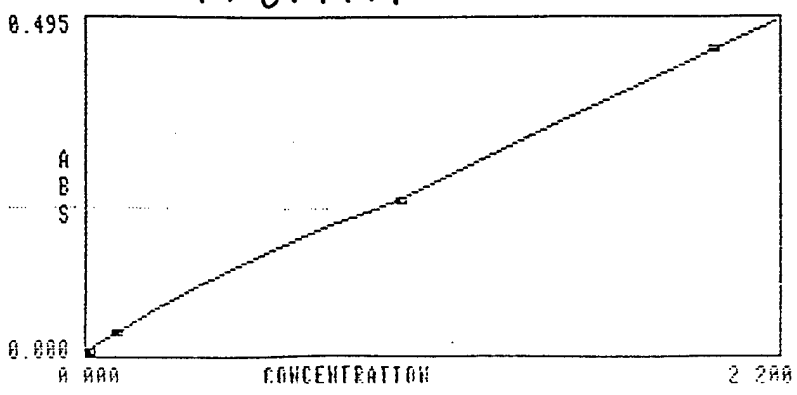
SAMPLE	CONC	%RSD	MEAN ABS	READINGS			
02.534.1 '100	14.04	12.7	0.102	0.111	0.093	30.655 mg/kg	108.1 %
02.534.1 '100	15.16	31.8	0.110	0.135	0.085	34.144	
~~02.535~~	~~OVER~~	~~21.3~~	~~0.495~~	~~0.570~~	~~0.421~~		
~~02.536~~	~~OVER~~	~~8.1~~	~~0.469~~	~~0.496~~	~~0.442~~		
02.537 '125	18.70	8.7	0.134	0.126	0.143	10.207 mg/kg	
02.538 '125	22.28	44.4	0.159	0.208	0.109	10.922	
02.539 '110	27.40	11.6	0.193	0.177	0.208	4.477	
02.540 '125	28.31	2.3	0.198	0.195	0.202	16.159	
02.541 '125	24.97	17.5	0.177	0.198	0.155	13.339	
02.542 '125	27.43	16.0	0.193	0.171	0.215	14.716	
02.543 '125	12.63	28.1	0.092	0.074	0.110	6.986	
02.554 '125	21.06	3.4	0.150	0.154	0.147	12.131	
02.554.1 '100	15.98	1.8	0.116	0.117	0.114	34.589	
~~02.544.1 '100~~	~~18.40~~	~~6.0~~	~~0.132~~	~~0.127~~	~~0.138~~	rediluted / reran	107.2%
02.551 '125	11.66	3.3	0.085	0.087	0.083	6.655	
02.552 '125	17.50	29.1	0.126	0.152	0.100	10.174	
~~02.553 '125~~	~~5.75~~	~~8.0~~	~~0.079~~	~~0.042~~	~~0.037~~	rediluted / reran	
02.554 '125	11.16	12.4	0.082	0.075	0.089	6.228	
02.555 '125	16.26	14.3	0.118	0.129	0.106	8.098	
02.556 '125	20.96	12.1	0.150	0.163	0.137	10.438	
02.557 '125	16.67	15.8	0.120	0.134	0.107	6.944	
02.558 '125	25.61	18.4	0.181	0.157	0.204	12.219	
02.559 '125	22.98	4.7	0.163	0.169	0.158	12.435	
02.560 '125	22.17	4.5	0.158	0.163	0.153	10.537	
02.561 '125	27.50	0.7	0.193	0.194	0.192	13.480	
02.562 '125	18.73	9.2	0.135	0.143	0.126	9.715	
~~02.562.1 '100~~	~~23.87~~	~~8.5~~	~~0.169~~	~~0.179~~	~~0.159~~	rediluted / reran	
02.562.1 '100	17.79	21.8	0.128	0.108	0.148	35.298	
02.563 '125	19.53	9.1	0.140	0.131	0.149	9.765	
02.533 '125	23.60	14.2	0.167	0.184	0.151	12.395	112.3%
02.532 '125	20.04	5.8	0.143	0.138	0.149	10.438	
~~02.533 '125~~	~~7.77~~	~~6.1~~	~~0.072~~	~~0.075~~	~~0.069~~	rediluted / reran	
02.535 '125	12.08	18.0	0.088	0.100	0.077	5.634	
02.536 '125	14.79	13.3	0.107	0.097	0.117	8.403	
02.553 '15	25.78	12.6	0.182	0.198	0.166	3.069	
02.533 '10	25.32	4.2	0.179	0.174	0.184	5.319	
02.562.1	15.91 '100	11.5	0.115	0.106	0.125	33.008	
02.544.1	14.70 '100	15.6	0.107	0.095	0.118	32.813	

PROGRAM 20 Cd

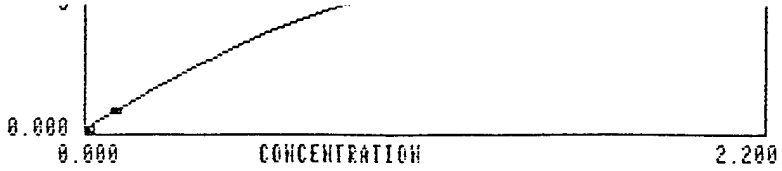
INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	4
SLIT WIDTH (nm)	0.5
WAVELENGTH (nm)	228.8
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

	0.000		0.022	0.021	0.022	0.022
	0.000		0.001	0.001	0.001	0.001
RD 1	0.010	7.6	0.005	0.005	0.005	0.005
ARD 2	0.100	0.0	0.031	0.031	0.032	0.031
RD 3	1.000	0.2	0.229	0.228	0.229	0.229
RD 4	2.000	0.2	0.450	0.450	0.449	0.451

r=0.9999



Cd
flame
03/08/94
15:30
LAC



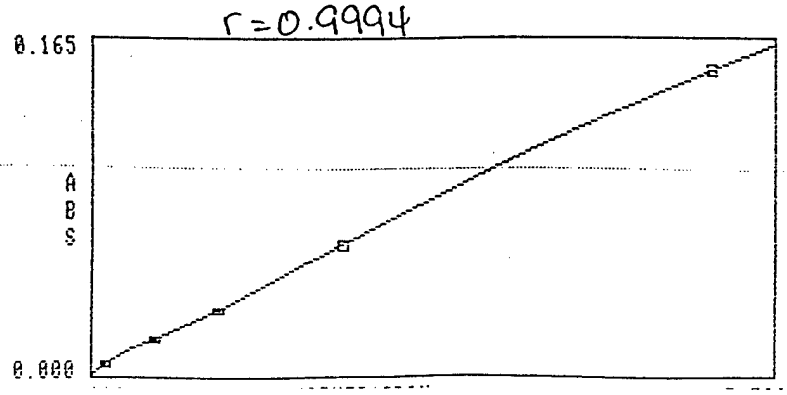
0 03.01	0.032	4.4	0.014	0.013	0.014	0.014	
0.100	0.142	0.3	0.044	0.044	0.044	0.044	
02.531	0.061	1.5	0.023	0.023	0.023	0.023	1.134 mg/kg
02.532	0.067	1.4	0.024	0.024	0.024	0.025	1.396
02.533	0.073	1.1	0.026	0.026	0.026	0.026	1.534
02.534	0.085	0.6	0.029	0.028	0.028	0.029	1.545
02.534.1	1.145	0.2	0.261	0.261	0.262	0.261	25.000 106.0%
02.534.1	1.162	0.4	0.265	0.265	0.264	0.266	26.171
~~02.535~~	~~0.129~~	~~0.4~~	~~0.040~~	~~0.040~~	~~0.040~~	~~0.040~~	> wrong samples
~~02.536~~	~~0.112~~	~~0.4~~	~~0.033~~	~~0.033~~	~~0.035~~	~~0.035~~	
~~02.537~~	~~0.110~~	~~0.4~~	~~0.034~~	~~0.035~~	~~0.034~~	~~0.035~~	
02.538	0.025	3.5	0.011	0.011	0.012	0.012	0.490
02.539	0.018	3.1	0.008	0.008	0.009	0.008	0.294
02.540	0.018	1.2	0.008	0.009	0.008	0.008	0.411
02.541	0.054	1.9	0.021	0.021	0.021	0.020	1.154
02.542	0.026	1.4	0.012	0.012	0.012	0.012	0.558
02.543	0.024	0.0	0.011	0.011	0.011	0.011	0.531
02.544	0.027	0.7	0.012	0.012	0.012	0.012	0.622 101.1%
02.544.1	1.038	0.7	0.237	0.236	0.238	0.239	22.468
02.544.1	1.043	0.3	0.238	0.238	0.238	0.239	20.451
02.551	0.033	0.6	0.014	0.014	0.014	0.014	0.753
02.552	0.031	0.8	0.014	0.014	0.014	0.013	0.721
02.553	0.040	0.6	0.017	0.017	0.017	0.017	0.952
02.554	0.010	2.5	0.005	0.005	0.005	0.005	0.223
02.555	0.050	1.9	0.020	0.020	0.019	0.020	0.996
02.556	0.018	1.9	0.008	0.008	0.008	0.009	0.3010
02.557	0.017	2.9	0.008	0.008	0.008	0.008	0.3244
02.558	0.016	0.0	0.007	0.008	0.007	0.007	0.3463
02.559	0.022	3.2	0.010	0.010	0.010	0.010	0.4183
02.560	0.020	0.0	0.009	0.009	0.009	0.009	0.392
02.561	0.013	4.3	0.007	0.007	0.006	0.007	0.236
02.562	0.284	0.8	0.083	0.083	0.083	0.084	5.183
02.562.1	1.307	0.3	0.297	0.297	0.298	0.298	27.116 102.3%
02.562.1	1.313	0.2	0.299	0.298	0.298	0.299	26.052
02.563	0.302	0.5	0.088	0.087	0.088	0.088	6.040
02.535	0.048	1.4	0.019	0.019	0.019	0.019	0.896
02.536	0.030	4.4	0.013	0.014	0.013	0.013	0.682
02.537	0.026	1.8	0.012	0.011	0.012	0.011	0.568
0 02.28	0.019	1.4	0.009	0.009	0.009	0.009	
02.234	0.030	1.0	0.013	0.013	0.013	0.013	
02.234.1	1.122	0.7	0.256	0.255	0.258	0.256	109.2%
02.234.1	1.125	0.6	0.257	0.257	0.258	0.255	
02.572	0.028	1.1	0.012	0.013	0.012	0.012	
0	-0.001	35.4	-0.000	-0.000	-0.000	-0.001	
1.00	0.976	0.3	0.225	0.224	0.225	0.225	

PROGRAM 20 Pb

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	5
SLIT WIDTH (nm)	1.0
WAVELENGTH (nm)	217.0
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

	0.000		0.189	0.189	0.188	0.189
	0.000		-0.002	-0.002	-0.002	-0.003
K	0.000		-0.041	-0.040	-0.041	-0.041
	0.000		-0.000	-0.000	-0.000	-0.000
ARD 1	0.100	11.0	0.005	0.006	0.005	0.005
DARD 2	0.500	1.3	0.017	0.017	0.017	0.017
DARD 3	1.000	1.0	0.032	0.032	0.032	0.032
ARD 4	2.000	1.4	0.066	0.065	0.065	0.067
DARD 5	5.000	0.6	0.150	0.149	0.150	0.151

Pb
flame
1130
03/11/94
LAC



0.000 ⌐ ¬
0.000 CONCENTRATION 5.500

0 03.01	0.063	21.5	0.003	0.003	0.003	0.004	mg/kg
0.100	0.109	8.2	0.006	0.005	0.006	0.006	
02.531	1.323	0.6	0.043	0.043	0.042	0.043	24.591
02.532	0.818	3.2	0.027	0.027	0.026	0.028	17.042
02.533	0.546	1.2	0.019	0.018	0.018	0.019	11.375
02.534	0.951	1.2	0.031	0.031	0.030	0.030	17.291
02.534.1	1.653	0.7	0.054	0.054	0.053	0.054	36.092
02.534.1	1.651	0.9	0.054	0.053	0.054	0.054	37.185 70.2%
02.535	0.947	2.2	0.030	0.030	0.030	0.031	17.668
02.536	1.185	1.5	0.038	0.038	0.038	0.039	26.932
02.537	0.727	1.9	0.024	0.025	0.024	0.024	15.873
02.538	2.311	0.4	0.075	0.075	0.075	0.075	45.314
02.539	1.350	1.3	0.043	0.044	0.043	0.044	22.059
02.540	1.120	1.6	0.036	0.036	0.036	0.035	25.571
~~02.541~~	~~OVER~~	~~0.4~~	~~0.057~~	~~0.058~~	~~0.058~~	~~0.060~~	diluted 1 reran
02.541 ½5	0.112 2.80	5.1	0.006	0.005	0.006	0.006	59.829
02.542	1.072	2.5	0.034	0.033	0.035	0.035	23.004
02.543	1.248	0.7	0.040	0.040	0.040	0.040	27.611
02.544	0.990	1.8	0.032	0.032	0.032	0.031	22.811
02.544.1	1.797	1.1	0.059	0.058	0.059	0.059	38.896 80.7%
02.544.1	1.823	0.4	0.059	0.059	0.060	0.059	35.745
02.551	0.933	1.9	0.030	0.031	0.030	0.030	21.301
02.552	0.473	0.9	0.017	0.017	0.017	0.016	11.000
02.553	1.199	0.9	0.038	0.039	0.038	0.038	28.648
02.554	1.689	0.7	0.055	0.055	0.055	0.055	37.701
02.555	2.126	0.7	0.069	0.070	0.069	0.069	42.351
02.556	1.611	0.3	0.052	0.052	0.052	0.052	32.092
02.557	1.210	0.4	0.039	0.039	0.039	0.039	20.234
02.558	1.639	1.9	0.053	0.053	0.052	0.054	31.279
02.559	1.385	1.0	0.045	0.045	0.045	0.044	29.978
02.560	0.631	1.8	0.021	0.021	0.022	0.021	11.996
02.561	0.616	1.4	0.021	0.021	0.021	0.021	12.078
~~02.562~~	~~OVER~~	~~1.0~~	~~0.051~~	~~0.051~~	~~0.050~~	~~0.051~~	diluted 1 reran
02.562 ½2	1.504 3.008	1.0	0.049	0.048	0.049	0.048	54.891 99.6%
~~02.562.1~~	~~OVER~~	~~0.7~~	~~0.174~~	~~0.175~~	~~0.174~~	~~0.177~~	diluted 1 reran
~~02.562.1~~	~~OVER~~	~~0.8~~	~~0.176~~	~~0.175~~	~~0.177~~	~~0.177~~	
02.562.1 ½2	2.003 4.004	0.8	0.066	0.066	0.065	0.066	83.071
02.562.1 ½2	1.982 3.964	0.8	0.065	0.065	0.065	0.066	78.651
~~02.563~~	~~OVER~~	~~0.2~~	~~0.552~~	~~0.552~~	~~0.552~~	~~0.550~~	
02.563 ½5	4.767 23.835	0.144	0.143	0.144	0.144	476.700	
0	0.046	34.0	0.002	0.002	0.003	0.002	
1.00	1.048	1.2	0.034	0.034	0.033	0.034	

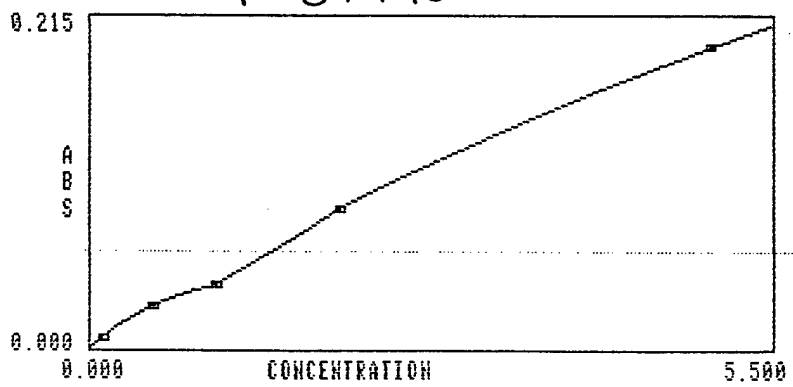
~~02.564 OVER 0.2 0.718 0.717 0.720 0.718~~ diluted 1 reran

PROGRAM 20 Pb

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	5
SLIT WIDTH (nm)	1.0
WAVELENGTH (nm)	217.0
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

BLANK	0.000		0.157	0.156	0.157	0.157
BLANK	0.000		-0.001	-0.001	-0.001	-0.001
STANDARD 1	0.100	7.1	0.007	0.007	0.007	0.008
STANDARD 2	0.500	2.2	0.028	0.028	0.029	0.027
STANDARD 3	1.000	0.3	0.042	0.042	0.042	0.042
STANDARD 4	2.000	0.2	0.091	0.091	0.091	0.091
STANDARD 5	5.000	0.3	0.196	0.195	0.196	0.195

r=0.9980



Pb
flame
03/18/94
1500
LAC

0 02.28	0.050	9.4	0.004	0.003	0.004	0.004
0.500	0.566	2.3	0.030	0.031	0.030	0.030
02.524	0.114	2.2	0.008	0.008	0.008	0.008
02.524.1	1.172	0.4	0.050	0.050	0.050	0.050
02.524.1	1.237	0.3	0.053	0.053	0.053	0.053
02.572	0.119	7.5	0.009	0.008	0.008	0.009
1.00	1.101	1.4	0.047	0.046	0.046	0.047
0	-0.001	99.9	-0.000	-0.000	-0.001	0.001

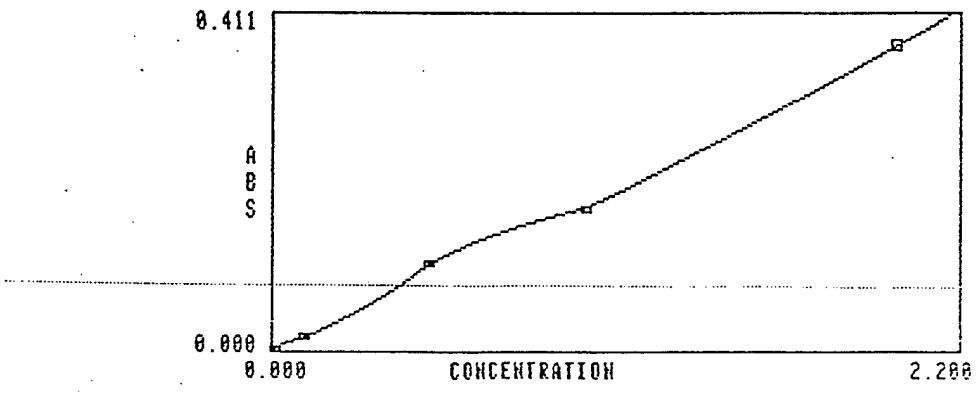
105870

PROGRAM 20 Be

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	5
SLIT WIDTH (nm)	1.0
WAVELENGTH (nm)	234.9
FLAME	N2O-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

.ANK	0.000		-0.003	-0.003	-0.003	-0.003
"NK	0.000		-0.001	-0.001	-0.001	-0.001
IDARD 1	0.005	24.5	0.001	0.001	0.001	0.001
TANDARD 2	0.100	0.9	0.015	0.015	0.015	0.016
TANDARD 3	0.500	0.1	0.105	0.105	0.106	0.105
IDARD 4	1.000	0.6	0.173	0.172	0.174	0.174
..NDARD 5	2.000	0.7	0.373	0.372	0.372	0.376

r=0.9982



Be
flame
03/09/94
1015
LAC

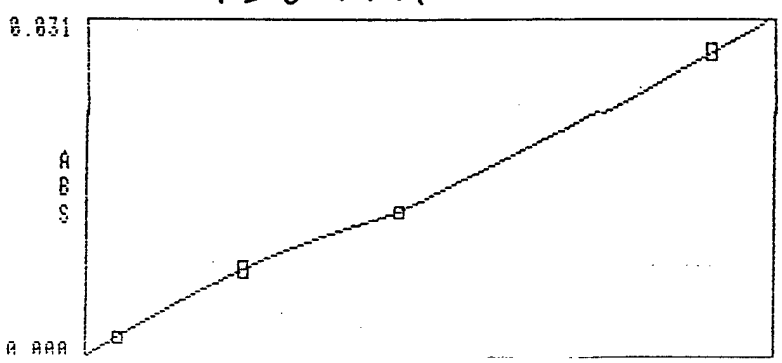
0 03.01	-0.004	10.5	-0.001	-0.001	-0.001	-0.001	
0.100	0.090	1.5	0.014	0.015	0.015	0.014	-.3346 ~~4.870~~ mg/kg
02.531	0.018	3.5	0.004	0.004	0.004	0.004	
02.532	0.021	2.6	0.005	0.005	0.004	0.005	0.438
02.533	0.012	4.9	0.003	0.003	0.003	0.003	0.441
02.534	0.018	2.2	0.004	0.004	0.004	0.004	0.327
02.534.1	1.006 98.8%	0.2	0.175	0.174	0.175	0.174	21.965
02.534.1	1.002	0.3	0.174	0.174	0.173	0.174	22.568
02.535	0.027	0.0	0.006	0.006	0.006	0.006	0.504
02.536	0.038	2.8	0.008	0.007	0.008	0.008	0.864
02.537	0.012	11.1	0.003	0.003	0.003	0.003	0.262
02.538	0.026	0.0	0.006	0.006	0.006	0.006	0.510
02.539	0.021	4.3	0.005	0.004	0.005	0.005	0.343
02.540	0.015	3.6	0.003	0.003	0.004	0.003	0.343
02.541	0.027	3.2	0.006	0.006	0.006	0.006	0.577
02.542	0.036	0.0	0.007	0.007	0.007	0.007	0.773
02.543	0.010	8.4	0.002	0.002	0.002	0.002	0.221
02.544	0.016	4.8	0.004	0.004	0.004	0.003	0.369
02.544.1	1.004 98.8%	0.3	0.174	0.174	0.174	0.175	21.732
02.544.1	1.005	0.2	0.174	0.175	0.174	0.174	19.706
02.551	0.022	1.8	0.005	0.005	0.005	0.005	0.502
02.552	0.011	12.9	0.002	0.002	0.003	0.003	0.256
02.553	0.010	7.3	0.002	0.003	0.002	0.002	0.238.
02.554	0.023	5.8	0.005	0.005	0.005	0.005	0.513
02.555	0.048	0.7	0.009	0.009	0.009	0.009	0.956
02.556	0.030	2.2	0.006	0.006	0.006	0.006	0.502
02.557	0.019	9.1	0.004	0.004	0.004	0.005	0.363
02.558	0.027	2.3	0.006	0.006	0.006	0.006	0.584
02.559	0.019	0.0	0.004	0.004	0.004	0.004	0.361
02.560	0.018	0.0	0.004	0.004	0.004	0.004	0.353
02.561	0.005	11.0	0.001	0.001	0.001	0.001	0.909
02.562	0.018	8.9	0.004	0.004	0.004	0.004	0.329
02.562.1	0.728 71.0	0.2	0.144	0.144	0.144	0.144	15.104
02.562.1	0.745	0.8	0.146	0.145	0.146	0.148	14.782
02.563	0.020	0.0	0.004	0.004	0.005	0.004	0.400
0 02.28	0.002	25.0	0.000	0.001	0.000	0.000	
02.234	0.003	32.1	0.001	0.001	0.001	0.001	
02.234.1	1.044 104.1	0.1	0.182	0.182	0.181	0.181	
02.234.1	1.059	0.4	0.184	0.185	0.185	0.183	
02.572	0.007	8.2	0.002	0.002	0.001	0.002	
0	-0.000	0.0	-0.000	-0.000	-0.000	-0.000	
1.00	0.926	0.3	0.167	0.166	0.167	0.167	

PROGRAM 20 T1

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.5
WAVELENGTH (nm)	276.8
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

LANK	0.000		0.003	0.004	0.003	0.003
ANK	0.000		0.001	0.001	0.001	0.001
NDARD 1	0.100	9.9	0.002	0.002	0.002	0.002
NDARD 2	0.500	5.8	0.008	0.008	0.008	0.008
TANDARD 3	1.000	2.5	0.013	0.013	0.013	0.014
NDARD 4	2.000	1.7	0.028	0.028	0.028	0.029

r = 0.9976



T1
flame
03/09/94
0900
LAC

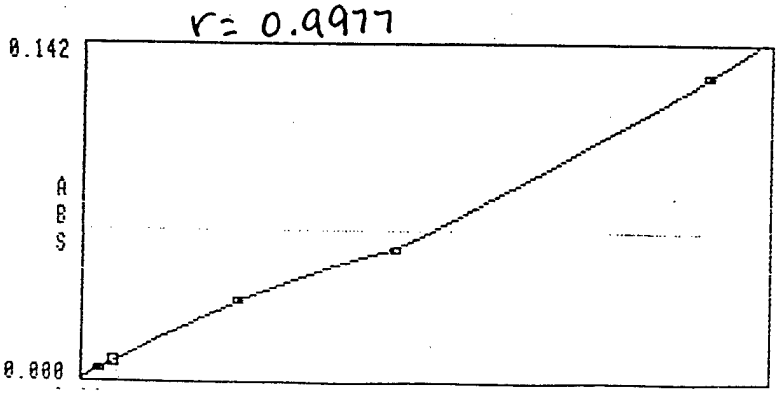
6.000 CONCENTRATION 2.200

0 03.01	0.029	11.2	0.001	0.000	0.001	0.001	
0.500	0.492	1.5	0.008	0.008	0.008	0.008	
02.531	0.322	6.7	0.005	0.005	0.005	0.006	5.985 mg/kg
02.532	0.200	4.9	0.004	0.003	0.004	0.004	4.167
02.533	0.196	2.5	0.003	0.003	0.004	0.004	4.118
02.534	0.305	7.4	0.005	0.005	0.005	0.006	5.546
02.534.1	1.186 88.1%	0.7	0.016	0.016	0.016	0.016	25.895
02.534.1	1.228	0.4	0.016	0.016	0.016	0.016	27.658
02.535	0.175	3.3	0.003	0.003	0.003	0.003	3.265
02.536	0.233	0.0	0.004	0.004	0.004	0.004	5.296
02.537	0.231	6.7	0.004	0.004	0.004	0.004	5.044
02.538	0.234	29.1	0.004	0.005	0.005	0.003	4.588
02.539	0.323	3.7	0.005	0.005	0.006	0.005	5.278
02.540	0.339	5.6	0.006	0.006	0.006	0.006	7.740
02.541	0.206	10.4	0.004	0.003	0.004	0.004	4.402
02.542	0.284	4.7	0.005	0.005	0.005	0.005	6.094
02.543	0.143	5.3	0.003	0.003	0.002	0.003	3.164
02.544	0.260	2.3	0.005	0.005	0.005	0.004	5.991
02.544.1	1.296 102.9%	1.1	0.017	0.017	0.017	0.018	28.052
02.544.1	1.325	1.1	0.018	0.018	0.018	0.018	25.980
02.551	0.155	4.3	0.003	0.003	0.003	0.003	3.539
02.552	0.112	5.1	0.002	0.002	0.002	0.002	2.605
02.553	0.108	6.2	0.002	0.002	0.002	0.002	2.571
02.554	0.198	3.0	0.004	0.003	0.004	0.004	4.420
02.555	0.281	4.4	0.005	0.005	0.005	0.005	5.598
02.556	0.300	1.2	0.005	0.005	0.005	0.005	5.017
02.557	0.270	1.8	0.005	0.005	0.005	0.005	5.153
02.558	0.358	4.5	0.006	0.006	0.006	0.006	7.749
02.559	0.351	3.4	0.006	0.006	0.006	0.006	6.673
02.560	0.161	6.6	0.003	0.003	0.003	0.003	3.098
02.561	0.158	6.4	0.003	0.003	0.003	0.003	2.873
02.562	0.192	5.3	0.003	0.003	0.004	0.003	3.504
02.562.1	1.103	1.3	0.015	0.015	0.014	0.015	22.884
02.562.1	1.141 91.1%	0.6	0.015	0.015	0.015	0.015	22.639
02.563	0.260	6.7	0.005	0.004	0.005	0.005	5.200
0 02.28	0.028	79.1	0.001	0.000	0.000	0.001	
02.234	0.089	7.4	0.002	0.002	0.002	0.002	
02.234.1	1.010	0.6	0.013	0.013	0.013	0.013	
02.234.1	1.016	0.5	0.013	0.013	0.013	0.014	
02.572	0.111	14.6	0.002	0.002	0.002	0.002	
0	-0.020	72.7	-0.000	-0.000	-0.001	-0.000	
1.00	0.724	3.9	0.011	0.010	0.011	0.011	
0 03.07	0.047	18.6	0.001	0.001	0.001	0.001	
03.103	0.057	52.2	0.001	0.000	0.001	0.001	
03.103.1	0.802 74.5%	0.0	0.011	0.011	0.011	0.011	
03.103.1	0.833	2.3	0.012	0.011	0.012	0.012	
03.094	0.132	7.1	0.002	0.002	0.002	0.003	

PROGRAM 20 Ni

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	4
SLIT WIDTH (nm)	0.2
WAVELENGTH (nm)	232.0
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

SAMPLE	CONC	%RSD	MEAN ABS	READINGS		
BLANK	0.000		0.068	0.068	0.068	0.068
BLANK	0.000		-0.000	-0.000	0.000	0.000
STANDARD 1	0.050	10.9	0.005	0.004	0.005	0.005
STANDARD 2	0.100	8.0	0.008	0.008	0.008	0.007
STANDARD 3	0.500	1.2	0.035	0.035	0.036	0.035
STANDARD 4	1.000	0.9	0.058	0.057	0.058	0.057
STANDARD 5	2.000	0.2	0.129	0.129	0.129	0.129



Ni
flame
03/08/94
1500
LAC

0 03.01	0.015	17.4	0.001	0.001	0.002	0.001	
0.100	0.102	4.0	0.008	0.008	0.007	0.008	
~~02.531~~	~~0.427~~	~~1.1~~	~~0.030~~	~~0.031~~	~~0.030~~	~~0.030~~	~~7.937 mg/kg~~
~~02.532~~	~~0.276~~	~~0.0~~	~~0.020~~	~~0.020~~	~~0.020~~	~~0.020~~	~~5.750~~
~~02.533~~	~~0.296~~	~~2.2~~	~~0.022~~	~~0.021~~	~~0.022~~	~~0.021~~	
02.534	0.355	1.1	0.026	0.025	0.026	0.025	6.455
02.534.1	1.340	0.3	0.080	0.080	0.080	0.080	29.258
02.534.1	1.394	0.3	0.084	0.084	0.083	0.084	31.396
02.535	0.966	0.4	0.056	0.057	0.056	0.056	18.022
02.536	1.032	0.3	0.060	0.060	0.059	0.060	23.455
02.537	0.360	2.8	0.026	0.026	0.025	0.027	7.860
02.538	0.687	0.7	0.045	0.045	0.045	0.045	13.471
02.539	0.390	0.2	0.028	0.028	0.028	0.028	6.373
02.540	0.309	1.0	0.022	0.022	0.023	0.022	7.055
02.541	0.696	0.1	0.045	0.045	0.045	0.045	14.872
02.542	1.128	0.7	0.066	0.066	0.065	0.066	24.206
02.543	0.152	2.6	0.011	0.011	0.012	0.011	3.363
02.544	0.374	1.2	0.027	0.027	0.027	0.027	8.618
02.544.1	1.555	0.6	0.095	0.095	0.095	0.096	33.658
02.544.1	1.556	0.3	0.095	0.095	0.096	0.095	30.510
02.551	0.601	0.7	0.041	0.040	0.041	0.041	13.722
02.552	0.175	0.7	0.013	0.013	0.013	0.013	4.070
02.553	0.155	3.6	0.012	0.012	0.011	0.012	3.691
02.554	0.397	1.0	0.028	0.029	0.028	0.028	8.862
02.555	0.442	1.2	0.031	0.032	0.032	0.031	8.805
02.556	0.721	0.5	0.047	0.046	0.047	0.047	12.057
02.557	0.427	0.2	0.030	0.030	0.030	0.030	8.149
02.558	0.447	1.5	0.032	0.032	0.032	0.031	9.675
02.559	0.446	1.8	0.032	0.031	0.032	0.031	8.479
02.560	0.444	2.0	0.031	0.031	0.032	0.032	8.706
02.561	0.264	2.7	0.019	0.019	0.019	0.020	4.800
02.562	0.559	1.2	0.038	0.039	0.038	0.038	10.201
02.562.1	1.547	0.1	0.095	0.095	0.095	0.095	32.095
02.562.1	1.552	0.3	0.095	0.095	0.095	0.095	30.794
02.563	0.566	0.7	0.039	0.039	0.039	0.039	11.320
0 02.28	-0.004	99.9	-0.000	-0.001	-0.001	0.001	
02.234	0.035	5.8	0.003	0.003	0.003	0.003	
02.234.1	1.110	0.6	0.065	0.065	0.064	0.065	
02.234.1	1.118	0.4	0.065	0.065	0.065	0.065	
02.572	0.012	38.9	0.001	0.001	0.002	0.001	
0	-0.002	99.9	-0.000	0.000	-0.001	-0.000	
1.00	0.994	0.8	0.057	0.057	0.058	0.057	
0 03.07	0.013	33.1	0.001	0.001	0.002	0.001	
03.103	0.021	19.3	0.002	0.002	0.002	0.002	
03.103.1	1.081	0.7	0.063	0.062	0.063	0.063	
03.103.1	1.081	0.3	0.063	0.063	0.063	0.063	
03.054	0.021	23.3	0.002	0.002	0.002	0.001	
03.094	0.126	2.9	0.010	0.010	0.009	0.009	
03.117	0.027	9.2	0.002	0.003	0.002	0.003	

Sorry! 7.937 mg/kg
5.750
6.219

98.5%

118.1%

107.5%

98.8%

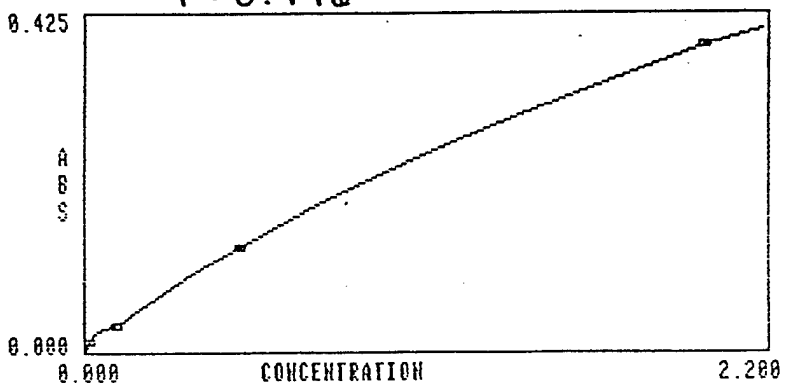
106.0%

PROGRAM 20 Zn

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	5
SLIT WIDTH (nm)	1.0
WAVELENGTH (nm)	213.9
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

K	0.000		0.001	0.001	0.002	0.001
ANDARD 1	0.010	8.6	0.011	0.012	0.010	0.010
ANDARD 2	0.100	0.5	0.032	0.032	0.032	0.032
DARD 3	0.500	0.1	0.134	0.134	0.134	0.133
NDARD 4	2.000	0.4	0.386	0.387	0.385	0.387

r=0.9964



Zn
flame
03/08/94
0800
LAC

0 03.01	0.010	0.6	0.010	0.010	0.010	0.010	
0.100	0.105	1.5	0.033	0.034	0.033	0.033	
02.531	1.577	0.3	0.323	0.324	0.323	0.322	29.312 mg/kg
02.532	1.080	0.5	0.244	0.243	0.245	0.243	22.500
02.533	1.091	0.5	0.246	0.247	0.245	0.245	22.920
02.534	1.417	0.4	0.299	0.299	0.297	0.300	25.760
02.534.1	2.105	0.3	0.399	0.398	0.399	0.400	68.870 45.961
02.534.1	2.112	0.1	0.400	0.399	0.400	0.400	47.567
~~02.535~~	~~OVER~~	~~0.2~~	~~0.491~~	~~0.491~~	~~0.490~~	~~0.489~~	
~~02.536~~	~~OVER~~	~~0.2~~	~~0.496~~	~~0.495~~	~~0.496~~	~~0.497~~	
02.537	1.249	0.3	0.272	0.272	0.271	0.273	27.271
~~02.538~~	~~OVER~~	~~0.2~~	~~0.535~~	~~0.536~~	~~0.533~~	~~0.535~~	
02.539	1.553	0.3	0.320	0.320	0.318	0.320	25.376
02.540	1.179	0.3	0.261	0.260	0.261	0.261	26.918
~~02.541~~	~~OVER~~	~~0.1~~	~~0.680~~	~~0.681~~	~~0.680~~	~~0.679~~	
~~02.542~~	~~OVER~~	~~0.2~~	~~0.527~~	~~0.527~~	~~0.525~~	~~0.526~~	
02.543	1.744	0.4	0.348	0.349	0.347	0.349	38.584
02.544	1.868	0.2	0.367	0.367	0.366	0.367	68.890 43.042
~~02.544.1~~	~~OVER~~	~~0.2~~	~~0.553~~	~~0.553~~	~~0.552~~	~~0.554~~	
~~02.544.1~~	~~OVER~~	~~0.5~~	~~0.567~~	~~0.565~~	~~0.570~~	~~0.567~~	
02.551	1.741	0.4	0.348	0.346	0.349	0.348	39.749
02.552	0.447	0.8	0.122	0.123	0.122	0.121	10.395
~~02.553~~	~~OVER~~	~~0.4~~	~~0.436~~	~~0.434~~	~~0.437~~	~~0.436~~	
02.554	1.742	0.4	0.348	0.349	0.347	0.347	38.884
~~02.555~~	~~OVER~~	~~0.1~~	~~0.615~~	~~0.615~~	~~0.615~~	~~0.616~~	
~~02.556~~	~~OVER~~	~~0.3~~	~~0.451~~	~~0.450~~	~~0.450~~	~~0.433~~	
02.557	1.595	0.1	0.326	0.326	0.326	0.326	30.439
02.558	1.785	0.2	0.354	0.355	0.354	0.354	38.636
02.559	1.915	0.3	0.374	0.373	0.375	0.373	36.407
02.560	1.314	0.4	0.282	0.281	0.282	0.284	25.765
02.561	0.929	0.3	0.218	0.218	0.218	0.217	16.891
~~02.562~~	~~OVER~~	~~0.1~~	~~0.867~~	~~0.868~~	~~0.868~~	~~0.866~~	
~~02.562.1~~	~~OVER~~	~~0.1~~	~~0.843~~	~~0.844~~	~~0.843~~	~~0.846~~	
~~02.562.1~~	~~OVER~~	~~0.1~~	~~0.875~~	~~0.875~~	~~0.876~~	~~0.875~~	
~~02.563~~	~~OVER~~	~~0.1~~	~~0.816~~	~~0.816~~	~~0.817~~	~~0.815~~	
02.535 '12	1.655	1.3	0.335	0.332	0.332	0.340	3.3100 61.754 mg/kg
02.536 '12	1.644	0.5	0.333	0.332	0.333	0.335	3.2800 74.546
02.538 '12	1.921	0.2	0.375	0.375	0.374	0.375	3.8420 75.333
02.541 '110	0.755	6.1	0.186	0.177	0.182	0.199	7.5500 161.325
02.542 '110	0.464	9.7	0.126	0.118	0.120	0.140	4.6400 99.571
02.544.1 '14	0.639	0.3	0.163	0.163	0.162	0.163	2.5560 55.325
02.544.1 '14	0.647	0.7	0.164	0.164	0.164	0.166	2.5880 50.157
02.553 '110	0.604	0.9	0.156	0.154	0.157	0.156	6.0400 143.810
02.555 '110	0.787	1.1	0.192	0.189	0.193	0.193	7.8700 156.773
02.556 '110	0.523	1.5	0.139	0.137	0.138	0.141	5.2300 87.458
02.562 '120	1.472	0.5	0.307	0.309	0.306	0.306	29.4400 122.90 537.226
02.562.1 '120	1.533	0.3	0.316	0.317	0.316	0.316	30.6600 636.110
02.562.1 '120	1.516	0.6	0.314	0.315	0.312	0.315	30.3200 601.587
02.563 '120	1.041	1.7	0.237	0.239	0.241	0.233	20.8200 416.400
0 02.28	0.007	3.5	0.008	0.008	0.008	0.008	
02.234	0.178	0.5	0.055	0.054	0.055	0.055	
02.234.1	1.211	0.2	0.266	0.266	0.265	0.266	
02.234.1	1.208	0.8	0.265	0.267	0.263	0.266	
02.572	0.105	2.0	0.033	0.034	0.033	0.033	
0	0.007	5.3	0.008	0.008	0.008	0.007	
1.00	1.080	0.4	0.244	0.244	0.245	0.243	
0 03.07	0.042	1.3	0.024	0.025	0.024	0.024	
03.103	0.017	1.0	0.016	0.016	0.015	0.016	101.890
03.103.1	1.035	0.3	0.236	0.236	0.236	0.237	
03.103.1	1.029	0.4	0.235	0.235	0.236	0.235	

SAMPLE	CONC	%RSD	MEAN ABS	READINGS		
03.094	0.038	1.9	0.023	0.024	0.023	0.023
03.114	0.206	0.8	0.062	0.063	0.062	0.062
03.116	0.639	1.0	0.163	0.161	0.163	0.165
03.117	0.164	0.8	0.051	0.051	0.051	0.050

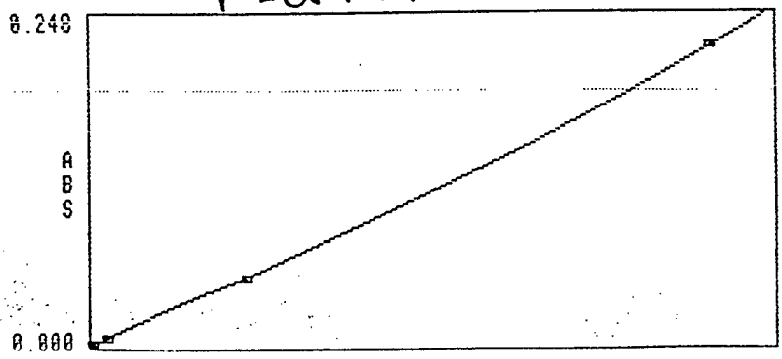
PROGRAM 20 Cu

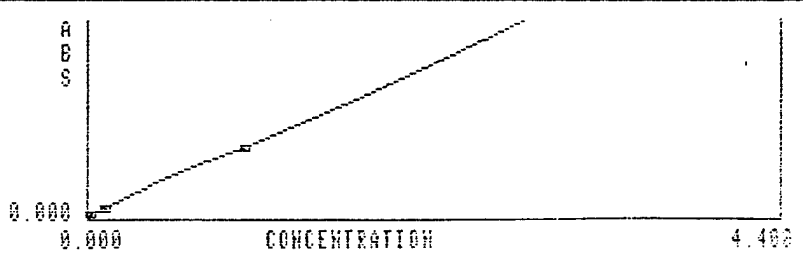
INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	4
SLIT WIDTH (nm)	0.5
WAVELENGTH (nm)	324.8
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

LE	CONC	%RSD	MEAN ABS	READINGS		
	0.000		0.194	0.194	0.193	0.193
	0.000		-0.001	-0.001	-0.000	-0.001
ARD 1	0.010	27.3	0.000	0.001	0.000	0.000
	0.000		-0.071	-0.071	-0.071	-0.071
	0.000		-0.000	-0.001	-0.000	-0.000
	0.000		-0.056	-0.056	-0.056	-0.056
	0.000		-0.000	-0.000	-0.000	-0.000
DARD 1	0.010	7.2	0.001	0.002	0.001	0.001
ARD 2	0.100	4.1	0.006	0.006	0.006	0.006
ARD 3	1.000	0.2	0.050	0.050	0.050	0.050
DARD 4	4.000	0.4	0.225	0.224	0.225	0.226

Cu
flame
03/08/94
1530
LAC

r=0.9995





0 03.01	-0.006	12.5	-0.001	-0.001	-0.001	-0.001	
~~0.100~~ 0.050	0.046	0.0	0.004	0.004	0.004	0.004	
02.531	1.026	0.4	0.052	0.051	0.052	0.052	19.071 mg/kg
02.532	0.729	2.5	0.038	0.038	0.039	0.037	15.188
02.533	1.040	1.6	0.052	0.052	0.053	0.052	21.849
02.534	0.320	0.7	0.018	0.018	0.018	0.018	5.818
02.534.1	1.298	0.5	0.066	0.066	0.066	0.067	28.341 99.6%
02.534.1	1.302	0.5	0.066	0.067	0.066	0.066	29.324
02.535	0.826	0.3	0.043	0.043	0.043	0.043	15.410
02.536	1.033	0.5	0.052	0.052	0.052	0.052	23.477
02.537	0.421	1.0	0.023	0.024	0.023	0.023	9.192
02.538	0.740	0.6	0.039	0.039	0.039	0.039	14.510
02.539	0.376	0.0	0.021	0.021	0.021	0.021	6.144
02.540	0.235	0.0	0.014	0.013	0.014	0.014	5.365
02.541	1.254	0.1	0.064	0.064	0.064	0.064	26.795
02.542	0.949	0.4	0.048	0.048	0.048	0.048	20.365
02.543	0.473	1.1	0.026	0.026	0.026	0.026	10.465
02.544	0.236	1.8	0.014	0.014	0.014	0.013	5.438
02.544.1	1.552	0.1	0.080	0.080	0.080	0.080	35.760 131.6%
02.544.1	1.557	0.5	0.080	0.080	0.080	0.080	30.529
02.551	0.441	0.9	0.024	0.024	0.025	0.024	10.069
02.552	0.269	0.9	0.015	0.015	0.016	0.015	6.256
02.553	1.100	0.5	0.056	0.055	0.056	0.056	26.191
02.554	0.527	0.3	0.029	0.029	0.029	0.029	11.763
02.555	0.546	0.0	0.030	0.030	0.030	0.030	10.877
02.556	0.622	0.6	0.033	0.033	0.033	0.033	10.401
02.557	0.332	0.0	0.019	0.019	0.019	0.019	6.336
02.558	1.087	0.6	0.055	0.055	0.055	0.055	23.528
02.559	0.476	0.6	0.026	0.026	0.026	0.026	9.010
02.560	0.276	1.3	0.016	0.016	0.016	0.016	5.412
02.561	0.561	0.4	0.030	0.030	0.030	0.031	10.237
02.562	2.217	0.4	0.117	0.116	0.117	0.117	40.456
02.562.1	3.434	0.2	0.189	0.190	0.189	0.189	71.245
02.562.1	3.452	0.2	0.190	0.190	0.190	0.191	68.492 121.7%
02.563	1.171	0.3	0.059	0.059	0.059	0.059	23.420
0 02.28	-0.042	4.1	-0.006	-0.006	-0.006	-0.006	
02.234	-0.011	0.0	-0.002	-0.002	-0.002	-0.002	<0.010
02.234.1	1.043	0.5	0.053	0.052	0.053	0.053	104.3%
02.234.1	1.044	0.7	0.053	0.053	0.052	0.053	
02.572	-0.029	0.0	-0.004	-0.004	-0.004	-0.004	<0.010
0	-0.042	1.0	-0.006	-0.006	-0.006	-0.006	
1.00	0.862	0.9	0.044	0.045	0.044	0.044	
0 03.07	-0.037	4.8	-0.005	-0.005	-0.006	-0.005	
03.103	-0.034	0.0	-0.005	-0.005	-0.005	-0.005	99.5%
03.103.1	0.995	0.7	0.050	0.050	0.050	0.051	
03.103.1	1.007	0.2	0.051	0.051	0.051	0.051	
03.054	-0.021	0.0	-0.003	-0.003	-0.003	-0.003	<0.010
03.094	-0.034	0.0	-0.005	-0.005	-0.005	-0.005	<0.020
03.114	-0.026	2.3	-0.004	-0.004	-0.004	-0.004	<0.010

arian SpectrAA 10/20 System Report

OPERATOR 001
DATE 03.09.94
BATCH 1

PROGRAM 2 Cu

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK HEIGHT
LAMP CURRENT (mA)	4
SLIT WIDTH (nm)	0.5
WAVELENGTH (nm)	324.8
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	OFF

FURNACE PARAMETERS

P	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
	120	3.0	3.0	NORMAL	NO
	120	2.0	3.0	NORMAL	NO
3	400	2.0	3.0	NORMAL	NO
4	400	2.0	0.0	NORMAL	NO
	600	1.0	0.0	NORMAL	NO
6	900	2.0	0.0	NORMAL	NO
7	900	2.0	3.0	NORMAL	NO
	2300	1.0	0.0	NORMAL	YES
	2300	1.0	0.0	NORMAL	YES
10	2300	1.0	3.0	NORMAL	NO

Cu furnace 03/09/94 1700 LAC

SAMPLER PARAMETERS

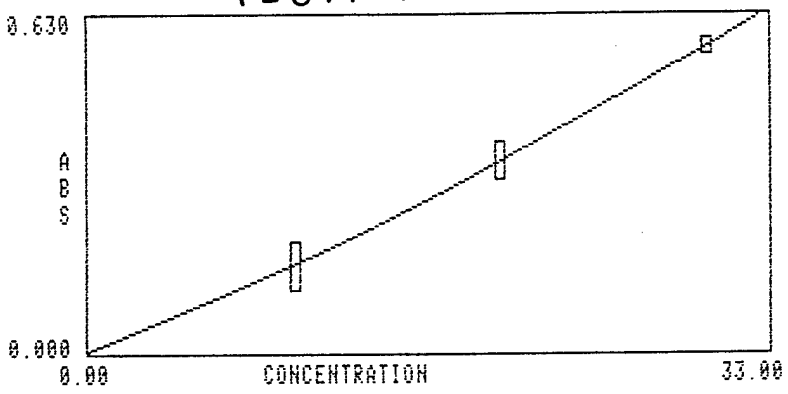
	VOLUMES (uL) SOLUTION	BLANK	MODIFIER
NK	--	20	
NDARD 1	4	16	
ANDARD 2	8	12	
NDARD 3	12	8	
PLE	20	0	

RECALIBRATION RATE 0
RESLOPE RATE 0

TIPLE INJECT NO HOT INJECT YES PRE INJECT NO
TEMPERATURE 100
INJECT RATE 2

SAMPLE	CONC	%RSD	MEAN ABS	READINGS	
BLANK	0.00		0.019	0.026	0.012
BLANK	0.00		-0.001	-0.008	0.006
STANDARD 1	10.00	26.0	0.165	0.195	0.135
STANDARD 2	20.00	9.1	0.360	0.337	0.383
STANDARD 3	30.00	2.1	0.572	0.564	0.581

r = 0.9997



0 03.01	4.42	22.7	0.073	0.085	0.061	
25.00	23.03	3.1	0.424	0.414	0.433	
~~02.234~~	~~OVER~~	~~1.7~~	~~0.775~~	~~0.804~~	~~0.785~~	reran diluted
02.234.1 1/100	14.00	0.5	0.239	0.238	0.240	1.400
02.234.1 1/100	12.73	9.4	0.215	0.201	0.229	1.273
02.572	10.71	7.0	0.178	0.186	0.169	0.0171
02.157	10.76	3.1	0.179	0.183	0.175	0.0176
02.054	23.10	17.1	0.425	0.476	0.374	0.0231
02.117	18.05	15.7	0.319	0.284	0.355	0.0181
0	0.12	10.3	0.002	0.002	0.002	
~~234 1/5~~	8.86	1.6	0.146	0.148	0.145	
234 1/2	16.95 53.9	1.7	0.297	0.301	0.293	0.0339 123.9%

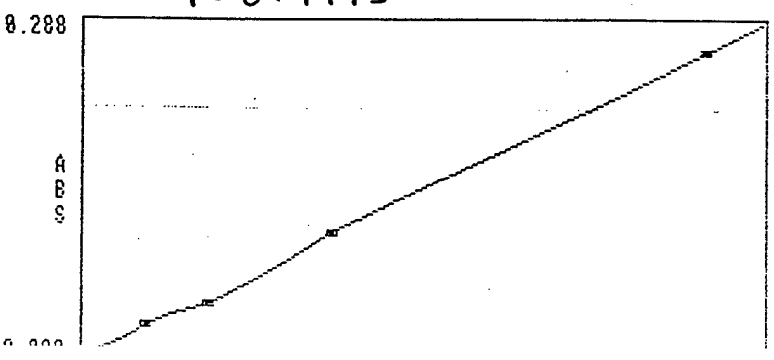
PROGRAM 20 Cr

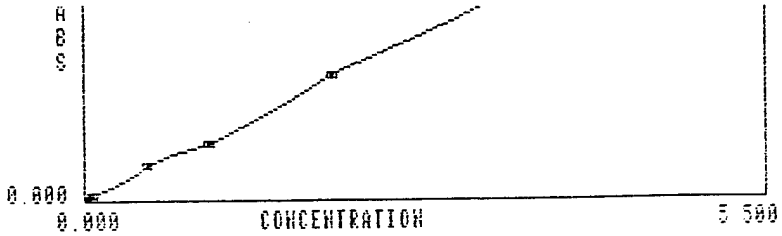
INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	7
SLIT WIDTH (nm)	0.2
WAVELENGTH (nm)	357.9
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

MPLE	CONC	%RSD	MEAN ABS	READINGS		
ANK	0.000		0.032	0.031	0.032	0.032
ANK	0.000		-0.001	-0.001	-0.001	-0.001
TANDARD 1	0.050	12.5	0.002	0.002	0.002	0.002
TANDARD 2	0.500	0.5	0.027	0.027	0.027	0.027
ANDARD 3	1.000	1.4	0.046	0.047	0.045	0.045
ANDARD 4	2.000	0.4	0.107	0.107	0.106	0.107
TANDARD 5	5.000	0.3	0.261	0.262	0.261	0.261

Cr
flame
03/09/94
0930
LAE

r=0.9995





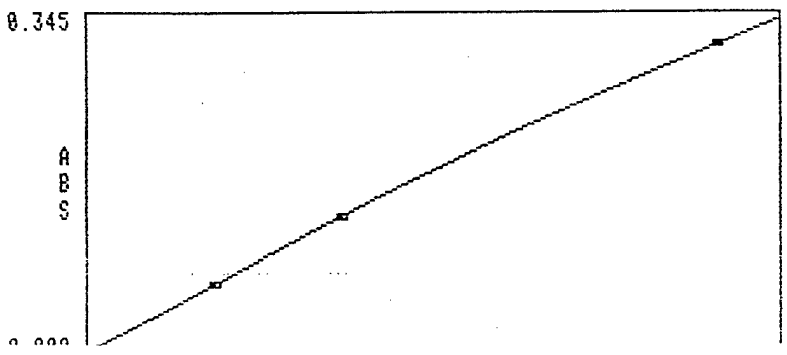
0 03.01	-0.020	23.4	-0.001	-0.001	-0.001	-0.001	
0500	0.478	0.3	0.025	0.025	0.025	0.026	
02.531	0.951	3.0	0.044	0.045	0.045	0.043	17.677 mg/kg
02.532	1.331	1.6	0.064	0.065	0.064	0.063	27.729
02.533	0.333	3.2	0.016	0.016	0.016	0.017	6.933
02.534	0.524 89%	0.6	0.028	0.028	0.028	0.028	9.527
02.534.1	1.414	1.0	0.069	0.068	0.069	0.069	30.873
02.534.1	1.425	0.2	0.069	0.070	0.069	0.070	32.095
02.535	0.795	1.1	0.040	0.040	0.040	0.039	14.832
02.536	0.717	1.2	0.037	0.037	0.037	0.036	16.310
02.537	0.391	1.9	0.020	0.019	0.020	0.020	8.612
02.538	0.728	0.3	0.037	0.037	0.037	0.037	14.275
02.539	0.685	0.3	0.036	0.036	0.035	0.036	11.193
02.540	0.508	0.0	0.027	0.027	0.027	0.027	11.600
02.541	1.059	0.8	0.049	0.049	0.048	0.049	22.628
02.542	1.029	0.9	0.047	0.047	0.048	0.047	22.082
02.543	0.121	2.3	0.005	0.005	0.005	0.005	2.677
02.544	1.029	1.3	0.047	0.047	0.048	0.048	23.710
02.544.1	1.890 86.1%	0.5	0.099	0.099	0.099	0.099	40.909
02.544.1	1.897	0.1	0.100	0.100	0.099	0.100	37.196
02.551	0.567	0.7	0.030	0.030	0.030	0.031	12.945
02.552	0.382	1.2	0.019	0.019	0.019	0.019	8.884
02.553	0.182	2.5	0.008	0.008	0.008	0.008	4.333
02.554	0.530	0.5	0.028	0.028	0.029	0.028	11.830
02.555	0.506	0.7	0.027	0.027	0.027	0.027	10.080
02.556	0.654	0.8	0.034	0.034	0.034	0.035	10.937
02.557	0.457	1.1	0.024	0.024	0.024	0.024	8.721
02.558	0.687	0.7	0.036	0.036	0.036	0.035	14.871
02.559	0.607	1.1	0.032	0.032	0.032	0.032	11.540
02.560	0.536	0.6	0.029	0.029	0.029	0.029	10.510
02.561	0.316	1.5	0.015	0.015	0.015	0.016	5.746
02.562	1.134	0.6	0.053	0.053	0.053	0.053	20.693
02.562.1	1.975 84.1%	0.8	0.105	0.104	0.105	0.106	40.975
02.562.1	1.987	0.7	0.106	0.107	0.105	0.105	39.425
02.563	3.354	0.3	0.177	0.177	0.177	0.178	67.080
0 02.28	0.042	11.9	0.002	0.002	0.002	0.002	
02.234	0.085	2.4	0.004	0.004	0.004	0.004	
02.234.1	1.126 104.1%	0.7	0.053	0.053	0.052	0.053	
02.234.1	1.135	0.5	0.053	0.053	0.053	0.053	
02.572	0.087	5.4	0.004	0.004	0.004	0.004	
0	-0.012	55.9	-0.000	-0.000	-0.001	-0.001	
1.00	0.813	0.7	0.040	0.040	0.040	0.041	

PROGRAM 20 Ag

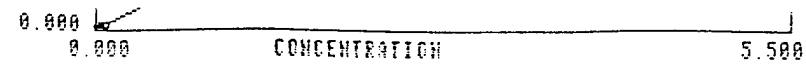
INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	4
SLIT WIDTH (nm)	0.5
WAVELENGTH (nm)	328.1
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

BLANK	0.000		0.001	0.001	0.001	0.001
STANDARD 1	0.010	30.8	0.001	0.001	0.000	0.000
STANDARD 2	0.050	3.2	0.003	0.003	0.003	0.003
STANDARD 3	1.000	0.6	0.070	0.070	0.070	0.070
STANDARD 4	2.000	0.4	0.137	0.136	0.137	0.137
STANDARD 5	5.000	0.3	0.314	0.315	0.314	0.313

r= 0.9992



Ag
flame
03/12/94
1600
LAC



mg/kg

0.500	0.514	0.3	0.035	0.035	0.035	0.034	
02.531	0.026	0.0	0.002	0.002	0.002	0.002	0.520
02.532	0.034	7.1	0.002	0.002	0.002	0.002	0.708
02.533	0.016	0.0	0.001	0.001	0.001	0.001	0.336
02.534	0.031	0.0	0.002	0.002	0.002	0.002	0.564
02.534.1	1.000	0.2	0.070	0.070	0.070	0.070	21.834
02.534.1	0.997	0.5	0.070	0.070	0.069	0.070	22.455
02.535	0.028	5.1	0.002	0.002	0.002	0.002	0.522
02.536	0.029	0.0	0.002	0.002	0.002	0.002	0.659
02.537	0.018	10.2	0.001	0.001	0.001	0.001	0.393
02.538	0.025	0.0	0.001	0.002	0.001	0.001	0.490
02.539	0.026	0.0	0.002	0.002	0.001	0.002	0.425
02.540	0.023	9.2	0.001	0.001	0.001	0.001	0.525

96.9%

02.541	0.028	12.7	0.002	0.001	0.002	0.002	0.598
02.542	0.034	2.9	0.002	0.002	0.002	0.002	0.730
02.543	0.012	22.3	0.001	0.001	0.001	0.001	0.266
02.544	0.024	6.1	0.001	0.001	0.001	0.002	0.553
02.544.1	1.000	0.2	0.070	0.070	0.070	0.070	21.645
02.544.1	0.998	0.3	0.070	0.070	0.070	0.070	19.569
02.551	0.026	0.0	0.002	0.002	0.001	0.002	0.594
02.552	0.016	6.5	0.001	0.001	0.001	0.001	0.372
02.553	0.015	16.1	0.001	0.001	0.001	0.001	0.357
02.554	0.025	0.0	0.001	0.001	0.002	0.001	0.558
02.555	0.025	4.2	0.001	0.001	0.001	0.002	0.498
02.556	0.028	3.7	0.002	0.002	0.002	0.002	0.558
02.557	0.016	0.0	0.001	0.001	0.001	0.001	0.268
02.558	0.021	0.0	0.001	0.001	0.001	0.001	0.401
02.559	0.024	4.4	0.001	0.001	0.001	0.001	0.520
02.560	0.026	5.6	0.002	0.002	0.001	0.001	0.494
02.561	0.010	0.0	0.001	0.001	0.001	0.000	0.196
02.562	0.021	0.0	0.001	0.001	0.001	0.001	0.383
02.562.1	1.000	0.3	0.070	0.070	0.070	0.070	20.747
02.562.1	0.998	0.4	0.070	0.070	0.070	0.070	19.802
02.563	0.025	0.0	0.001	0.001	0.001	0.001	0.500
0	0.006	24.6	0.000	0.000	0.000	0.000	
2.00	1.950	0.1	0.134	0.134	0.134	0.133	
0 02.28	0.007	0.0	0.000	0.000	0.000	0.000	
02.234	0.016	6.6	0.001	0.001	0.001	0.001	
02.234.1	1.229	0.4	0.086	0.086	0.085	0.086	
02.234.1	1.240	0.2	0.086	0.086	0.086	0.087	
02.572	0.022	9.4	0.001	0.001	0.001	0.001	
0	-0.007	36.2	-0.000	-0.000	-0.001	-0.000	
5.0	4.884	0.6	0.308	0.306	0.309	0.309	

97.6%

121.3%

97.9%

STANDARD 2	8	12
STANDARD 3	12	8
SAMPLE	20	0

RECALIBRATION RATE 0
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

PROGRAM 5 Sb

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK HEIGHT
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.2
WAVELENGTH (nm)	217.6
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	OFF

Sb
furnace
03/00/94
1200
LAC

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	85	5.0	3.0	NORMAL	NO
2	95	25.0	3.0	NORMAL	NO
3	130	5.0	3.0	NORMAL	NO
4	400	5.0	3.0	NORMAL	NO
5	1000	2.0	3.0	NORMAL	NO
6	1000	2.0	0.0	NORMAL	NO
7	2200	1.0	0.0	NORMAL	YES
8	2200	3.0	0.0	NORMAL	YES
9	2400	1.0	3.0	NORMAL	NO
11	2400	1.0	3.0	NORMAL	NO
12	2700	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS

VOLUMES (uL)		
SOLUTION	BLANK	MODIFIER

2	75	25.0	3.0	NORMAL	NO
3	130	5.0	3.0	NORMAL	NO
4	400	5.0	3.0	NORMAL	NO
5	1000	2.0	3.0	NORMAL	NO
6	1000	2.0	0.0	NORMAL	NO
7	2200	1.0	0.0	NORMAL	YES
8	2200	3.0	0.0	NORMAL	YES
9	2400	1.0	3.0	NORMAL	NO
11	2400	1.0	3.0	NORMAL	NO
12	2700	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS

VOLUMES (uL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	
STANDARD 1	4	16	
STANDARD 2	8	12	
STANDARD 3	12	8	
SAMPLE	20	0	

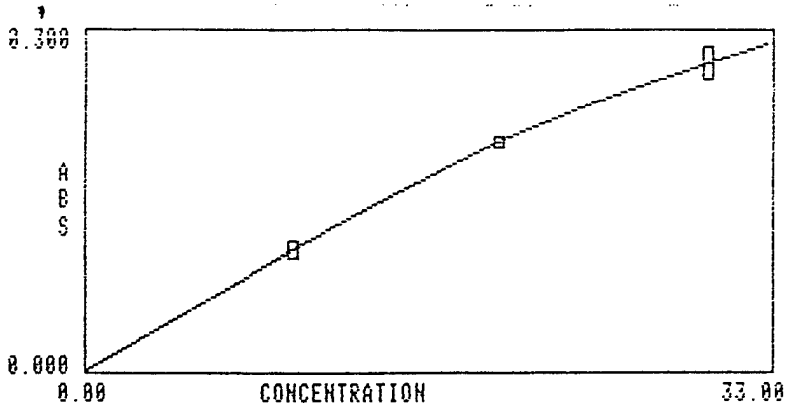
RECALIBRATION RATE 0

RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

SAMPLE	CONC	%RSD	MEAN ABS	READINGS		
BLANK	0.00		4.000‡	4.000‡	4.000‡	
BLANK	0.00		0.017	0.018	0.015	
BLANK	0.00		-0.002	-0.003	-0.002	
STANDARD 1	10.00	4.7	0.106	0.110	0.102	
STANDARD 2	20.00	0.9	0.201	0.203	0.200	
STANDARD 3	30.00	4.6	0.272	0.281	0.264	

r=0.9965



SAMPLE	CONC	%RSD	MEAN ABS	READINGS			ppm	mg/kg
0 03.01	1.21	20.2	0.013	0.011	0.015			
25.00	23.64	1.1	0.230	0.232	0.228			
~~02.533 1/25~~	~~7.93~~	~~7.3~~	~~0.084~~	~~0.089~~	~~0.080~~			
02.537 1/10	10.46	1.2	0.111	0.112	0.110		0.1050	2.293
~~02.543 1/10~~	~~4.44~~	~~5.3~~	~~0.047~~	~~0.045~~	~~0.049~~			3.678
02.551 1/10	16.11	3.2	0.165	0.162	0.169		0.1611	
~~02.555 1/25~~	~~8.59~~	~~2.7~~	~~0.091~~	~~0.093~~	~~0.089~~			
~~02.553 1/5~~	~~6.79~~	~~4.3~~	~~0.072~~	~~0.074~~	~~0.070~~			
~~02.554 1/25~~	~~9.30~~	~~9.5~~	~~0.099~~	~~0.092~~	~~0.105~~			
~~02.555 1/25~~	~~8.38~~	~~2.5~~	~~0.089~~	~~0.087~~	~~0.090~~			
02.556 1/25	10.66	0.7	0.113	0.113	0.112		0.26665	5.319
02.557 1/10	11.88	1.0	0.125	0.125	0.124		0.1188	1.987
02.562 1/5	16.79	1.2	0.172	0.173	0.170		0.0840	1.430
02.562.1 1/100	10.11	4.3	0.107	0.104	0.110		1.0110	92.7%
02.562.1 1/100	9.95	1.3	0.105	0.104	0.106		0.9950	
~~0 02.28~~	~~1.56~~	~~16.7~~	~~0.016~~	~~0.018~~	~~0.015~~			
~~02.234 900~~	~~8.01~~	~~1.6~~	~~0.085~~	~~0.085~~	~~0.084~~	poor	~~0.805~~ <0.010	93.1%
02.234.1 1/100	9.71	5.4	0.103	0.099	0.107		0.9710	
02.234.1 1/100	11.50	1.2	0.121	0.122	0.120		1.1500	
~~02.572 1/5~~	~~2.12~~	~~7.2~~	~~0.022~~	~~0.024~~	~~0.021~~			
0	1.55	5.4	0.016	0.017	0.016			
533 1/10	12.73	3.5	0.133	0.136	0.130		0.1270	2.668
534 1/2	9.78	4.1	0.104	0.107	0.101		0.0190	0.3460
565 1/10	14.21	5.6	0.147	0.141	0.153		0.1420	2.829
~~553 1/2~~	~~9.34~~	~~4.2~~	~~0.099~~	~~0.096~~	~~0.102~~			2.344
554 1/10	10.46	4.6	0.111	0.107	0.114		0.1050	
~~555 1/10~~	~~12.22~~	~~2.3~~	~~0.128~~	~~0.126~~	~~0.130~~		~~0.1220~~ wrong sample is 02.552 1/10 = 2.4	
572	6.77	1.5	0.072	0.072	0.071		<0.0100	0.388
553	16.29	1.5	0.167	0.165	0.169		.016389	
543	15.64	0.4	0.161	0.161	0.160		.015.64	0.345

OPERATOR 001
DATE 03.10.94
BATCH 1

PROGRAM 5 Sb

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK HEIGHT
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.2
WAVELENGTH (nm)	217.6
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	OFF

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	85	5.0	3.0	NORMAL	NO
2	95	25.0	3.0	NORMAL	NO
3	130	5.0	3.0	NORMAL	NO
4	400	5.0	3.0	NORMAL	NO
5	1000	2.0	3.0	NORMAL	NO
6	1000	2.0	0.0	NORMAL	NO
7	2200	1.0	0.0	NORMAL	YES
8	2200	3.0	0.0	NORMAL	YES
9	2400	1.0	3.0	NORMAL	NO
11	2400	1.0	3.0	NORMAL	NO
12	2700	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS

	VOLUMES (uL) SOLUTION	BLANK	MODIFIER
BLANK	--	20	
STANDARD 1	4	16	
STANDARD 2	8	12	
STANDARD 3	12	8	
SAMPLE	20	0	

RECALIBRATION RATE 0
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

Sb
furnace
03/10/94
0900
LAE

SAMPLER PARAMETERS
VOLUMES (uL)

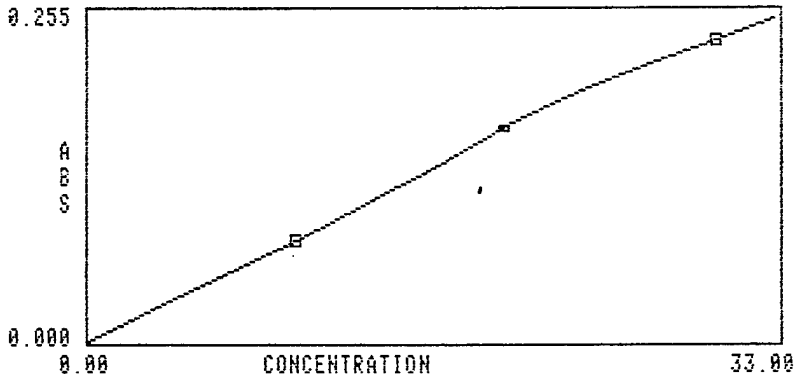
	SOLUTION	BLANK	MODIFIER
[redacted]	--	20	
[redacted]NDARD 1	4	16	
[redacted]NDARD 2	8	12	
[redacted]DARD 3	12	8	
[redacted]PLE	20	0	

RECALIBRATION RATE 0
RESLOPE RATE 0

[redacted]IPLE INJECT NO HOT INJECT NO PRE INJECT NO

[redacted]LE	CONC	%RSD	MEAN ABS	READINGS	
[redacted]NK	0.00		0.010	0.008	0.012
[redacted]DARD 1	10.00	2.8	0.078	0.076	0.079
[redacted]NDARD 2	20.00	0.4	0.165	0.165	0.166
[redacted]NDARD 3	30.00	0.5	0.232	0.231	0.233

r = 0.9972



						ppm	mg/kg
[redacted].01	3.58	4.8	0.028	0.029	0.027		
[redacted]25.00	24.33	0.5	0.197	0.197	0.198		
~~331~~	~~OVER~~	~~8.2~~	~~0.607~~	~~0.644~~	~~0.573~~		
332 1/50	12.62	7.2	0.099	0.094	0.105	0.6310	13.146
~~333~~	~~OVER~~	~~4.2~~	~~0.613~~	~~0.631~~	~~0.594~~		
334 1/50	10.55	9.8	0.082	0.088	0.076	0.5280	11.528
~~334.1~~	~~6.42~~	~~10.8~~	~~0.050~~	~~0.054~~	~~0.046~~		
~~334.1~~	~~4.93~~	~~0.0~~	~~0.038~~	~~0.038~~	~~0.039~~		
335 1/50	10.09	2.9	0.078	0.080	0.077	0.5050	10.261
336 1/50	10.86	2.7	0.085	0.083	0.086	0.5430	12.341

02.536	1/50	10.88	2.7	0.083	0.083	0.088	0.5450	12.5
~~02.537~~		~~8.08~~	~~1.2~~	~~0.063~~	~~0.063~~	~~0.062~~		
.538	1/50	10.45	3.3	0.081	0.083	0.079	0.5230	10.255
.539	1/50	13.02	10.4	0.103	0.110	0.095	0.6510	10.637
02.540	1/50	14.33	3.8	0.114	0.111	0.117	0.7170	16.370
.541	1/50	10.74	1.1	0.084	0.084	0.083	0.5370	11.474
~~.542~~		~~7.66~~	~~2.0~~	~~0.075~~	~~0.078~~	~~0.074~~		
~~02.543~~		~~5.35~~	~~5.5~~	~~0.041~~	~~0.043~~	~~0.040~~		
~~02.544~~		~~8.32~~	~~6.0~~	~~0.064~~	~~0.067~~	~~0.062~~		
.544.1	1/100	10.03	4.5	0.078	0.075	0.080	1.0003	21.645
02.544.1	1/100	10.35	5.0	0.080	0.083	0.078	1.0850	20.294
~~02.551~~		~~7.56~~	~~1.6~~	~~0.059~~	~~0.059~~	~~0.058~~		
~~.552~~		~~6.32~~	~~0.9~~	~~0.049~~	~~0.049~~	~~0.049~~		
~~.553~~		~~5.70~~	~~4.3~~	~~0.044~~	~~0.043~~	~~0.046~~		
~~02.554~~		~~6.76~~	~~4.9~~	~~0.054~~	0.056	0.052		
~~.555~~		~~6.83~~	~~4.3~~	~~0.053~~	~~0.055~~	~~0.051~~		
~~.556~~		~~7.23~~	~~2.5~~	0.056	0.057	0.055		
~~02.557~~		~~8.37~~	~~10.0~~	~~0.065~~	~~0.060~~	~~0.069~~		
02.558	1/5	16.39	1.2	0.132	0.131	0.134	0.0820	1.565
.559	1/5	18.14	0.4	0.148	0.148	0.149	0.0860	1.862

SAMPLE		CONC	%RSD	MEAN ABS	READINGS			
.560	1/5	20.00	2.4	0.165	0.163	0.168	0.1000	1.901
.561	1/5	10.05	3.4	0.078	0.080	0.076	0.0500	0.980
02.562	1/5	15.44	0.3	0.124	0.124	0.124	0.0770	1.405
.562.1	1/100	10.40	7.3	0.081	0.077	0.085	1.0400	21.577
.562.1	1/100	10.64	1.3	0.083	0.084	0.082	1.0640	21.111
~~02.563~~		~~7.41~~	~~2.6~~	~~0.057~~	~~0.059~~	~~0.056~~		
~~02.28~~ 531	1/5	10.65	1.1	0.083	0.082	0.084	0.5325	9.898
~~.234~~ 533	1/50	~~7.65~~	~~0.6~~	~~0.059~~	~~0.059~~	~~0.060~~		
~~02.234.1~~ 534	1/25	~~6.39~~	~~6.4~~	~~0.073~~	~~0.076~~	~~0.069~~		
~~02.534.1~~		10.07	2.2	0.078	0.077	0.079	1.5100	32.969
~~.534.1~~	1/100	9.83	0.8	0.076	0.077	0.076	1.4890	33.198
02.642	1/25	11.28	1.4	0.088	0.089	0.087	0.2820	6.052
~~02.643~~	1/25	~~7.26~~	~~3.1~~	~~0.056~~	~~0.057~~	~~0.055~~		6.014
02.544	1/25	10.44	1.7	0.081	0.080	0.082	0.2610	0.1030
~~02.645~~	1/25	~~9.46~~	~~3.8~~	~~0.073~~	~~0.071~~	~~0.075~~	keep 0.2365	
~~02.553~~	1/50	~~7.03~~	~~4.4~~	~~0.070~~	~~0.072~~	~~0.069~~		

96.3%

98.2%

PROGRAM 5 Sb

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK HEIGHT
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.2
WAVELENGTH (nm)	217.6
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	OFF

Sb
furnace
03/00/94
1200
LAC

FURNACE PARAMETERS

TEP	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
	85	5.0	3.0	NORMAL	NO
	95	25.0	3.0	NORMAL	NO
	130	5.0	3.0	NORMAL	NO
	400	5.0	3.0	NORMAL	NO
	1000	2.0	3.0	NORMAL	NO
	1000	2.0	0.0	NORMAL	NO
7	2200	1.0	0.0	NORMAL	YES
8	2200	3.0	0.0	NORMAL	YES
9	2400	1.0	3.0	NORMAL	NO
1	2400	1.0	3.0	NORMAL	NO
2	2700	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS

	VOLUMES (uL) SOLUTION	BLANK	MODIFIER
[redacted]K	--	20	
ST[redacted]DARD 1	4	16	
STANDARD 2	8	12	
ST[redacted]DARD 3	12	8	
[redacted]LE	20	0	

RECALIBRATION RATE	0
RESLOPE RATE	0

9	2400	1.0	3.0	NORMAL	NO
11	2400	1.0	3.0	NORMAL	NO
12	2700	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS

VOLUMES (uL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	
STANDARD 1	4	16	
STANDARD 2	8	12	
STANDARD 3	12	8	
SAMPLE	20	0	

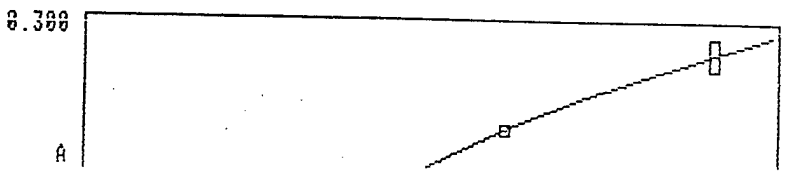
RECALIBRATION RATE 0

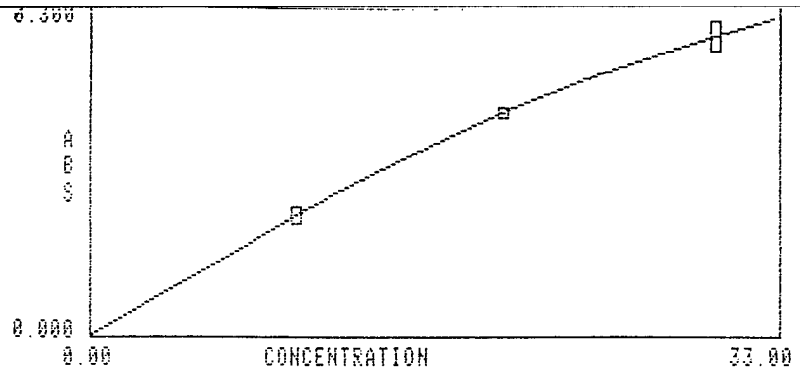
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

SAMPLE	CONC	%RSD	MEAN ABS	READINGS		
BLANK	0.00		4.000*	4.000*	4.000*	
BLANK	0.00		0.017	0.018	0.015	
BLANK	0.00		-0.002	-0.003	-0.002	
STANDARD 1	10.00	4.7	0.106	0.110	0.102	
STANDARD 2	20.00	0.9	0.201	0.203	0.200	
STANDARD 3	30.00	4.6	0.272	0.281	0.264	

r=0.9965





...PLE	CONC	%RSD	MEAN ABS	READINGS			ppm	mg/kg
3.01	1.21	20.2	0.013	0.011	0.015			
25.00	23.64	1.1	0.230	0.232	0.228			
~~533 1/25~~	~~7.73~~	~~7.3~~	~~0.084~~	~~0.089~~	~~0.080~~			
537 1/10	10.46	1.2	0.111	0.112	0.110		0.1050	2.293
~~543 1/10~~	~~4.44~~	~~5.3~~	~~0.047~~	~~0.045~~	~~0.049~~			3.678
02.551 1/10	16.11	3.2	0.165	0.162	0.169		0.1611	
~~555 1/25~~	~~8.59~~	~~2.9~~	~~0.091~~	~~0.093~~	~~0.089~~			
~~553 1/5~~	~~6.79~~	~~4.3~~	~~0.072~~	~~0.074~~	~~0.070~~			
~~554 1/25~~	~~9.30~~	~~9.5~~	~~0.099~~	~~0.092~~	~~0.105~~			
~~555 1/25~~	~~8.36~~	~~2.5~~	~~0.087~~	~~0.087~~	~~0.090~~			
556 1/25	10.66	0.7	0.113	0.113	0.112		0.26665	5.319
02.557 1/10	11.88	1.0	0.125	0.125	0.124		0.1188	1.987
562 1/5	16.79	1.2	0.172	0.173	0.170		0.0840	1.430
562.1 1/100	10.11	4.3	0.107	0.104	0.110		1.011 0	92.7%
02.562.1 1/100	9.95	1.3	0.105	0.104	0.106		0.9950	
~~02.28~~	~~1.56~~	~~16.7~~	~~0.016~~	~~0.018~~	~~0.015~~			
~~234 1/100~~	~~8.01~~	~~1.6~~	~~0.085~~	~~0.086~~	~~0.084~~		~~0.805~~ <0.010	93.1%
234.1 1/100	9.71	5.4	0.103	0.099	0.107		0.9710	
234.1 1/100	11.50	1.2	0.121	0.122	0.120		1.1500	
~~572 1/5~~	~~2.12~~	~~7.2~~	~~0.022~~	~~0.024~~	~~0.021~~			
	1.55	5.4	0.016	0.017	0.016			2.668
53 1/10	12.73	3.5	0.133	0.136	0.130		0.1270	0.3460
24 1/2	9.78	4.1	0.104	0.107	0.101		0.0190	2.829
5 1/10	14.21	5.6	0.147	0.141	0.153		0.1420	2.344
~~533 1/2~~	~~7.34~~	~~4.2~~	~~0.077~~	~~0.076~~	~~0.102~~			
554 1/10	10.46	4.6	0.111	0.107	0.114		0.1050	
~~5 1/10~~	~~12.22~~	~~2.3~~	~~0.128~~	~~0.126~~	~~0.130~~		~~0.1220~~ wrong sample is 02.552 1/10 = 2.440	
2	6.77	1.5	0.072	0.072	0.071		<0.0100	0.388
53	16.29	1.5	0.167	0.165	0.169		.01638	
13	15.64	0.4	0.161	0.161	0.160		.015.64	0.345

Analyst HDV Time 1300 Date 02/28/94

Sample I.D.	543	544	551	552	553	554
Tare Dish 1	30.49g	28.66g	28.67g	29.15g	28.75g	29.1887g
Tare Dish 2	30.49g	28.66g	28.67g	29.15g	28.75g	29.1887g
Dish+1stDry	44.38g	60.65g	50.40g	49.90g	47.73g	52.52g
Dish+2ndDry	44.38g	60.65g	50.40g	49.90g	47.73g	52.52g
Volume Sample	47.55g	65.57g	52.96	52.16g	49.49g	57.1971g
% Solids	81.42%	86.67%	89.46%	90.18%	91.51%	83.29%
	17.06	36.91	24.29	23.01	20.74	29.01

Analyst HDV Time 1600 Date 02/28/94

Sample I.D.	556	555	557	558	559	560
Tare-Dish 1	28.57g	29.89g	28.56g	29.76g	28.51g	29.15g
Tare Dish 2	28.57g	29.89g	28.56g	29.76g	28.51g	29.15g
Dish+1stDry	49.61g	49.71g	47.25g	57.33g	56.29g	61.38g
Dish+2ndDry	49.61g	49.71g	47.25g	57.33g	56.29g	61.38g
Volume Sample + Tares	52.14g	53.03g	50.10g	62.32g	60.04g	67.81g
% Solids	89.27%	85.66%	86.77%	84.67%	88.11%	83.37%
	23.57	23.14	21.54	32.57	31.53	38.66

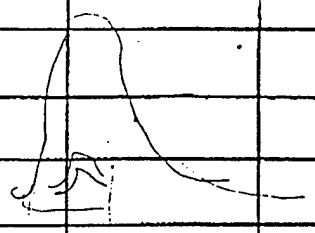
Analyst LAC Time 1730 Date 02/28/94

Sample I.D.	561	562	563			
Tare-Dish 1	29.01g	30.39g	28.82g			
Tare Dish 2	29.01g	30.39g	28.82g			
Dish+1stDry	55.63g	62.40g	64.89g			
Dish+2ndDry	55.63g	62.40g	64.89g			
Volume	57.97g	81.00g	81.48g			
% Solids	91.92%	63.25%	68.50%			
	28.96	50.61	52.66			

PERCENT SOLIDS

Analyst HAV Time 1100 Date 02/22/94

Sample I.D.	9402010455	9402015				
Tare Dish 1	27.86g					
Tare Dish 2	27.86g					
Dish+1stDry						
Dish+2ndDry						
~~Volume~~ wet sample + dish.	44.59g					
% Solids						



Analyst HAV Time 1500 Date 02/25/94

Sample I.D.	9402010531	532	533	536	535	536
Tare-Dish 1	28.92g	28.19g	28.57g	31.04g	28.18g	28.65g
Tare Dish 2	28.92g	28.19g	28.57g	31.04g	28.18g	28.65g
Dish+1stDry	39.36g	33.22g	40.97g	48.03g	46.55g	68.27g
Dish+2ndDry	39.36g	33.22g	40.97g	48.03g	46.55g	68.27g
~~Dish+wet~~ Volume sample	41.23g	34.32g	42.37g	50.85g	49.38g	71.76g
% Solids	84.80%	82.05%	89.85%	85.75%	86.70%	91.90
	12.31	6.13g	13.8	19.81	21.19	43.11

Analyst HAV Time 0900 1300 Date 02/28/94

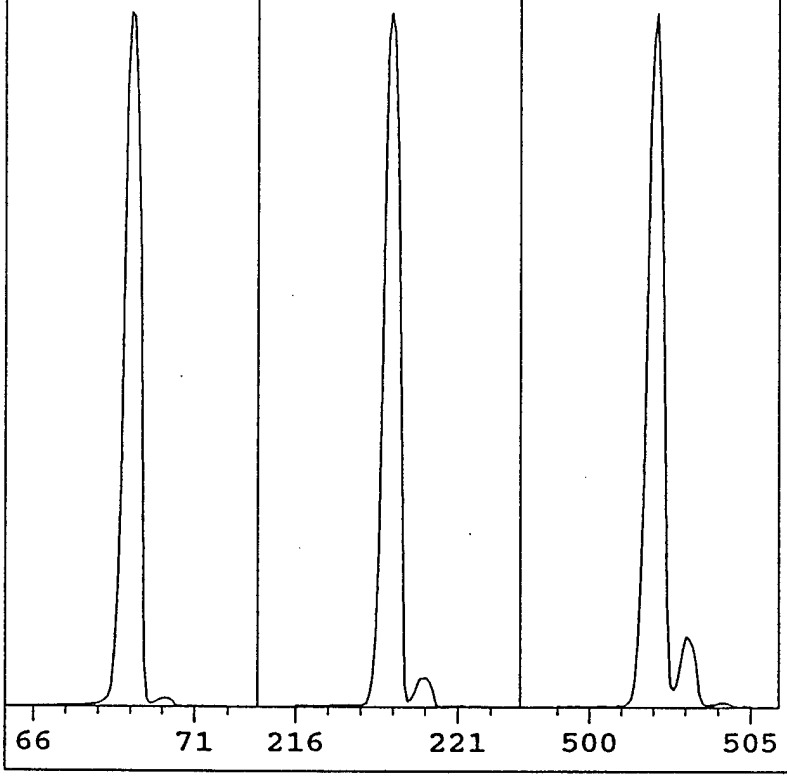
Sample I.D.	9402010537	538	539	540	541	542
Tare-Dish 1	28.85g	27.87g	29.17g	29.01g	29.50g	28.62
Tare Dish 2	28.85g	27.87g	29.17g	29.01g	29.50g	28.62
Dish+1stDry	49.98g	39.56g	41.68g	40.38g	41.50g	46.75g
Dish+2ndDry	49.98g	39.56g	41.68g	40.38g	41.50g	46.75g
~~Dish+wet~~ Volume sample	52.44g	41.62g	44.00g	42.47g	44.04g	49.50g
% Solids	89.57%	85.01%	84.35%	98.92%	82.53%	86.83%
	23.59	13.75	14.83	13.46	14.54	20.8

HP5971 Standard Spectra AutoTune

Instrument: GC/MS

Mon Feb 28 08:08:13 1994 C:\HPCHEM\1\5971\ATUNE.U

Mass	69.00	Mass	219.00	Mass	502.10
Ab	319104	Ab	217781	Ab	14128
Pw50	0.57	Pw50	0.57	Pw50	0.54

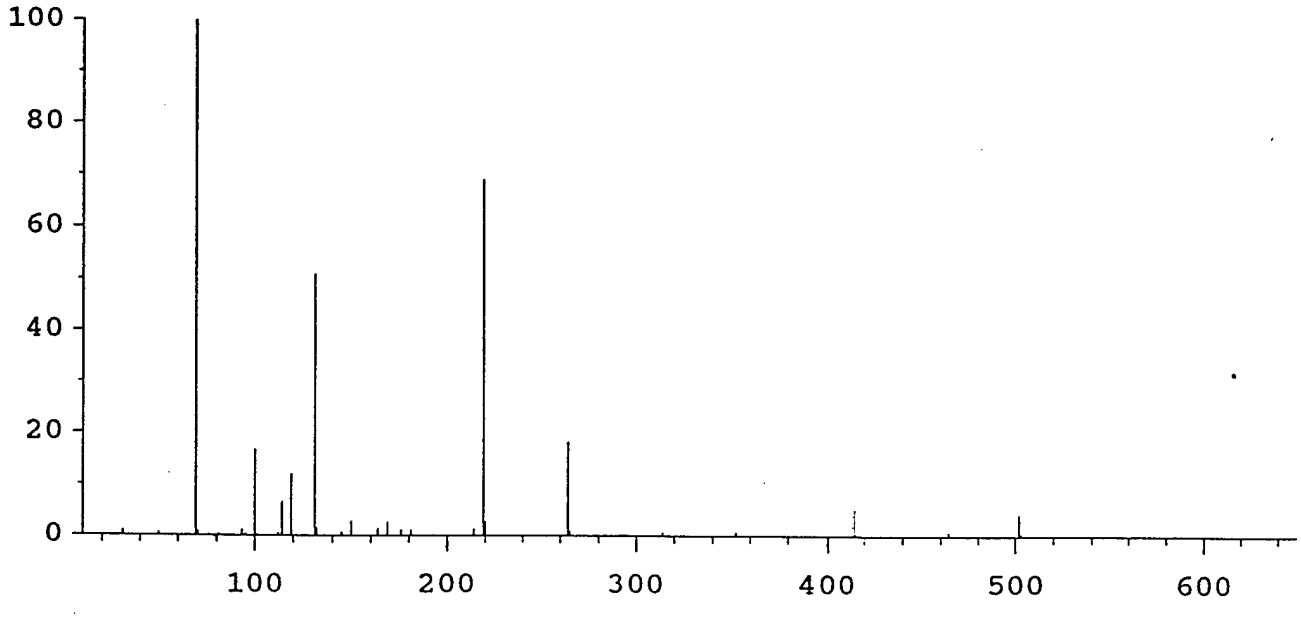


EMVolts	2447	AmuGain	373
Xray	89.8	AmuOffs	69
Emission	ON	219Wid	-0.008
MS Temp	185	TTI	OFF
Vacuum	39	DC Pol	NEG
Samples	16	Repeller	14.99
Averages	1	IonFocus	39.0
StepSize	0.10	EntLens	26.10
MassGain	-331	EntOffs	6.02
MassOffs	-2	Filament	2

PFTBA OPEN

Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10

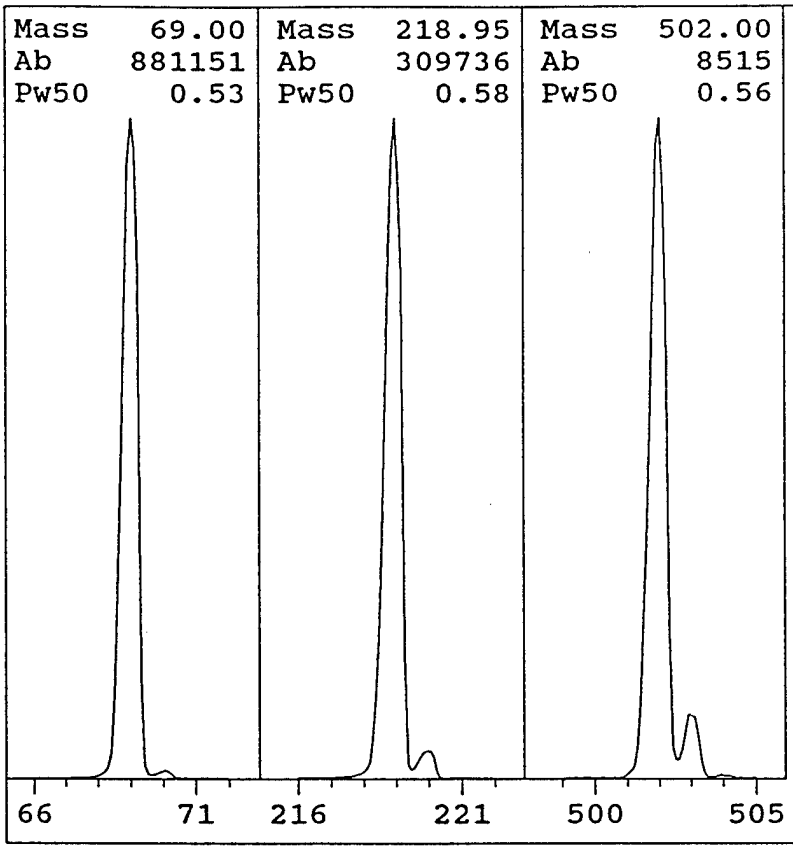
80 peaks Base: 69.05 Abundance: 277888



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.05	277888	100.00	70.05	2912	1.05
219.00	192256	69.18	220.00	8078	4.20
502.05	12114	4.36	503.05	1220	10.07

HP5971 BFB Dynamic Target Tune

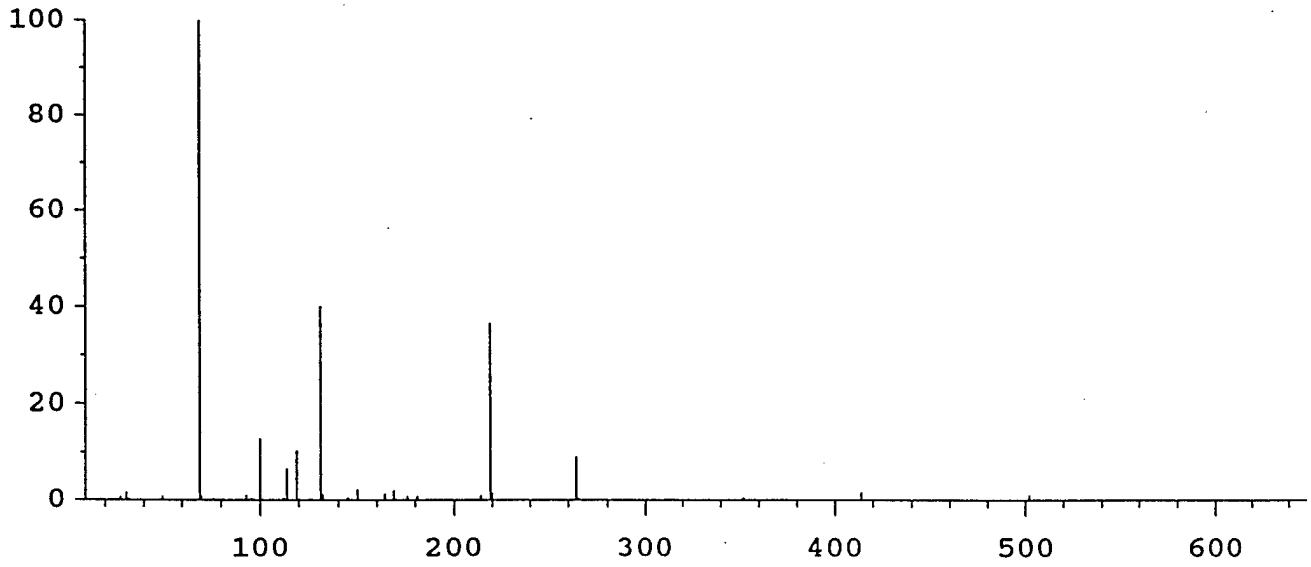
Mon Feb 28 08:16:58 1994 C:\HPCHEM\1\5971\BFB.U



EMVolts	2682	AmuGain	373
Xray	89.8	AmuOffs	75
Emission	ON	219Wid	0.031
MS Temp	185	TTI	OFF
Vacuum	39	DC Pol	NEG
Samples	16	Repeller	18.39
Averages	1	IonFocus	39.0
StepSize	0.10	EntLens	0.00
MassGain	-338	EntOffs	VAR
MassOffs	-3	Filament	2

PFTBA OPEN

Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10
116 peaks Base: 69.00 Abundance: 726976



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	726976	100.00	70.00	7967	1.10
218.90	266816	36.70	219.90	11403	4.27
501.95	7393	1.02	502.95	739	10.00

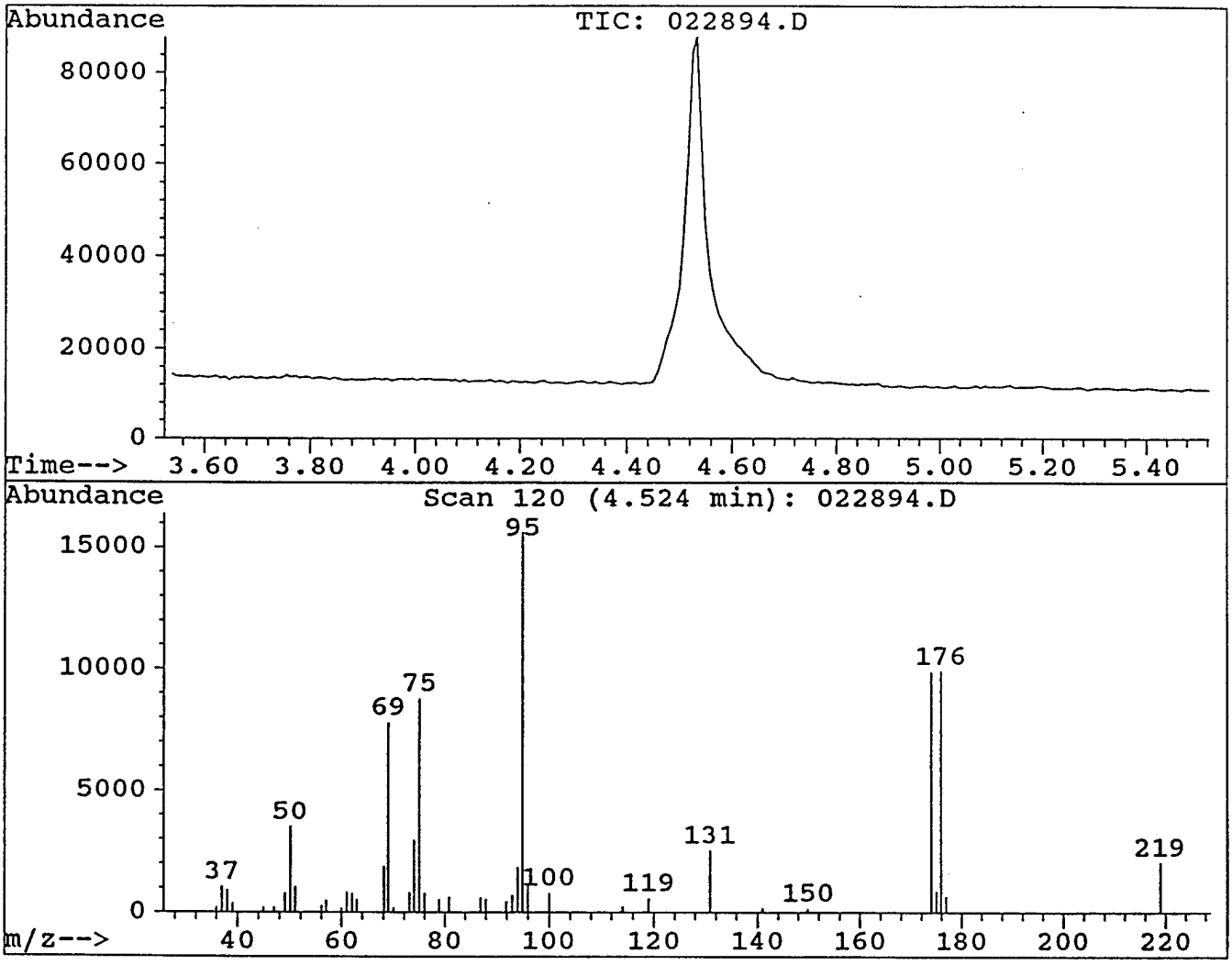
TARGET MASS:	69	131	219	502
DYNAMIC ENT OFFSET:	14.1	13.8	14.6	16.1
TARGET ABUND(%):	100.0	35.0	30.0	0.8
ACTUAL TUNE ABUND(%):	100.0	40.3	36.7	1.0

BFB

Data File : C:\HPCHEM\1\DATA\022894.D
Acq Time : 28 Feb 94 8:22 am
Sample : BFB TUNE EVALUATION
Misc : 1uL INJECTION (50nG)

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\BFB624.M
Title :



Peak Apex is scan: 120

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.4	3507	PASS
75	95	30	60	56.1	8776	PASS
95	95	100	100	100.0	15633	PASS
96	95	5	9	7.0	1091	PASS
173	174	0	2	0.0	0	PASS
174	95	50	100	63.2	9882	PASS
175	174	5	9	8.7	858	PASS
176	174	95	101	100.3	9909	PASS
177	176	5	9	6.6	654	PASS

022894.D BFB624.M Mon Feb 28 08:30:52 1994 GC/MS

Simulate Run Sequence Mon Feb 28 08:52:26 1994

Sequence Name: C:\HPCHEM\1\SEQUENCE\0228VOL.S
Comment:
Operator: HJV
Data Path: C:\HPCHEM\1\DATA\022894\
Method Path: C:\HPCHEM\1\METHODS\

Line	Type	Vial	DataFile	Method	Sample Name
1)	Sample	1	0228HJV1	8240	BLANK FOR VO ANALYSES
2)	Sample	1	0228HJV2	8240	SPCC 100PPB
3)	Sample	1	0228HJV3	8240	CCC 100PPB
4)	Sample	1	0228HJV4	8240	9402010531
5)	Sample	1	0228HJV5	8240	9402010532
6)	Sample	1	0228HJV6	8240	9402010533
7)	Sample	1	0228HJV7	8240	9402010534
8)	Sample	1	0228HJV8	8240	9402010535
9)	Sample	1	0228HJV9	8240	9402010536
10)	Sample	1	0228HV10	8240	9402010537

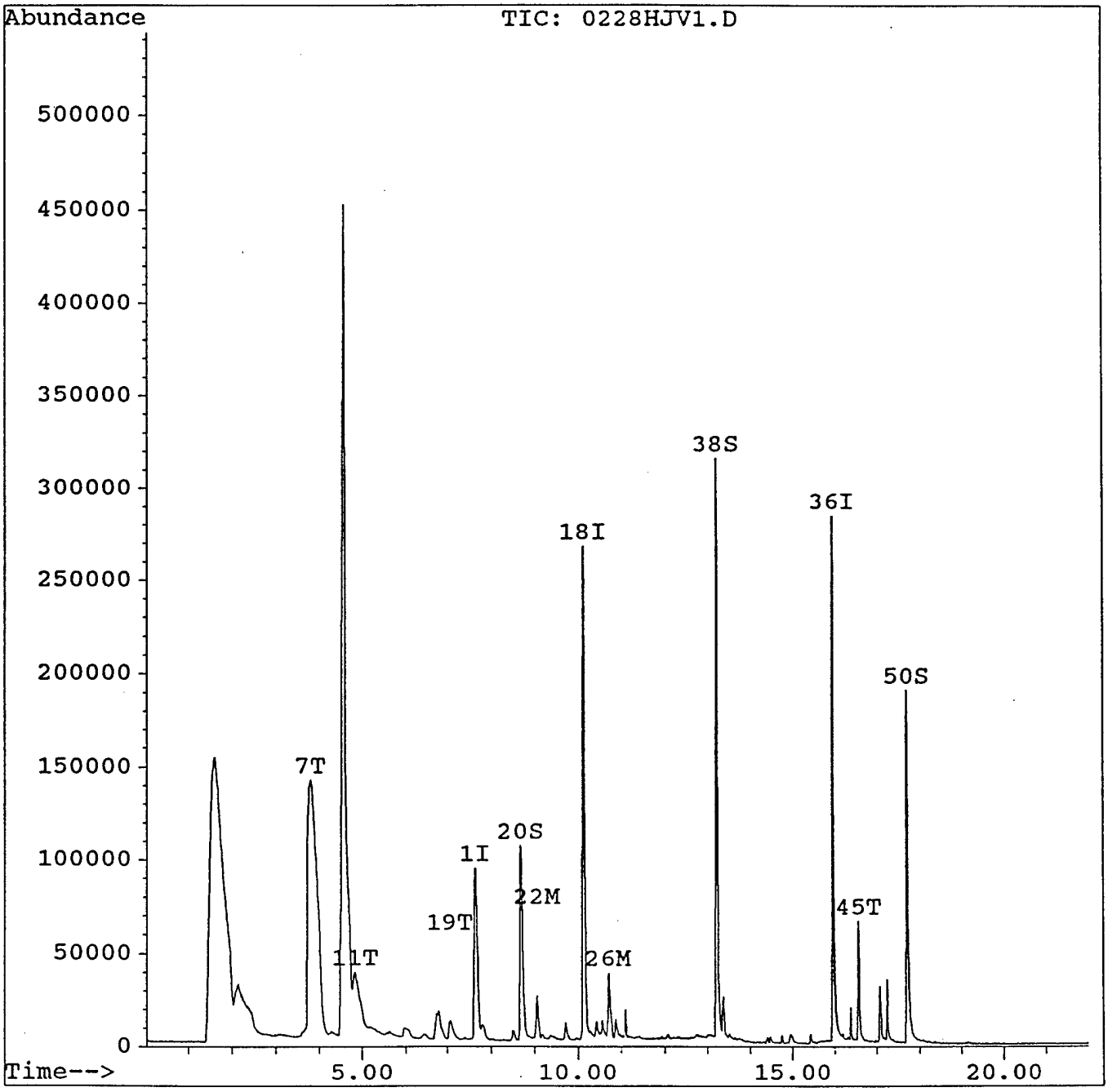
Bytes Needed: 500000 Space on drive C: 43196416
Sequence Verification Done!

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV1.D
Acq Time : 28 Feb 94 9:04 am
Sample : BLANK FOR VO ANALYSES
Misc : 5mL MILLI Q WATER + 10uL INTSTD/SURR.
Quant Time: Mar 2 8:10 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV1.D
Acq Time : 28 Feb 94 9:04 am
Sample : BLANK FOR VO ANALYSES
Misc : 5mL MILLI Q WATER + 10uL INTSTD/SURR.
Quant Time: Mar 2 8:10 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

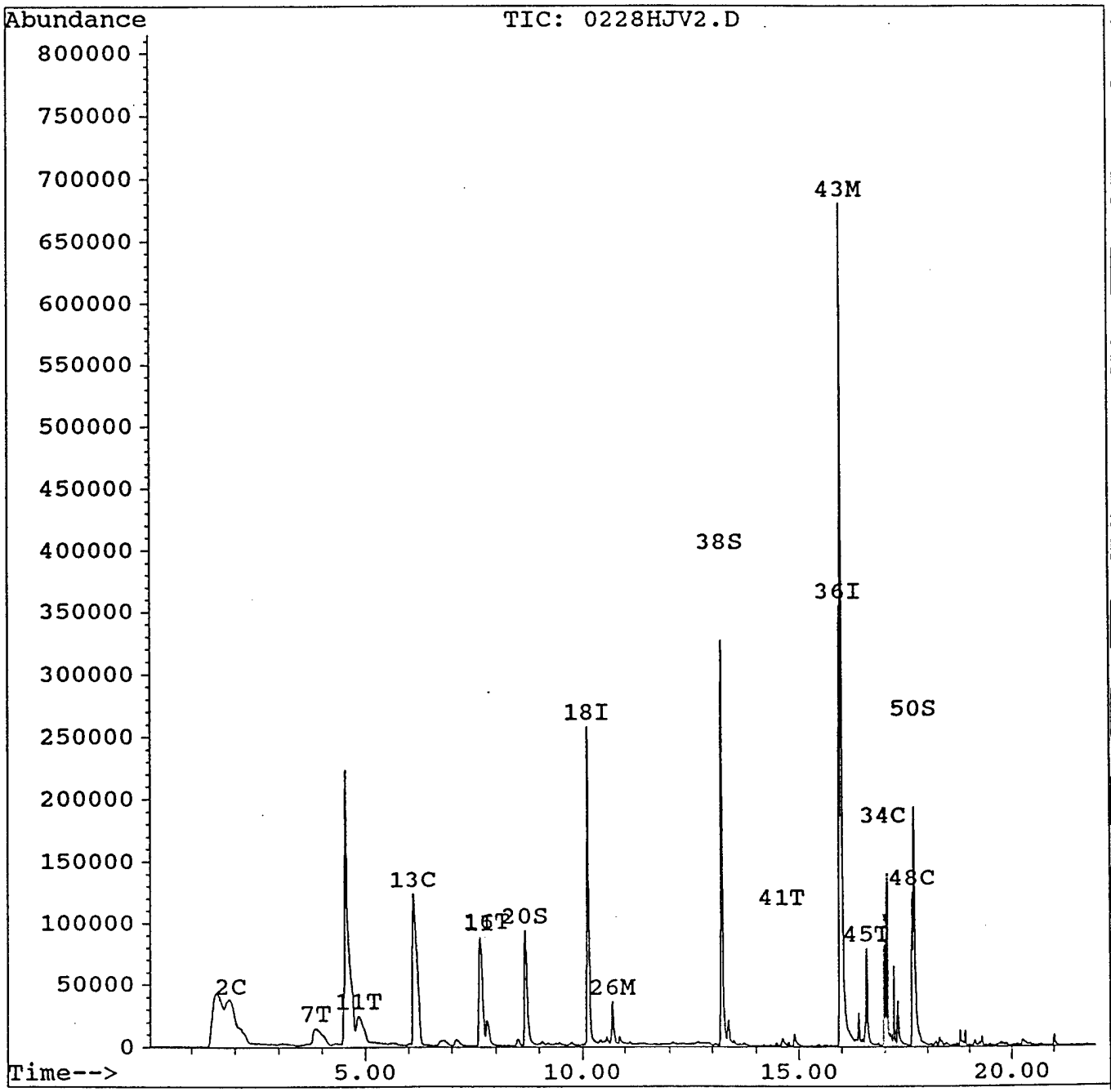
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.63	130	90054	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.12	114	312779	50.00	ug/l	0.
36) Chlorobenzene-d5	15.95	117	211491	50.00	ug/l	0.
System Monitoring Compounds						%Recove
20) 1,2-Dichloroethane-d4	8.68	65	200371	70.12	ug/l	140.
38) Toluene-d8	13.22	98	302162	52.04	ug/l	104.
50) Bromofluorobenzene	17.70	95	112942	48.32	ug/l	96.
Target Compounds						Qval
7) Acetone	3.80	43	1348399	247.88	ug/l	
11) Methylene chloride	4.84	84	40540	11.90	ug/l	#
19) 2-Butanone	7.04	43	40774	12.21	ug/l	m
22) Benzene	9.06	78	40027	5.80	ug/l	#
26) Trichloroethene	10.70	130	17700	8.86	ug/l	
45) M&P-Xylene	16.57	106	23542	7.54	ug/l	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV2.D
Acq Time : 28 Feb 94 9:35 am Operator: HJV
Sample : SPCC 100PPB Inst : GC/MS
Misc : 5mL MILLI Q WATER + 2.5uL SPCC + 10uLINT Multiplr: 1.00
Quant Time: Feb 28 11:13 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV2.D
Acq Time : 28 Feb 94 9:35 am Operator: HJV
Sample : SPCC 100PPB Inst : GC/MS
Misc : 5mL MILLI Q WATER + 2.5uL SPCC + 10uLINT Multiplr: 1.00
Quant Time: Feb 28 11:13 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(.
1) Bromochloromethane	7.64	130	86308	50.00	ug/l	0
18) 1,4-Difluorobenzene	10.12	114	294042	50.00	ug/l	0
36) Chlorobenzene-d5	15.96	117	240498	50.00	ug/l	0
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.69	65	178272	66.36	ug/l	132
38) Toluene-d8	13.22	98	311597	47.19	ug/l	94
50) Bromofluorobenzene	17.71	95	112331	42.26	ug/l	84
Target Compounds						Qva
2) Chloromethane	1.92	50	147967	118.38	ug/l	m
7) Acetone	3.86	43	135376	25.97	ug/l	m
11) Methylene chloride	4.85	84	39079	11.97	ug/l	m
13) 1,1-Dichloroethane	6.11	63	433139	108.16	ug/l	
16) Chloroform	7.80	83	35205	6.64	ug/l	m
26) Trichloroethene	10.70	130	18189	9.68	ug/l	
34) Bromoform	16.98	173	87072	62.82	ug/l	m
41) 2-Hexanone	14.61	43	11299	6.61	ug/l	#
43) Chlorobenzene	16.00	112	417861	94.25	ug/l	m
45) M&P-Xylene	16.57	106	22764	6.41	ug/l	
48) 1,1,2,2-Tetrachloroethane	17.66	83	108713	70.19	ug/l	m

Calculation of Response Factors:

(1) Chloromethane $\frac{147967 \times 50}{86308 \times 100} = 0.86$ ✓

(2) 1,1-Dichloroethane $\frac{433139 \times 50}{86308 \times 100} = 2.50$ ✓

(3) Bromoform = $\frac{87072 \times 50}{294042 \times 100} = 0.150$ < cnt

(4) Chlorobenzene = $\frac{417861 \times 50}{240498 \times 100} = 0.87$ ✓

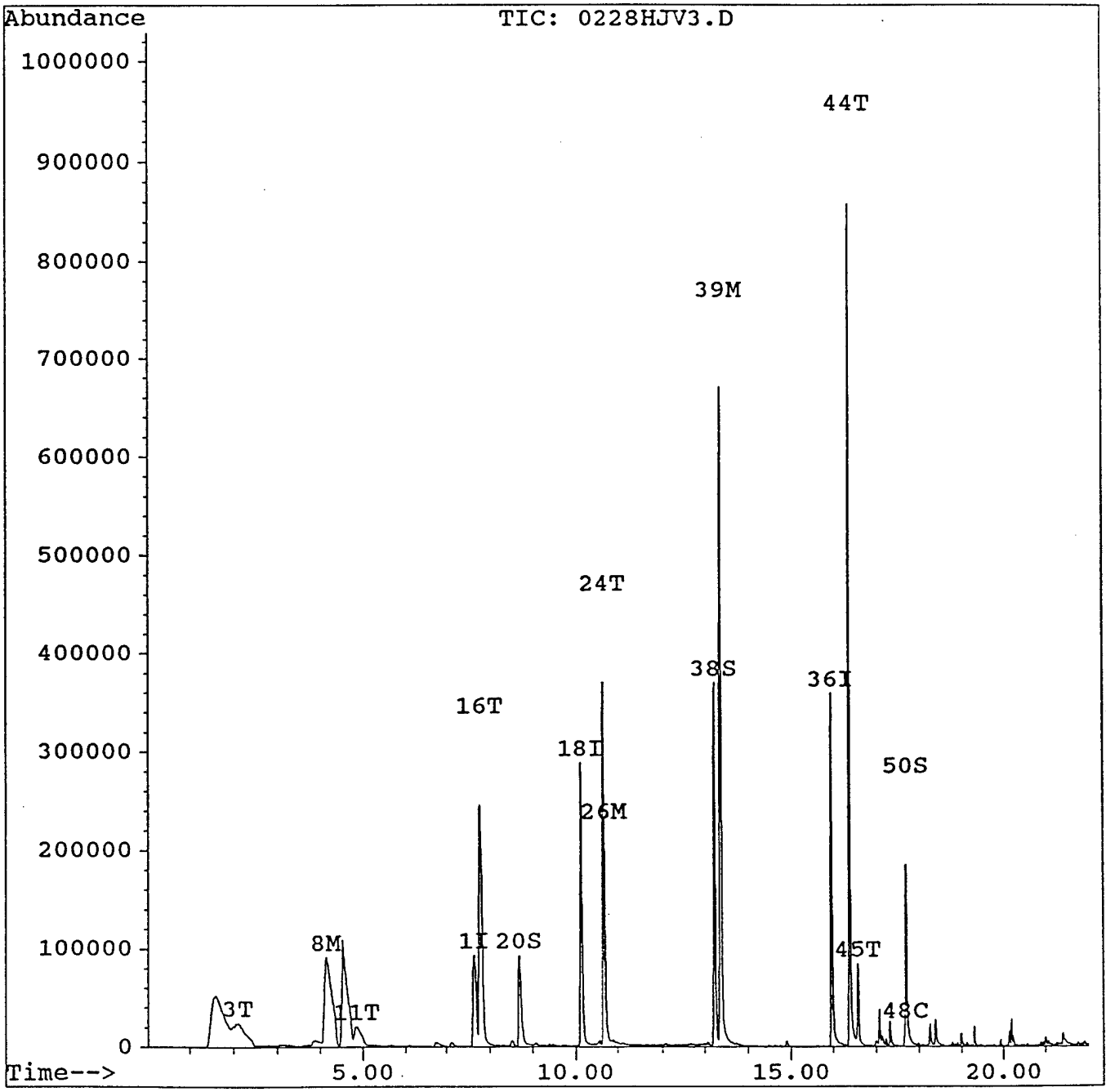
(5) 1,1,2,2 Tetrachloroethane = $\frac{108713 \times 50}{240498 \times 100} = 0.23$ < cnt.

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV3.D
Acq Time : 28 Feb 94 10:07 am Operator: HJV
Sample : CCC 100PPB Inst : GC/MS
Misc : 5mL WATER + 2.5uL CCC + 10uL INTSTD/SURR Multiplr: 1.00
Quant Time: Feb 28 11:17 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV3.D
Acq Time : 28 Feb 94 10:07 am Operator: HJV
Sample : CCC 100PPB Inst : GC/MS
Misc : 5mL WATER + 2.5uL CCC + 10uL INTSTD/SURR Multiplr: 1.00
Quant Time: Feb 28 11:17 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(
1) Bromochloromethane	7.64	130	87575	50.00	ug/l	0
18) 1,4-Difluorobenzene	10.12	114	330861	50.00	ug/l	0
36) Chlorobenzene-d5	15.95	117	253687	50.00	ug/l	0
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.69	65	181852	60.16	ug/l	120
38) Toluene-d8	13.23	98	344647	49.48	ug/l	98
50) Bromofluorobenzene	17.70	95	101377	36.16	ug/l	72
Target Compounds						Qva
3) Vinyl chloride	2.11	62	229261	110.10	ug/l	m
8) 1,1-Dichloroethene	4.15	61	406903	107.37	ug/l	m
11) Methylene chloride	4.86	84	39787	12.01	ug/l	m
16) Chloroform	7.78	83	496318	92.23	ug/l	m
24) 1,2-Dichloropropane	10.65	63	173615	105.04	ug/l	#
26) Trichloroethene	10.68	130	17396	8.23	ug/l	#
39) Toluene	13.37	92	407132	80.73	ug/l	m
44) Ethylbenzene	16.38	106	198013	87.33	ug/l	m
45) M&P-Xylene	16.57	106	24523	6.54	ug/l	m
48) 1,1,2,2-Tetrachloroethane	17.67	83	13803	8.45	ug/l	m

Calculation of Response Factor: Percent Diffe

(1) Vinyl chloride = $\frac{229261 \times 50}{87575 \times 100} = 1.3089$ $\frac{1.189 - 1.3089 \times 100}{1.189} =$

(2) 1,1 Dichloroethene = $\frac{406903 \times 50}{87575 \times 100} = 2.3232$ $\frac{2.164 - 2.3232 \times 100}{2.164} = 7.$

(3) Chloroform = $\frac{496318 \times 50}{87575 \times 100} = 2.8337$ $\frac{3.073 - 2.8337 \times 100}{3.073} =$

(4) 1,2-Dichloropropane = $\frac{173615 \times 50}{330861 \times 100} = 0.2624$ $\frac{0.250 - 0.2624 \times 100}{0.250} =$

(5) Toluene = $\frac{407132 \times 50}{253687 \times 100} = 0.8024$ $\frac{0.994 - 0.8024 \times 100}{0.994} = 19.$

(6) Ethyl benzene = $\frac{198013 \times 50}{253687 \times 100} = 0.3903$ $\frac{0.447 - 0.3903 \times 100}{0.447} = 12.$

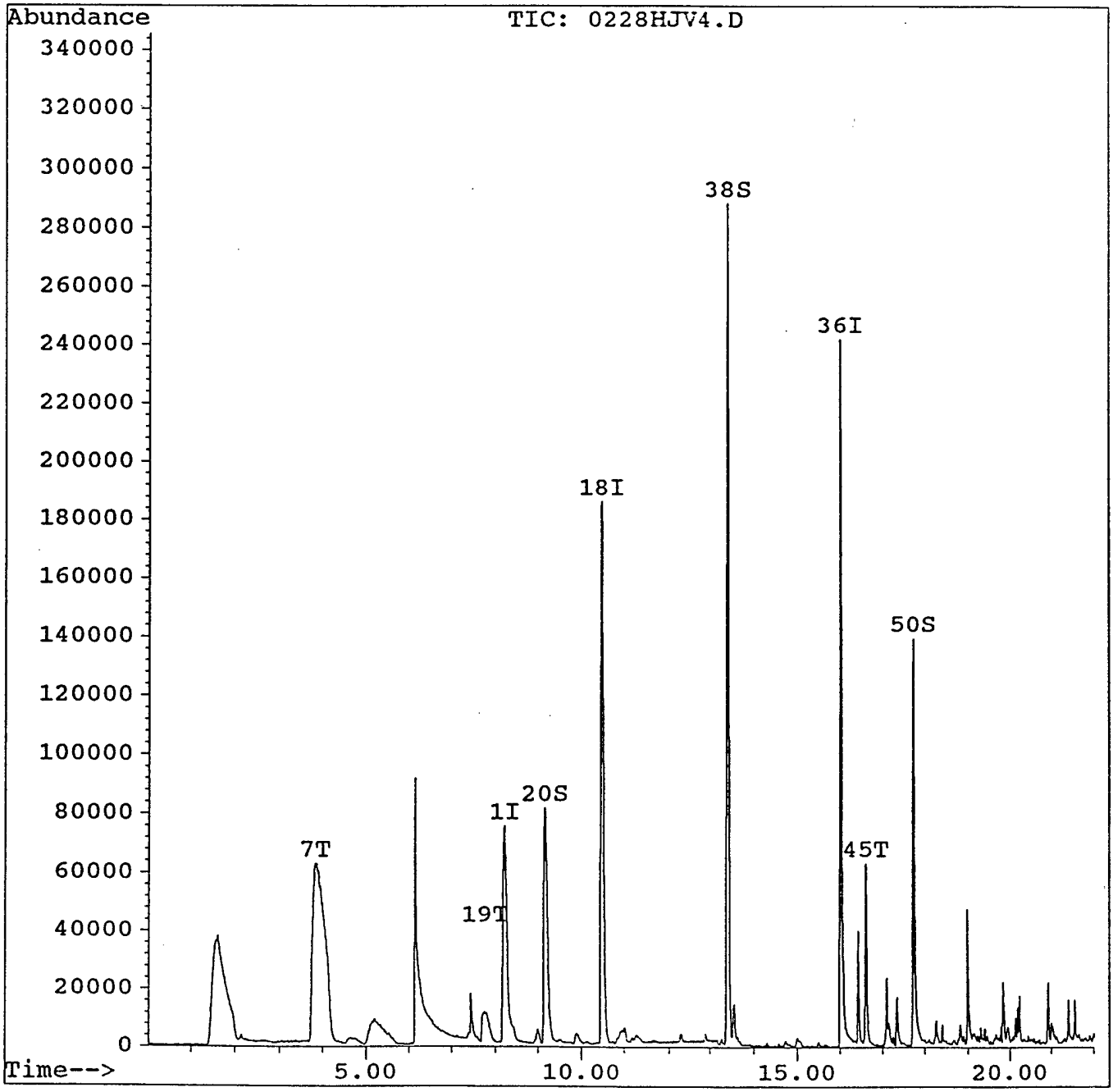
ccc's All Cleared

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV4.D
Acq Time : 28 Feb 94 10:40 am Operator: HJV
Sample : 9402010531 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Feb 28 14:55 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV4.D
Acq Time : 28 Feb 94 10:40 am Operator: HJV
Sample : 9402010531 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Feb 28 14:55 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

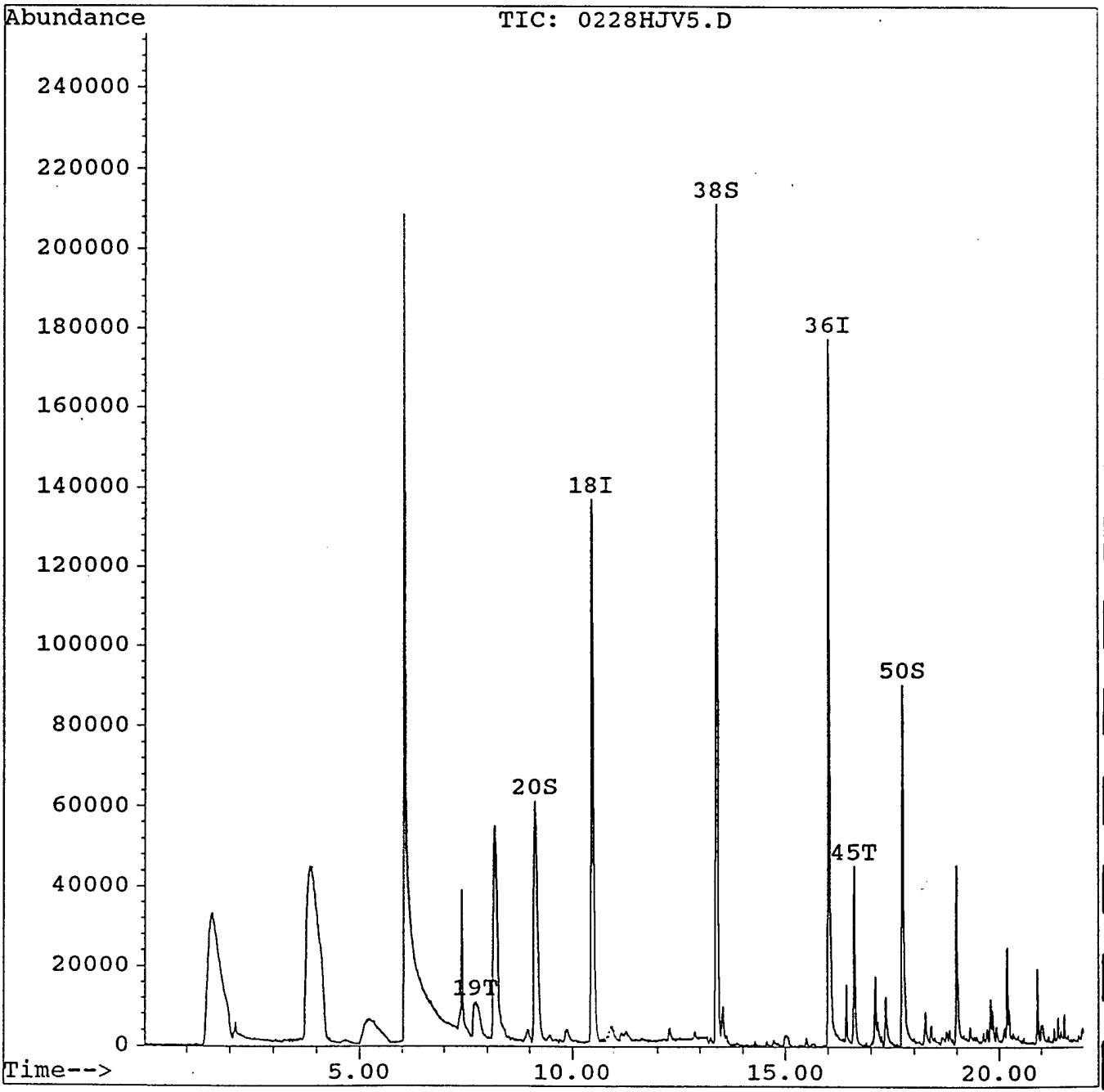
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Mi
1) Bromochloromethane	8.21	130	84177	50.00	ug/l	0.59
18) 1,4-Difluorobenzene	10.46	114	300814	50.00	ug/l	0.3
36) Chlorobenzene-d5	16.02	117	207223	50.00	ug/l	0.0
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	9.14	65	173691	63.20	ug/l	126.4
38) Toluene-d8	13.40	98	297867	52.35	ug/l	104.7%
50) Bromofluorobenzene	17.73	95	102715	44.85	ug/l	89.6%
Target Compounds						Qvalue
7) Acetone	3.84	43	805485	158.41	ug/l m	70
19) 2-Butanone	7.78	43	79651	24.81	ug/l m	7
45) M&P-Xylene	16.61	106	22596	7.38	ug/l m	9

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV5.D
Acq Time : 28 Feb 94 11:14 am Operator: HJV
Sample : 9402010532 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:04 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV5.D
Acq Time : 28 Feb 94 11:14 am Operator: HJV
Sample : 9402010532 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:04 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

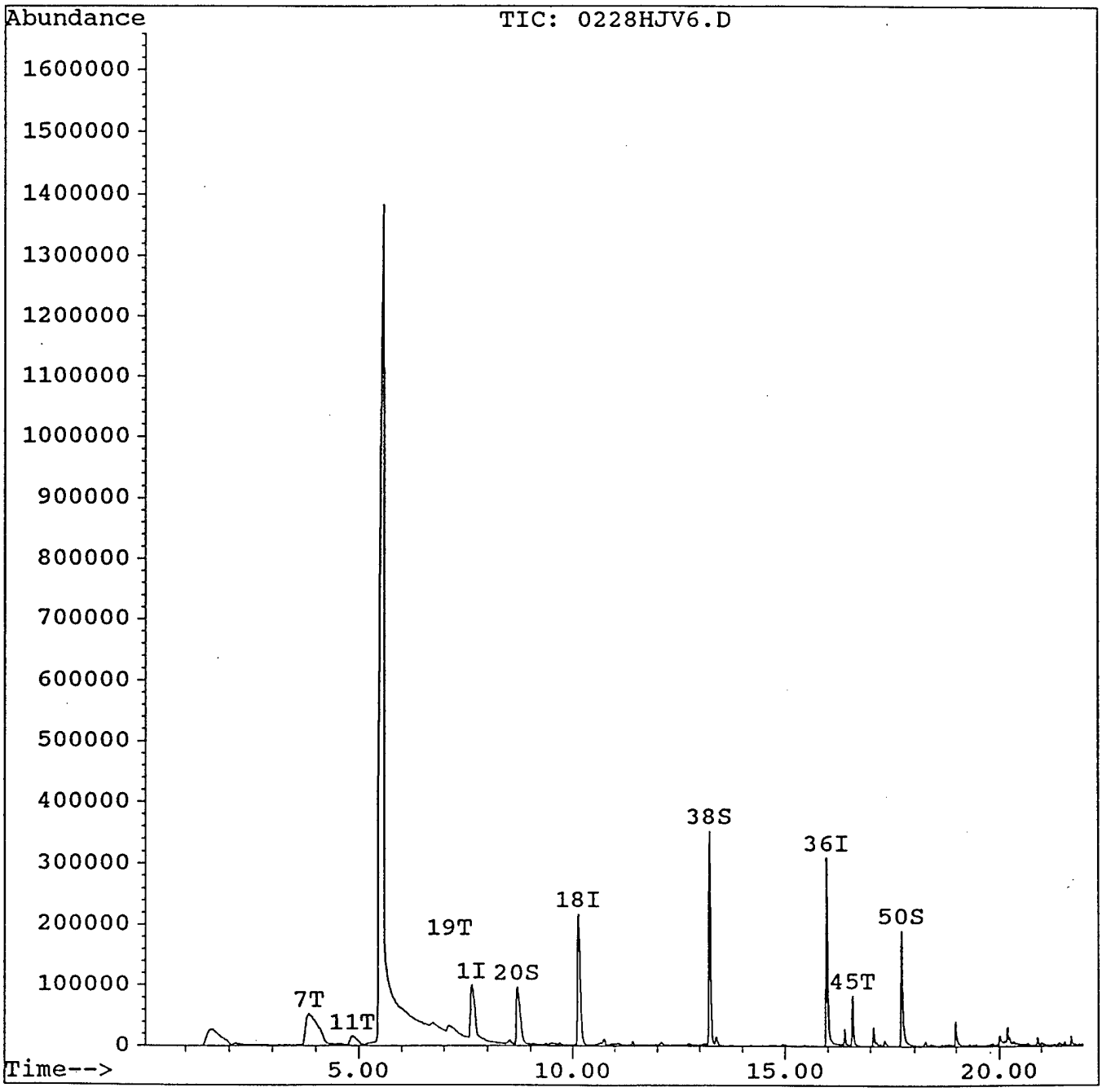
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	0.00	130	0	0.00	ug/l	-7.6
18) 1,4-Difluorobenzene	10.45	114	221574	50.00	ug/l	0.
36) Chlorobenzene-d5	16.01	117	136571	50.00	ug/l	0.
System Monitoring Compounds						%Recove
20) 1,2-Dichloroethane-d4	9.12	65	129715	64.08	ug/l	128.
38) Toluene-d8	13.39	98	217191	57.92	ug/l	115.8
50) Bromofluorobenzene	17.73	95	72452	48.00	ug/l	96.
Target Compounds						Qvalu
19) 2-Butanone	7.72	43	65178	27.56	ug/l m	9
45) M&P-Xylene	16.60	106	15827	7.85	ug/l	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV6.D
Acq Time : 28 Feb 94 11:48 am Operator: HJV
Sample : 9402010533 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:08 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV6.D
Acq Time : 28 Feb 94 11:48 am Operator: HJV
Sample : 9402010533 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:08 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

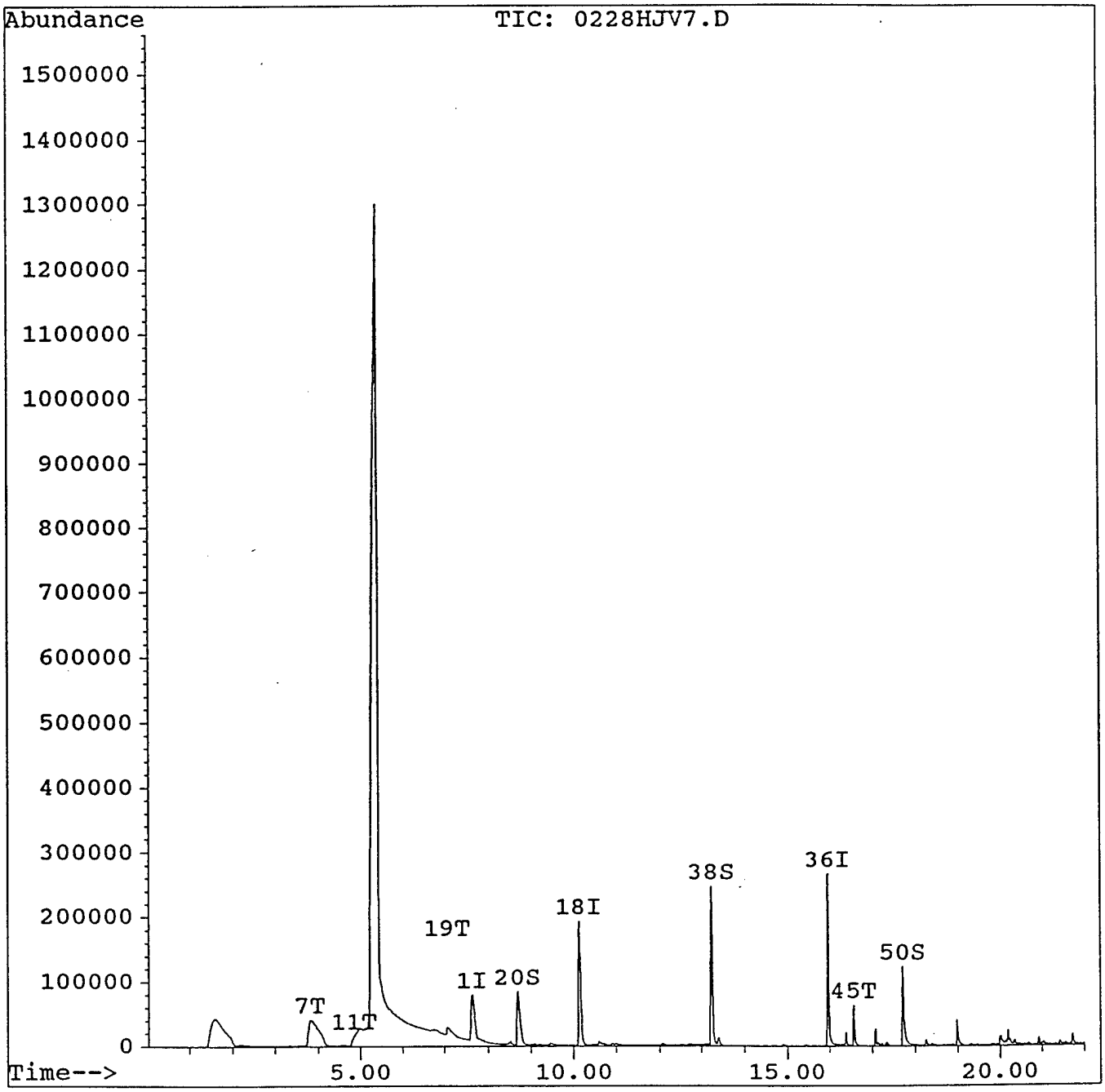
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(M
1) Bromochloromethane	7.64	130	100102	50.00	ug/l		0.02
18) 1,4-Difluorobenzene	10.13	114	362356	50.00	ug/l		0.03
36) Chlorobenzene-d5	15.97	117	272404	50.00	ug/l		0.03
System Monitoring Compounds							%Recove
20) 1,2-Dichloroethane-d4	8.69	65	213616	64.53	ug/l		129.05
38) Toluene-d8	13.24	98	368538	49.28	ug/l		98.55
50) Bromofluorobenzene	17.71	95	125363	41.64	ug/l		83.27
Target Compounds							Qvalue
7) Acetone	3.85	43	661921	109.47	ug/l	m	65
11) Methylene chloride	4.85	84	35670	9.42	ug/l		1
19) 2-Butanone	7.11	43	111634	28.86	ug/l	m	93
45) M&P-Xylene	16.58	106	29778	7.40	ug/l		82

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV7.D
Acq Time : 28 Feb 94 12:22 pm Operator: HJV
Sample : 9402010534 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:14 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV7.D
Acq Time : 28 Feb 94 12:22 pm Operator: HJV
Sample : 9402010534 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:14 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

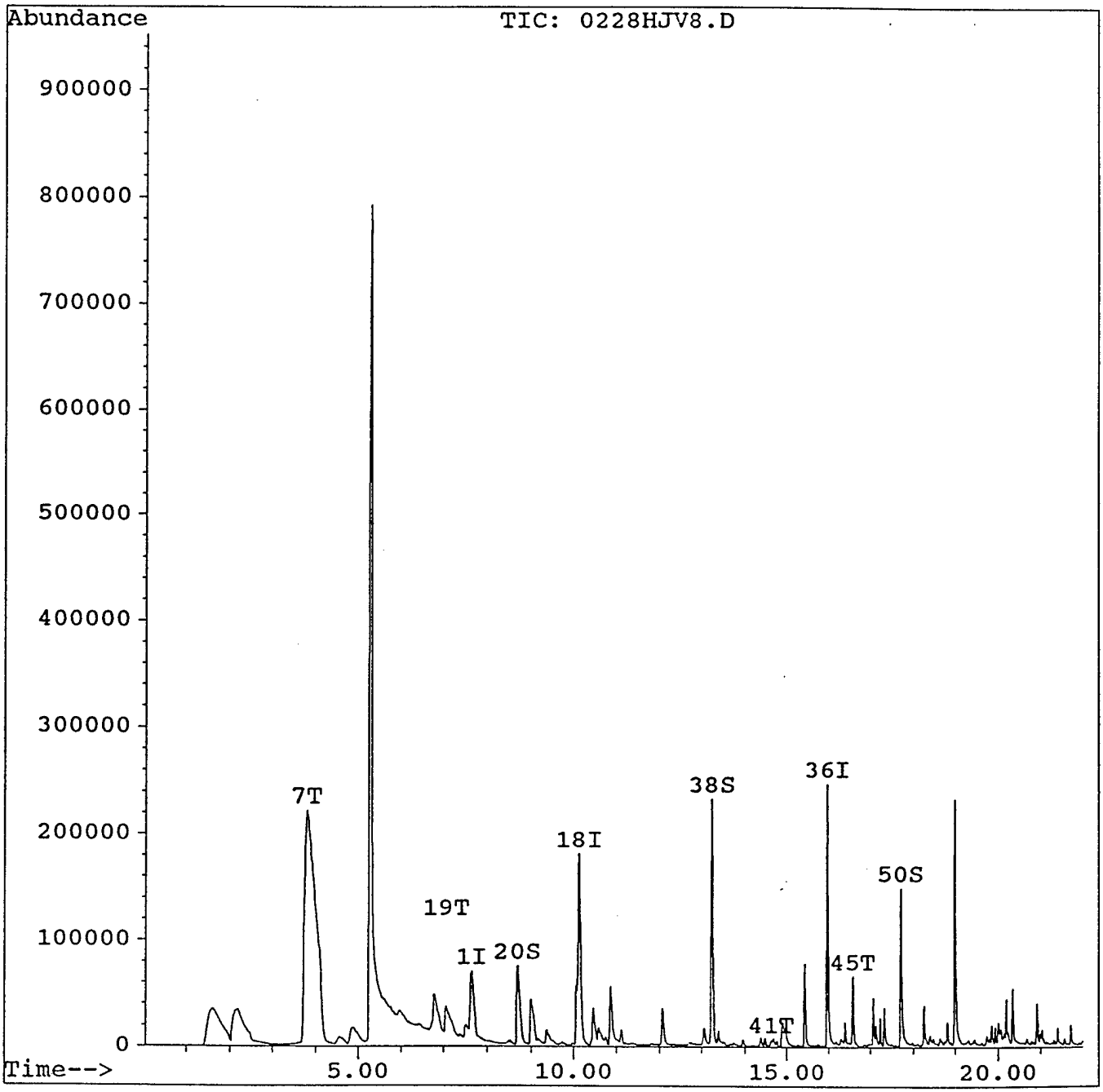
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.63	130	71444	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.13	114	259415	50.00	ug/l	0.
36) Chlorobenzene-d5	15.96	117	190859	50.00	ug/l	0.0
System Monitoring Compounds						%Recove
20) 1,2-Dichloroethane-d4	8.69	65	132000	55.69	ug/l	111.
38) Toluene-d8	13.24	98	231936	44.26	ug/l	88.5
50) Bromofluorobenzene	17.72	95	86500	41.01	ug/l	82.
Target Compounds						Qvalue
7) Acetone	3.82	43	432859	100.30	ug/l m	
11) Methylene chloride	4.84	84	25962	9.61	ug/l	
19) 2-Butanone	7.06	43	85052	30.72	ug/l m	
45) M&P-Xylene	16.57	106	20436	7.25	ug/l	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV8.D
Acq Time : 28 Feb 94 12:55 pm Operator: HJV
Sample : 9402010535 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:18 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV8.D
Acq Time : 28 Feb 94 12:55 pm Operator: HJV
Sample : 9402010535 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:18 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

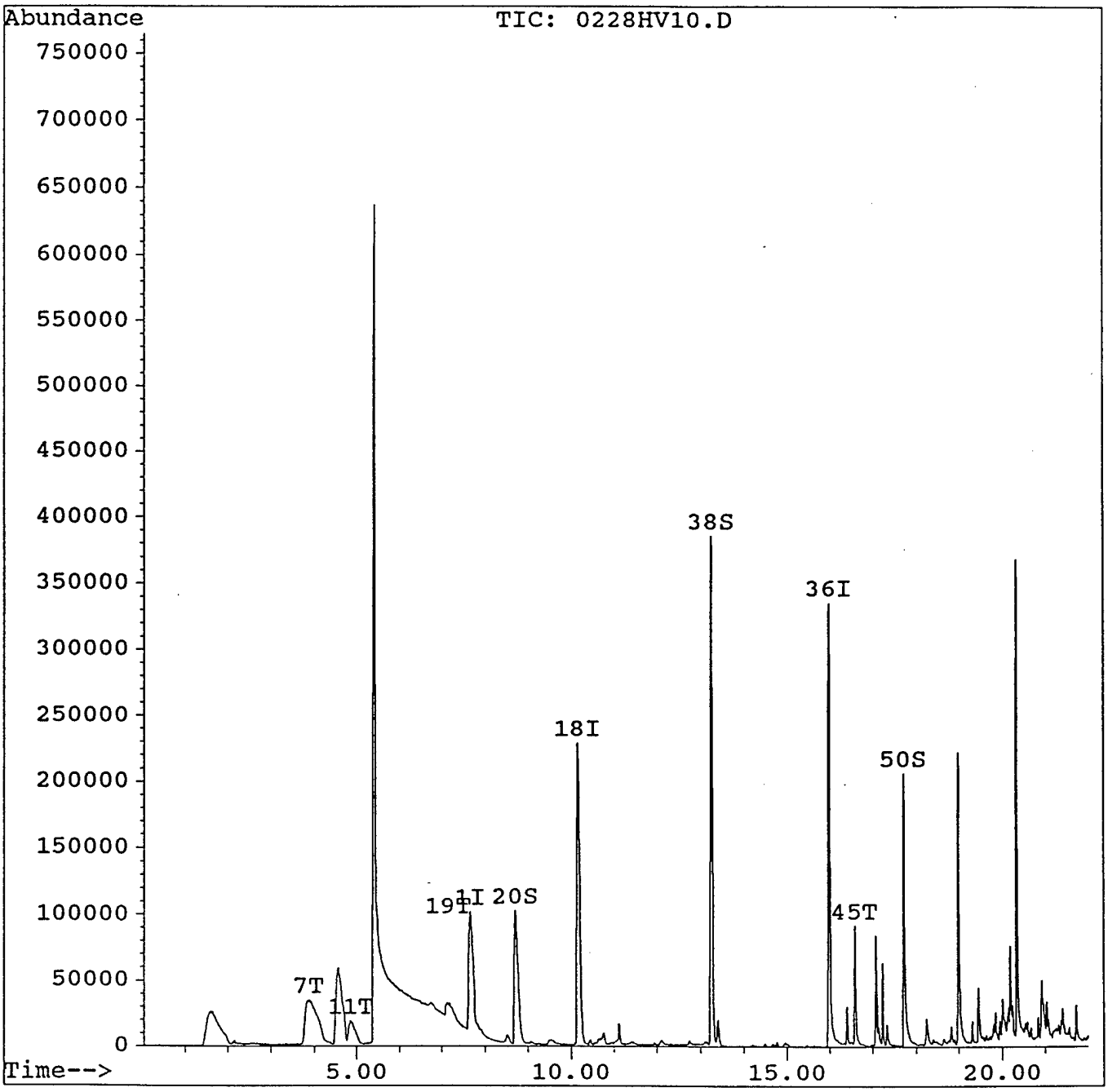
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(I
1) Bromochloromethane	7.64	130	65499	50.00	ug/l	0.(
18) 1,4-Difluorobenzene	10.14	114	243824	50.00	ug/l	0
36) Chlorobenzene-d5	15.97	117	186695	50.00	ug/l	0
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.70	65	129178	57.99	ug/l	115
38) Toluene-d8	13.24	98	218739	42.67	ug/l	85.
50) Bromofluorobenzene	17.71	95	89013	43.14	ug/l	86
Target Compounds						Qva
7) Acetone	3.80	43	2535303	640.79	ug/l	
19) 2-Butanone	7.05	43	125421	48.19	ug/l	m
41) 2-Hexanone	14.63	43	6731	5.07	ug/l	m
45) M&P-Xylene	16.58	106	20582	7.46	ug/l	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV10.D
Acq Time : 28 Feb 94 2:03 pm Operator: HJV
Sample : 9402010537 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:24 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV10.D
Acq Time : 28 Feb 94 2:03 pm Operator: HJV
Sample : 9402010537 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:24 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.65	130	108749	50.00	ug/l	0.0
18) 1,4-Difluorobenzene	10.14	114	394255	50.00	ug/l	0.
36) Chlorobenzene-d5	15.98	117	286850	50.00	ug/l	0.
System Monitoring Compounds						%Recove
20) 1,2-Dichloroethane-d4	8.70	65	216963	60.23	ug/l	120.
38) Toluene-d8	13.25	98	405599	51.50	ug/l	103.0
50) Bromofluorobenzene	17.72	95	131463	41.47	ug/l	82.
Target Compounds						Qvalue
7) Acetone	3.87	43	448048	68.21	ug/l m	65
11) Methylene chloride	4.86	84	38653	9.40	ug/l m	
19) 2-Butanone	7.14	43	96067	22.83	ug/l m	
45) M&P-Xylene	16.58	106	31295	7.39	ug/l	77

(#) = qualifier out of range (m) = manual integration

Simulate Run Sequence Mon Feb 28 14:33:46 1994

Sequence Name: C:\HPCHEM\1\SEQUENCE\0228VOL2.S
Comment:
Operator: HJV
Data Path: C:\HPCHEM\1\DATA\022894\
Method Path: C:\HPCHEM\1\METHODS\

Line	Type	Vial	DataFile	Method	Sample Name
1)	Sample	1	0228HV11	8240	9402010538
2)	Sample	1	0228HV12	8240	9402010539
3)	Sample	1	0228HV13	8240	9402010540
4)	Sample	1	0228HV14	8240	9402010541
5)	Sample	1	0228HV15	8240	9402010542
6)	Sample	1	0228HV16	8240	9402010543
7)	Sample	1	0228HV17	8240	9402010544

Bytes Needed: 350000 Space on drive C: 39829504
Sequence Verification Done!

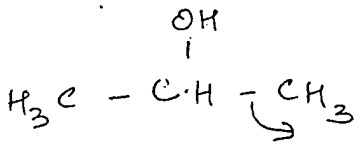
Information from Data File:

File:	C:\HPCHEM\1\DATA\022894\0228HV10.D
Operator:	HJV
Date Acquired:	28 Feb 94 2:03 pm
Method File:	8240
Sample Name:	9402010537
Misc Info:	5g SAMPLE + 5mL WATER WITH 10uL INTSTD/SURR.
Vial Number:	1

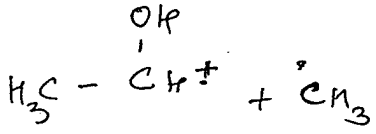
Search Libraries: C:\DATABASE\NBS54K.L Minimum Quality: 50

Unknown Spectrum: Apex
Integration Events: AutoIntegrate

Pk#	RT	Area%	Library/ID	Ref#	CAS#	Qual
1	5.42	100.00	C:\DATABASE\NBS54K.L 2-Propanol	123	000067-63-0	78



(2-propanol)



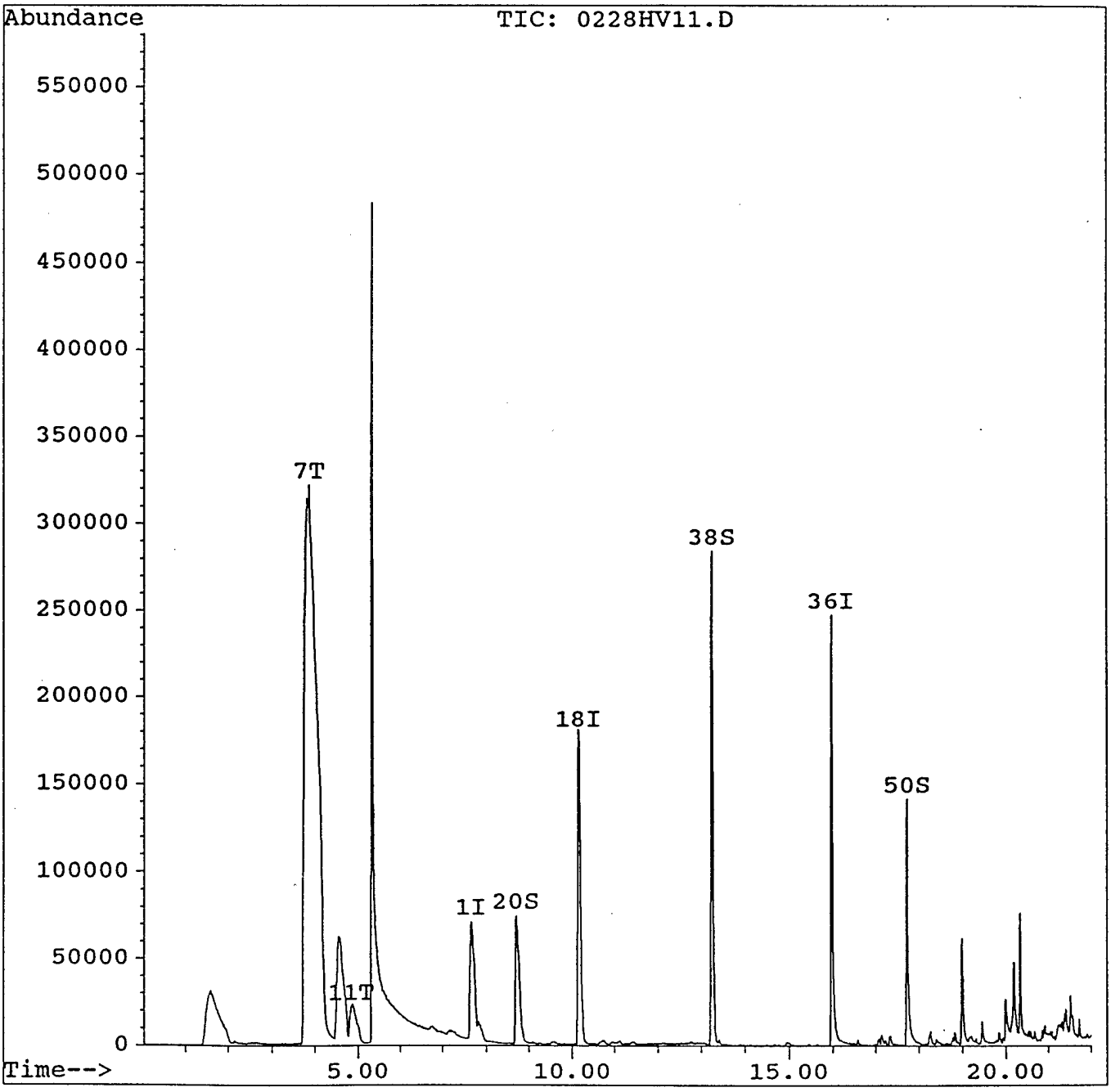
C_3H_8O

$3 \times 6 = 18$
$1 \times 16 = 16$
$1 \times 8 = 8$
60

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV11.D
Acq Time : 28 Feb 94 2:49 pm Operator: HJV
Sample : 9402010538 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:27 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV11.D
Acq Time : 28 Feb 94 2:49 pm Operator: HJV
Sample : 9402010538 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:27 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.65	130	80639	50.00	ug/l	0.0
18) 1,4-Difluorobenzene	10.16	114	306624	50.00	ug/l	0.
36) Chlorobenzene-d5	15.97	117	213559	50.00	ug/l	0.
System Monitoring Compounds						%Recove
20) 1,2-Dichloroethane-d4	8.71	65	176697	63.08	ug/l	126.
38) Toluene-d8	13.25	98	300910	51.32	ug/l	102.6
50) Bromofluorobenzene	17.72	95	96194	40.75	ug/l	81.5
Target Compounds						Qval
7) Acetone	3.87	43	4180164	858.16	ug/l	m 3
11) Methylene chloride	4.83	84	51907	17.02	ug/l	

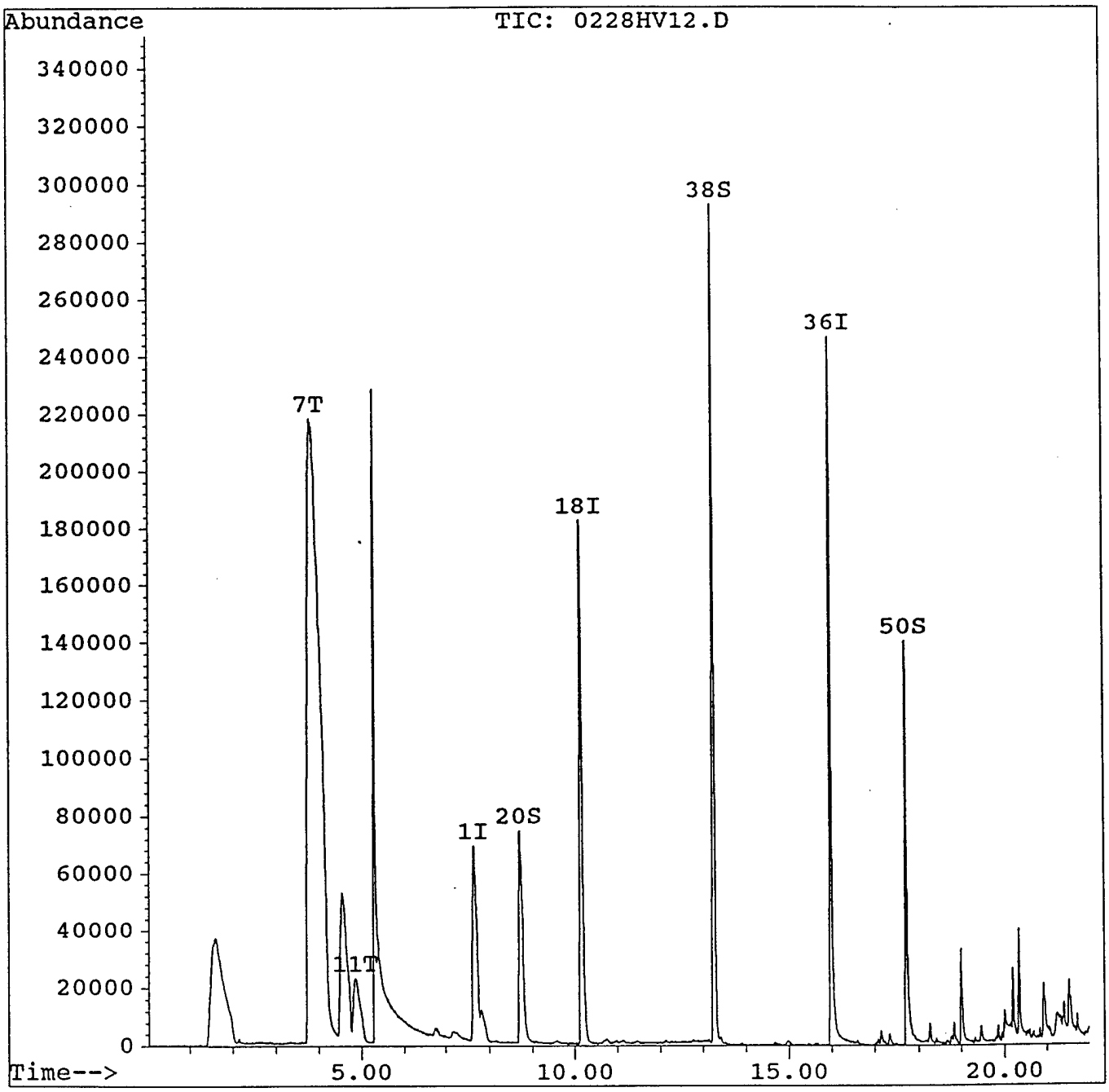
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV12.D
Acq Time : 28 Feb 94 3:23 pm
Sample : 9402010539
Misc : 5g SAMPLE + 5mL WATER WITH 10uLINTSTD/S
Quant Time: Mar 2 8:30 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV12.D
Acq Time : 28 Feb 94 3:23 pm Operator: HJV
Sample : 9402010539 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uLINTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:30 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

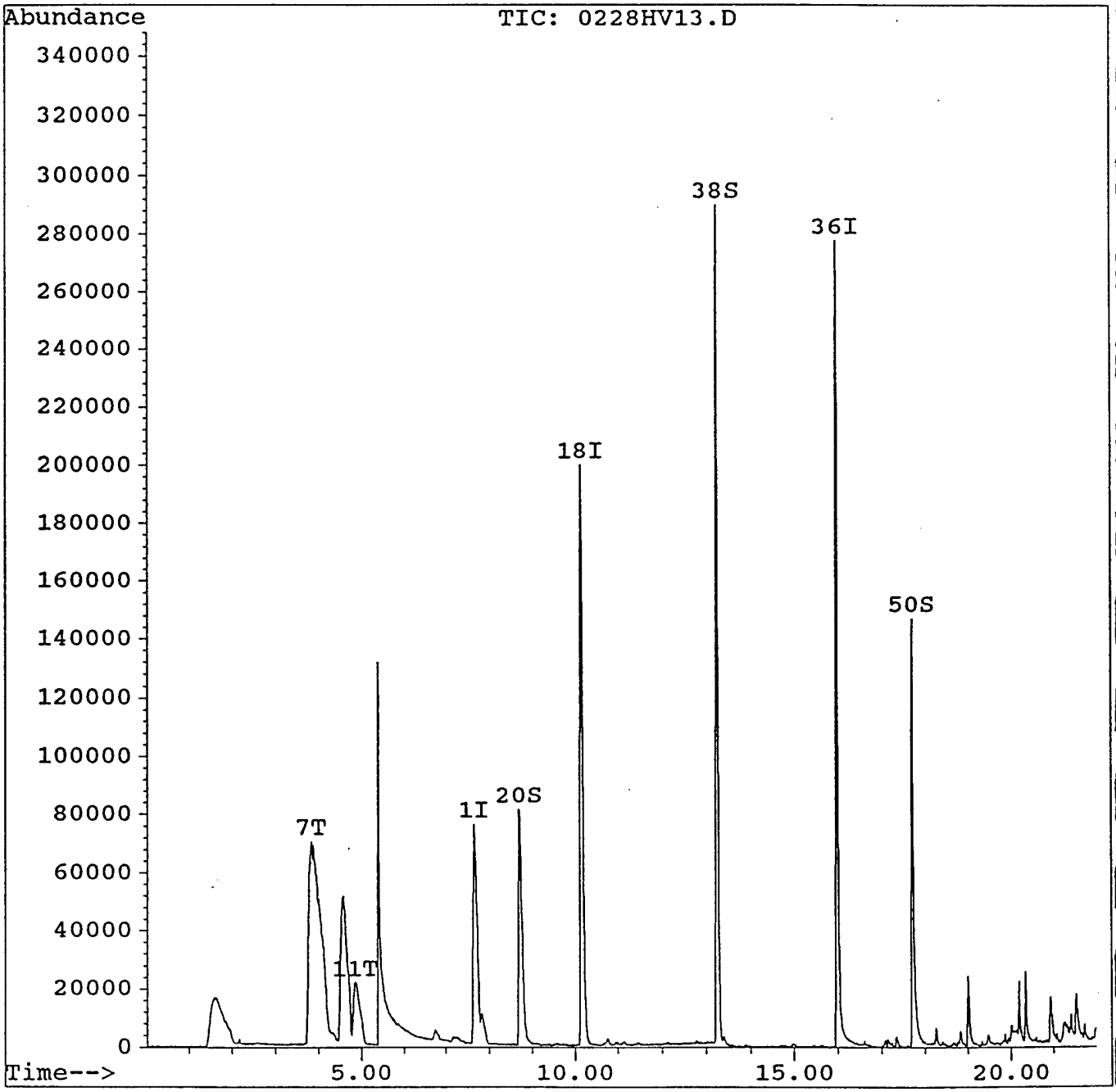
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.67	130	81558	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.15	114	311647	50.00	ug/l	0.
36) Chlorobenzene-d5	15.97	117	218788	50.00	ug/l	0.
System Monitoring Compounds						%Recove
20) 1,2-Dichloroethane-d4	8.71	65	175580	61.67	ug/l	123.
38) Toluene-d8	13.25	98	306975	51.10	ug/l	102.
50) Bromofluorobenzene	17.72	95	101838	42.11	ug/l	84.
Target Compounds						Qval
7) Acetone	3.82	43	2695972	547.23	ug/l	m
11) Methylene chloride	4.87	84	51349	16.65	ug/l	m

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV13.D
Acq Time : 28 Feb 94 3:56 pm Operator: HJV
Sample : 9402010540 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:31 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV13.D
Acq Time : 28 Feb 94 3:56 pm Operator: HJV
Sample : 9402010540 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:31 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

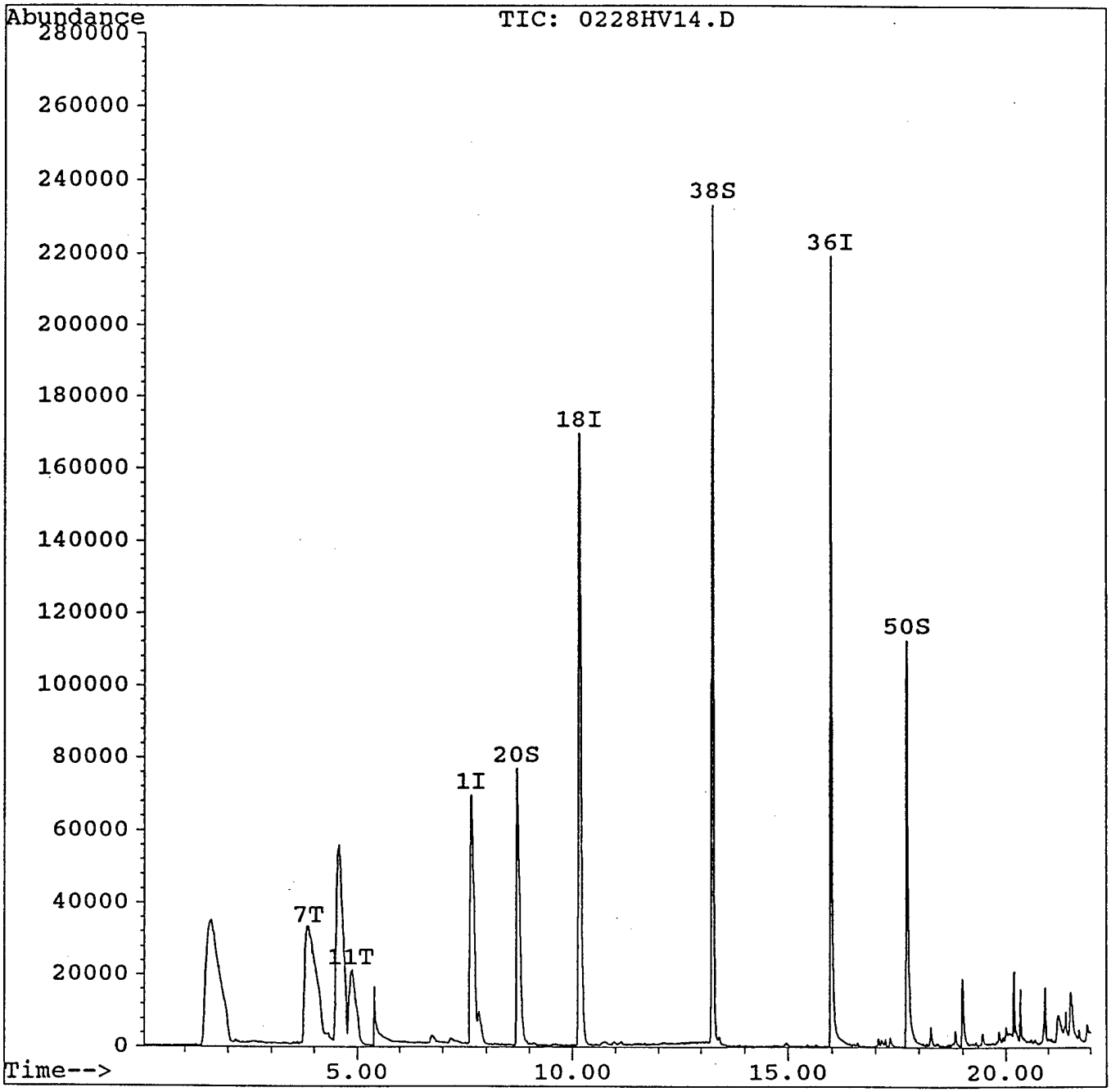
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(
1) Bromochloromethane	7.66	130	86129	50.00	ug/l	0
18) 1,4-Difluorobenzene	10.15	114	319065	50.00	ug/l	0
36) Chlorobenzene-d5	15.97	117	240486	50.00	ug/l	0
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.70	65	178248	61.15	ug/l	122
38) Toluene-d8	13.25	98	305277	46.24	ug/l	92
50) Bromofluorobenzene	17.72	95	104281	39.23	ug/l	78
Target Compounds						Qva
7) Acetone	3.84	43	289499	55.64	ug/l	
11) Methylene chloride	4.84	84	50536	15.51	ug/l	m

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV14.D
Acq Time : 28 Feb 94 4:30 pm Operator: HJV
Sample : 9402010541 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:34 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV14.D
Acq Time : 28 Feb 94 4:30 pm Operator: HJV
Sample : 9402010541 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:34 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

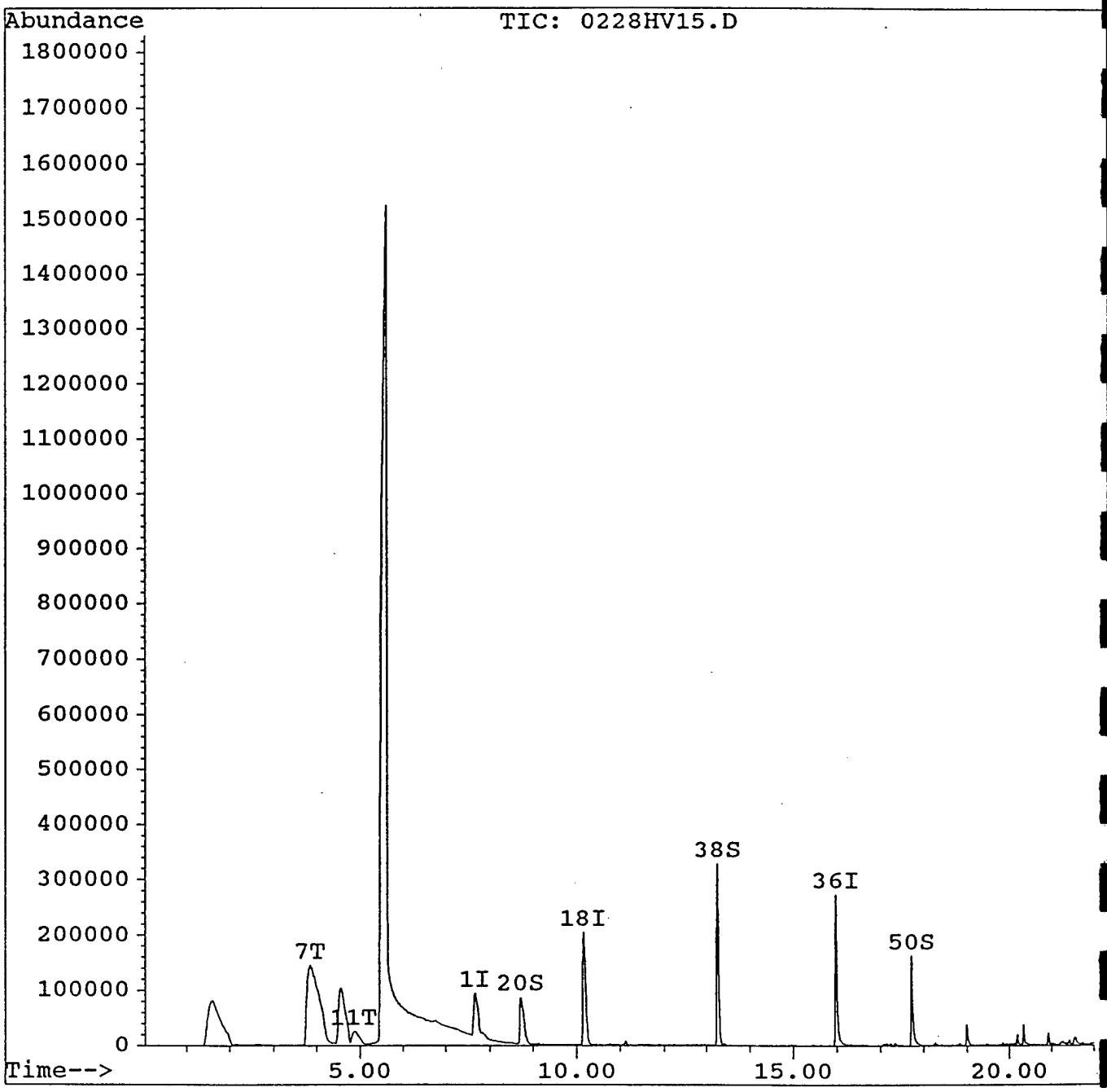
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(I
1) Bromochloromethane	7.66	130	75872	50.00	ug/l	0
18) 1,4-Difluorobenzene	10.15	114	264640	50.00	ug/l	0
36) Chlorobenzene-d5	15.98	117	184195	50.00	ug/l	0
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.71	65	147801	61.13	ug/l	122
38) Toluene-d8	13.26	98	231294	45.74	ug/l	91
50) Bromofluorobenzene	17.72	95	82894	40.72	ug/l	81
Target Compounds						Qva
7) Acetone	3.88	43	399372	87.14	ug/l	m
11) Methylene chloride	4.85	84	45016	15.69	ug/l	m

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV15.D
Acq Time : 28 Feb 94 5:04 pm Operator: HJV
Sample : 9402010542 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:36 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV15.D
Acq Time : 28 Feb 94 5:04 pm Operator: HJV
Sample : 9402010542 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:36 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

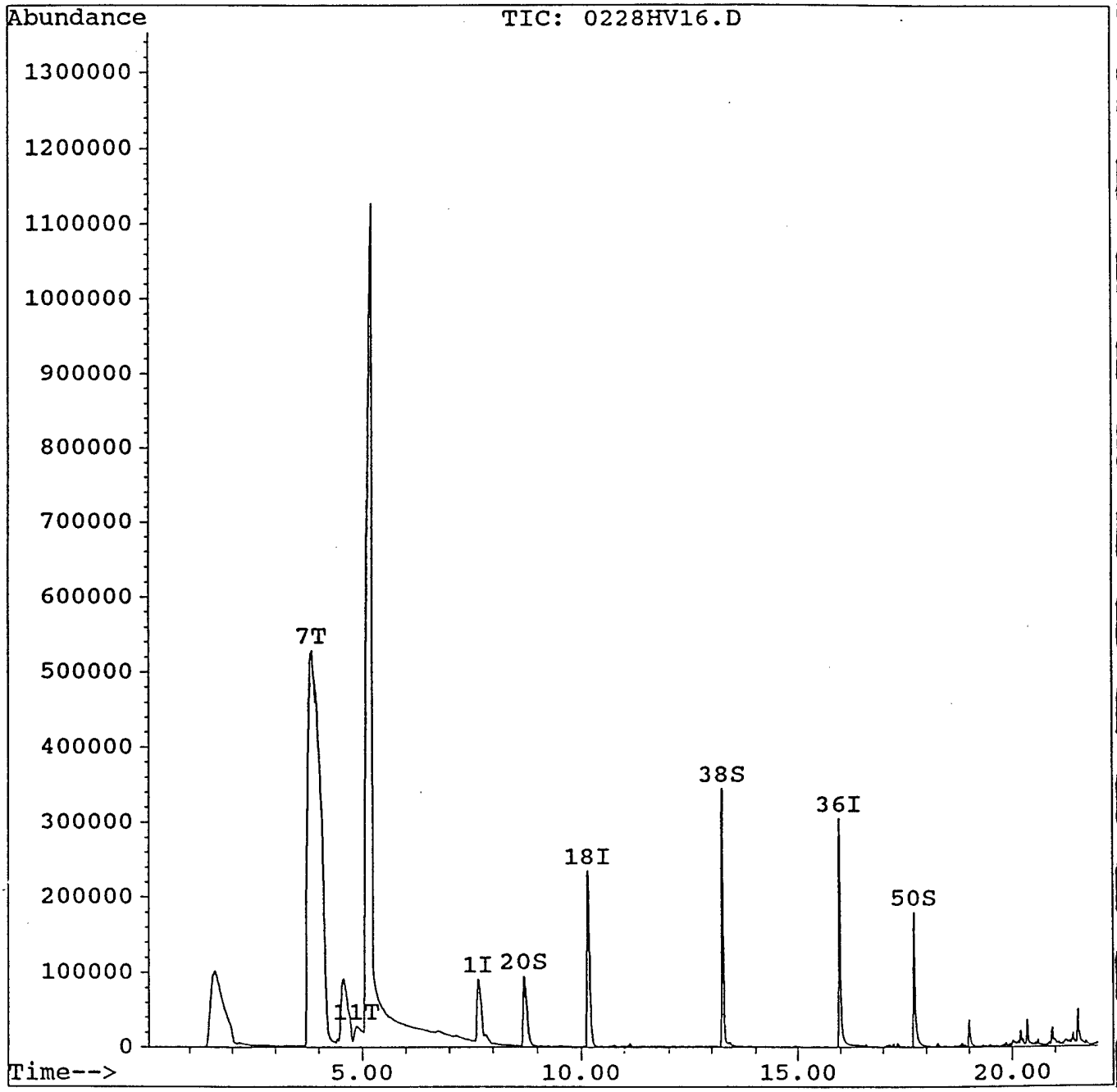
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(R
1) Bromochloromethane	7.66	130	93289	50.00	ug/l	0.0
18) 1,4-Difluorobenzene	10.15	114	351145	50.00	ug/l	0
36) Chlorobenzene-d5	15.98	117	246463	50.00	ug/l	0
System Monitoring Compounds						%Recove
20) 1,2-Dichloroethane-d4	8.71	65	188477	58.75	ug/l	117
38) Toluene-d8	13.26	98	356499	52.68	ug/l	105.3
50) Bromofluorobenzene	17.72	95	108441	39.81	ug/l	79.6
Target Compounds						Qvalu
7) Acetone	3.86	43	1945555	345.25	ug/l m	6
11) Methylene chloride	4.85	84	53330	15.11	ug/l m	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV16.D
Acq Time : 28 Feb 94 5:37 pm Operator: HJV
Sample : 9402010543 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:38 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV16.D
Acq Time : 28 Feb 94 5:37 pm Operator: HJV
Sample : 9402010543 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:38 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

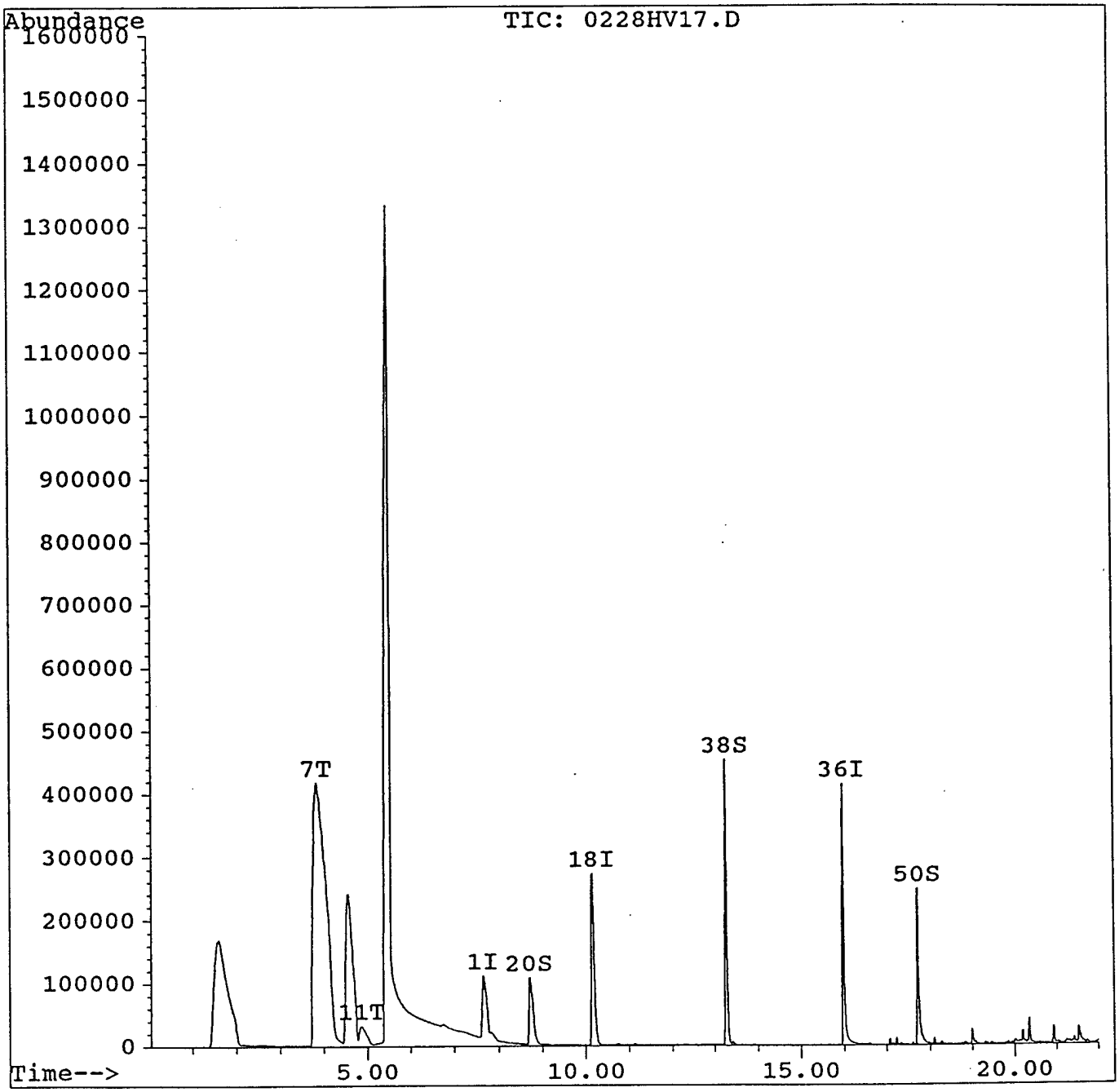
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min
1) Bromochloromethane	7.66	130	96484	50.00	ug/l	0.04
18) 1,4-Difluorobenzene	10.15	114	366230	50.00	ug/l	0.05
36) Chlorobenzene-d5	15.98	117	250551	50.00	ug/l	0.04
System Monitoring Compounds						%Recovery
20) 1,2-Dichloroethane-d4	8.70	65	198333	59.28	ug/l	118.55
38) Toluene-d8	13.25	98	341167	49.60	ug/l	99.19
50) Bromofluorobenzene	17.72	95	115604	41.75	ug/l	83.49
Target Compounds						Qvalue
7) Acetone	3.86	43	6882581	1180.91	ug/l m	7
11) Methylene chloride	4.85	84	56262	15.42	ug/l m	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV17.D
Acq Time : 28 Feb 94 6:11 pm Operator: HJV
Sample : 9402010544 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:40 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

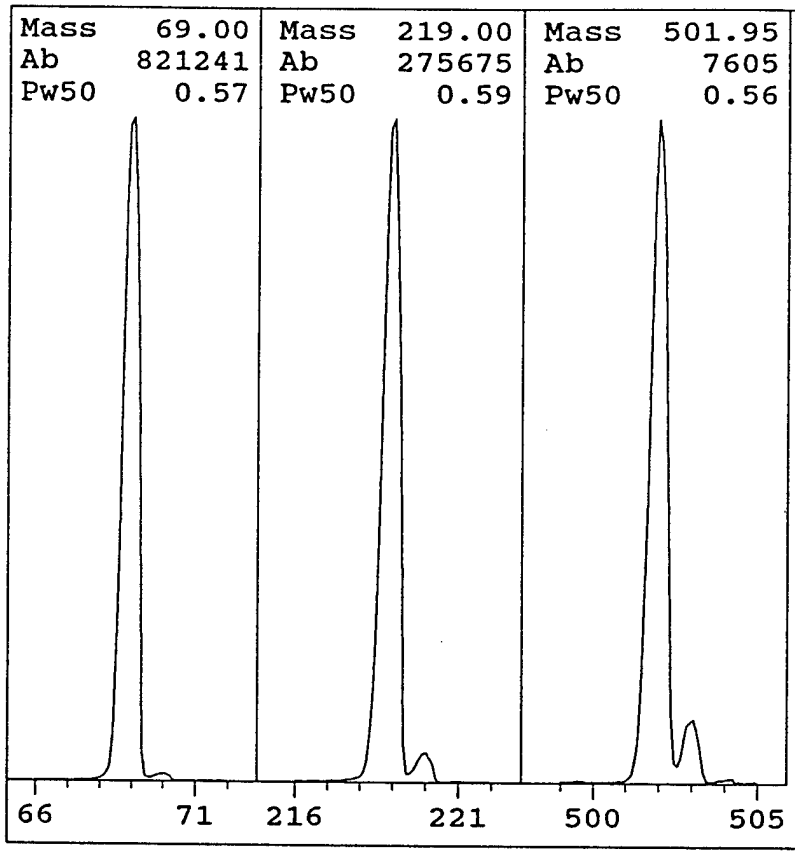
Data File : C:\HPCHEM\1\DATA\022894\0228HV17.D
Acq Time : 28 Feb 94 6:11 pm Operator: HJV
Sample : 9402010544 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:40 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.65	130	117828	50.00	ug/l	0.0
18) 1,4-Difluorobenzene	10.15	114	467685	50.00	ug/l	0.
36) Chlorobenzene-d5	15.98	117	350946	50.00	ug/l	0.
System Monitoring Compounds						%Recove
20) 1,2-Dichloroethane-d4	8.70	65	239897	56.14	ug/l	112.
38) Toluene-d8	13.26	98	476232	49.43	ug/l	98.8
50) Bromofluorobenzene	17.72	95	159843	41.21	ug/l	82.
Target Compounds						Qvalu
7) Acetone	3.85	43	5694580	800.08	ug/l m	8
11) Methylene chloride	4.86	84	70269	15.77	ug/l	

HP5971 BFB Dynamic Target Tune

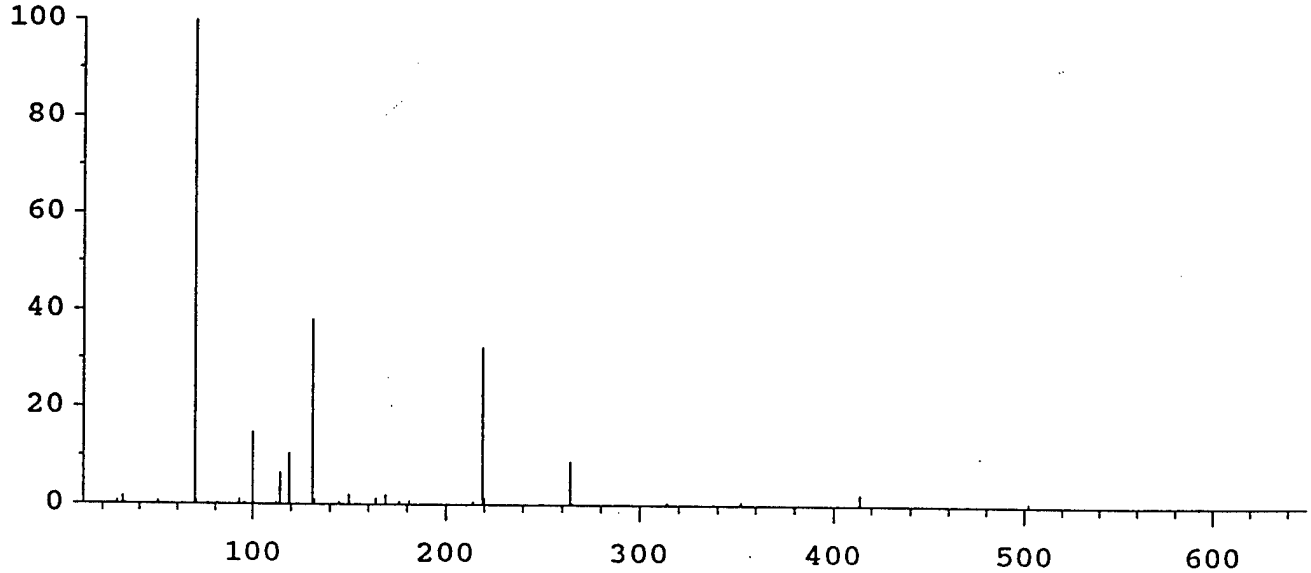
Mon Feb 28 19:30:01 1994 C:\HPCHEM\1\5971\BFB.U



EMVolts	2682	AmuGain	373
Xray	94.1	AmuOffs	75
Emission	ON	219Wid	0.038
MS Temp	183	TTI	OFF
Vacuum	39	DC Pol	NEG
Samples	16	Repeller	18.78
Averages	1	IonFocus	38.0
StepSize	0.10	EntLens	0.00
MassGain	-328	EntOffs	VAR
MassOffs	-4	Filament	2

PFTBA OPEN

Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10
110 peaks Base: 69.00 Abundance: 703744



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	703744	100.00	70.00	7559	1.07
218.95	229248	32.58	219.95	10102	4.41
502.00	6258	0.89	503.00	693	11.07

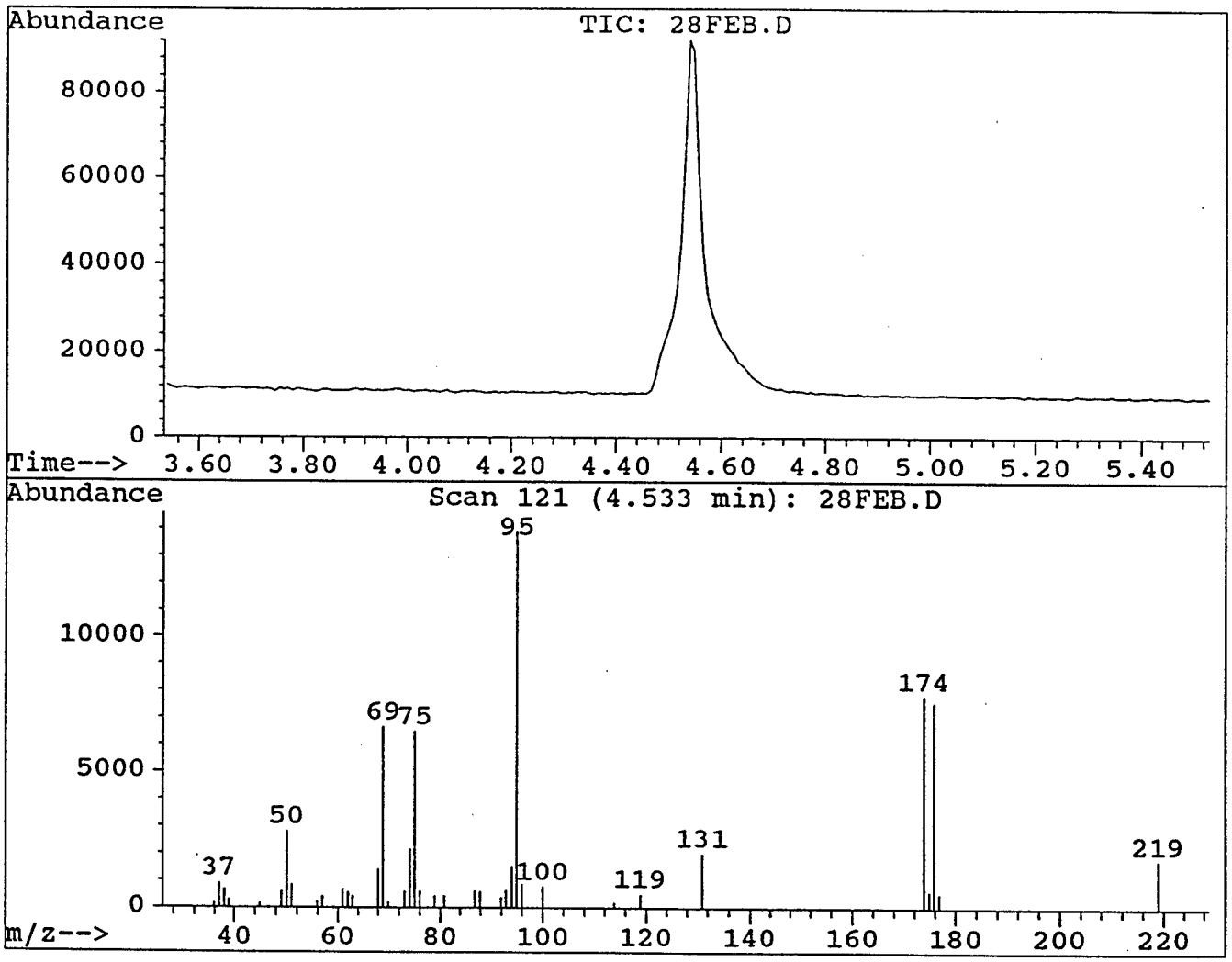
TARGET MASS:	69	131	219	502
DYNAMIC ENT OFFSET:	15.1	19.3	23.3	16.8
TARGET ABUND(%):	100.0	35.0	30.0	0.8
ACTUAL TUNE ABUND(%):	100.0	38.3	32.6	0.9

BFB

Data File : C:\HPCHEM\1\DATA\28FEB.D
Acq Time : 28 Feb 94 7:34 pm
Sample : BFB TUNE EVALUATION
Misc : 1uL INJECTION (50nG)

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\BFB624.M
Title :



Peak Apex is scan: 121

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.1	2797	PASS
75	95	30	60	46.6	6470	PASS
95	95	100	100	100.0	13895	PASS
96	95	5	9	6.2	860	PASS
173	174	0	2	0.0	0	PASS
174	95	50	100	56.2	7814	PASS
175	174	5	9	7.7	602	PASS
176	174	95	101	96.7	7559	PASS
177	176	5	9	7.0	529	PASS

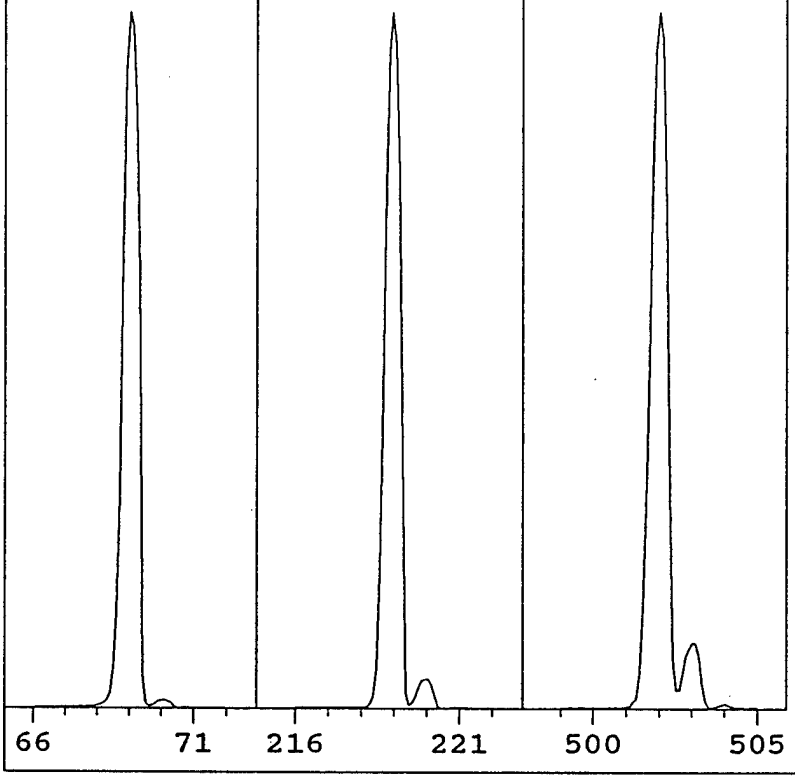
28FEB.D BFB624.M Mon Feb 28 19:42:50 1994 GC/MS

HP5971 Standard Spectra AutoTune

Instrument: GC/MS

Mon Feb 28 19:22:16 1994 C:\HPCHEM\1\5971\ATUNE.U

Mass	69.00	Mass	218.95	Mass	502.00
Ab	326977	Ab	191217	Ab	13631
Pw50	0.56	Pw50	0.55	Pw50	0.55

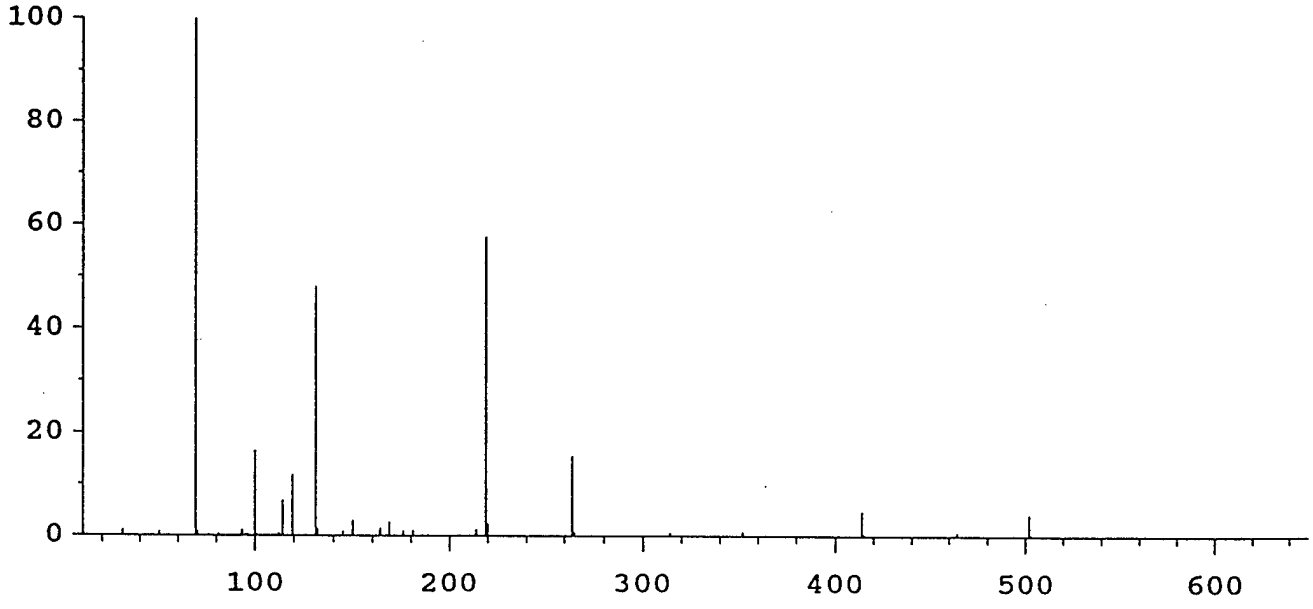


EMVolts	2635	AmuGain	371
Xray	98.3	AmuOffs	66
Emission	ON	219Wid	-0.039
MS Temp	184	TTI	OFF
Vacuum	40	DC Pol	NEG
Samples	16	Repeller	14.99
Averages	1	IonFocus	37.0
StepSize	0.10	EntLens	23.59
MassGain	-337	EntOffs	6.27
MassOffs	-2	Filament	2

PFTBA OPEN

Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10

87 peaks Base: 69.00 Abundance: 277888



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	277888	100.00	70.10	2989	1.08
218.90	160320	57.69	220.00	6994	4.36
501.95	11688	4.21	502.95	1118	9.57

Simulate Run Sequence Mon Feb 28 19:48:29 1994

Sequence Name: C:\HPCHEM\1\SEQUENCE\0228VOL3.S
Comment:
Operator: HJV
Data Path: C:\HPCHEM\1\DATA\022894\
Method Path: C:\HPCHEM\1\METHODS\

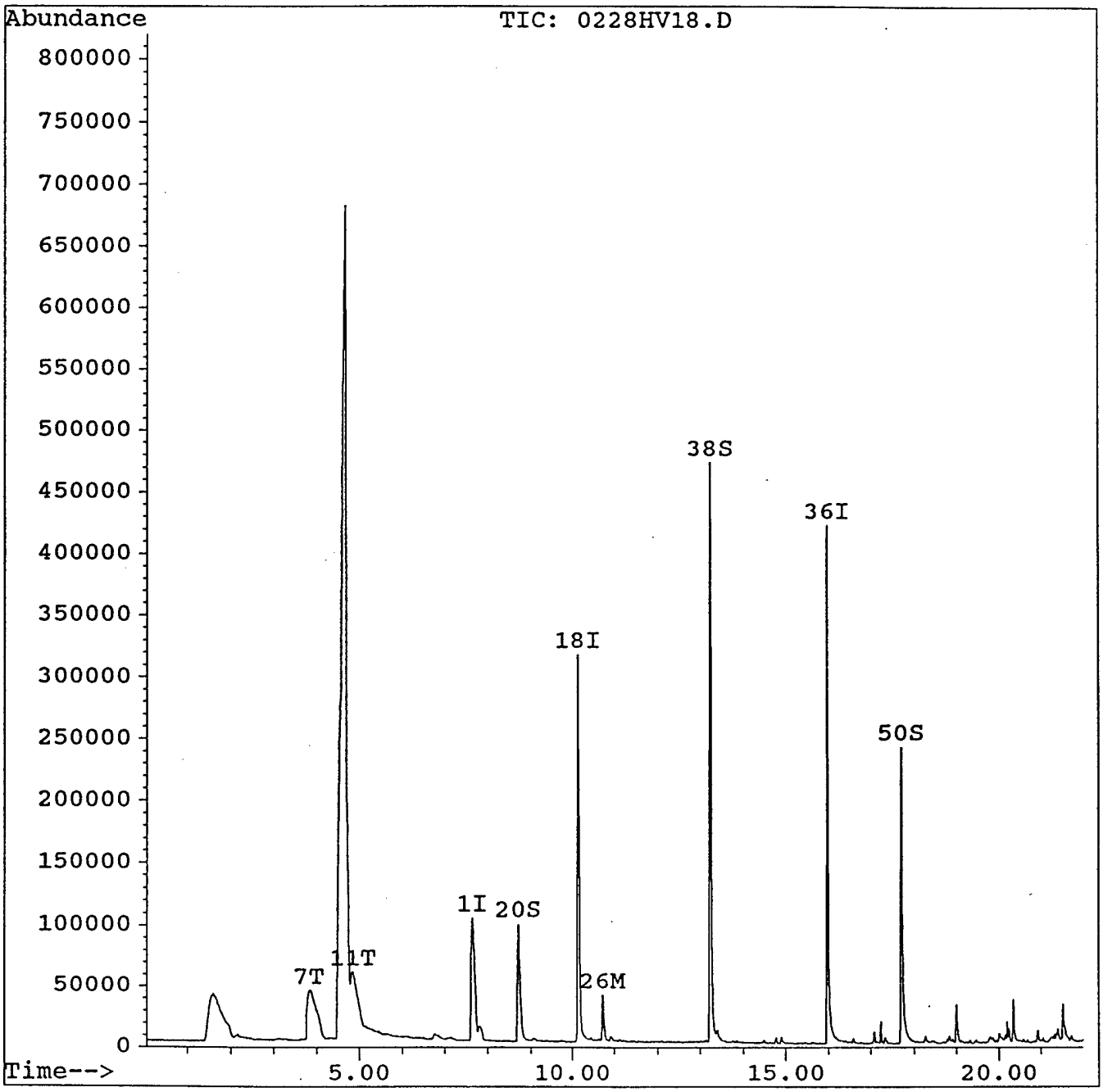
Line	Type	Vial	DataFile	Method	Sample Name
1)	Sample	1	0228HV18	8240	BLANK FOR VO ANALYSES
2)	Sample	1	0228HV19	8240	SPCC 100PPB
3)	Sample	1	0228HV20	8240	CCC 100PPB
4)	Sample	1	0228HV21	8240	9402010551
5)	Sample	1	0228HV22	8240	9402010552
6)	Sample	1	0228HV23	8240	9402010553
7)	Sample	1	0228HV24	8240	9402010554
8)	Sample	1	0228HV25	8240	9402010555
9)	Sample	1	0228HV26	8240	9402010556
10)	Sample	1	0228HV27	8240	9402010557
11)	Sample	1	0228HV28	8240	9402010558

Bytes Needed: 550000 Space on drive C: 37601280
Sequence Verification Done!

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV18.D
Acq Time : 28 Feb 94 8:02 pm Operator: HJV
Sample : BLANK FOR VO ANALYSES Inst : GC/MS
Misc : 5mL MILLI Q WATER + 10uL INTSTD/SURR. Multiplr: 1.00
Quant Time: Mar 2 8:42 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV18.D
Acq Time : 28 Feb 94 8:02 pm
Sample : BLANK FOR VO ANALYSES
Misc : 5mL MILLI Q WATER + 10uL INTSTD/SURR.
Quant Time: Mar 2 8:42 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

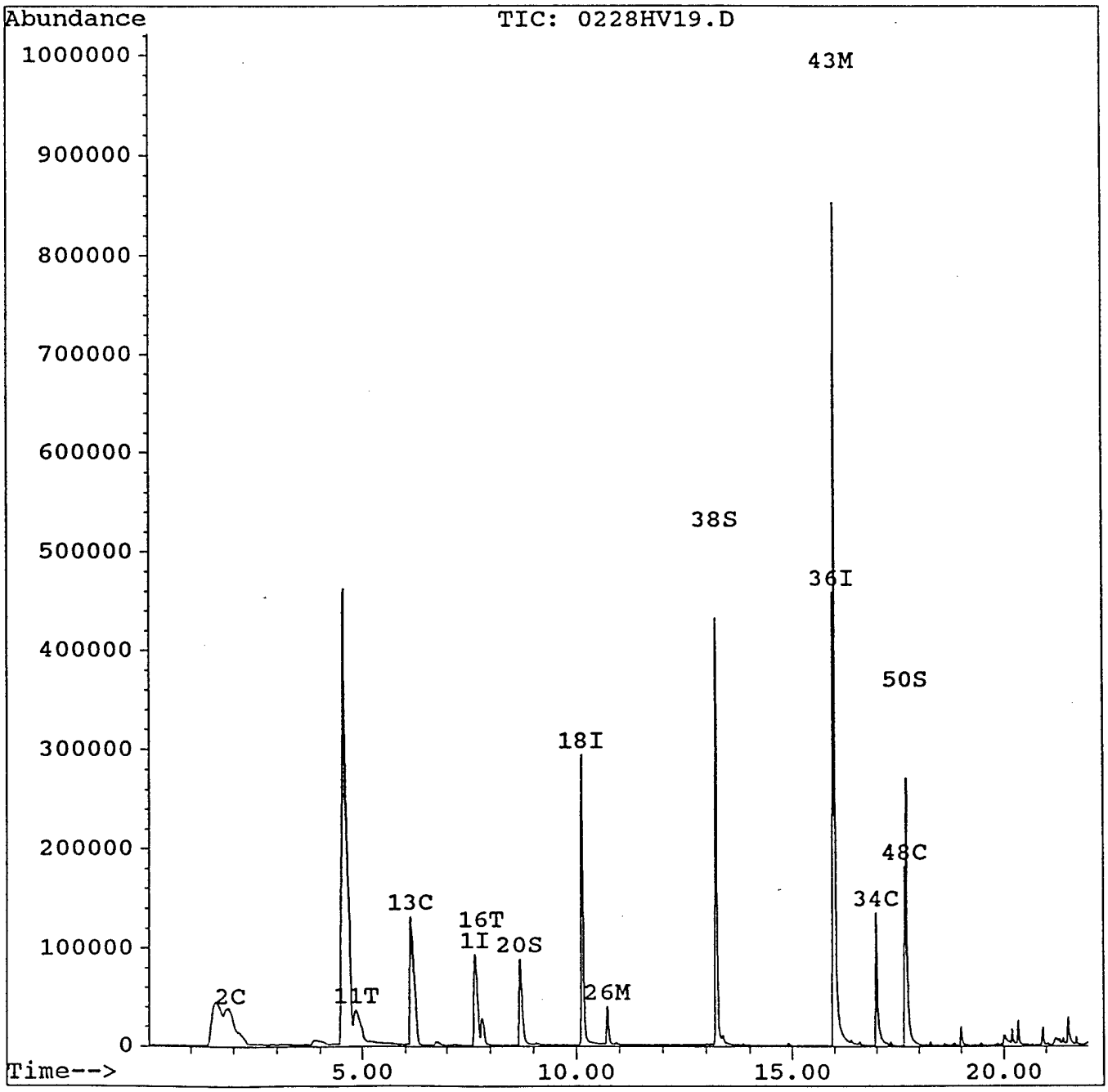
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(
1) Bromochloromethane	7.65	130	106266	50.00	ug/l	(
18) 1,4-Difluorobenzene	10.14	114	440406	50.00	ug/l	(
36) Chlorobenzene-d5	15.97	117	338817	50.00	ug/l	(
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.70	65	185935	46.21	ug/l	92
38) Toluene-d8	13.25	98	494570	53.17	ug/l	106
50) Bromofluorobenzene	17.72	95	148001	39.52	ug/l	79
Target Compounds						Qva
7) Acetone	3.83	43	423036	65.90	ug/l	m
11) Methylene chloride	4.86	84	65494	16.30	ug/l	
26) Trichloroethene	10.72	130	20035	7.12	ug/l	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV19.D
Acq Time : 28 Feb 94 8:33 pm Operator: HJV
Sample : SPCC 100PPB Inst : GC/MS
Misc : 5mL MILLI Q WATER + 2.5uL SPCC + 10uLINT Multiplr: 1.00
Quant Time: Mar 1 13:32 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV19.D
Acq Time : 28 Feb 94 8:33 pm
Sample : SPCC 100PPB
Misc : 5mL MILLI Q WATER + 2.5uL SPCC + 10uLINT
Quant Time: Mar 1 13:32 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.65	130	92477	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.14	114	396421	50.00	ug/l	0.
36) Chlorobenzene-d5	15.96	117	313036	50.00	ug/l	0.
System Monitoring Compounds						%Recove
20) 1,2-Dichloroethane-d4	8.70	65	161036	44.46	ug/l	88.
38) Toluene-d8	13.24	98	450740	52.44	ug/l	104.
50) Bromofluorobenzene	17.71	95	165885	47.95	ug/l	95.
Target Compounds						Qval
2) Chloromethane	1.92	50	142448	106.37	ug/l	m
11) Methylene chloride	4.87	84	70919	20.28	ug/l	
13) 1,1-Dichloroethane	6.13	63	448347	104.49	ug/l	#
16) Chloroform	7.81	83	51709	9.10	ug/l	
26) Trichloroethene	10.72	130	20895	8.25	ug/l	
34) Bromoform	16.99	173	103128	55.19	ug/l	m
43) Chlorobenzene	16.01	112	590926	102.40	ug/l	
48) 1,1,2,2-Tetrachloroethane	17.67	83	153233	76.01	ug/l	m

Calculation of Response Factors:

(1) Chloromethane $\frac{142448 \times 50}{92477 \times 100} = 0.77$ ✓

(2) 1,1-Dichloroethane $\frac{448347 \times 50}{92477 \times 100} = 2.42$ ✓

(3) ~~Ctor~~ Bromoform $\frac{103128 \times 50}{396421 \times 100} = (0.13)$ ont

(4) Chlorobenzene $\frac{590926 \times 50}{313036 \times 100} = 0.94$

(5) 1,1,2,2-Tetrachloroethane

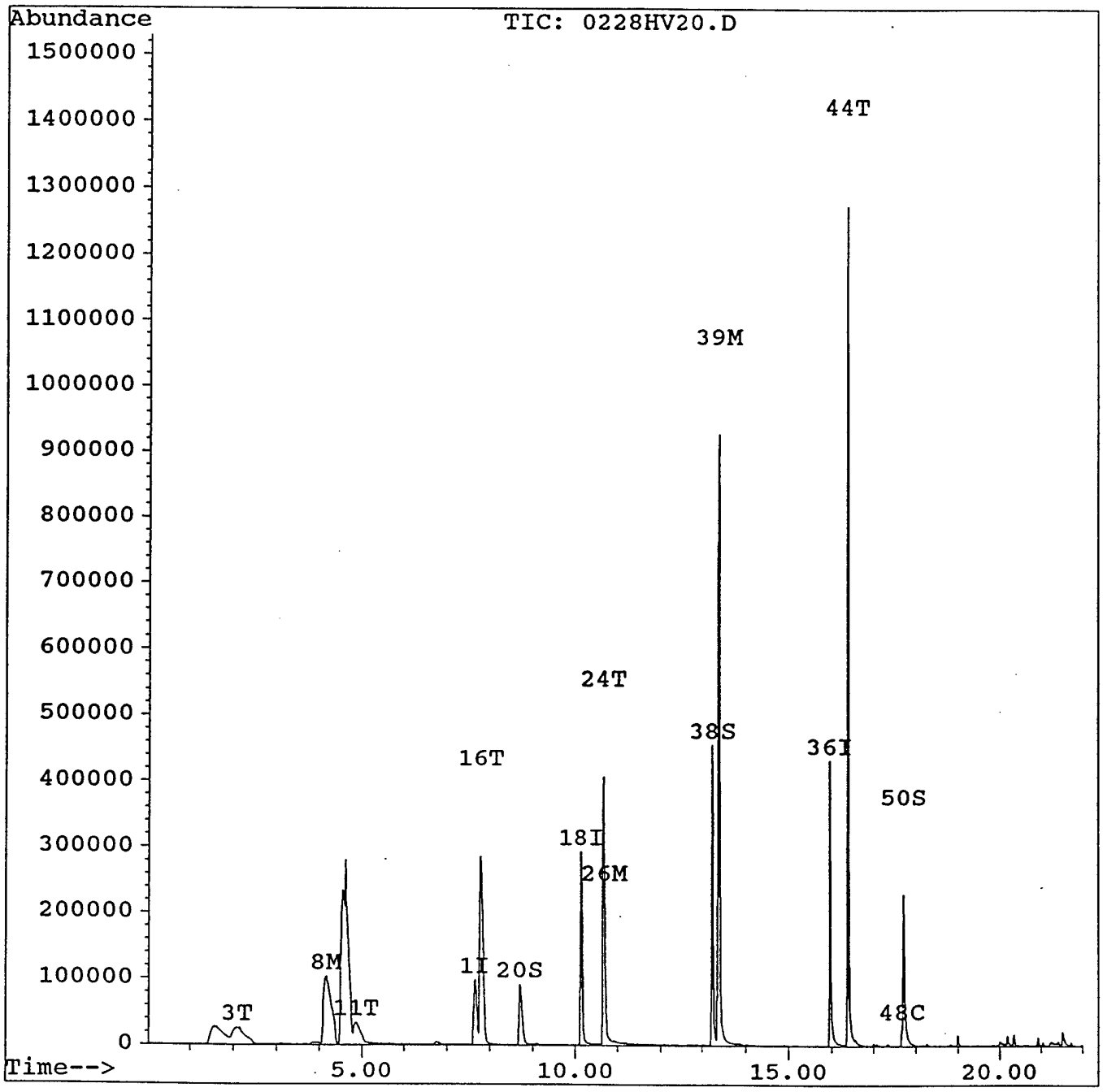
$\frac{153233 \times 50}{313036 \times 100} = (0.25)$

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV20.D
Acq Time : 28 Feb 94 9:05 pm Operator: HJV
Sample : CCC 100PPB Inst : GC/MS
Misc : 5mL WATER + 2.5uL CCC + 10uL INTSTD/SURR Multiplr: 1.00
Quant Time: Mar 1 13:37 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV20.D
Acq Time : 28 Feb 94 9:05 pm Operator: HJV
Sample : CCC 100PPB Inst : GC/MS
Misc : 5mL WATER + 2.5uL CCC + 10uL INTSTD/SURR Multiplr: 1.00
Quant Time: Mar 1 13:37 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(
1) Bromochloromethane	7.65	130	99082	50.00	ug/l	0
18) 1,4-Difluorobenzene	10.13	114	396336	50.00	ug/l	0
36) Chlorobenzene-d5	15.96	117	324130	50.00	ug/l	0
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.69	65	177868	49.12	ug/l	98
38) Toluene-d8	13.24	98	446581	50.18	ug/l	100
50) Bromofluorobenzene	17.71	95	153095	42.73	ug/l	85
Target Compounds						Qva
3) Vinyl chloride	2.08	62	249135	105.75	ug/l	m
8) 1,1-Dichloroethene	4.17	61	430265	100.34	ug/l	m
11) Methylene chloride	4.86	84	72271	19.29	ug/l	#
16) Chloroform	7.79	83	610582	100.28	ug/l	
24) 1,2-Dichloropropane	10.66	63	199821	100.93	ug/l	m
26) Trichloroethene	10.70	130	18793	7.42	ug/l	m
39) Toluene	13.39	92	616982	95.76	ug/l	
44) Ethylbenzene	16.39	106	303046	104.60	ug/l	
48) 1,1,2,2-Tetrachloroethane	17.67	83	22905	10.97	ug/l	m

Calculation of Response Factors

Calc. of % R F

(1) Vinyl chloride $\frac{249135 \times 50}{99082 \times 100} = 1.257$

~~1.2~~ $\frac{1.189}{0.956} - 1.25 \times 100$ / $\frac{0.956}{1.189}$

(2) 1,1-Dichloroethene $\frac{430265 \times 50}{99082 \times 100} = 2.171$

$\frac{2.164 - 2.17}{2.164} \times 100 =$

(3) Chloroform $\frac{610582 \times 50}{99082 \times 100} = 3.081$

$\frac{3.073 - 3.081}{3.073} \times 100 = 0$ ~

(4) 1,2-Dichloropropane $\frac{199821 \times 50}{396336 \times 100} = 0.252$

$\frac{0.250 - 0.252}{0.250} \times 100 = 0$ ✓

(5) Toluene $\frac{616982 \times 50}{324130 \times 100} = 0.952$

$\frac{0.994 - 0.952}{0.994} \times 100 = 4.$

(6) Ethyl Benzene $\frac{303046 \times 50}{324130 \times 100} = 0.467$

$\frac{0.447 - 0.467}{0.447} \times 100 = 4.$ ~

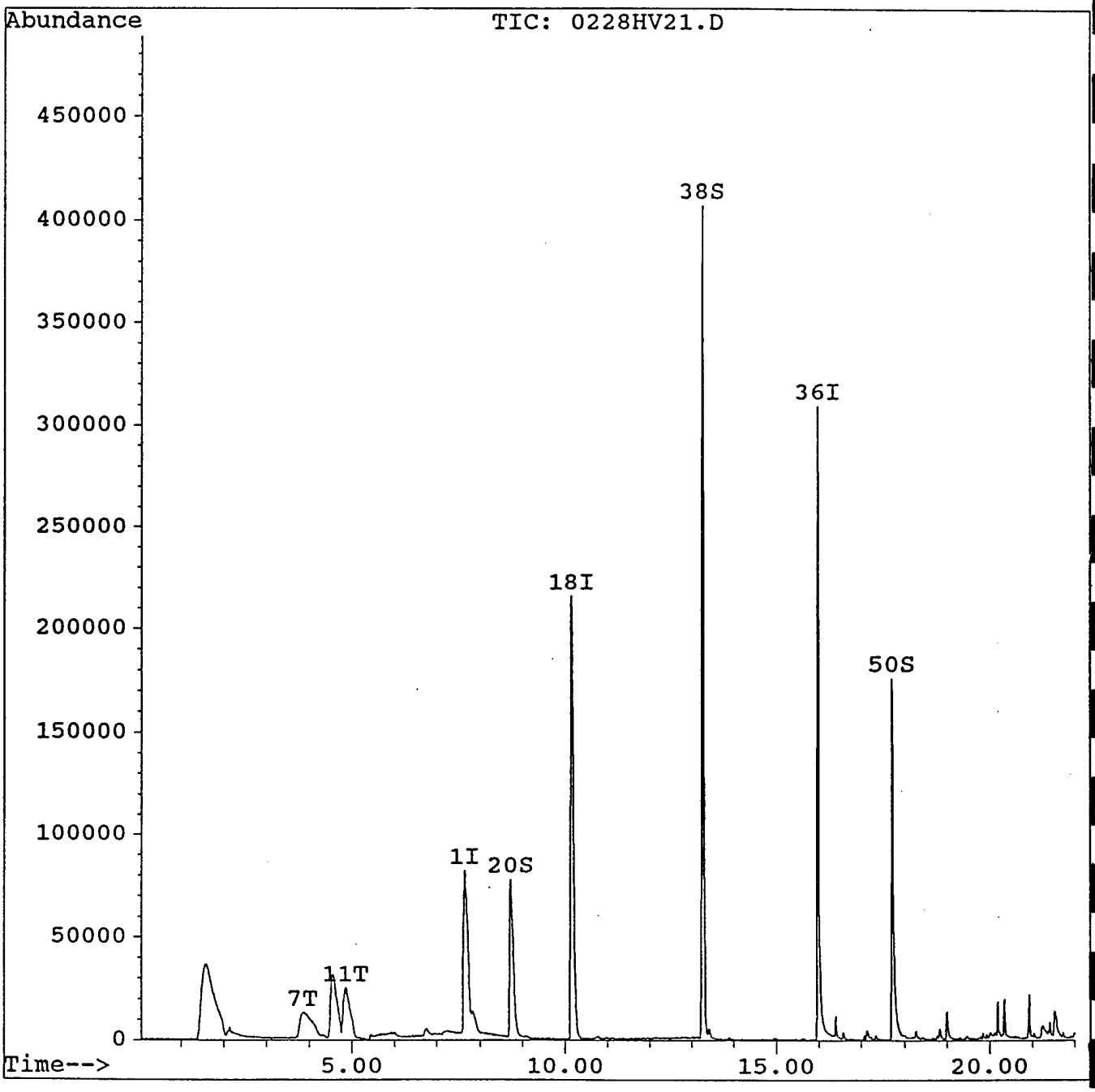
CCC's ALL CLEARED

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV21.D
Acq Time : 28 Feb 94 9:39 pm Operator: HJV
Sample : 9402010551 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:44 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV21.D
Acq Time : 28 Feb 94 9:39 pm Operator: HJV
Sample : 9402010551 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:44 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

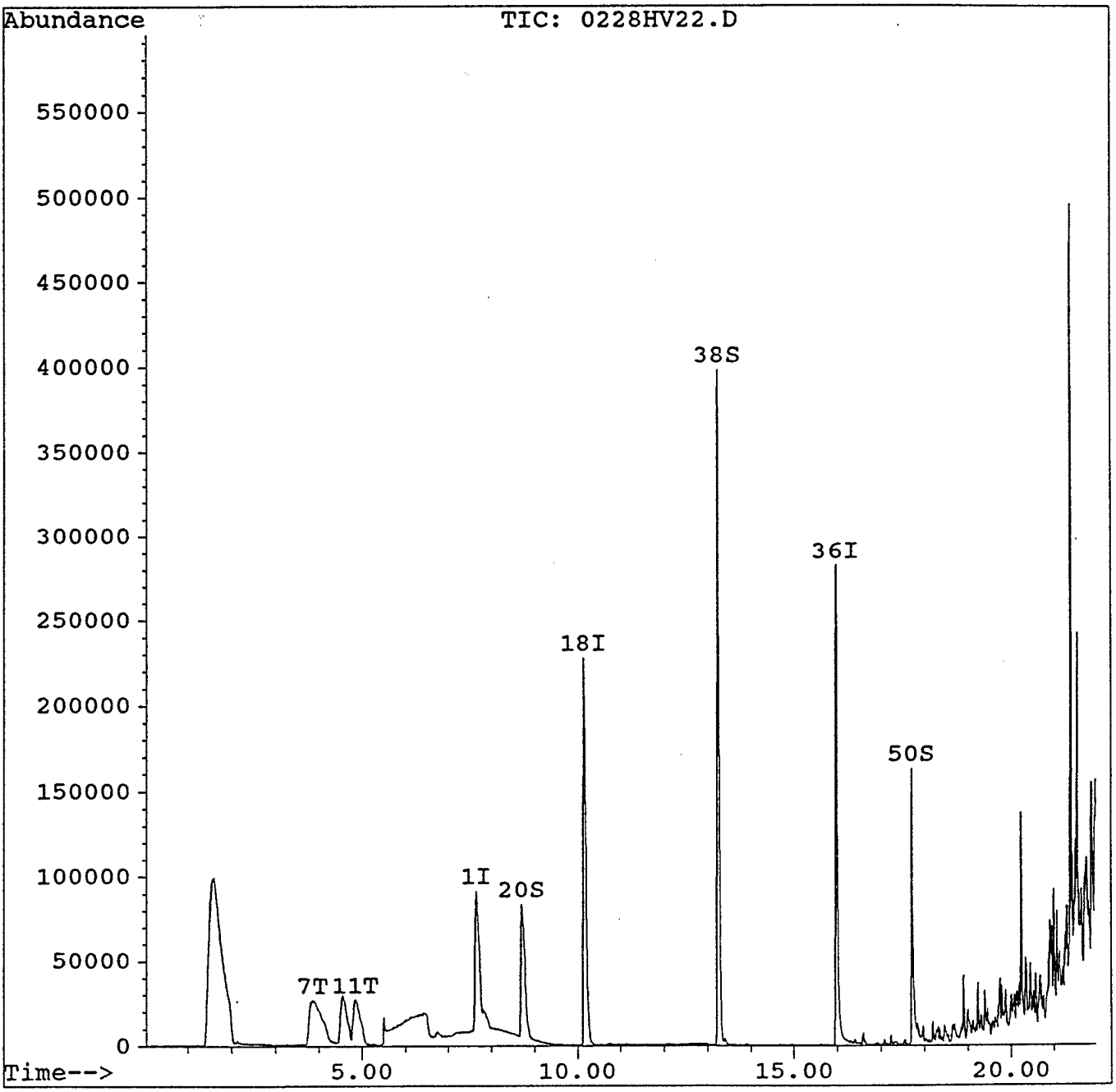
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(I
1) Bromochloromethane	7.66	130	98487	50.00	ug/l	0
18) 1,4-Difluorobenzene	10.15	114	421523	50.00	ug/l	0
36) Chlorobenzene-d5	15.98	117	299691	50.00	ug/l	0
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.71	65	196760	51.09	ug/l	102
38) Toluene-d8	13.25	98	462713	56.24	ug/l	112
50) Bromofluorobenzene	17.72	95	136465	41.20	ug/l	82
Target Compounds						Qva
7) Acetone	3.87	43	160418	26.96	ug/l	m
11) Methylene chloride	4.84	84	65295	17.53	ug/l	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV22.D
Acq Time : 28 Feb 94 10:12 pm Operator: HJV
Sample : 9402010552 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:46 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV22.D
Acq Time : 28 Feb 94 10:12 pm Operator: HJV
Sample : 9402010552 Inst : GC/M
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:46 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

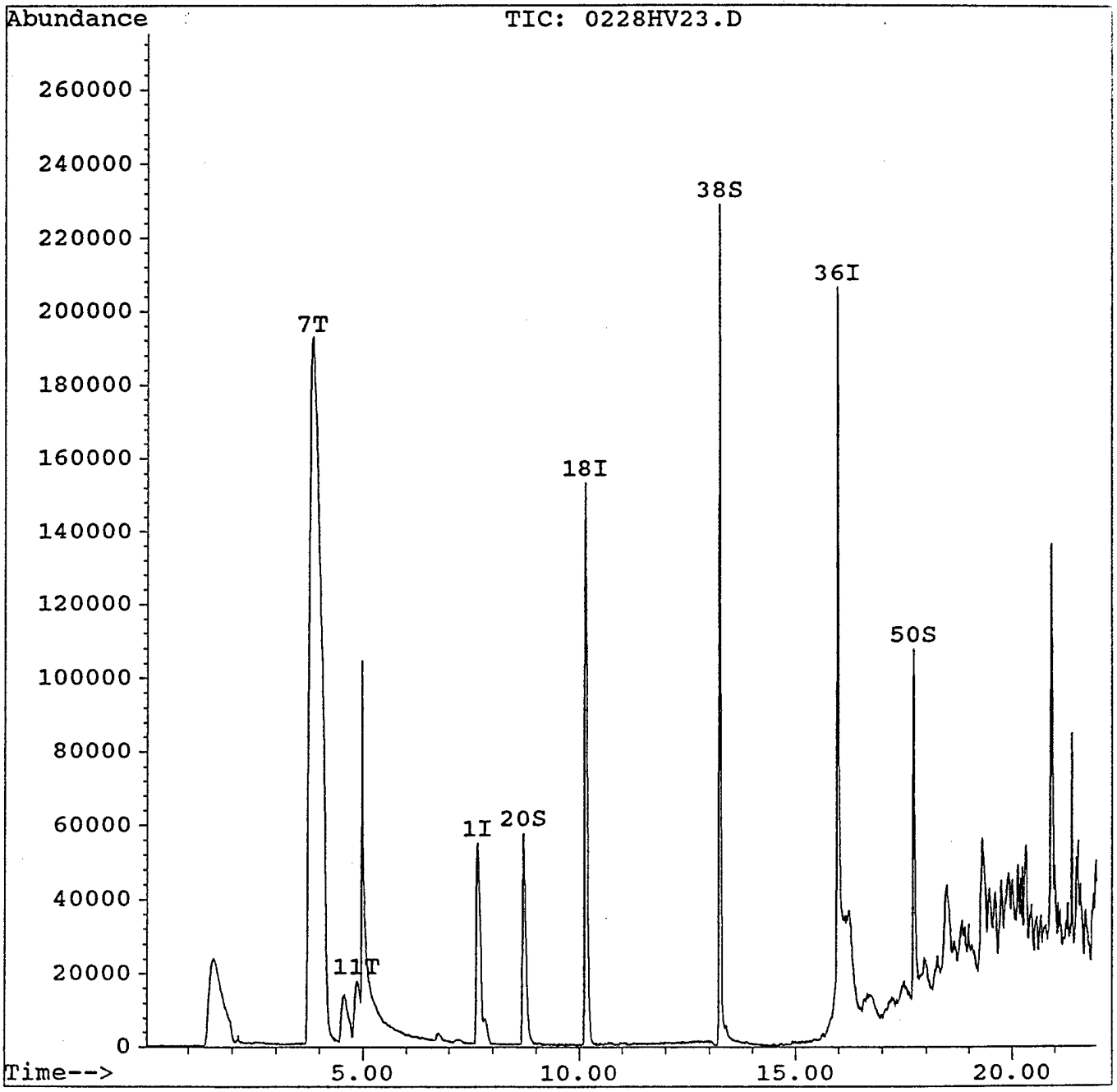
Internal Standards	R.T.	QIon	Response	Conc Units	Dev/M
1) Bromochloromethane	7.65	130	105044	50.00 ug/l	0.
18) 1,4-Difluorobenzene	10.15	114	455781	50.00 ug/l	0.
36) Chlorobenzene-d5	15.98	117	280091	50.00 ug/l	
System Monitoring Compounds					%Recove
20) 1,2-Dichloroethane-d4	8.70	65	205619	49.38 ug/l	9
38) Toluene-d8	13.25	98	466653	60.68 ug/l	12
50) Bromofluorobenzene	17.72	95	128562	41.53 ug/l	83.
Target Compounds					Qv
7) Acetone	3.87	43	346026	54.53 ug/l	m
11) Methylene chloride	4.84	84	70725	17.80 ug/l	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV23.D
Acq Time : 28 Feb 94 10:46 pm Operator: HJV
Sample : 9402010553 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:48 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV23.D
Acq Time : 28 Feb 94 10:46 pm
Sample : 9402010553
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S
Quant Time: Mar 2 8:48 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

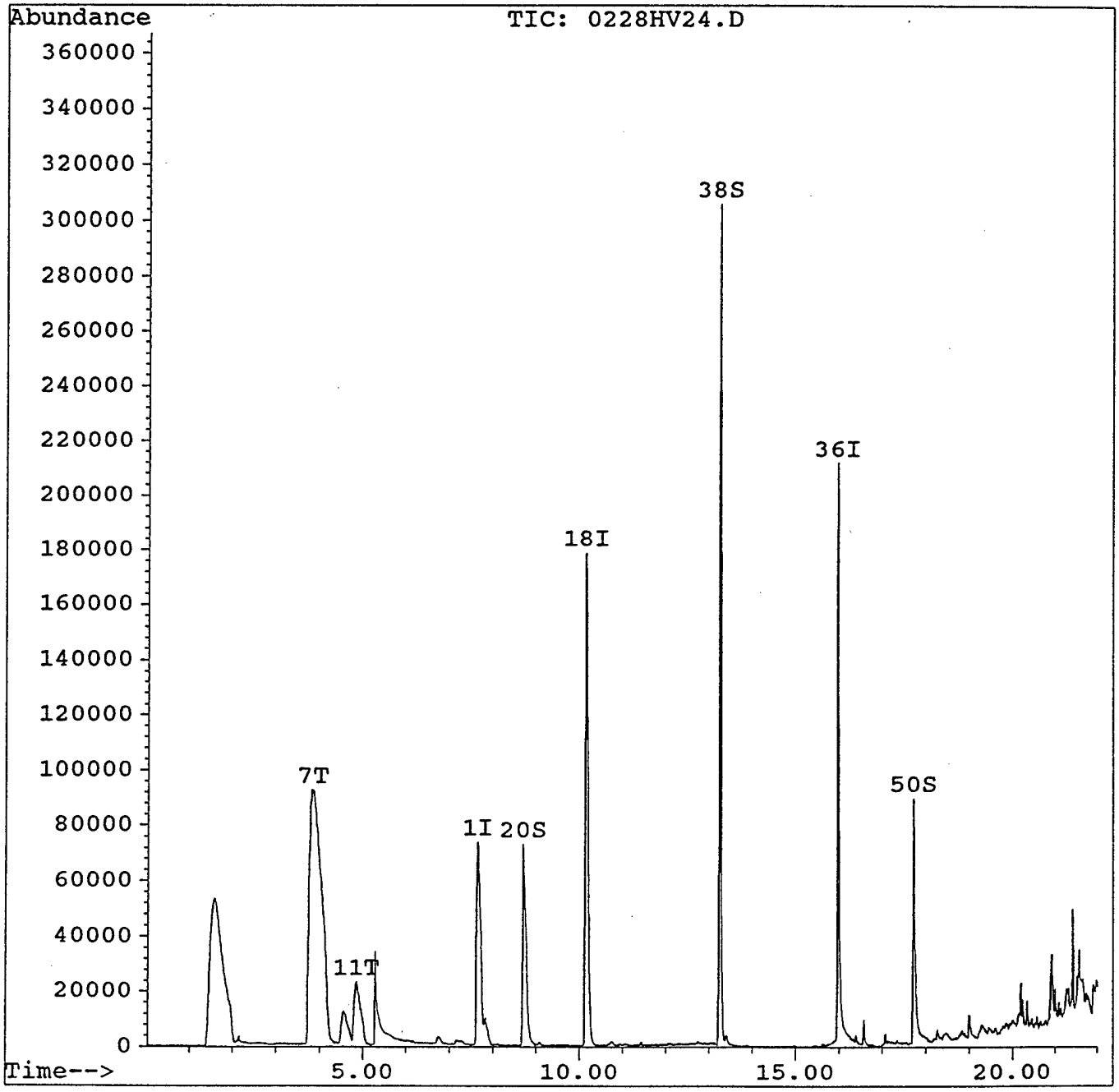
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Mi
1) Bromochloromethane	7.65	130	66219	50.00	ug/l	0.0
18) 1,4-Difluorobenzene	10.15	114	260041	50.00	ug/l	0.0
36) Chlorobenzene-d5	15.97	117	179095	50.00	ug/l	0.0
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.71	65	132505	55.77	ug/l	111
38) Toluene-d8	13.24	98	251665	51.18	ug/l	102
50) Bromofluorobenzene	17.71	95	102174	51.62	ug/l	103.2
Target Compounds						Qva
7) Acetone	3.82	43	2353854	588.46	ug/l	m
11) Methylene chloride	4.85	84	40169	16.04	ug/l	m

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV24.D
Acq Time : 28 Feb 94 11:19 pm Operator: HJV
Sample : 9402010554 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:51 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV24.D
Acq Time : 28 Feb 94 11:19 pm Operator: HJV
Sample : 9402010554 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:51 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(
1) Bromochloromethane	7.65	130	87375	50.00 ug/l	0
18) 1,4-Difluorobenzene	10.15	114	324695	50.00 ug/l	0
36) Chlorobenzene-d5	15.97	117	191376	50.00 ug/l	0
System Monitoring Compounds					%Recov
20) 1,2-Dichloroethane-d4	8.70	65	171598	57.85 ug/l	115
38) Toluene-d8	13.25	98	314718	59.90 ug/l	119
50) Bromofluorobenzene	17.72	95	90086	42.59 ug/l	85
Target Compounds					Qua
7) Acetone	3.85	43	1184069	224.34 ug/l m	
11) Methylene chloride	4.85	84	58019	17.56 ug/l	

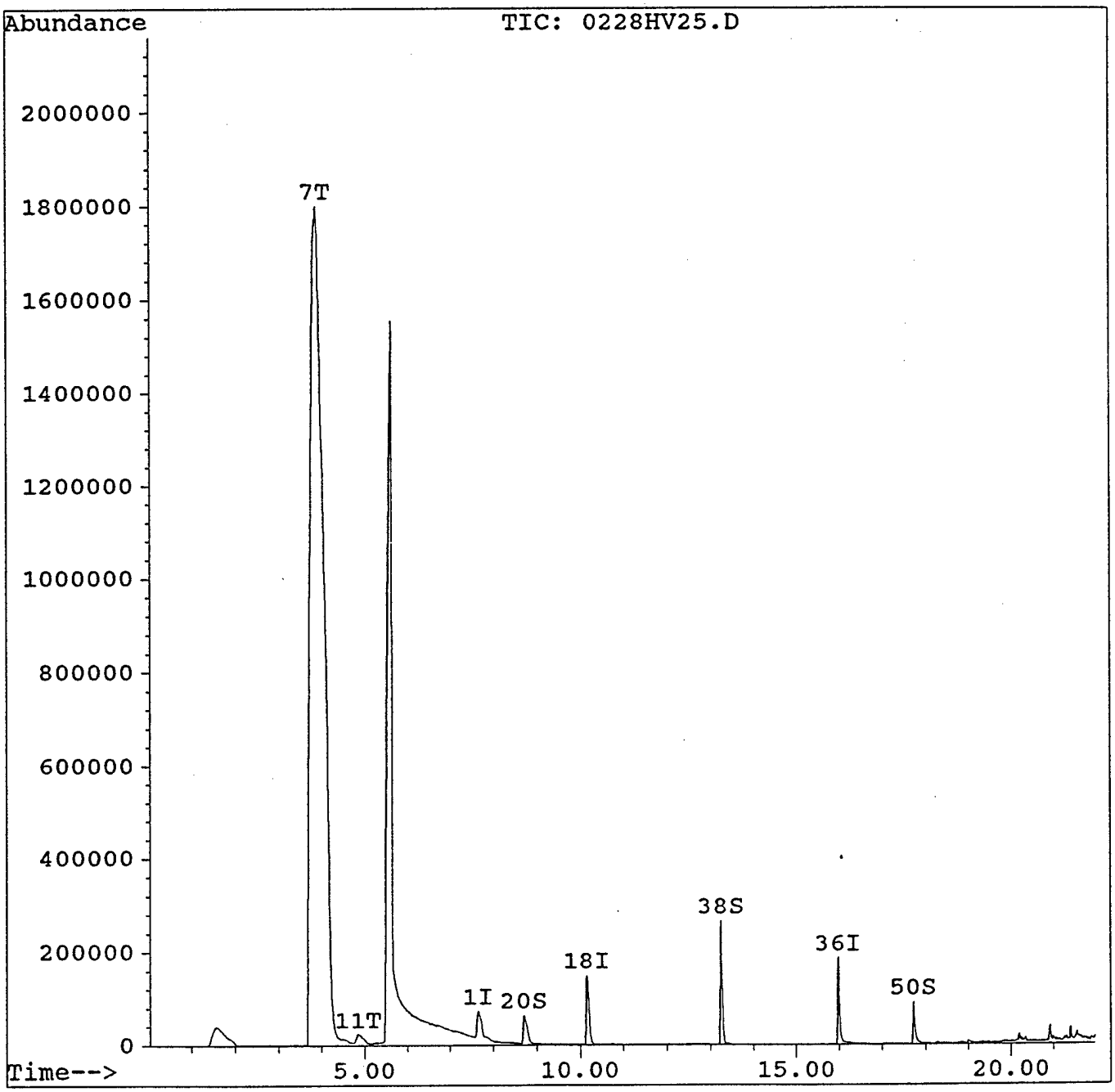
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV25.D
Acq Time : 28 Feb 94 11:53 pm
Sample : 9402010555
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S
Quant Time: Mar 2 8:53 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV25.D
Acq Time : 28 Feb 94 11:53 pm Operator: HJV
Sample : 9402010555 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:53 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

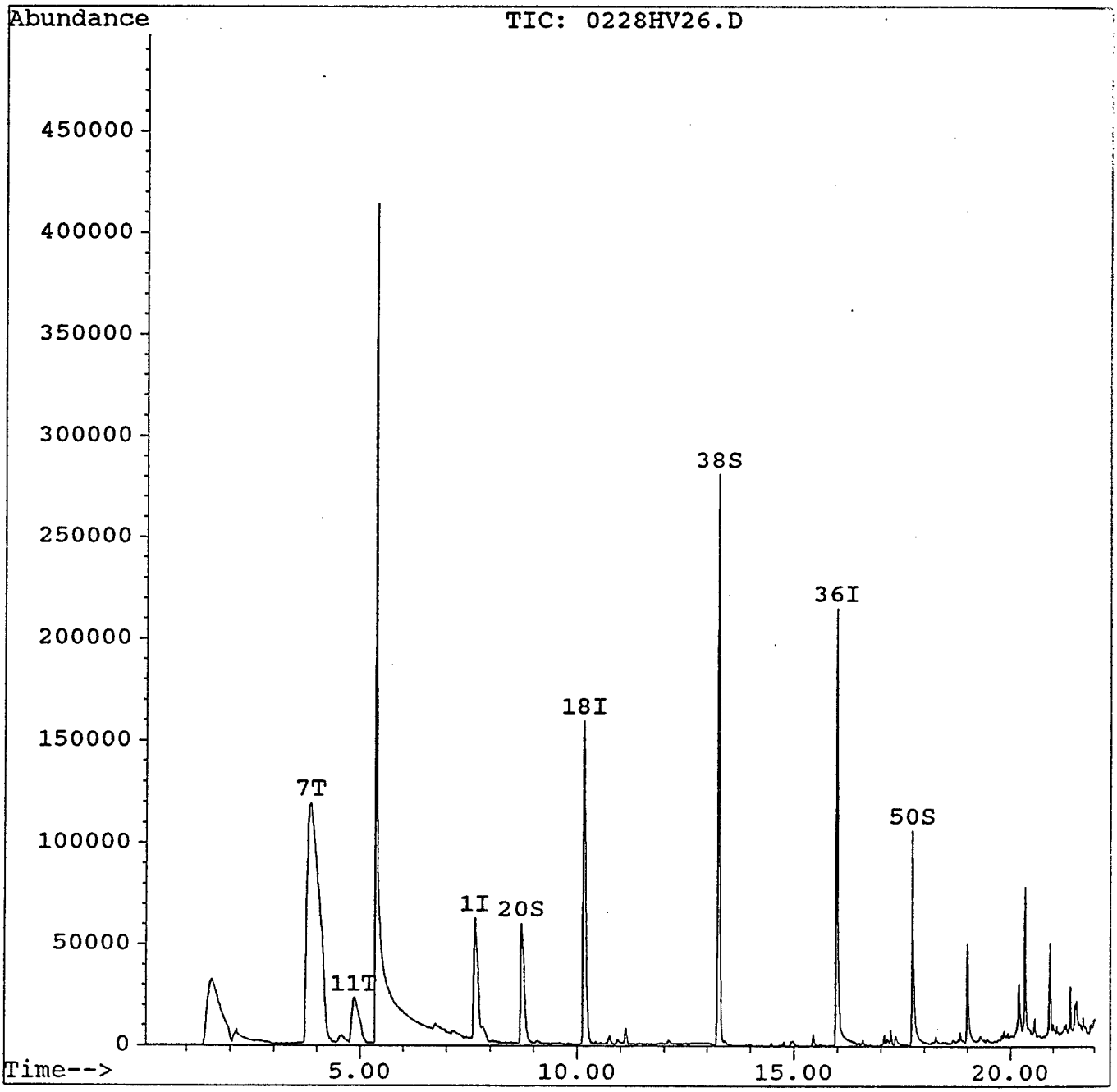
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(M
1) Bromochloromethane	7.65	130	72048	50.00 ug/l	0.03
18) 1,4-Difluorobenzene	10.15	114	289741	50.00 ug/l	0.
36) Chlorobenzene-d5	15.98	117	194943	50.00 ug/l	0.
System Monitoring Compounds					%Recove
20) 1,2-Dichloroethane-d4	8.71	65	155256	58.65 ug/l	117.
38) Toluene-d8	13.25	98	307732	57.50 ug/l	114.
50) Bromofluorobenzene	17.72	95	83555	38.78 ug/l	77.56
Target Compounds					Qval
7) Acetone	3.88	43	26025011	5979.85 ug/l	m
11) Methylene chloride	4.86	84	46582	17.09 ug/l	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV26.D
Acq Time : 1 Mar 94 12:26 am Operator: HJV
Sample : 9402010556 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:55 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV26.D
Acq Time : 1 Mar 94 12:26 am Operator: HJV
Sample : 9402010556 Inst : GC/M
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:55 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev
1) Bromochloromethane	7.65	130	73461	50.00	ug/l	0
18) 1,4-Difluorobenzene	10.15	114	291509	50.00	ug/l	0
36) Chlorobenzene-d5	15.97	117	208027	50.00	ug/l	0
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.70	65	145924	54.79	ug/l	109
38) Toluene-d8	13.25	98	300029	52.53	ug/l	105
50) Bromofluorobenzene	17.72	95	96569	42.00	ug/l	84
Target Compounds						Qva
7) Acetone	3.85	43	1515394	341.50	ug/l	m
11) Methylene chloride	4.84	84	46784	16.84	ug/l	m

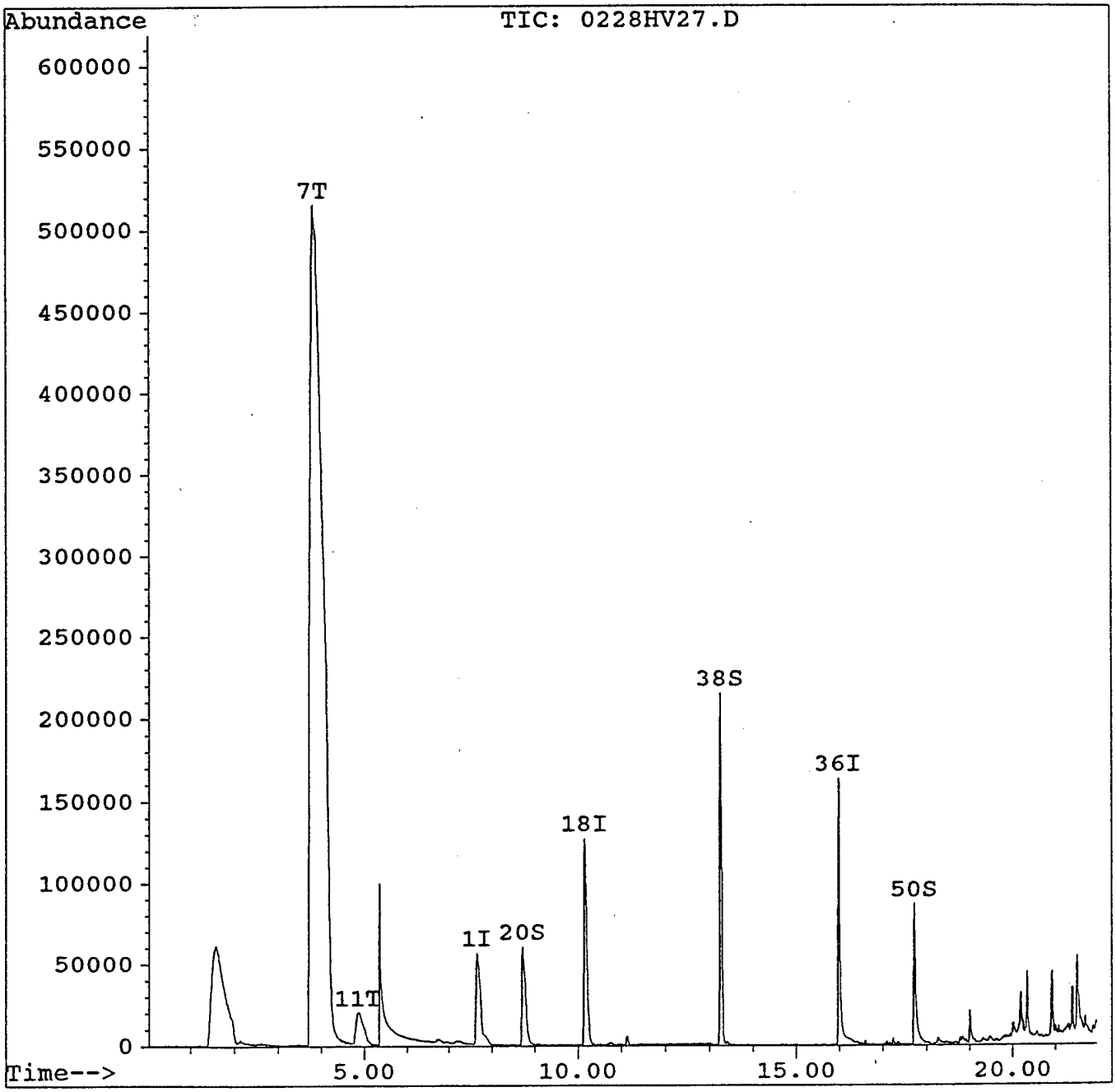
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV27.D
Acq Time : 1 Mar 94 1:00 am
Sample : 9402010557
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S
Quant Time: Mar 2 8:57 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV27.D
Acq Time : 1 Mar 94 1:00 am Operator: HJV
Sample : 9402010557 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:57 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(M
1) Bromochloromethane	7.66	130	70797	50.00 ug/l	0.0
18) 1,4-Difluorobenzene	10.16	114	239868	50.00 ug/l	0.
36) Chlorobenzene-d5	15.99	117	164314	50.00 ug/l	0
System Monitoring Compounds					%Recove
20) 1,2-Dichloroethane-d4	8.72	65	136773	62.41 ug/l	124
38) Toluene-d8	13.26	98	247158	54.79 ug/l	109
50) Bromofluorobenzene	17.72	95	79622	43.84 ug/l	87.
Target Compounds					Qva
7) Acetone	3.82	43	7064888	1652.01 ug/l	m
11) Methylene chloride	4.84	84	43938	16.41 ug/l	m

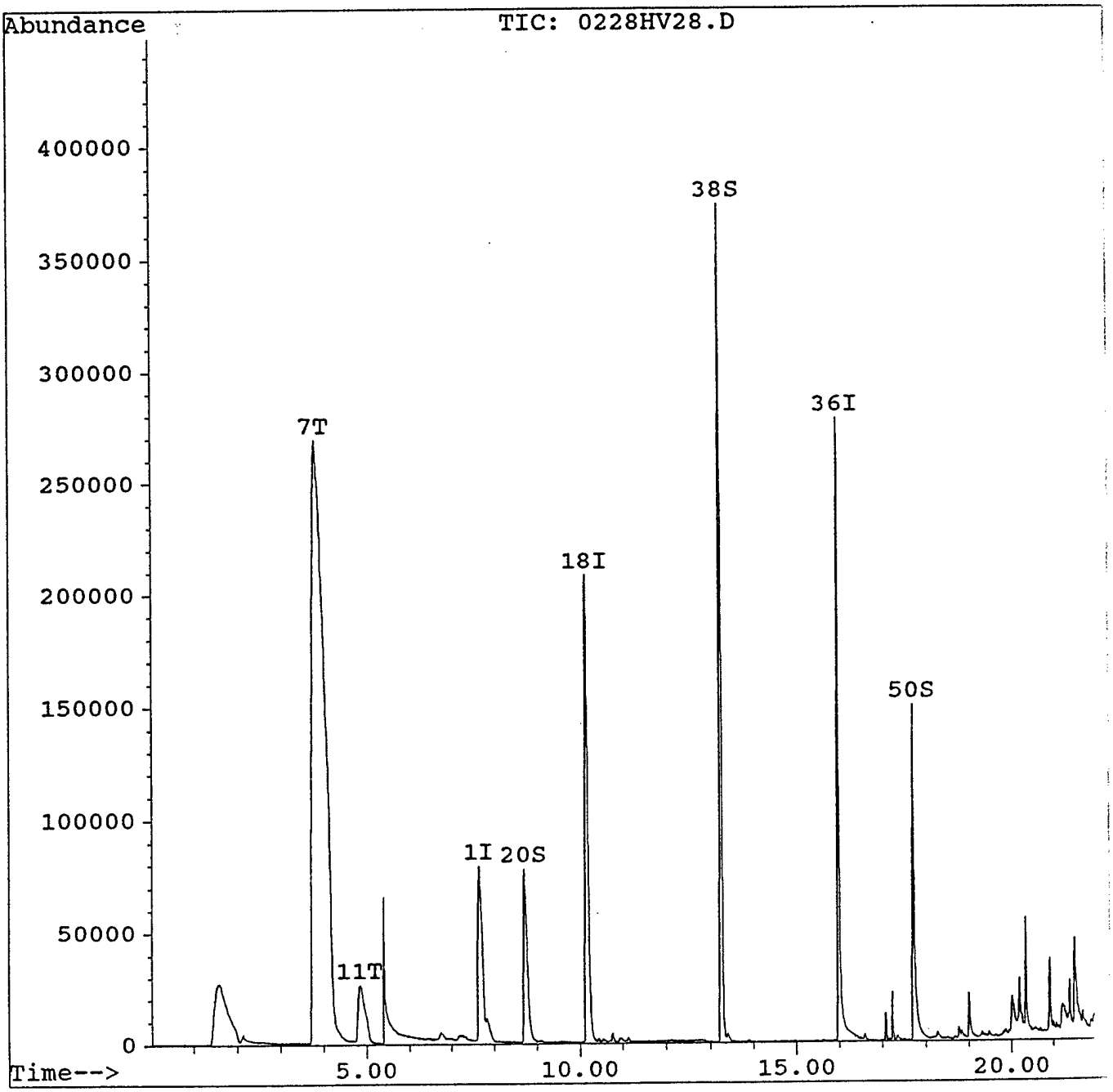
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV28.D
Acq Time : 1 Mar 94 1:33 am
Sample : 9402010558
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S
Quant Time: Mar 2 8:59 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV28.D
Acq Time : 1 Mar 94 1:33 am Operator: HJV
Sample : 9402010558 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 8:59 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

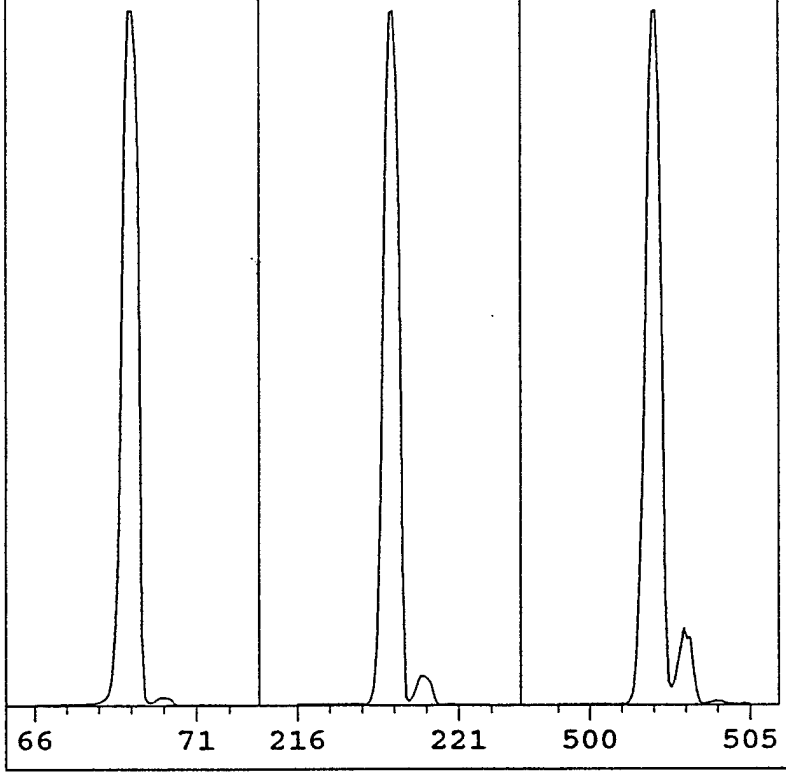
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(
1) Bromochloromethane	7.66	130	98576	50.00	ug/l	0
18) 1,4-Difluorobenzene	10.15	114	406327	50.00	ug/l	0
36) Chlorobenzene-d5	15.98	117	268870	50.00	ug/l	0
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.72	65	198825	53.56	ug/l	107
38) Toluene-d8	13.26	98	403038	54.60	ug/l	109
50) Bromofluorobenzene	17.72	95	122894	41.35	ug/l	82
Target Compounds						Qua
7) Acetone	3.83	43	3624147	608.63	ug/l	m
11) Methylene chloride	4.84	84	66323	17.79	ug/l	

(#) = qualifier out of range (m) = manual integration

HP5971 Standard Spectra AutoTune

Instrument: GC/MS
Tue Mar 01 08:09:52 1994 C:\HPCHEM\1\5971\ATUNE.U

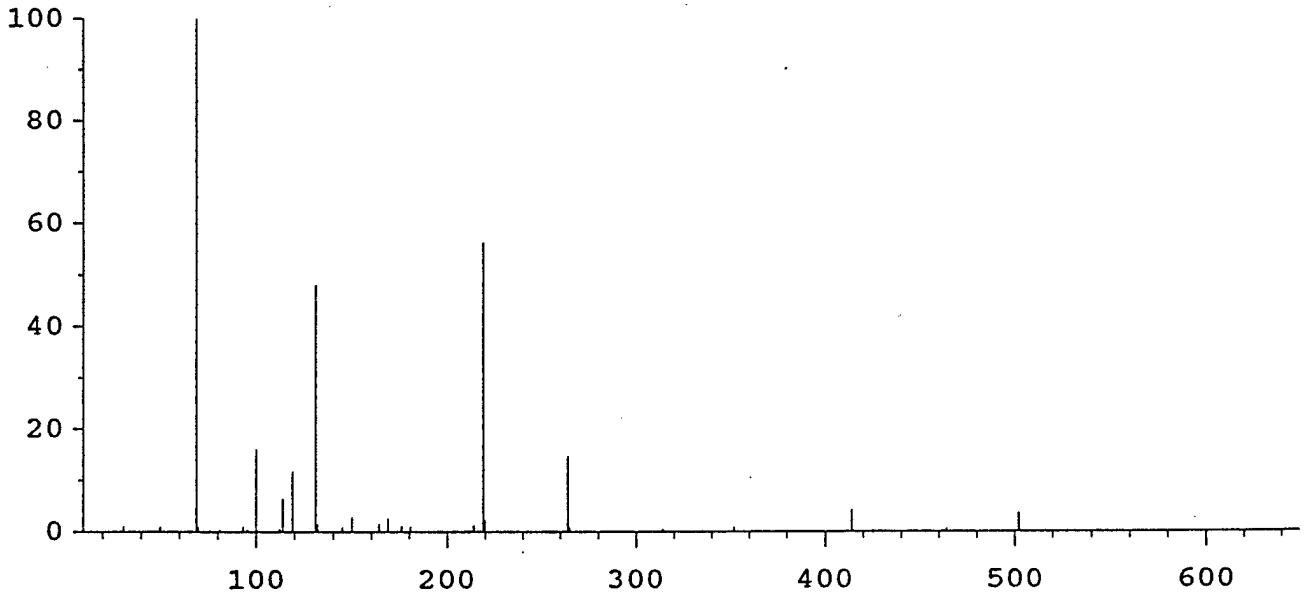
Mass	68.90	Mass	218.95	Mass	502.05
Ab	308898	Ab	175808	Ab	11754
Pw50	0.55	Pw50	0.56	Pw50	0.55



EMVolts	2635	AmuGain	373
Xray	98.3	AmuOffs	68
Emission	ON	219Wid	-0.028
MS Temp	185	TTI	OFF
Vacuum	39	DC Pol	NEG
Samples	16	Repeller	14.99
Averages	1	IonFocus	36.0
StepSize	0.10	EntLens	23.59
MassGain	-322	EntOffs	6.27
MassOffs	-3	Filament	2

PFTBA OPEN

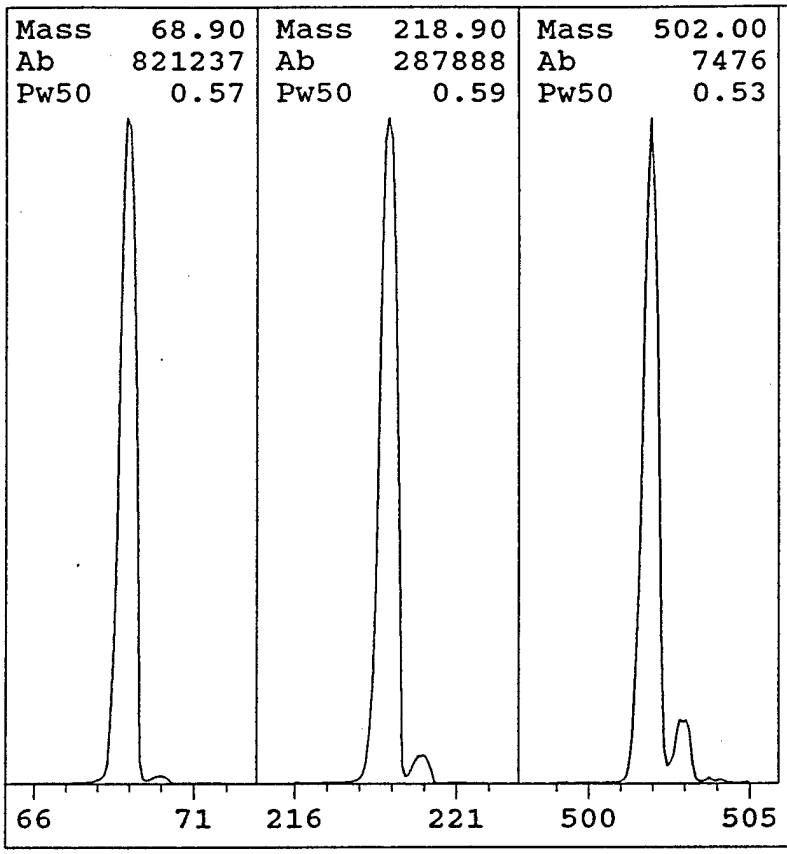
Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10
88 peaks Base: 68.95 Abundance: 270464



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
68.95	270464	100.00	69.95	3049	1.13
218.90	152256	56.29	219.90	6506	4.27
502.00	10242	3.79	503.00	995	9.71

HP5971 BFB Dynamic Target Tune

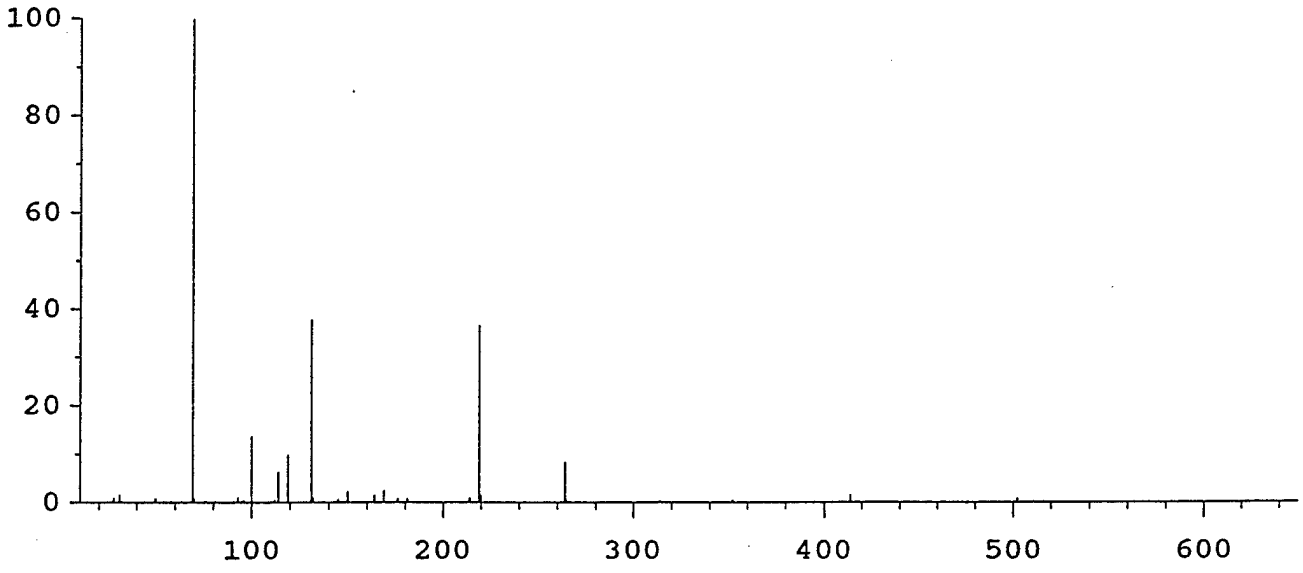
Tue Mar 01 08:18:30 1994 C:\HPCHEM\1\5971\BFB.U



EMVolts	2682	AmuGain	376
Xray	98.3	AmuOffs	72
Emission	ON	219Wid	0.024
MS Temp	184	TTI	OFF
Vacuum	39	DC Pol	NEG
Samples	16	Repeller	18.78
Averages	1	IonFocus	35.0
StepSize	0.10	EntLens	0.00
MassGain	-327	EntOffs	VAR
MassOffs	-4	Filament	2

PFTBA OPEN

Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10
108 peaks Base: 69.00 Abundance: 690496



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	690496	100.00	69.90	7643	1.11
218.85	252736	36.60	219.85	11002	4.35
501.95	6188	0.90	503.05	600	9.70

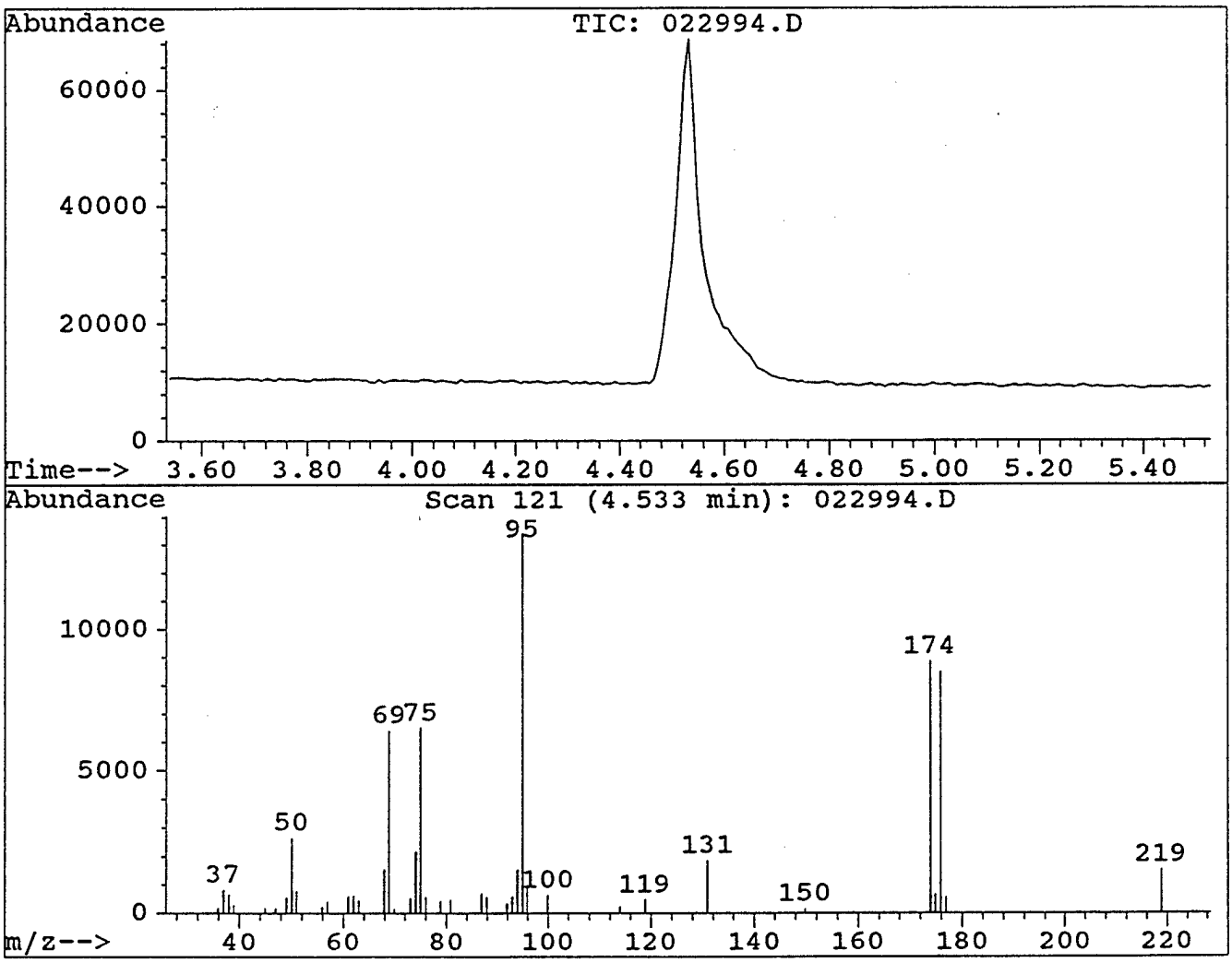
TARGET MASS:	69	131	219	502
DYNAMIC ENT OFFSET:	14.8	18.1	15.6	16.3
TARGET ABUND(%):	100.0	35.0	30.0	0.8
ACTUAL TUNE ABUND(%):	100.0	37.9	36.6	0.9

BFB

Data File : C:\HPCHEM\1\DATA\022994.D
Acq Time : 1 Mar 94 8:22 am
Sample : BFB TUNE EVALUATION
Misc : 1uL INJECTION (50nG)

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\BFB624.M
Title :



Peak Apex is scan: 121

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.7	2641	PASS
75	95	30	60	48.5	6506	PASS
95	95	100	100	100.0	13409	PASS
96	95	5	9	6.8	912	PASS
173	174	0	2	0.0	0	PASS
174	95	50	100	66.2	8874	PASS
175	174	5	9	7.2	641	PASS
176	174	95	101	95.9	8514	PASS
177	176	5	9	6.7	571	PASS

022994.D BFB624.M Tue Mar 01 08:34:49 1994 GC/MS

Simulate Run Sequence Tue Mar 01 09:05:42 1994

Sequence Name: C:\HPCHEM\1\SEQUENCE\0301VOL.S
Comment:
Operator: HJV
Data Path: C:\HPCHEM\1\DATA\030194\
Method Path: C:\HPCHEM\1\METHODS\

Line	Type	Vial	DataFile	Method	Sample Name
1)	Sample	1	0301HJV1	8240	BLANK FOR VO ANALYSES
2)	Sample	1	0301HJV2	8240	SPCC 100PPB
3)	Sample	1	0301HJV3	8240	CCC 100PPB
4)	Sample	1	0301HJV4	8240	9402010547
5)	Sample	1	0301HJV5	8240	9402010548
6)	Sample	1	0301HJV6	8240	9402010549
7)	Sample	1	0301HJV7	8240	9402010559
8)	Sample	1	0301HJV8	8240	9402010560
9)	Sample	1	0301HJV9	8240	9402010561
10)	Sample	1	0301HV10	8240	9402010562
11)	Sample	1	0301HV11	8240	9402010563
12)	Sample	1	0301HV12	8240	9402010515 TCLP VOL

Bytes Needed: 600000 Space on drive C: 33824768
Sequence Verification Done!

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV1.D
Acq Time : 1 Mar 94 9:18 am
Sample : BLANK FOR VO ANALYSES
Misc : 5mL WATER + 10uL INTSTD/SURR.
Quant Time: Mar 2 9:02 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.65	130	95161	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.14	114	351172	50.00	ug/l	0.
36) Chlorobenzene-d5	15.97	117	283542	50.00	ug/l	0.
System Monitoring Compounds						%Recove
20) 1,2-Dichloroethane-d4	8.69	65	170068	53.01	ug/l	106.
38) Toluene-d8	13.25	98	395097	50.75	ug/l	101.
50) Bromofluorobenzene	17.72	95	125592	40.08	ug/l	80.
Target Compounds						Qvalu
7) Acetone	3.85	43	255022	44.36	ug/l #	6
11) Methylene chloride	4.87	84	65290	18.14	ug/l	9

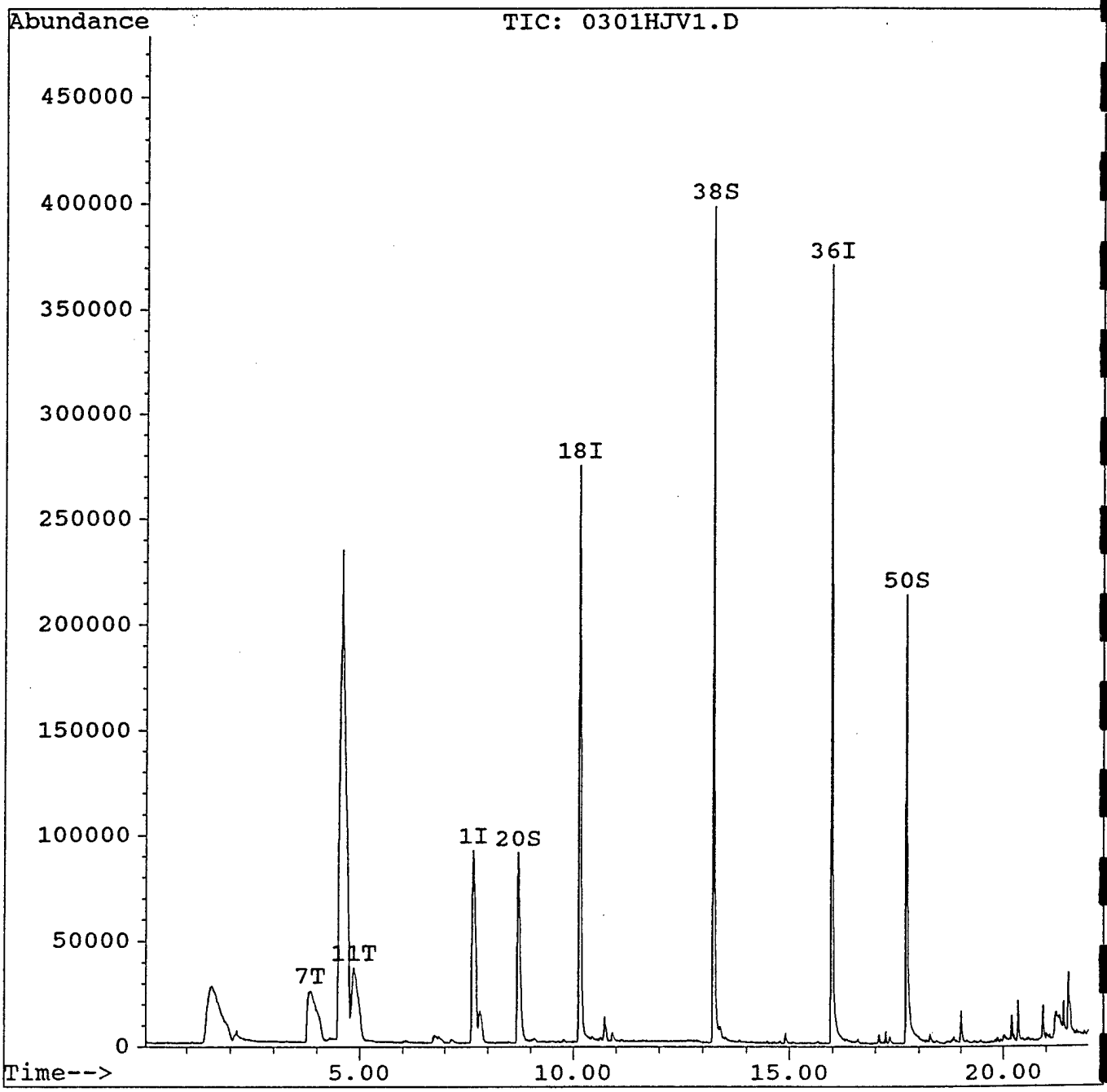
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV1.D
Acq Time : 1 Mar 94 9:18 am
Sample : BLANK FOR VO ANALYSES
Misc : 5mL WATER + 10uL INTSTD/SURR.
Quant Time: Mar 2 9:02 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV2.D
Acq Time : 1 Mar 94 9:49 am Operator: HJV
Sample : SPCC 100PPB Inst : GC/MS
Misc : 5mL WATER +2.5uL SPCC + 10uL INTSTD/SURR Multiplr: 1.00
Quant Time: Mar 1 14:04 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.66	130	85452	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.14	114	335493	50.00	ug/l	0.
36) Chlorobenzene-d5	15.96	117	280230	50.00	ug/l	0.
System Monitoring Compounds						%Recove
20) 1,2-Dichloroethane-d4	8.70	65	157163	51.27	ug/l	102.
38) Toluene-d8	13.24	98	381891	49.64	ug/l	99.
50) Bromofluorobenzene	17.71	95	150342	48.54	ug/l	97.
Target Compounds						Qvalu
2) Chloromethane	1.88	50	132246	106.87	ug/l	m
11) Methylene chloride	4.87	84	75685	23.42	ug/l	
13) 1,1-Dichloroethane	6.14	63	451823	113.95	ug/l	m
16) Chloroform	7.82	83	60798	11.58	ug/l	
34) Bromoform	16.99	173	111140	70.28	ug/l	m
43) Chlorobenzene	16.01	112	548129	106.10	ug/l	
48) 1,1,2,2-Tetrachloroethane	17.67	83	156838	86.90	ug/l	m

Calculation of response factors :-

(1) Chloro methane $\frac{132246 \times 50}{85452 \times 100} = 0.77$ ✓

(2) 1,1-Dichloro ethane $\frac{451823 \times 50}{85452 \times 100} = 2.64$ ✓

(3) ~~Cl~~ Bromoform $\frac{111140 \times 50}{335493 \times 100} = (0.17)$ ans

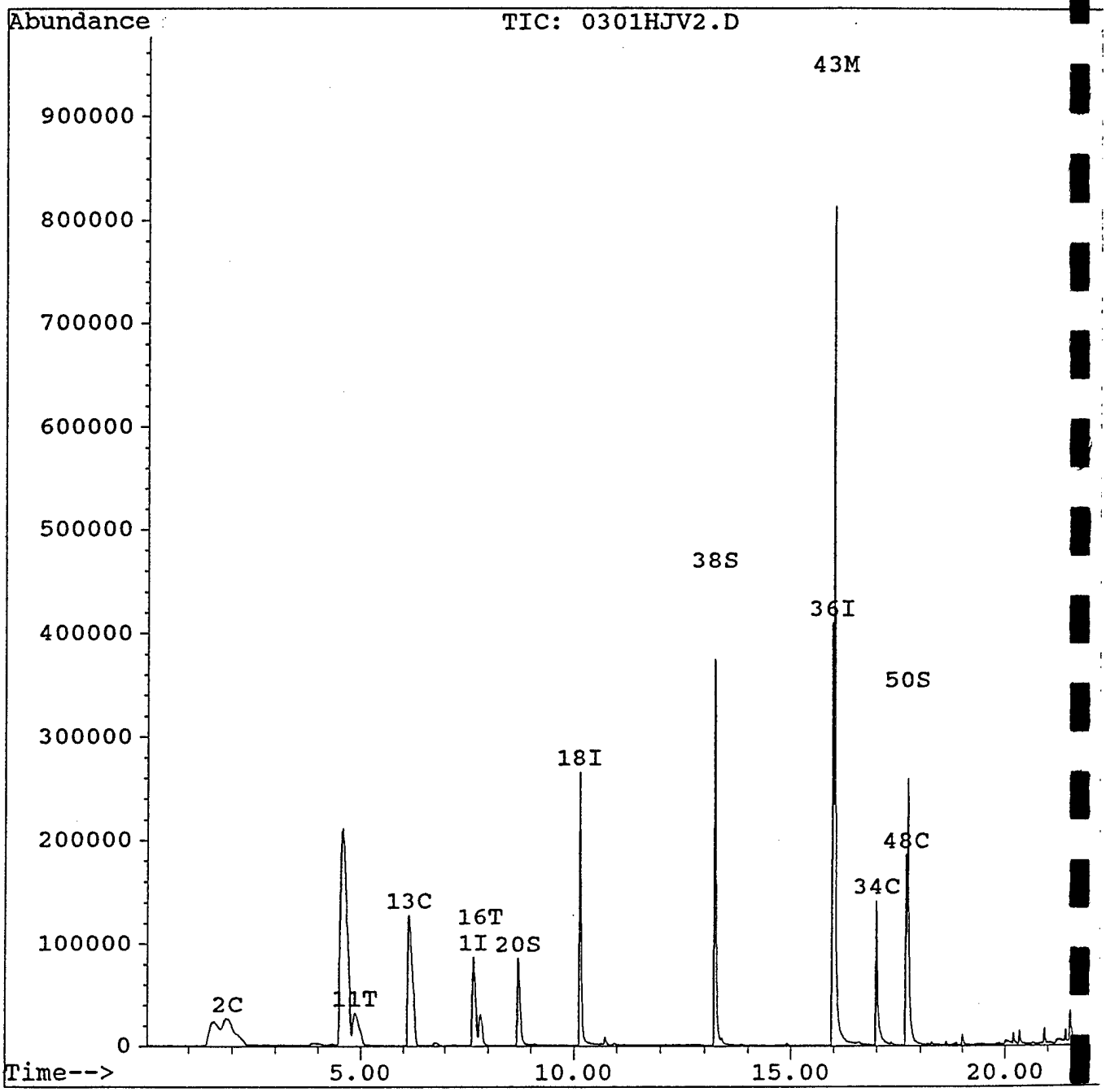
(4) Chloro benzene $\frac{548129 \times 50}{280230 \times 100} = 0.97$ ✓

(5) 1,1,2,2-Tetra chloro ethane $\frac{156836 \times 50}{280230 \times 100} = 0.29$ ✓

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV2.D
Acq Time : 1 Mar 94 9:49 am Operator: HJV
Sample : SPCC 100PPB Inst : GC/MS
Misc : 5mL WATER +2.5uL SPCC + 10uL INTSTD/SURR Multiplr: 1.00
Quant Time: Mar 1 14:04 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV3.D
Acq Time : 1 Mar 94 10:20 am Operator: HJV
Sample : CCC 100PPB Inst : GC/MS
Misc : 5mL WATER +2.5uL CCC + 10uL INTSTD/SURR. Multiplr: 1.00
Quant Time: Mar 1 14:08 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(R
1) Bromochloromethane	7.65	130	93593	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.14	114	376322	50.00	ug/l	0.
36) Chlorobenzene-d5	15.97	117	305499	50.00	ug/l	0.
System Monitoring Compounds						%Recove
20) 1,2-Dichloroethane-d4	8.70	65	169317	49.25	ug/l	98.
38) Toluene-d8	13.24	98	425220	50.70	ug/l	101.
50) Bromofluorobenzene	17.71	95	139571	41.34	ug/l	82.
Target Compounds						Qvalu
3) Vinyl chloride	2.08	62	234784	105.50	ug/l m	8
8) 1,1-Dichloroethene	4.16	61	405789	100.19	ug/l m	2
11) Methylene chloride	4.87	84	81708	23.08	ug/l	9
16) Chloroform	7.78	83	555532	96.59	ug/l m	9
24) 1,2-Dichloropropane	10.66	63	192703	102.51	ug/l m	7
39) Toluene	13.39	92	525955	86.61	ug/l m	9
44) Ethylbenzene	16.40	106	250836	91.86	ug/l m	8
48) 1,1,2,2-Tetrachloroethane	17.68	83	17813	9.05	ug/l m	9

Calculation of response factor :- Calc. of % RPD

(1) Vinyl chloride $\frac{234784 \times 50}{93593 \times 100} = 1.254$ $\frac{1.189 - 1.254}{1.189} \times 100 = 5.$

(2) 1,1-Dichloro ethene $\frac{405789 \times 50}{93593 \times 100} = 2.167$ $\frac{2.164 - 2.167}{2.164} \times 100 = 0.$

(3) Chloroform $\frac{555532 \times 50}{93593 \times 100} = 2.967$ $\frac{3.073 - 2.967}{3.073} \times 100 = 3.$

(4) 1,2-Dichloro propane $\frac{192703 \times 50}{376322 \times 100} = 0.256$ $\frac{0.250 - 0.256}{0.250} \times 100 = 2.$

(5) Toluene $\frac{525955 \times 50}{305499 \times 100} = 0.861$ $\frac{0.994 - 0.861}{0.994} \times 100 = 13.3$

(6) Ethyl Benzene $\frac{250836 \times 50}{305499 \times 100} = 0.411$ $\frac{0.447 - 0.411}{0.447} \times 100 = 8.0$

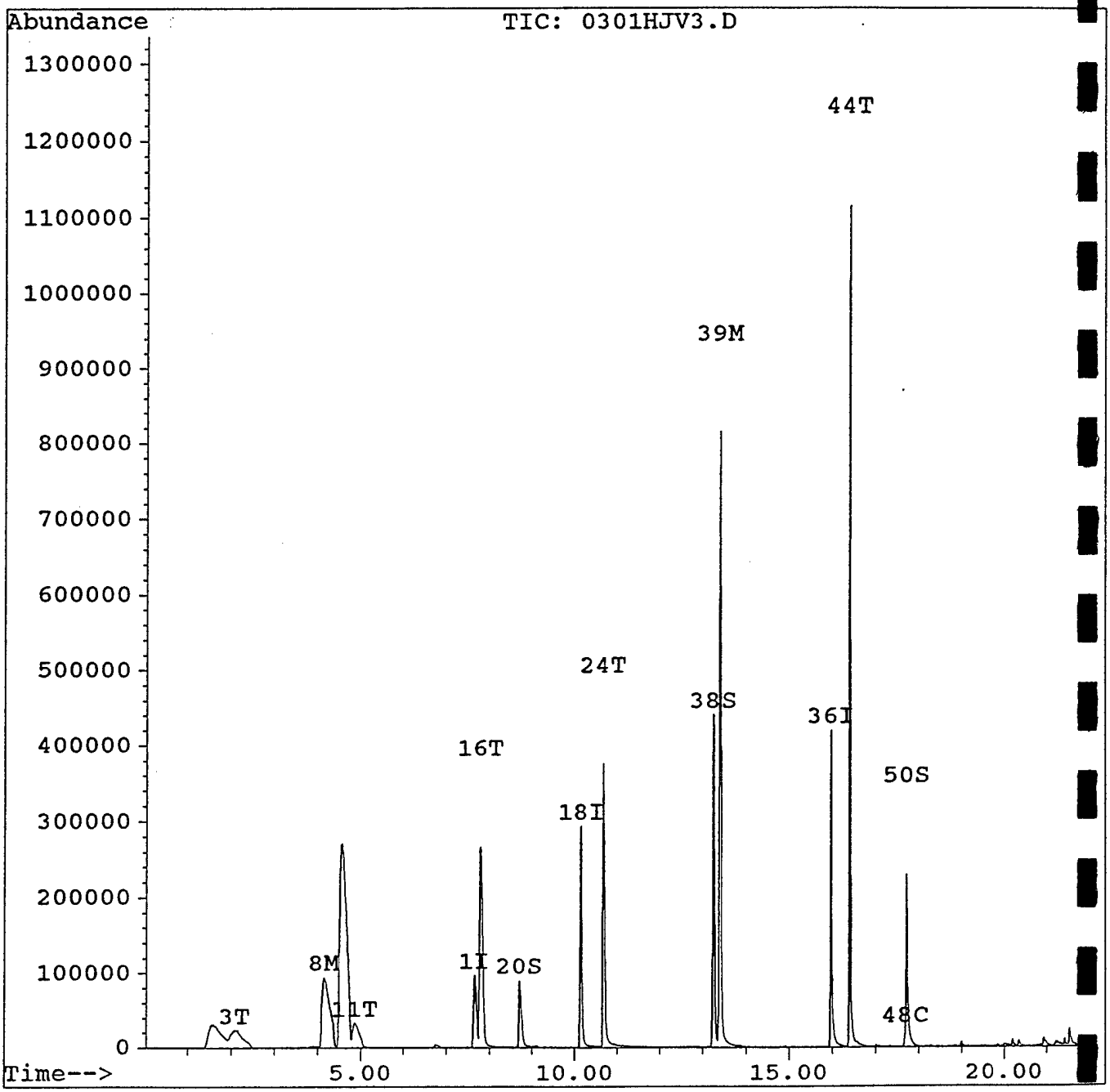
CCC's ALL CLEARED

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV3.D
Acq Time : 1 Mar 94 10:20 am Operator: HJV
Sample : CCC 100PPB Inst : GC/MS
Misc : 5mL WATER +2.5uL CCC + 10uL INTSTD/SURR. Multiplr: 1.00
Quant Time: Mar 1 14:08 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV7.D
Acq Time : 1 Mar 94 12:30 pm Operator: HJV
Sample : 9402010559 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 9:10 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

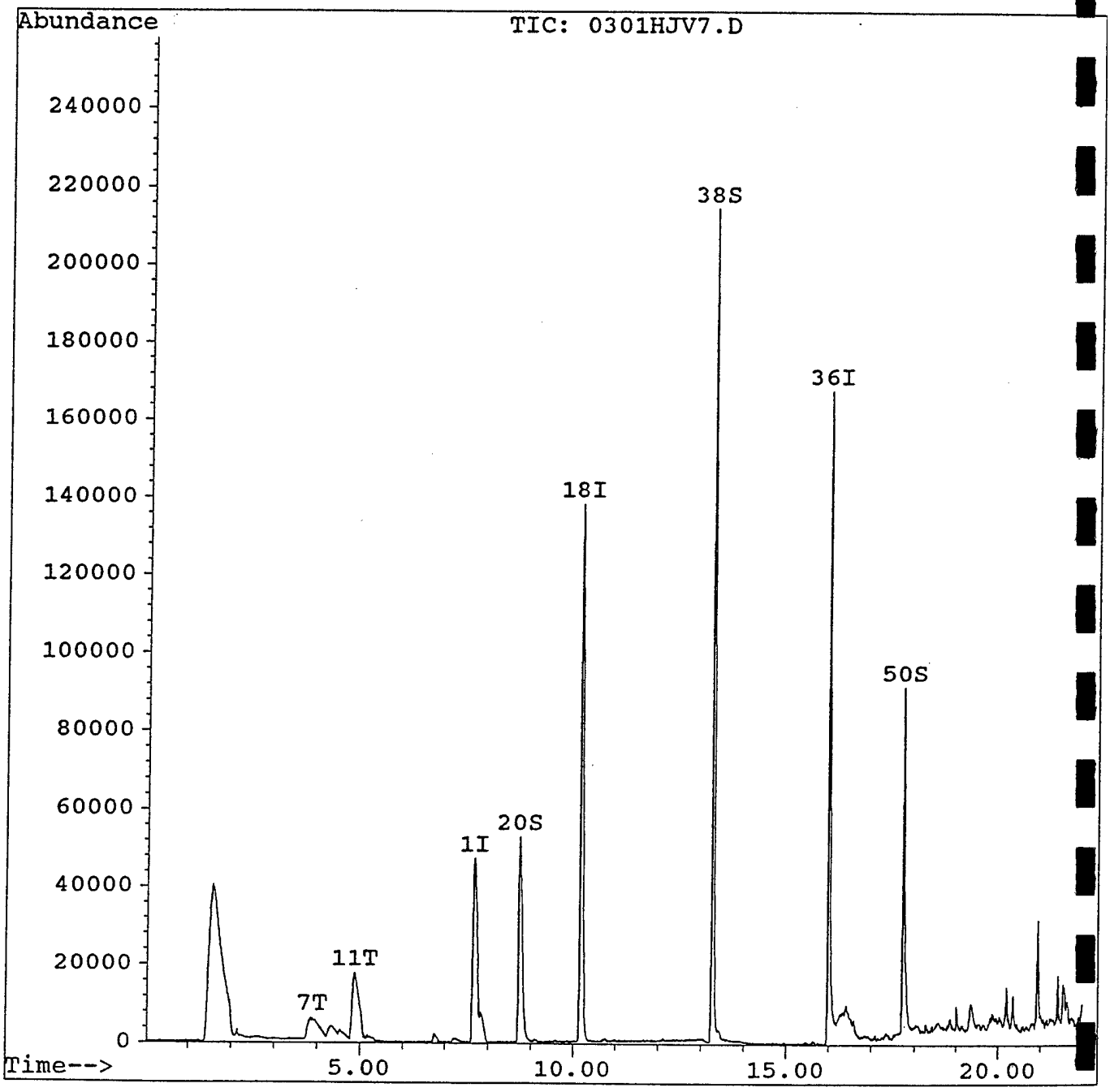
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(I
1) Bromochloromethane	7.68	130	59573	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.16	114	234931	50.00	ug/l	0.
36) Chlorobenzene-d5	15.98	117	150856	50.00	ug/l	0.
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.72	65	116795	54.42	ug/l	108.
38) Toluene-d8	13.26	98	230480	55.65	ug/l	111.
50) Bromofluorobenzene	17.73	95	79901	47.92	ug/l	95.
Target Compounds						Qval
7) Acetone	3.90	43	63327	17.60	ug/l m	1
11) Methylene chloride	4.87	84	42663	18.93	ug/l m	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV7.D
Acq Time : 1 Mar 94 12:30 pm Operator: HJV
Sample : 9402010559 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 9:10 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV8.D
Acq Time : 1 Mar 94 1:03 pm Operator: HJV
Sample : 9402010560 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 9:12 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

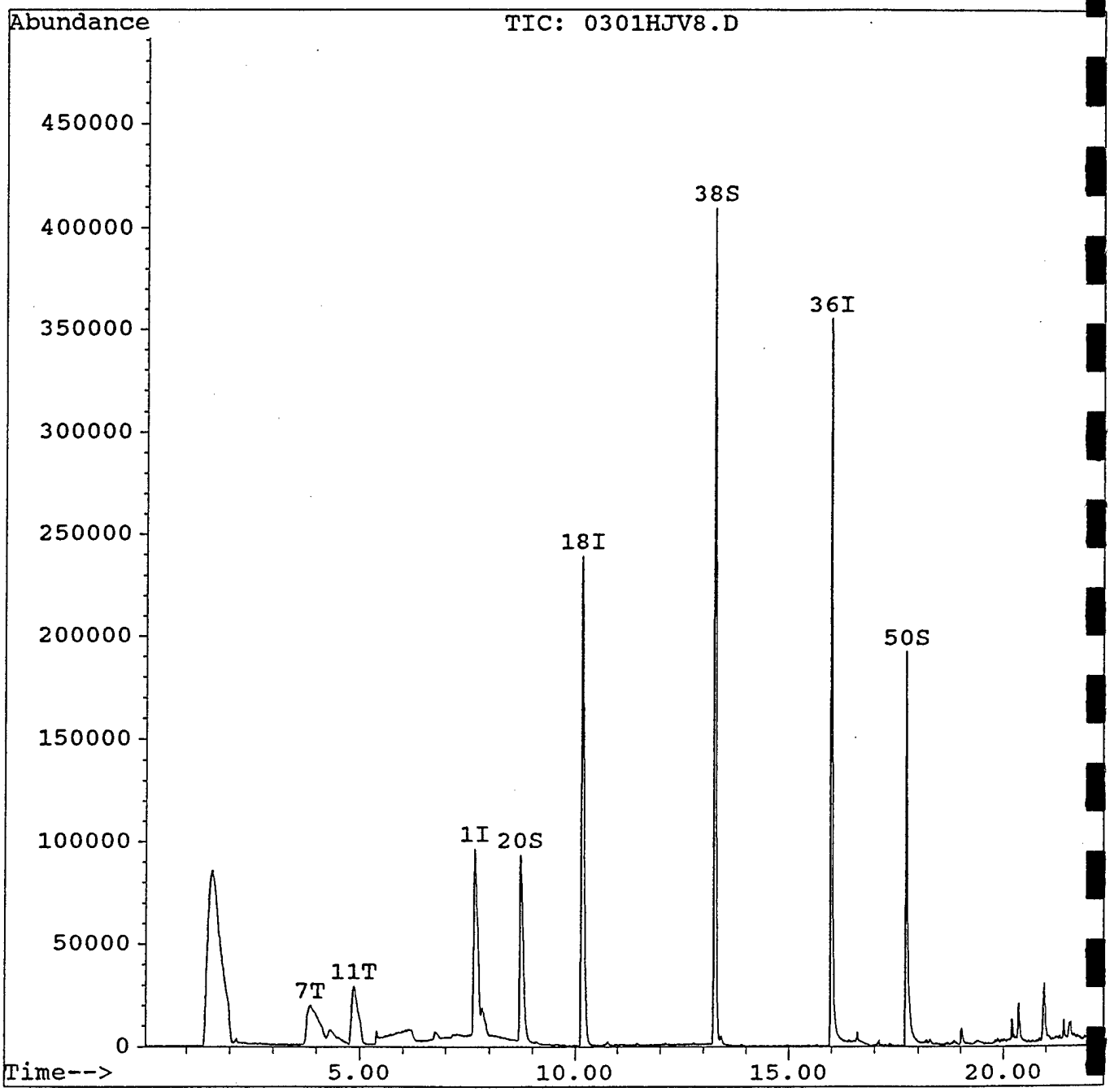
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.66	130	106110	50.00	ug/l	0.(
18) 1,4-Difluorobenzene	10.16	114	418767	50.00	ug/l	0.(
36) Chlorobenzene-d5	15.98	117	314884	50.00	ug/l	0.(
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.71	65	217166	56.76	ug/l	113.5
38) Toluene-d8	13.27	98	442729	51.21	ug/l	102.4
50) Bromofluorobenzene	17.73	95	144709	41.58	ug/l	83.1
Target Compounds						Qvalu
7) Acetone	3.87	43	236106	36.84	ug/l m	8
11) Methylene chloride	4.86	84	73146	18.23	ug/l	9

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV8.D
Acq Time : 1 Mar 94 1:03 pm Operator: HJV
Sample : 9402010560 Inst : GC/M
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 9:12 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV9.D
Acq Time : 1 Mar 94 1:37 pm Operator: HJV
Sample : 9402010561 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 9:14 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

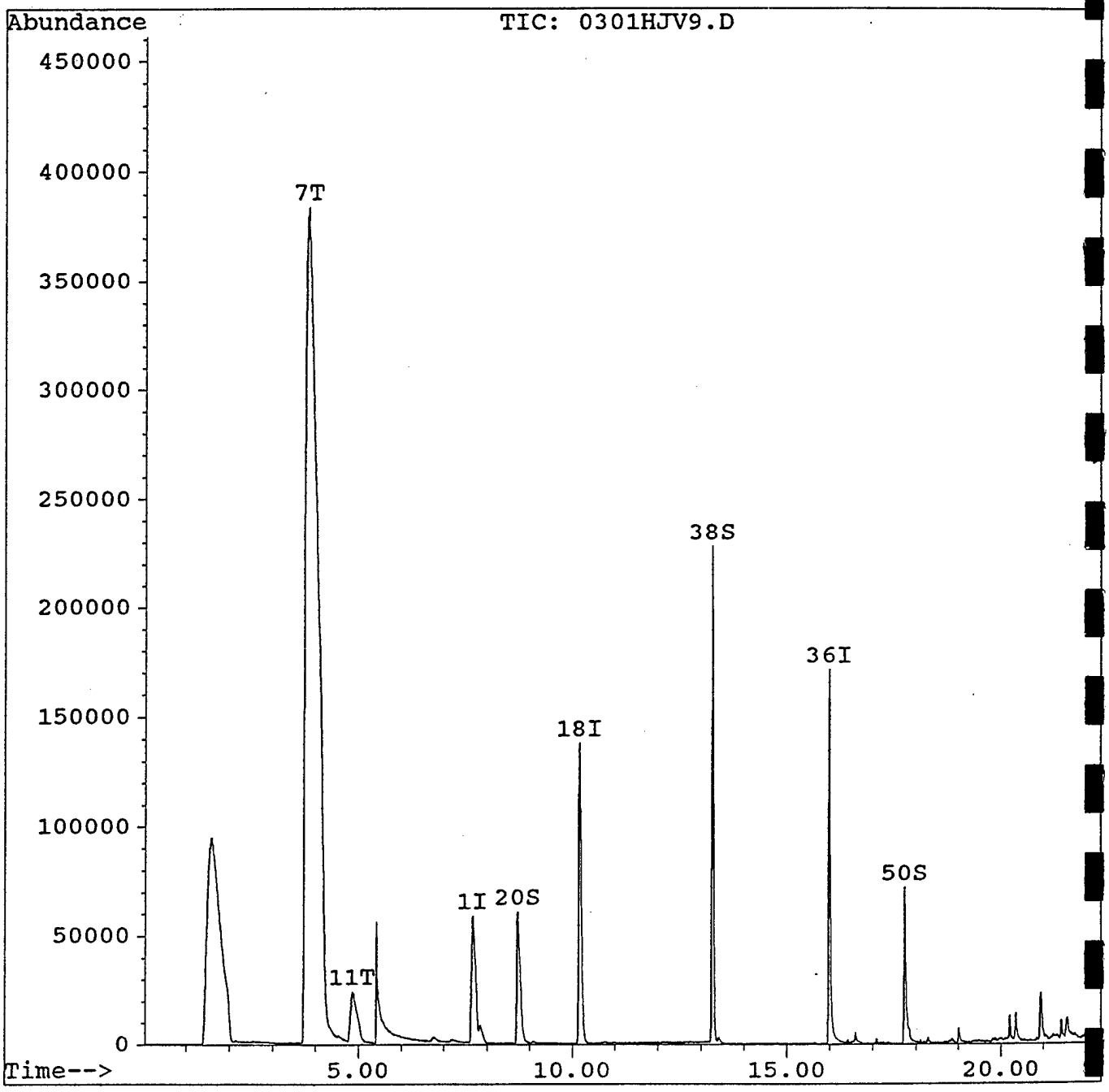
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.67	130	66650	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.16	114	235403	50.00	ug/l	0.
36) Chlorobenzene-d5	15.98	117	151729	50.00	ug/l	0.
System Monitoring Compounds						%Recove
20) 1,2-Dichloroethane-d4	8.71	65	125334	58.28	ug/l	116.
38) Toluene-d8	13.26	98	229058	54.99	ug/l	109.
50) Bromofluorobenzene	17.73	95	65427	39.01	ug/l	78.
Target Compounds						Qval
7) Acetone	3.84	43	5046306	1253.42	ug/l	
11) Methylene chloride	4.86	84	48734	19.33	ug/l	m

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV9.D
Acq Time : 1 Mar 94 1:37 pm Operator: HJV
Sample : 9402010561 Inst : GC/M
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 9:14 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HV10.D
Acq Time : 1 Mar 94 2:11 pm Operator: HJV
Sample : 9402010562 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 9:16 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

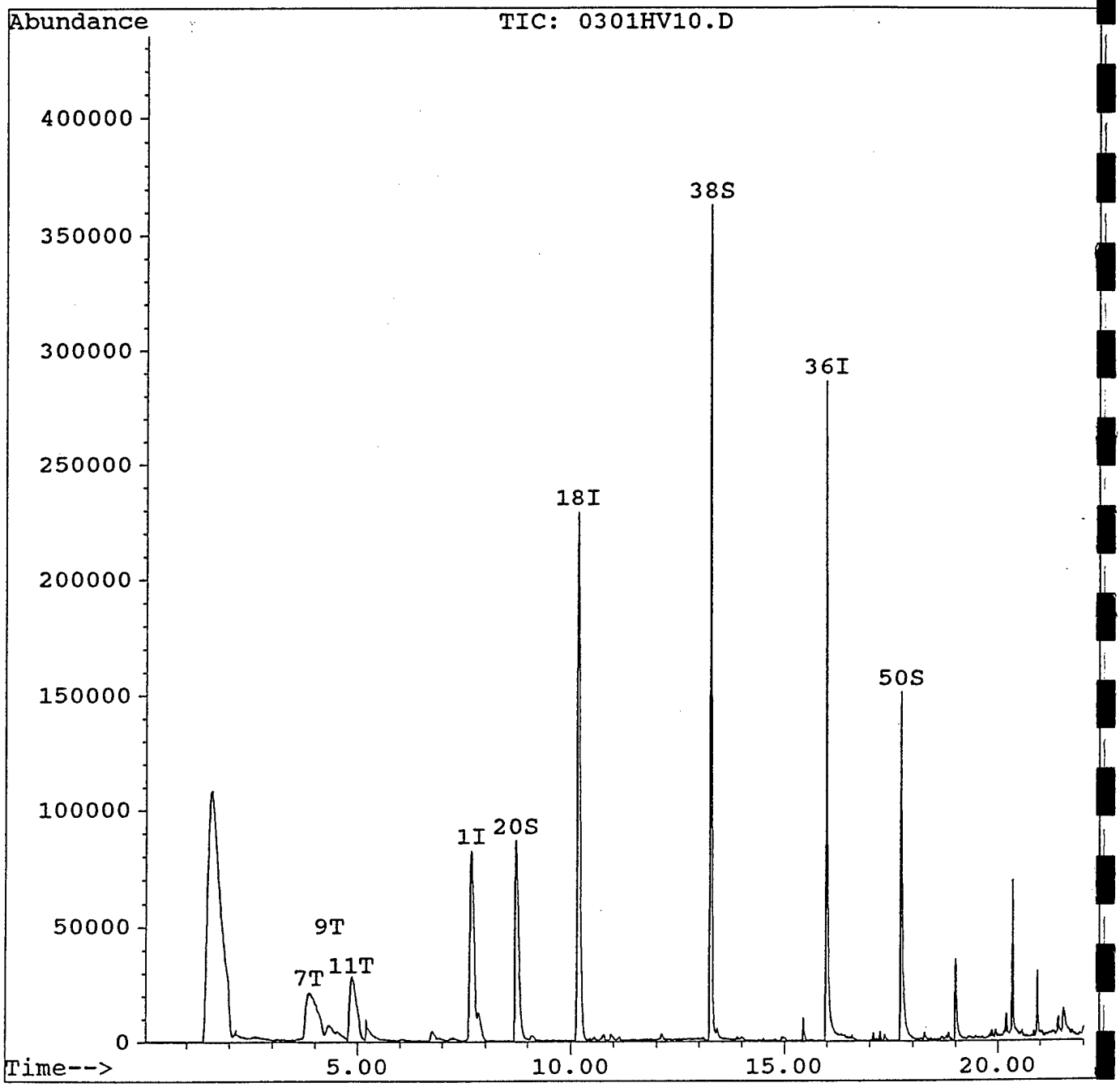
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(
1) Bromochloromethane	7.68	130	101031	50.00	ug/l	0
18) 1,4-Difluorobenzene	10.15	114	395944	50.00	ug/l	0.
36) Chlorobenzene-d5	15.99	117	254542	50.00	ug/l	0
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.71	65	180701	49.95	ug/l	99
38) Toluene-d8	13.26	98	385163	55.11	ug/l	110
50) Bromofluorobenzene	17.73	95	113536	40.36	ug/l	80
Target Compounds						Qval
7) Acetone	3.87	43	256850	42.09	ug/l	m
9) Carbon disulfide	4.35	76	63644	7.76	ug/l	m
11) Methylene chloride	4.84	84	69810	18.27	ug/l	m

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HV10.D
Acq Time : 1 Mar 94 2:11 pm Operator: HJV
Sample : 9402010562 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 9:16 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HV11.D
Acq Time : 1 Mar 94 2:45 pm Operator: HJV
Sample : 9402010563 Inst : GC/MS
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00
Quant Time: Mar 2 9:18 1994

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.66	130	96426	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.15	114	343906	50.00	ug/l	0.
36) Chlorobenzene-d5	15.98	117	240891	50.00	ug/l	0.
System Monitoring Compounds						%Recove
20) 1,2-Dichloroethane-d4	8.71	65	182725	58.16	ug/l	116.
38) Toluene-d8	13.26	98	331719	50.16	ug/l	100.
50) Bromofluorobenzene	17.72	95	115654	43.44	ug/l	86.8
Target Compounds						Qvalu
7) Acetone	3.90	43	109324	18.77	ug/l m	5
11) Methylene chloride	4.87	84	66152	18.14	ug/l m	9

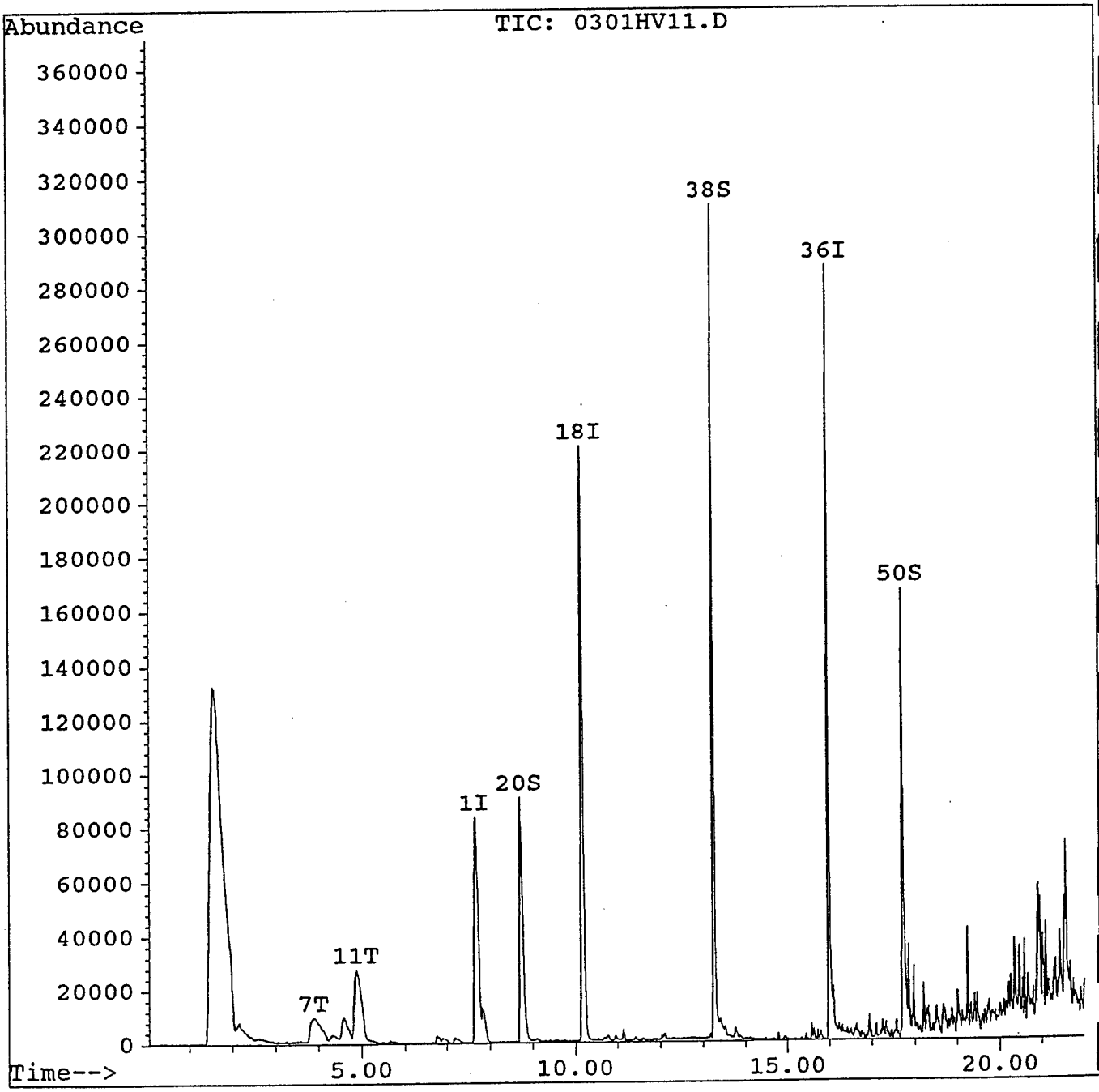
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HV11.D
Acq Time : 1 Mar 94 2:45 pm
Sample : 9402010563
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S
Quant Time: Mar 2 9:18 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\0314942\0314HV1.D
Acq Time : 13 Mar 94 3:08 am Operator: HJV
Sample : 9402010572 SEMI VOL. Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Apr 12 8:26 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

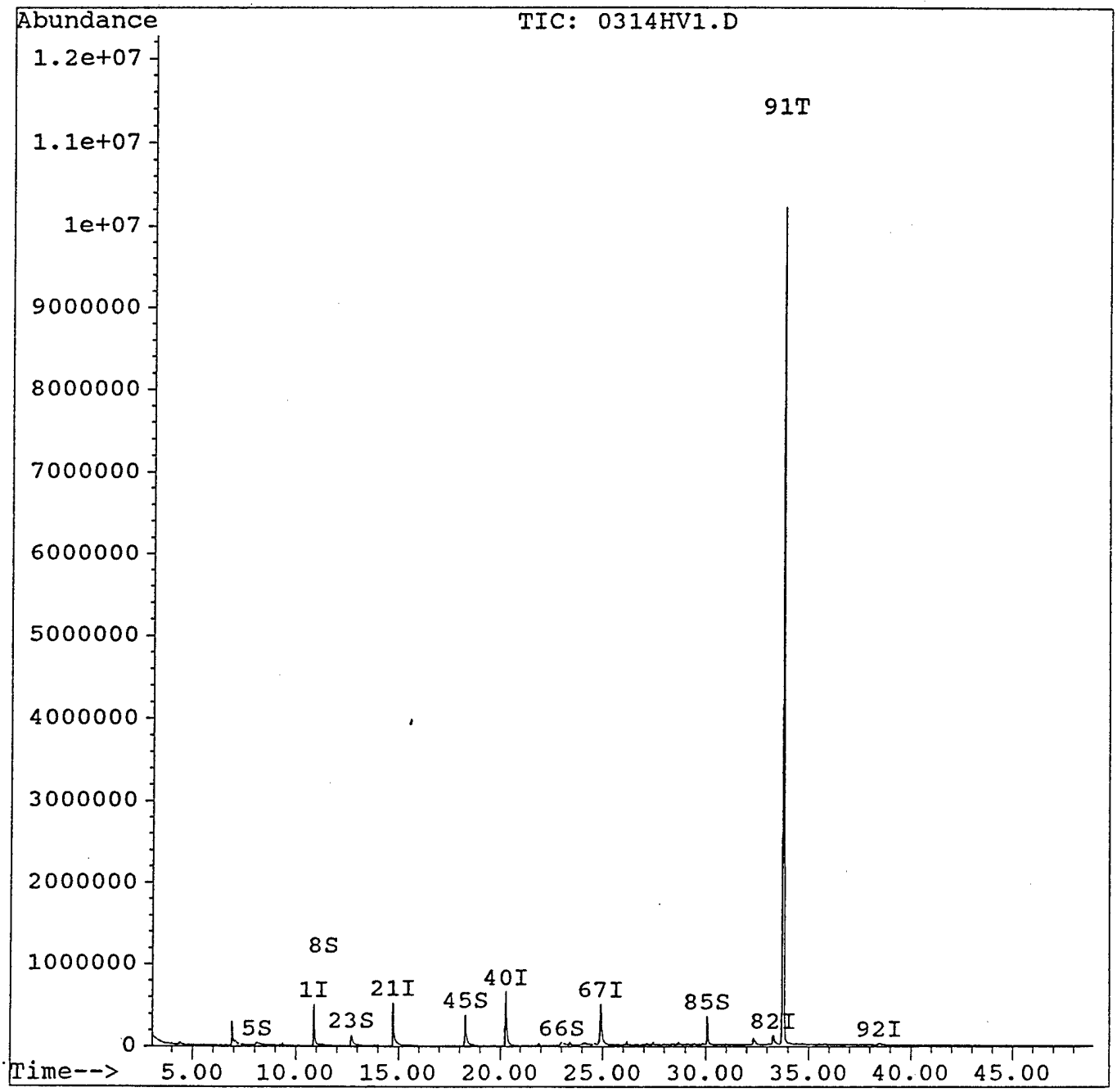
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.87	152	366757	40.00	ng	0.11
21) Naphthalene-d8	14.74	136	1305755	40.00	ng	0.09
40) Acenaphthene-d10	20.28	164	750763	40.00	ng	0.11
67) Phenanthrene-d10	24.91	188	1028163	40.00	ng	0.06
82) Chrysene-d12	33.30	240	197211	40.00	ng	0.17
92) Perylene-d12	38.48	264	80542	40.00	ng	0.42
System Monitoring Compounds						**%Recovery**
5) 2-Fluorophenol	8.12	112	274170	29.49	ng	73.72%
8) Phenol-d5	11.35	99	283461	23.09	ng	57.72%
23) Nitrobenzene-d5	12.71	82	366825	33.37	ng	83.42%
45) 2-Fluorobiphenyl	18.28	172	759784	27.92	ng	69.80%
66) 2,4,6-Tribromophenol	23.03	330	79909	28.81	ng	72.04%
85) Terphenyl-d14	30.07	244	348537	61.68	ng	154.20%
Target Compounds						**Qvalue**
91) Bis(2-ethylhexyl) phthalat	33.80	149	11541038	1624.81	ng	m 96

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0314942\0314HV1.D
Acq Time : 13 Mar 94 3:08 am Operator: HJV
Sample : 9402010572 SEMI VOL. Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Apr 12 8:26 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HV14.D
Acq Time : 1 Mar 94 4:32 pm
Sample : 9402010572
Misc : 5mL SAMPLE + 10uL INTSTD/SURR.
Quant Time: Mar 2 9:23 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

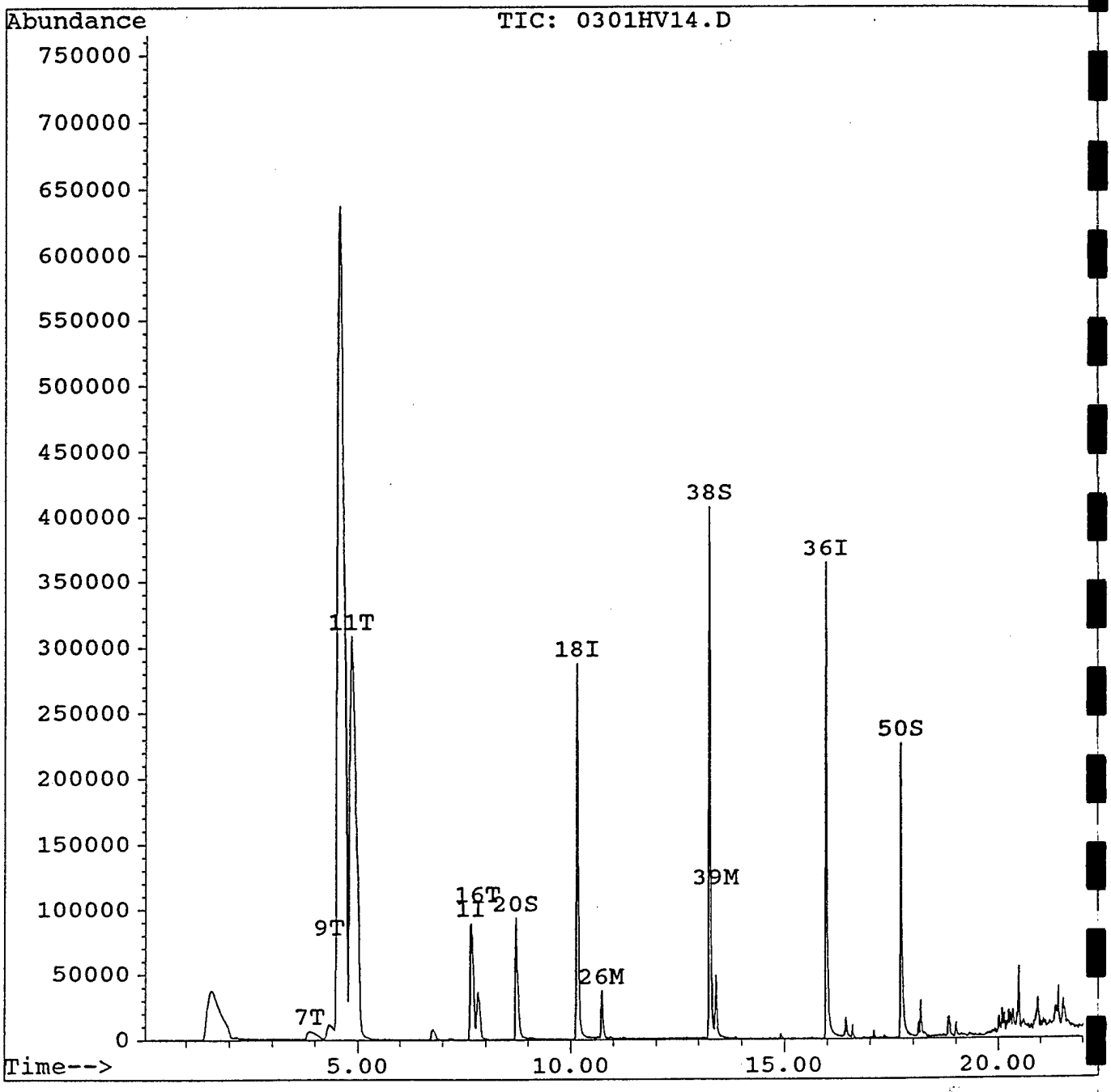
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.66	130	90316	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.15	114	363553	50.00	ug/l	0.
36) Chlorobenzene-d5	15.98	117	295762	50.00	ug/l	0.
System Monitoring Compounds						%Recove
20) 1,2-Dichloroethane-d4	8.71	65	168152	50.63	ug/l	101.
38) Toluene-d8	13.26	98	407371	50.17	ug/l	100.
50) Bromofluorobenzene	17.73	95	138594	42.40	ug/l	84.
Target Compounds						Qval
7) Acetone	3.89	43	60692	11.12	ug/l	m
9) Carbon disulfide	4.35	76	105938	14.46	ug/l	m
11) Methylene chloride	4.84	84	766496	224.39	ug/l	
16) Chloroform	7.82	83	70766	12.75	ug/l	
26) Trichloroethene	10.73	130	19730	8.49	ug/l	
39) Toluene	13.41	92	30910	5.26	ug/l	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HV14.D
Acq Time : 1 Mar 94 4:32 pm
Sample : 9402010572
Misc : 5mL SAMPLE + 10uL INTSTD/SURR.
Quant Time: Mar 2 9:23 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Information from Data File:

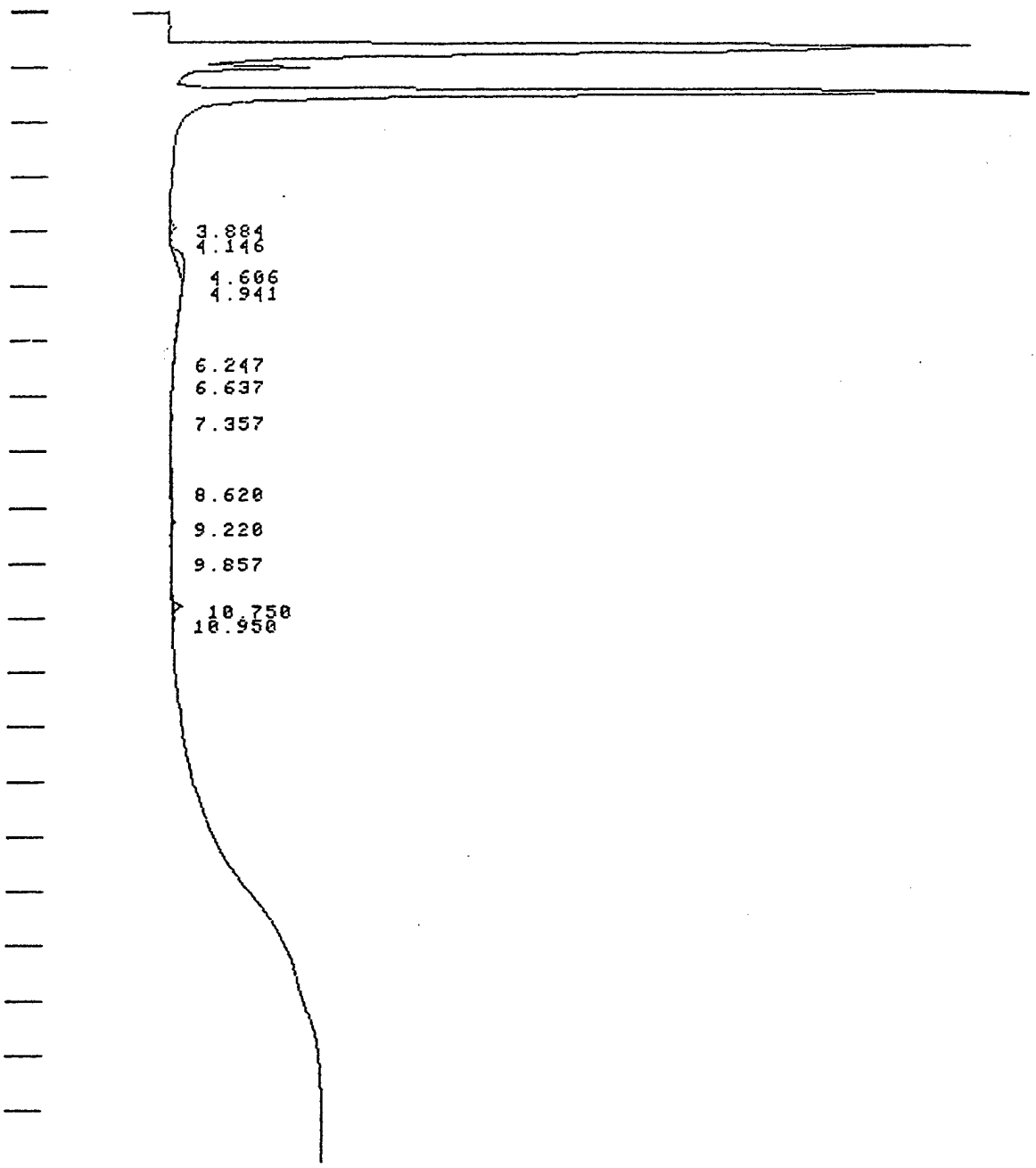
File: C:\HPCHEM\1\DATA\030194\0301HV14.D
Operator: HJV
Date Acquired: 1 Mar 94 4:32 pm
Method File: 8240
Sample Name: 9402010572
Misc Info: 5mL SAMPLE + 10uL INTSTD/SURR.
Vial Number: 1

Search Libraries: C:\DATABASE\NBS54K.L Minimum Quality: 50

Unknown Spectrum: Apex
Integration Events: AutoIntegrate

Pk#	RT	Area%	Library/ID	Ref#	CAS#	Qual
1	1.59	5.34	C:\DATABASE\NBS54K.L			
			No matches found			
2	4.56	45.14	C:\DATABASE\NBS54K.L			
			Ethane, 1,1,2-trichloro-1,2,2-trif	16399	000076-13-1	83
			Ethane, 1,1,2,2-tetrachloro-1-fluo	15887	000354-14-3	50
			Methane, trichlorofluoro-	5515	000075-69-4	35
3	4.84	20.81	C:\DATABASE\NBS54K.L			
			Methane, dichloro-	492	000075-09-2	91
4	7.66	3.17	C:\DATABASE\NBS54K.L			
			Methane, bromochloro-	4239	000074-97-5	95
			Methane, dichloro-	492	000075-09-2	47
5	8.71	2.74	C:\DATABASE\NBS54K.L			
			No matches found			
6	10.15	5.81	C:\DATABASE\NBS54K.L			
			Benzene, 1,4-difluoro-	2556	000540-36-3	95
			Benzene, 1,2-difluoro-	2555	000367-11-3	91
			Benzene, 1,3-difluoro-	2557	000372-18-9	90
7	13.26	7.08	C:\DATABASE\NBS54K.L			
			Mepivacaine (carbocaine)	28096	000096-88-8	38
			1H-Imidazole-2-methanol	1102	003724-26-3	28
8	15.98	6.06	C:\DATABASE\NBS54K.L			
			1H-Pyrazole, 3-methyl-	433	001453-58-3	7
9	17.73	3.84	C:\DATABASE\NBS54K.L			
			Benzene, 1-bromo-2-fluoro-	13705	001072-85-1	94
			Benzene, 1-bromo-3-fluoro-	13704	001073-06-9	91
			Benzene, 1-bromo-4-fluoro-	13706	000460-00-4	91

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC105

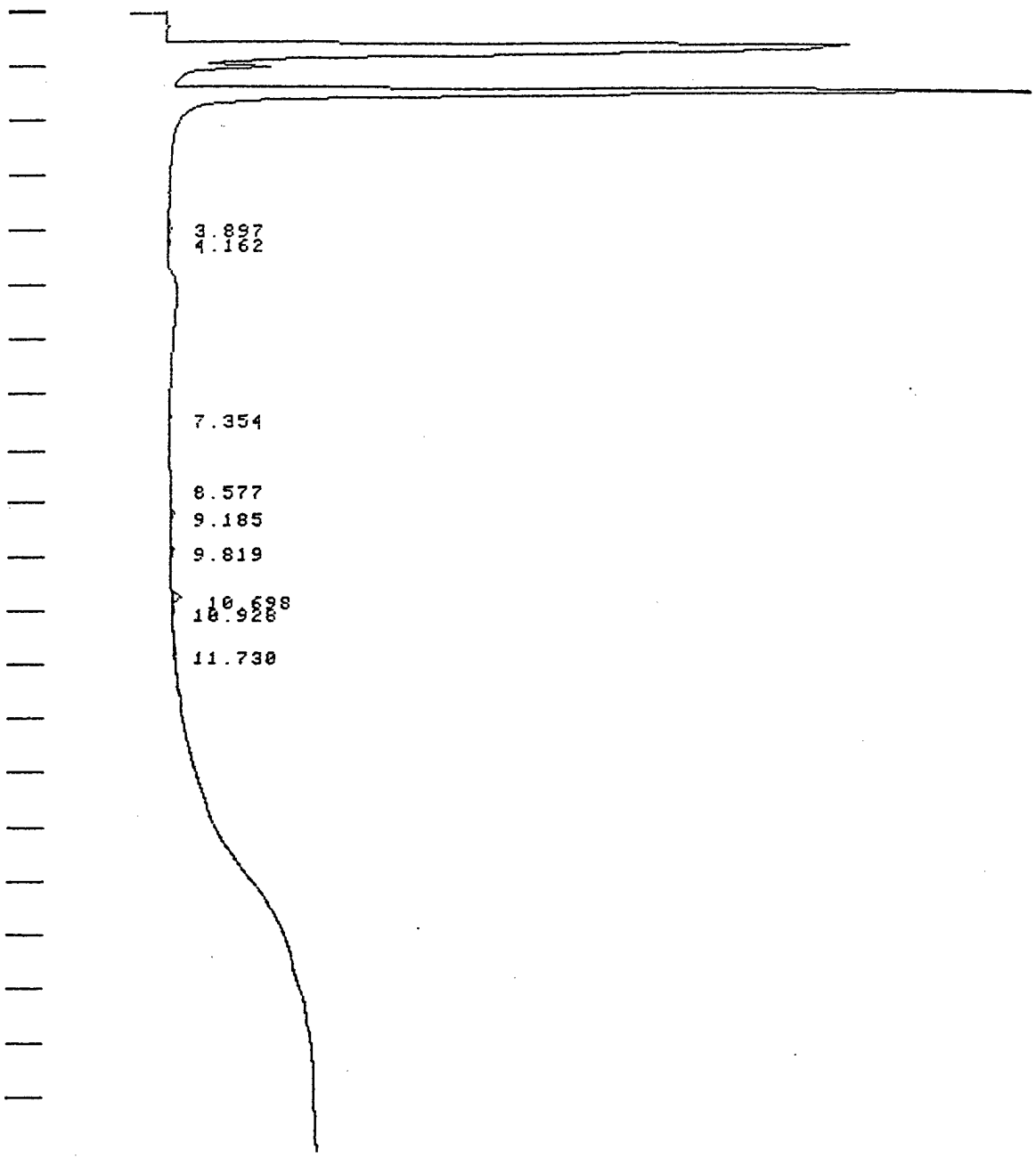
CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 8:35 3 MAR 94

SAMPLE: EXTR. BLANK METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 3620

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC106

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 9:06 3 MAR 94

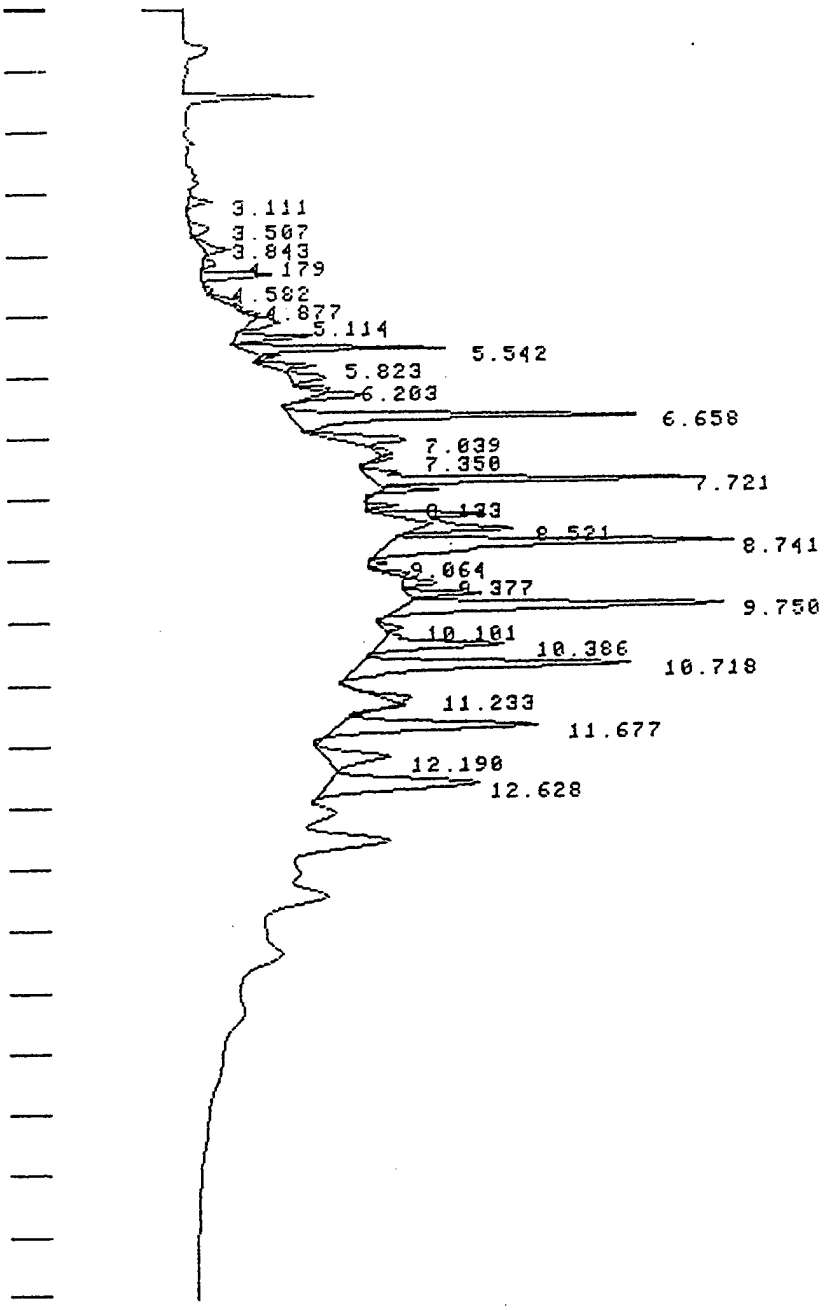
SAMPLE: 9402010531 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 1576

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000

CHART SPEED 0.8 CM/MIN
ATTEN: 256 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC107

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 9:36 3 MAR 94

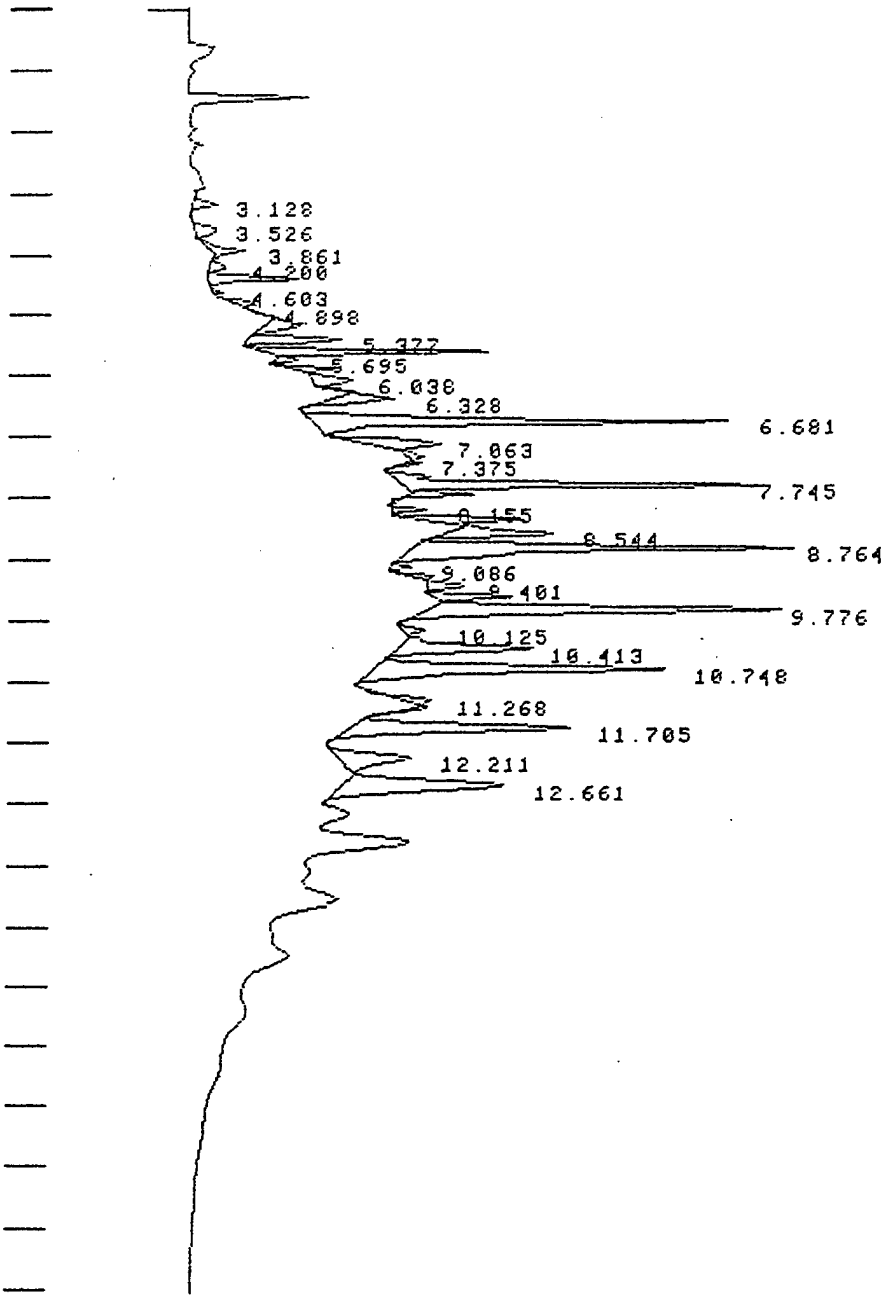
SAMPLE: 531 SPIKE METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 6150120

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000

ATTEN: 256 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC108

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 10:14 3 MAR 94

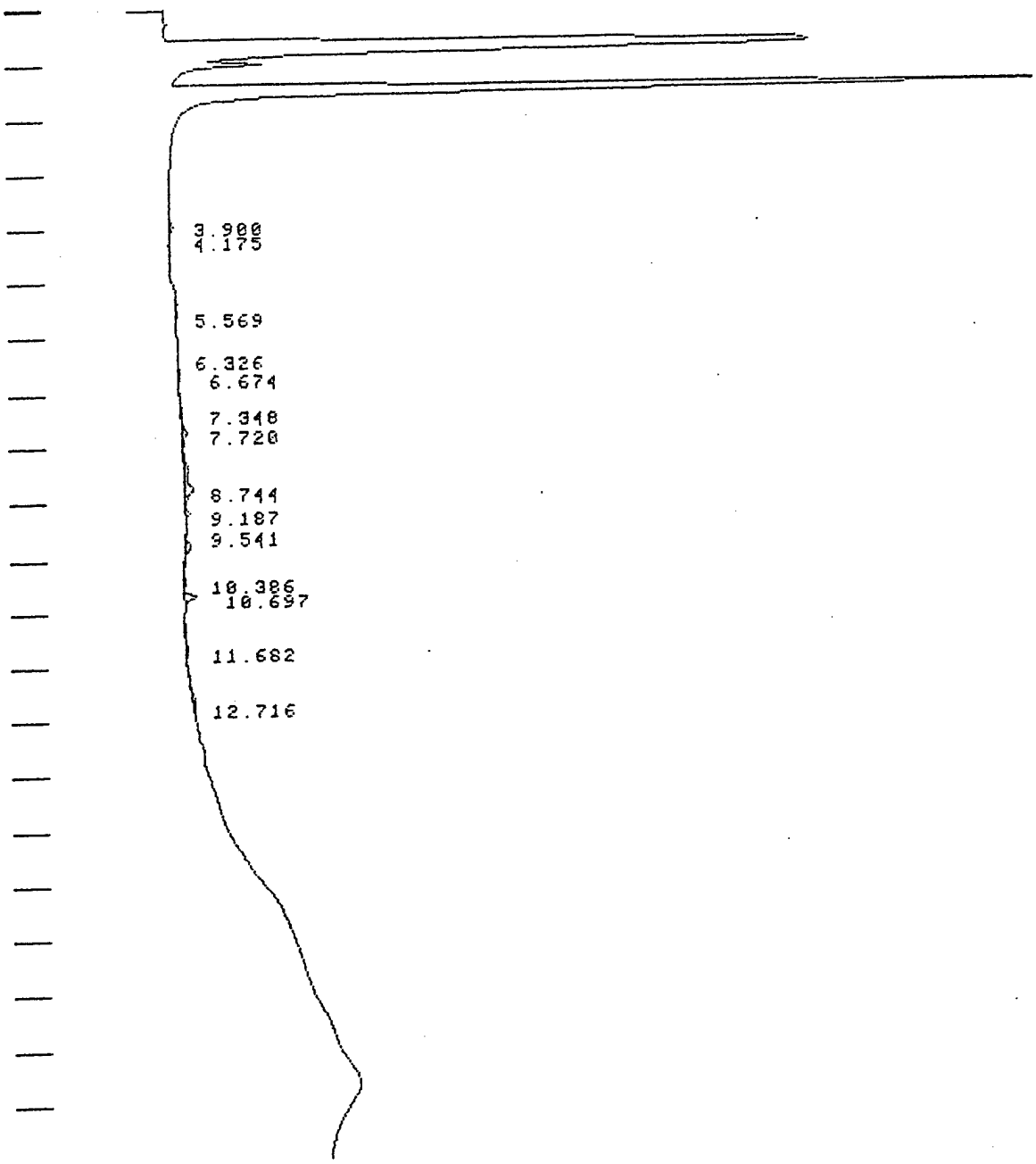
SAMPLE: SPK DUP METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 6818429

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC109

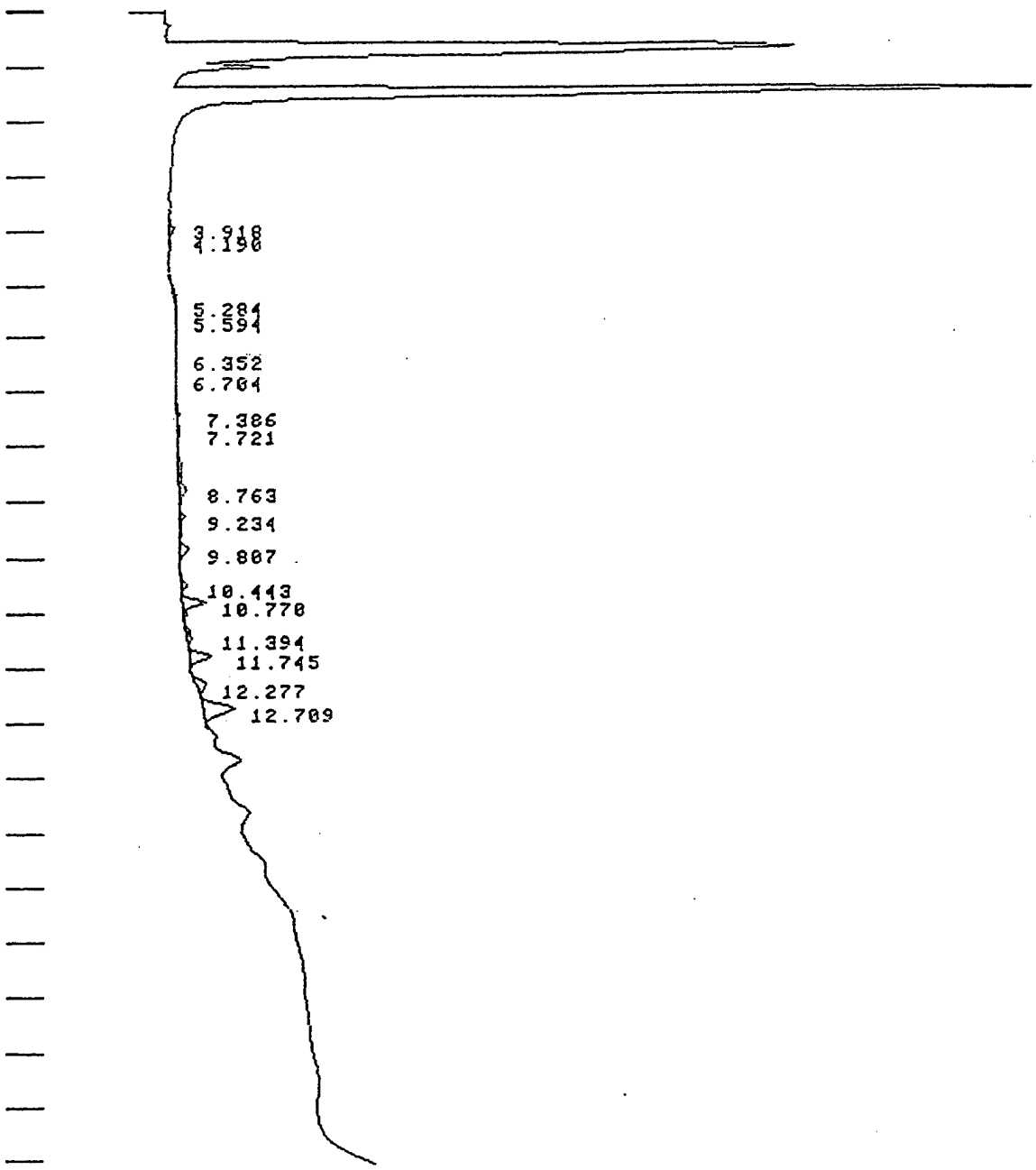
CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 10:45 3 MAR 94

SAMPLE: 9402010532 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 5694

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC110

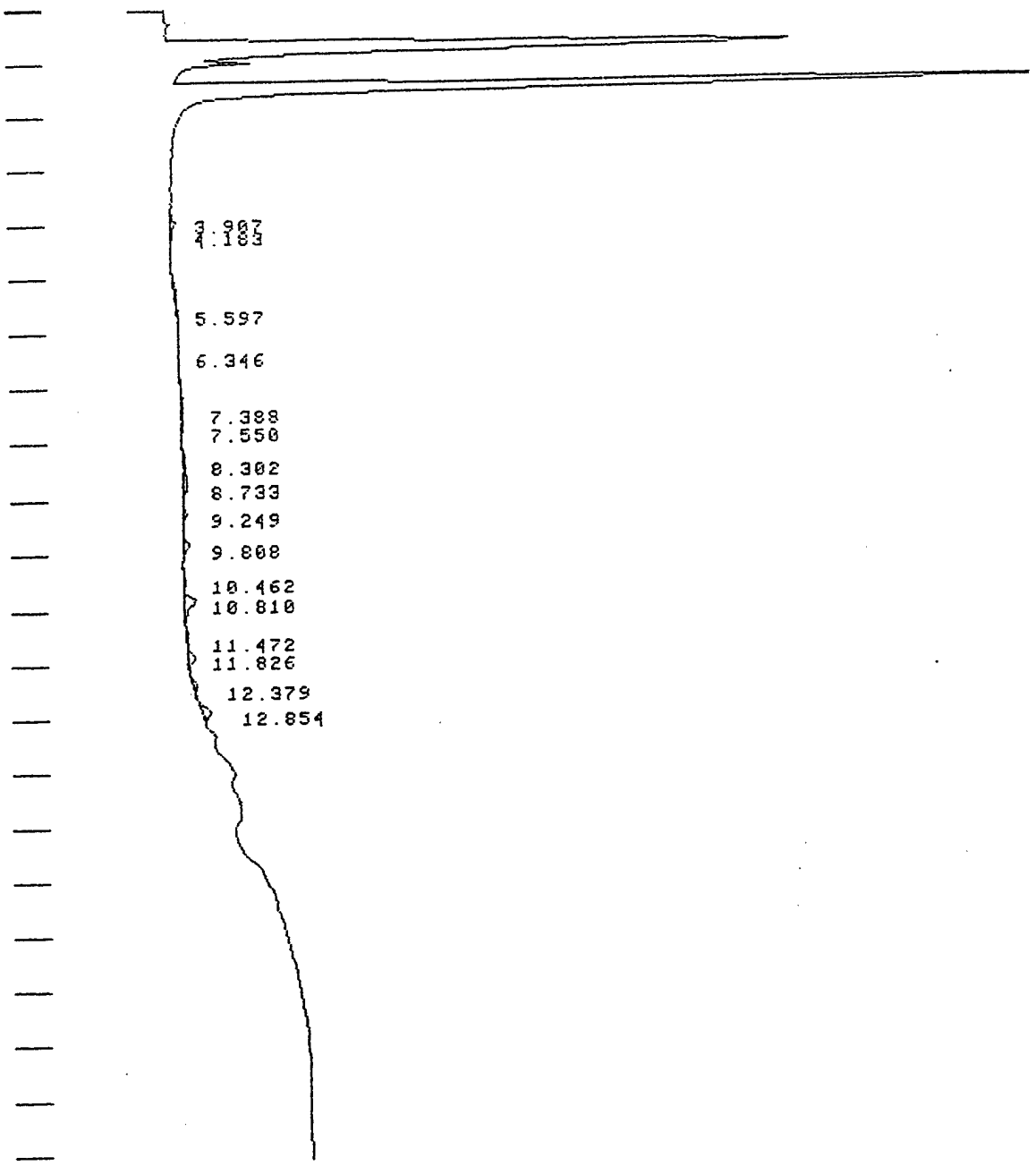
CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 11:28 3 MAR 94

SAMPLE: 9402010533 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 13067

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC111

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 12:37 3 MAR 94

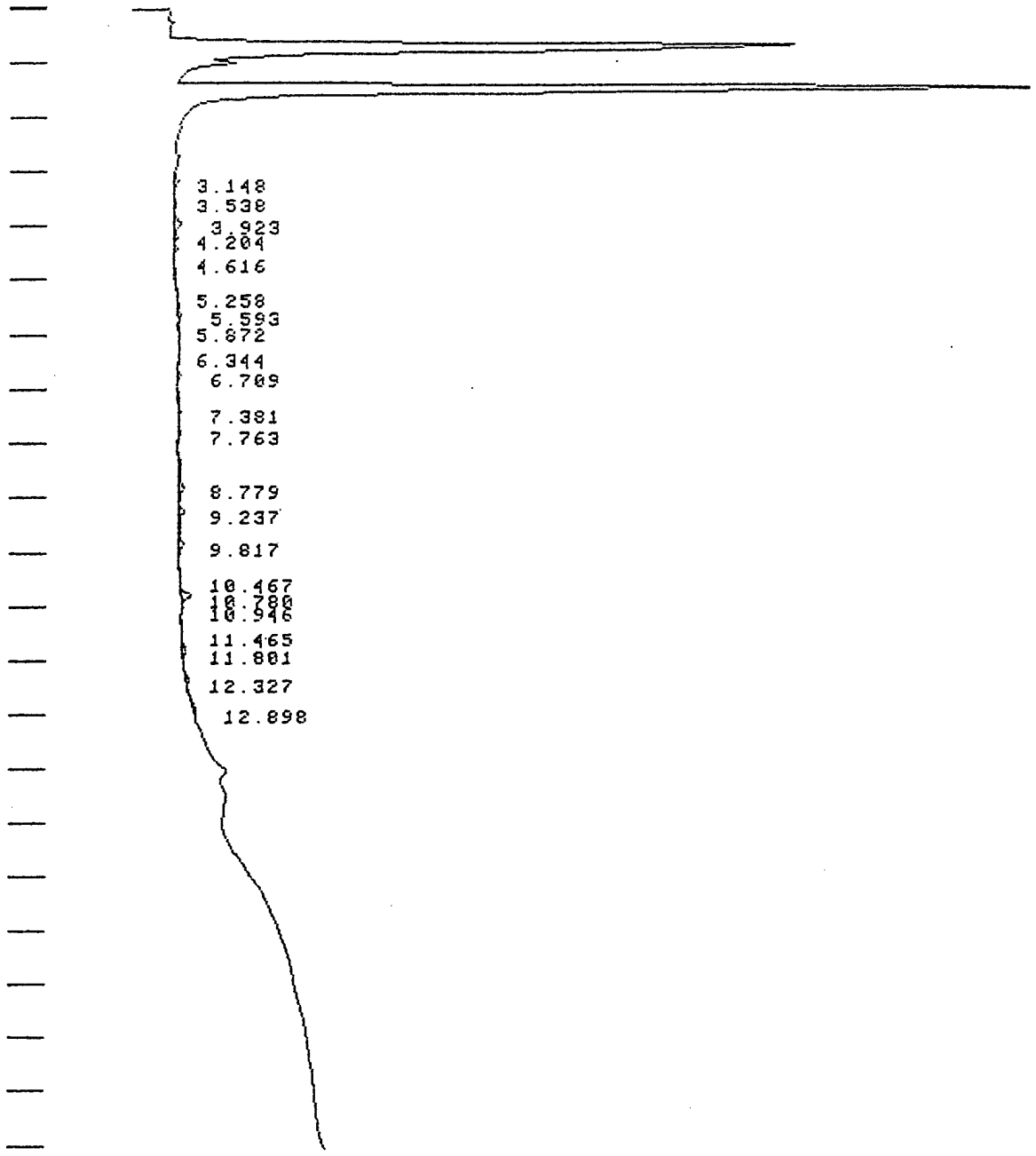
SAMPLE: 9402010534 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 7007

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC112

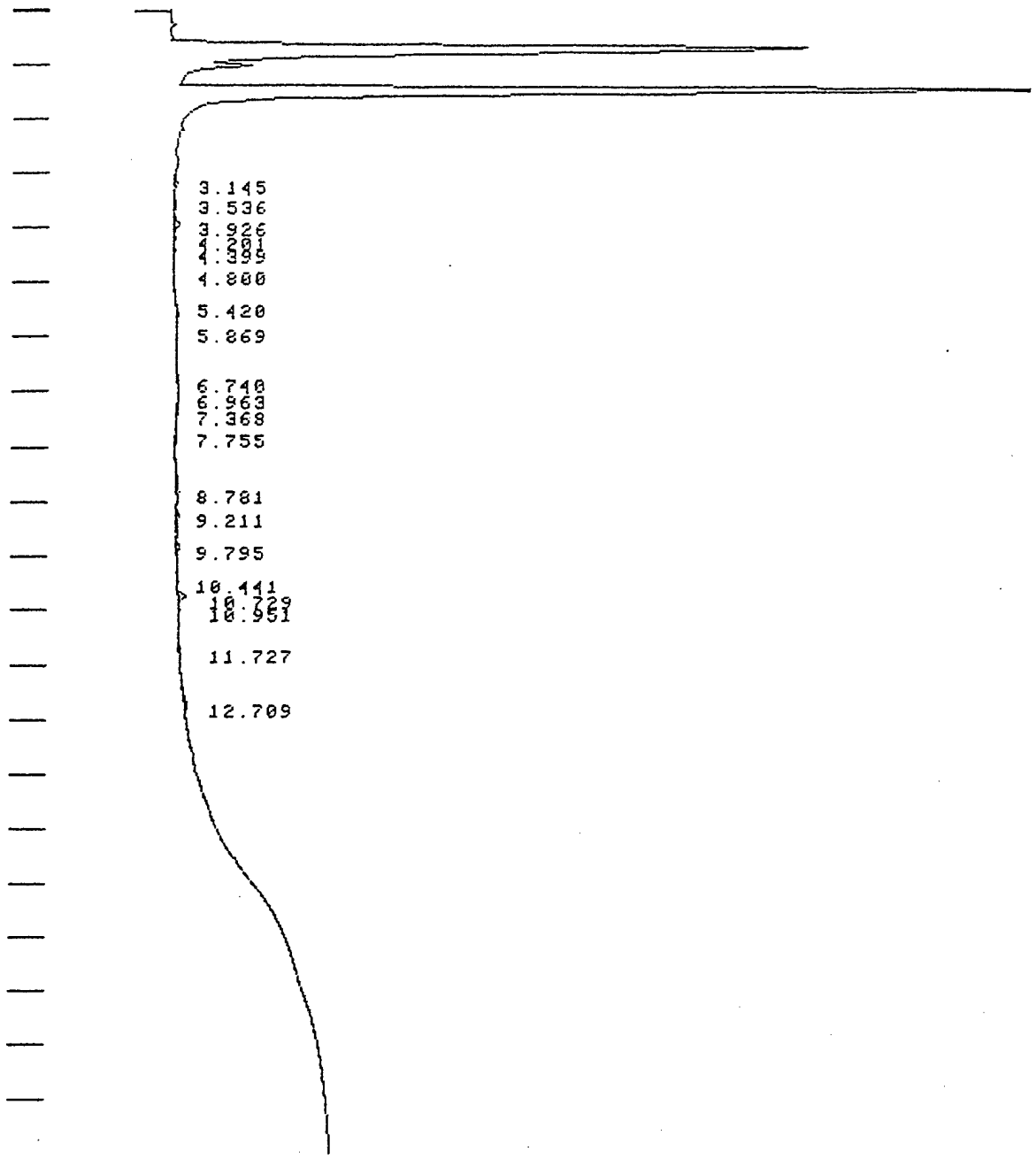
CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 13:27 3 MAR 94

SAMPLE: 9402010535 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 5894

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC113

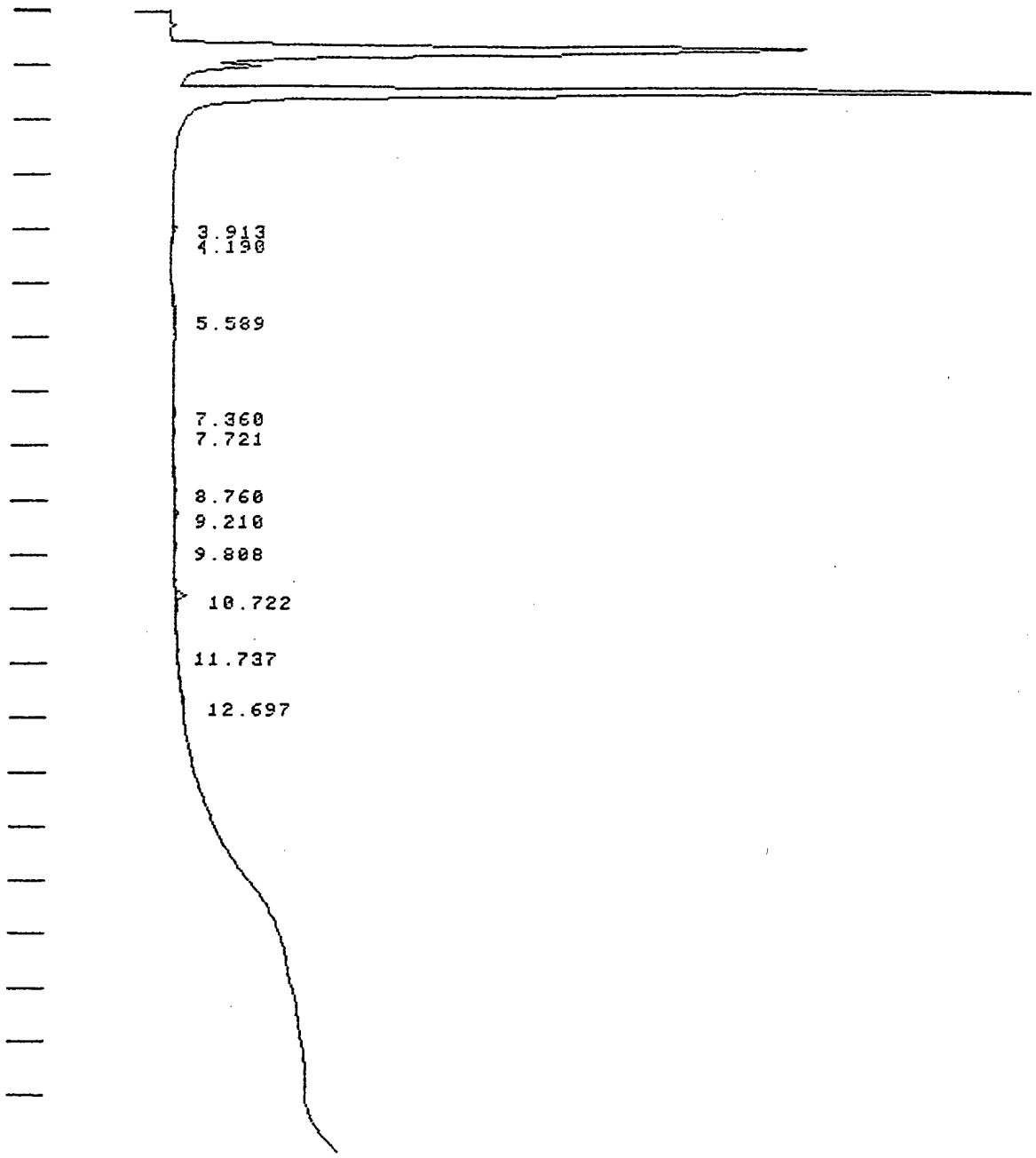
CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 13:59 3 MAR 94

SAMPLE: 9402010536 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 3346

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC114

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 14:33 3 MAR 94

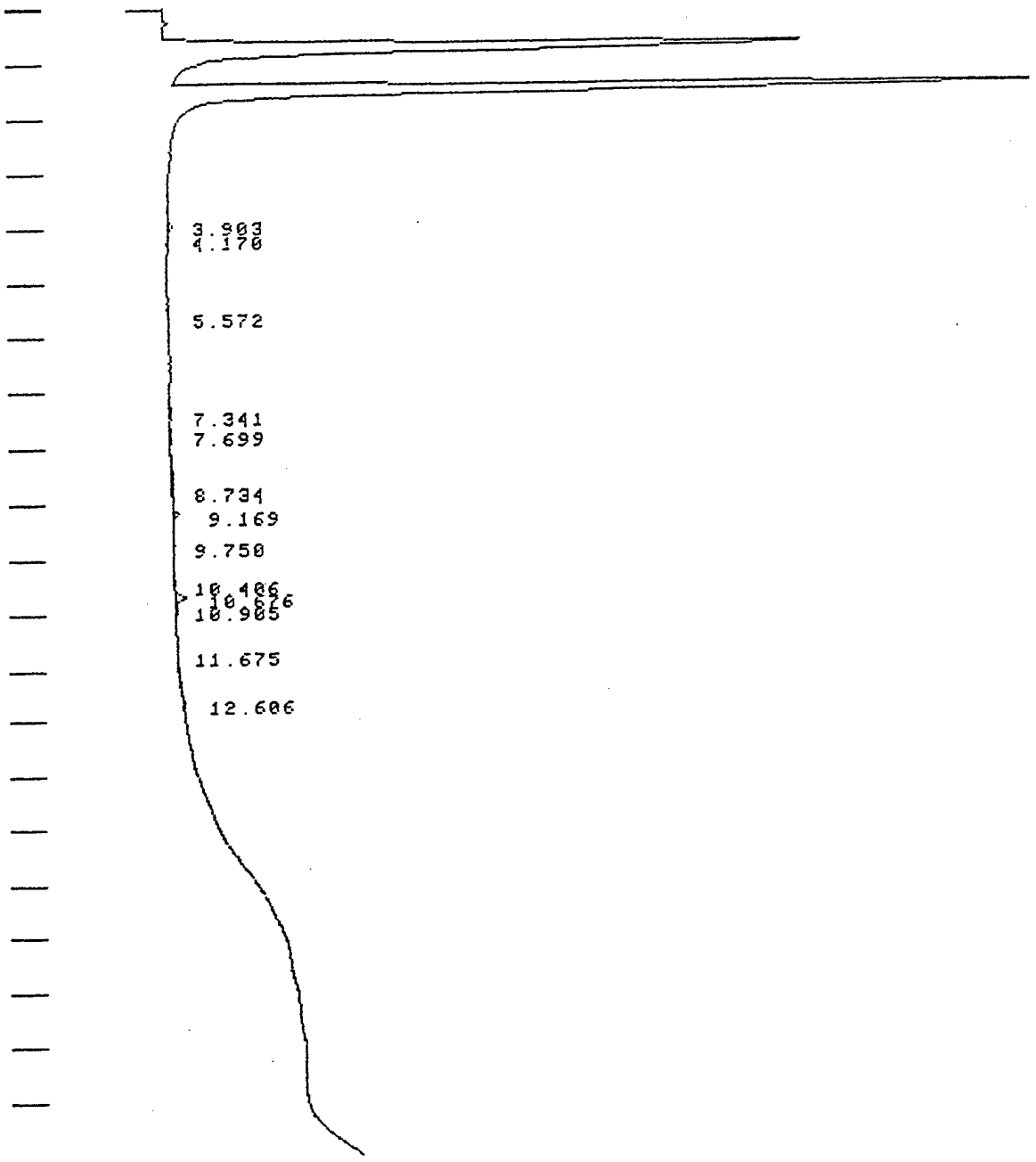
SAMPLE: 9402010537 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 3221

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC115

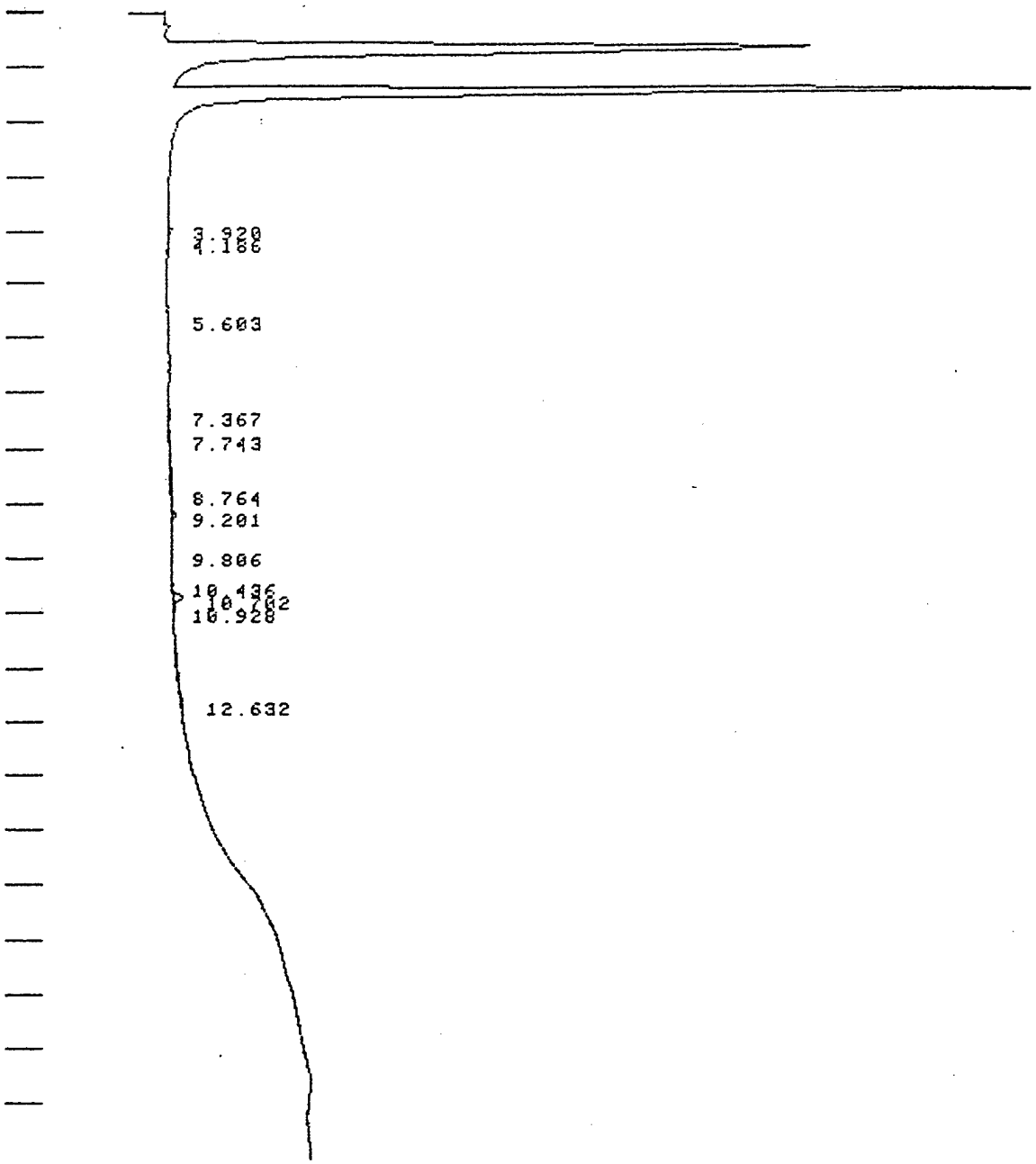
CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 15:05 3 MAR 94

SAMPLE: 9402010538 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 2399

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC116

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 15:35 3 MAR 94

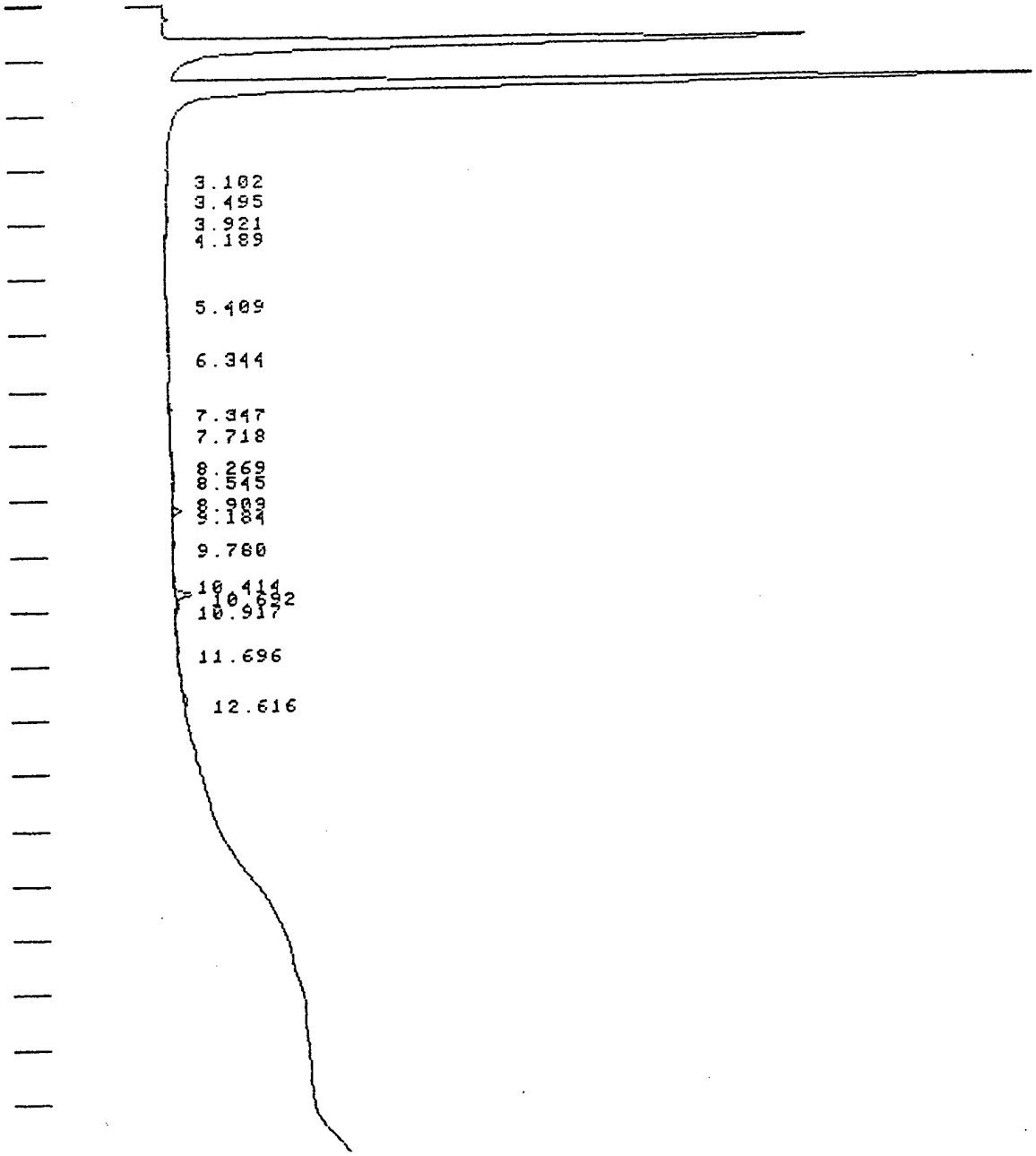
SAMPLE: 9402010539 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 2097

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC117

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 16:08 3 MAR 94

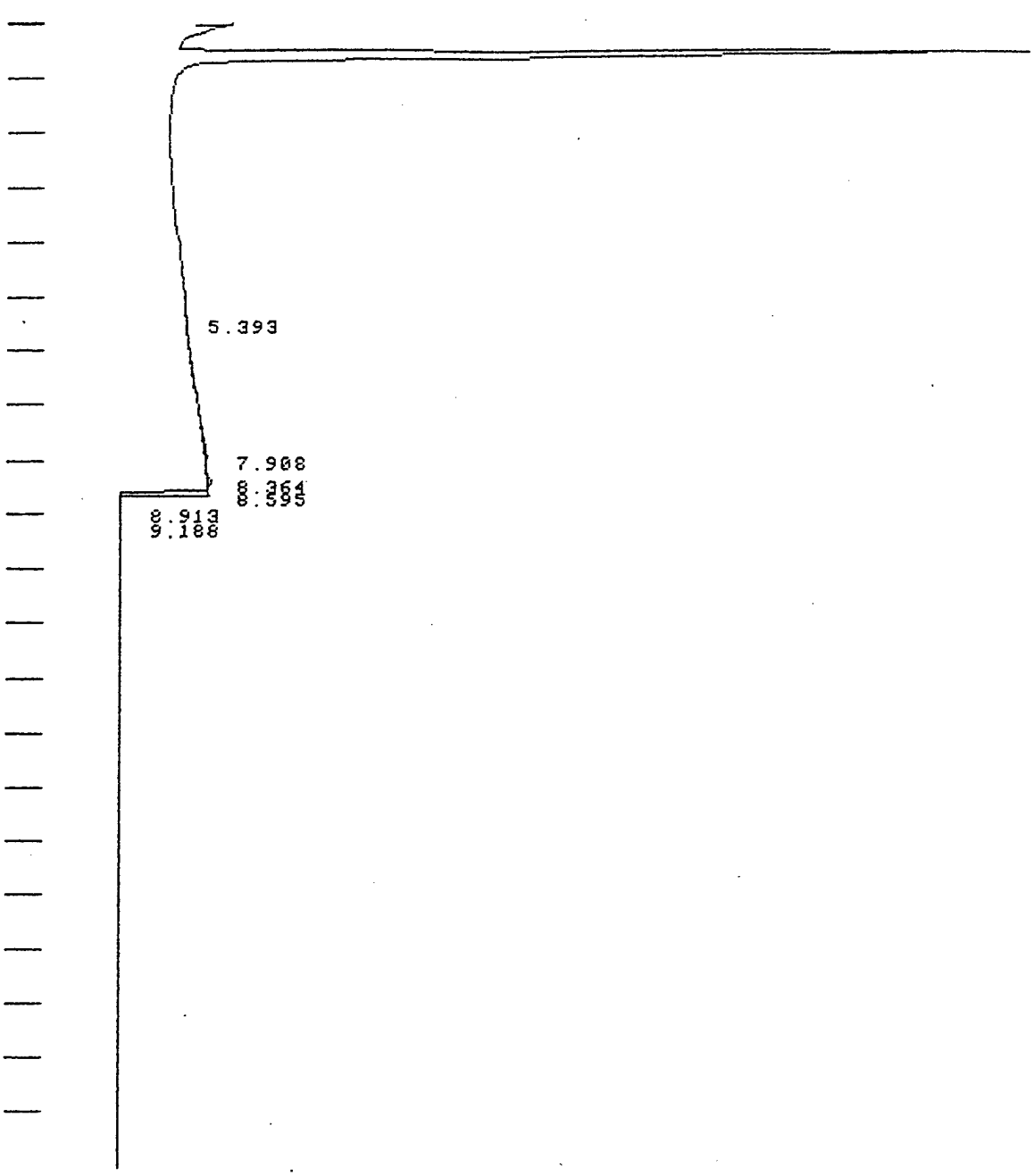
SAMPLE: 540 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 3108

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC118

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 7:23 4 MAR 94

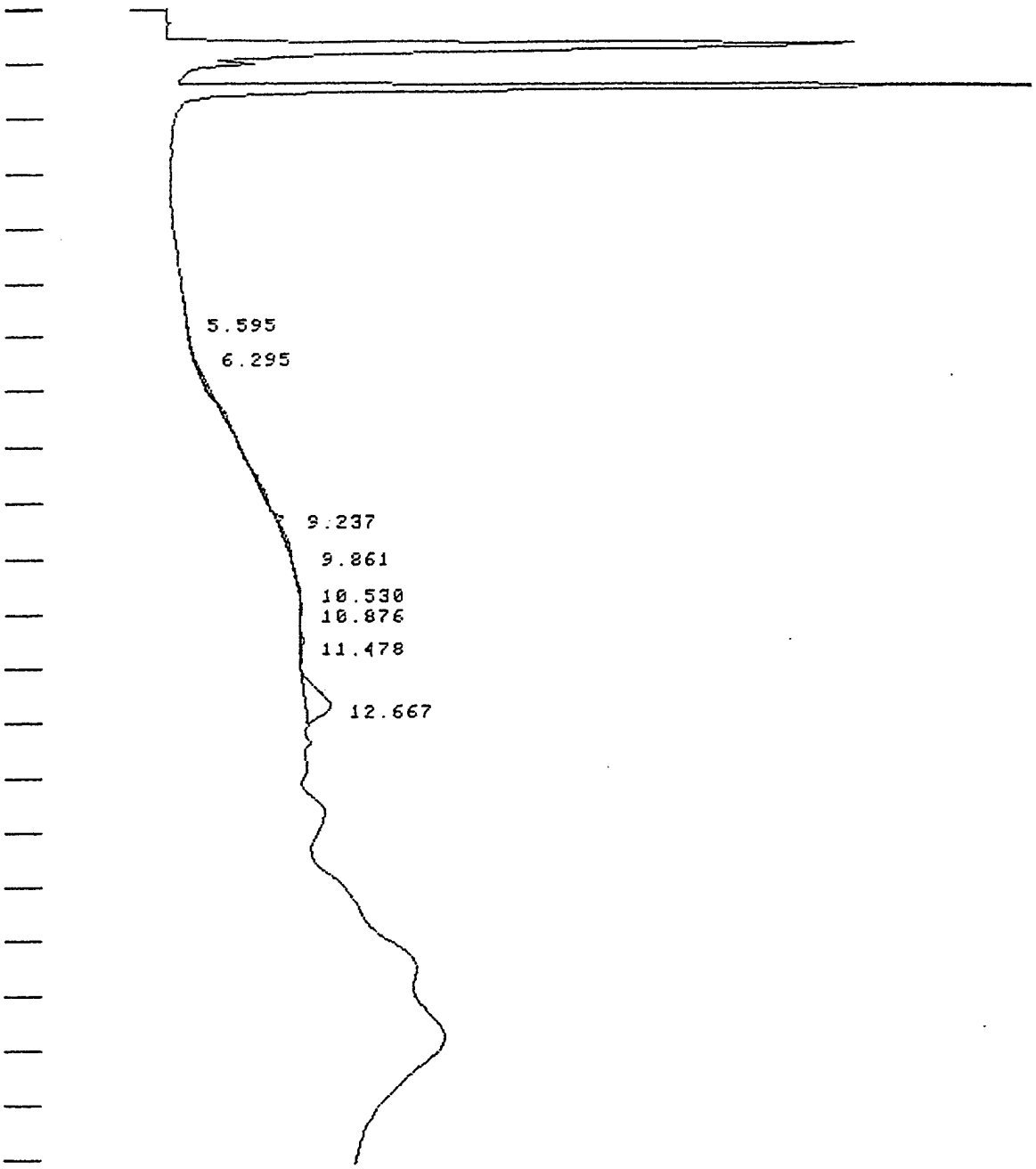
SAMPLE: EXTR. BLANK METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 67511

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC122

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 7:21 7 MAR 94

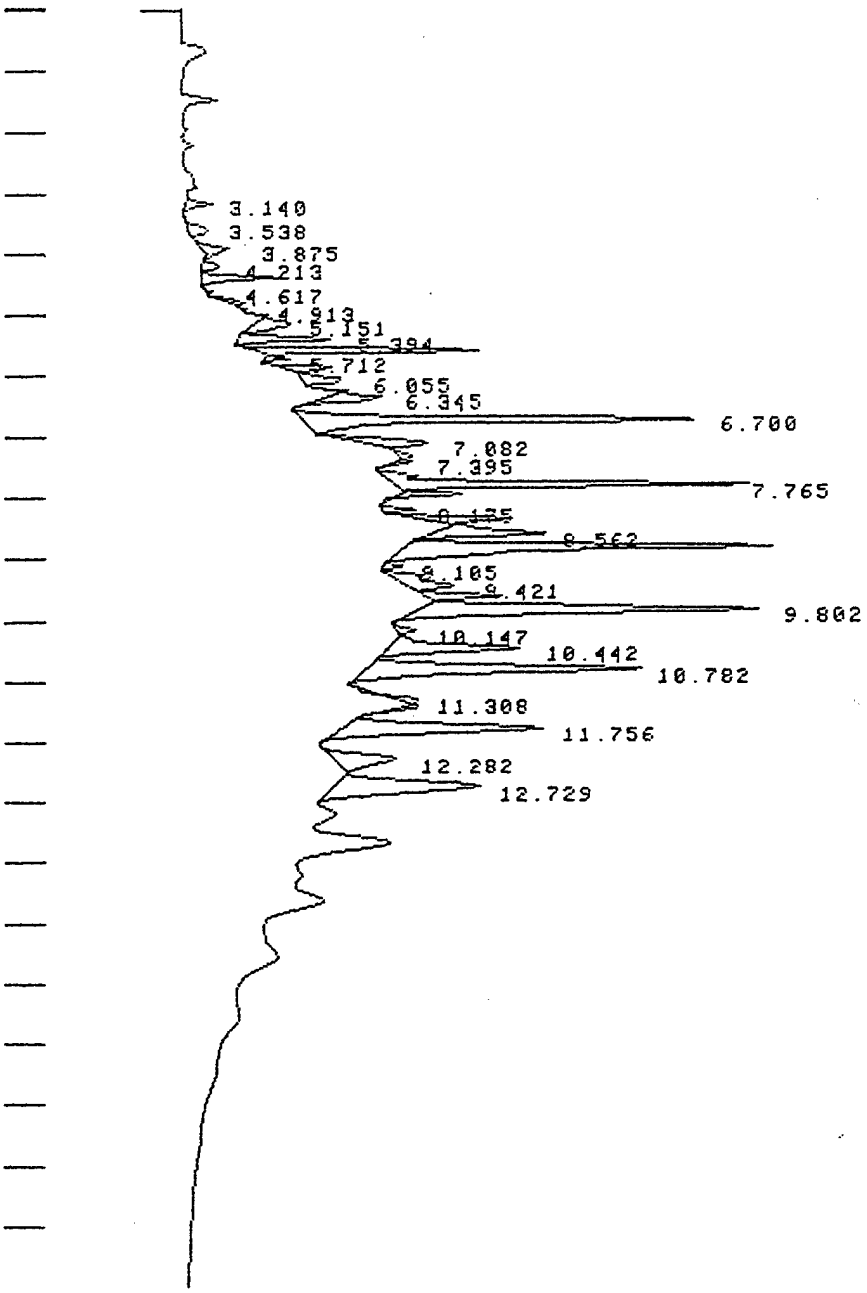
SAMPLE: 940200541 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 13553

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000

CHART SPEED 0.8 CM/MIN
ATTEN: 256 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC123

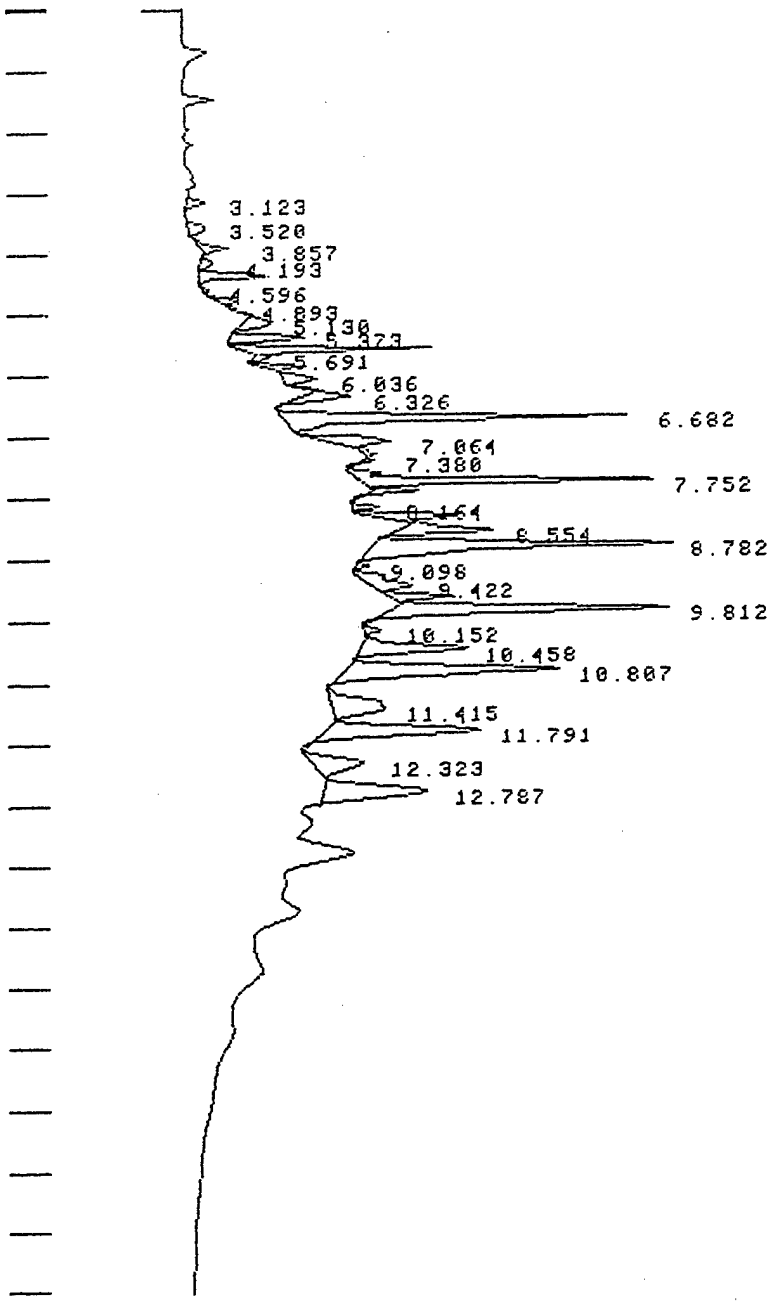
CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 7:55 7 MAR 94

SAMPLE: 541 SPK METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 6780890

CHART SPEED 0.8 CM/MIN
ATTEN: 256 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC124

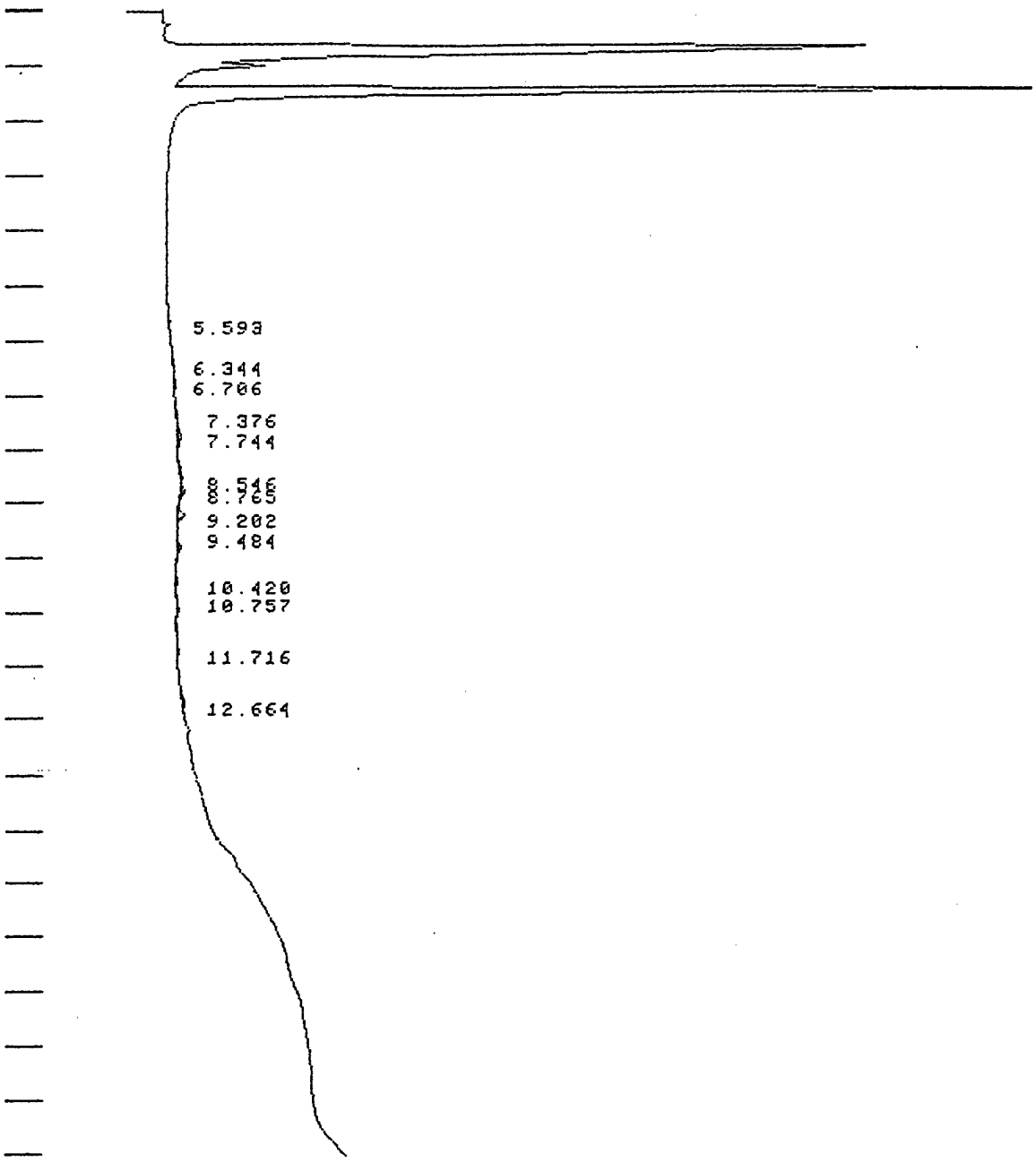
CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 9:02 7 MAR 94

SAMPLE: ~~542~~ 541 MS Dup METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 5710393

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC125

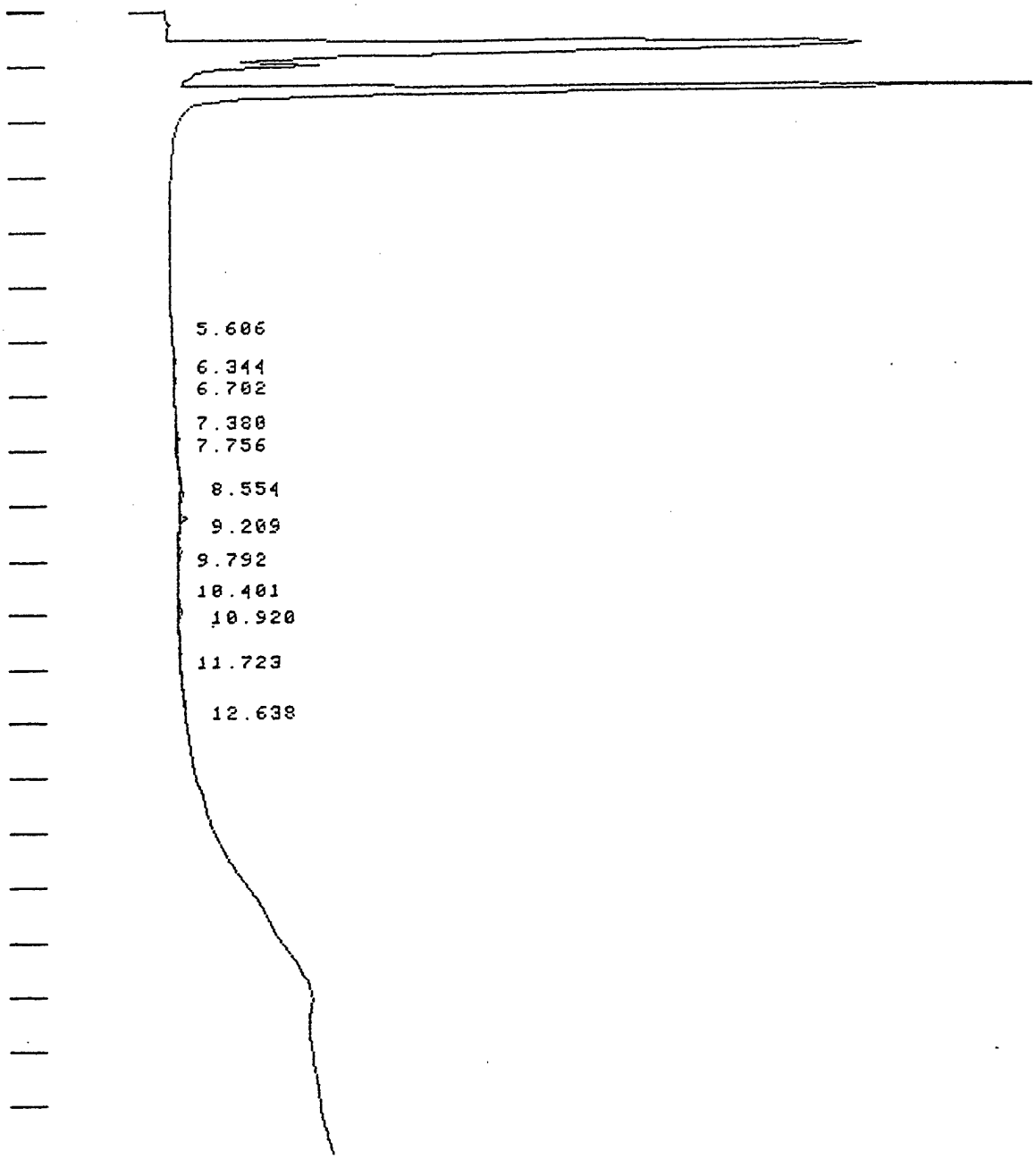
CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 9:32 7 MAR 94

SAMPLE: 542 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 2728

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC126

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 10:03 7 MAR 94

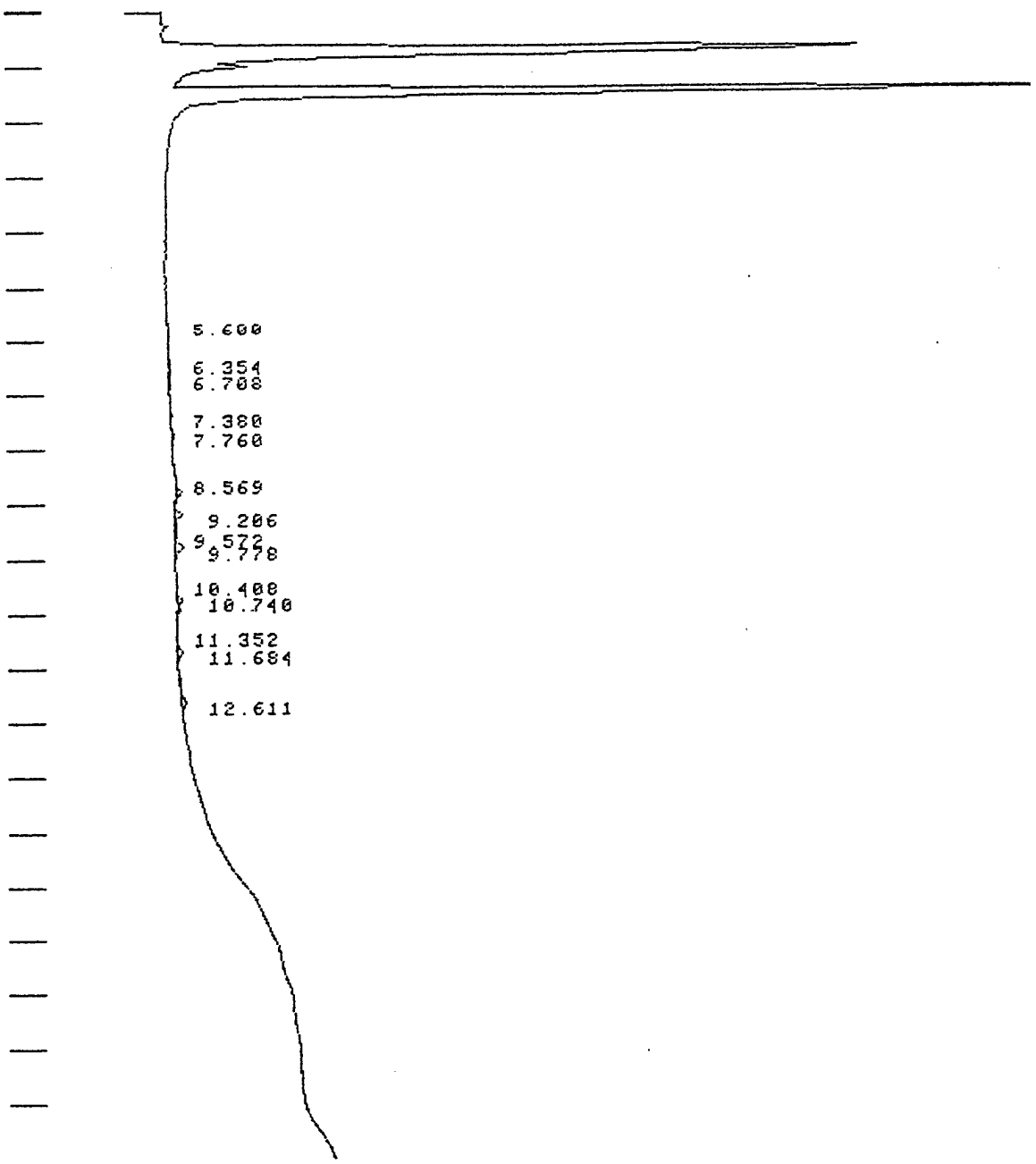
SAMPLE: 543 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 2245

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC127

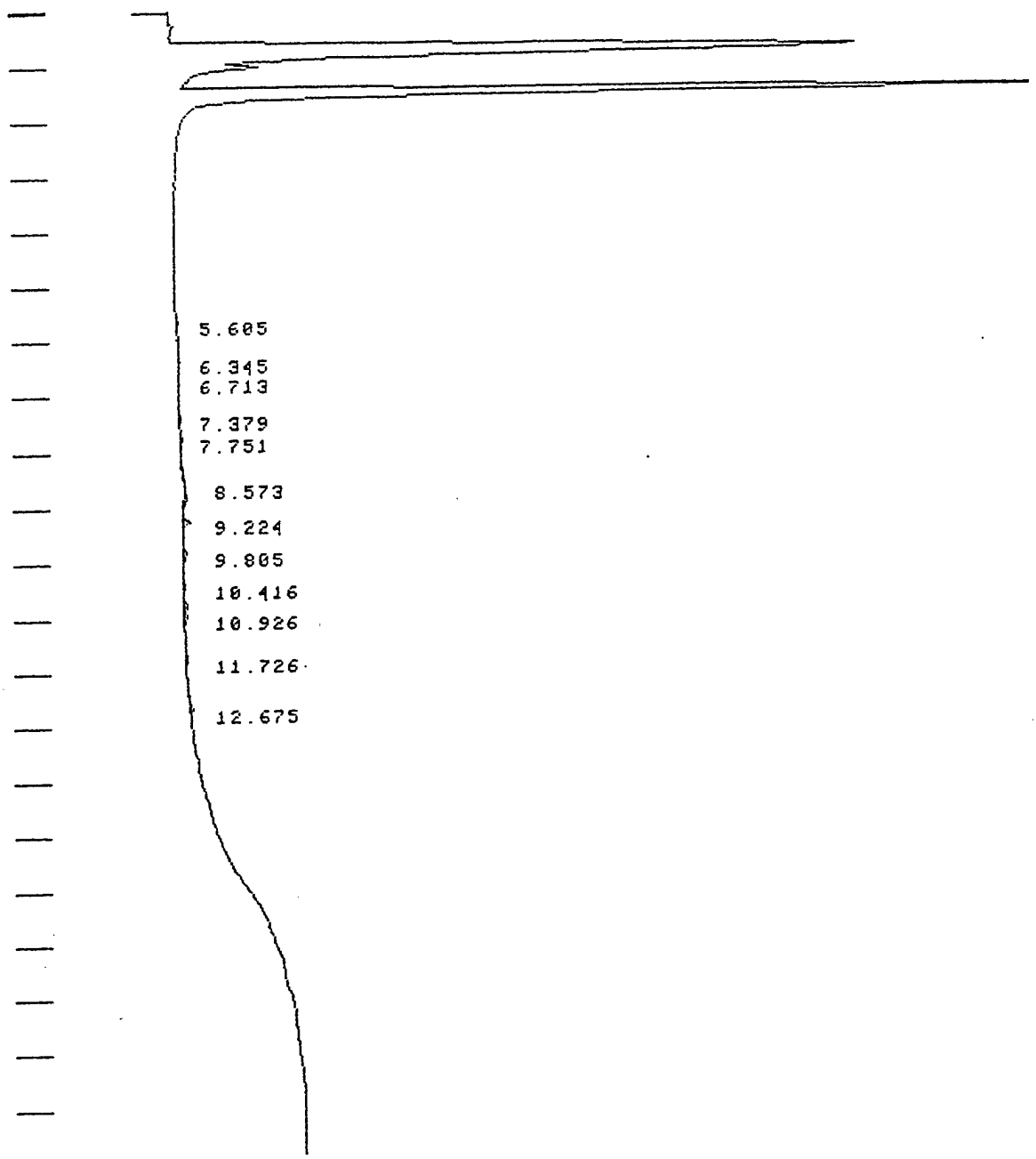
CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 10:35 7 MAR 94

SAMPLE: 544 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 3350

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC128

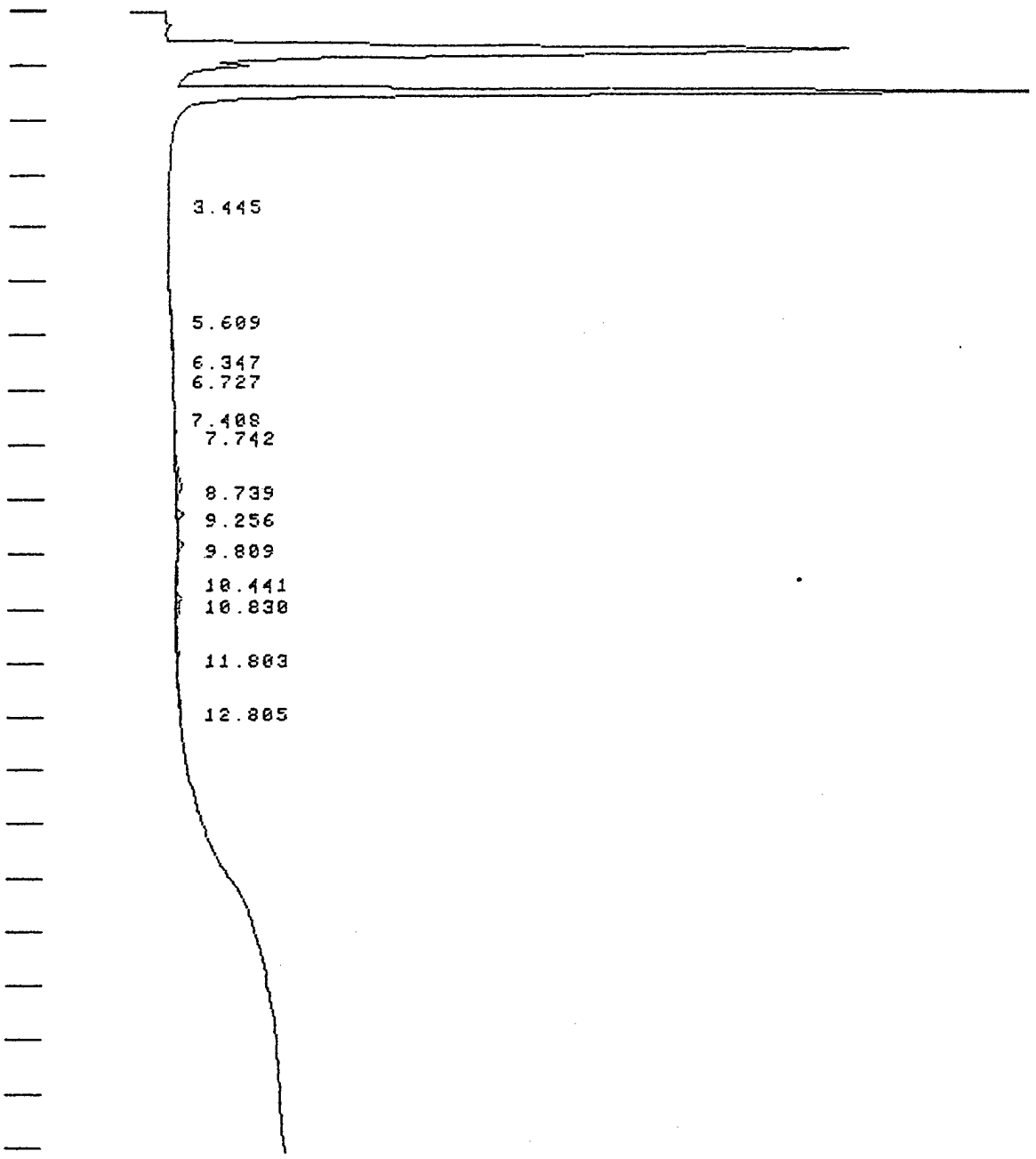
CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 11:13 7 MAR 94

SAMPLE: 551 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 2243

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC129

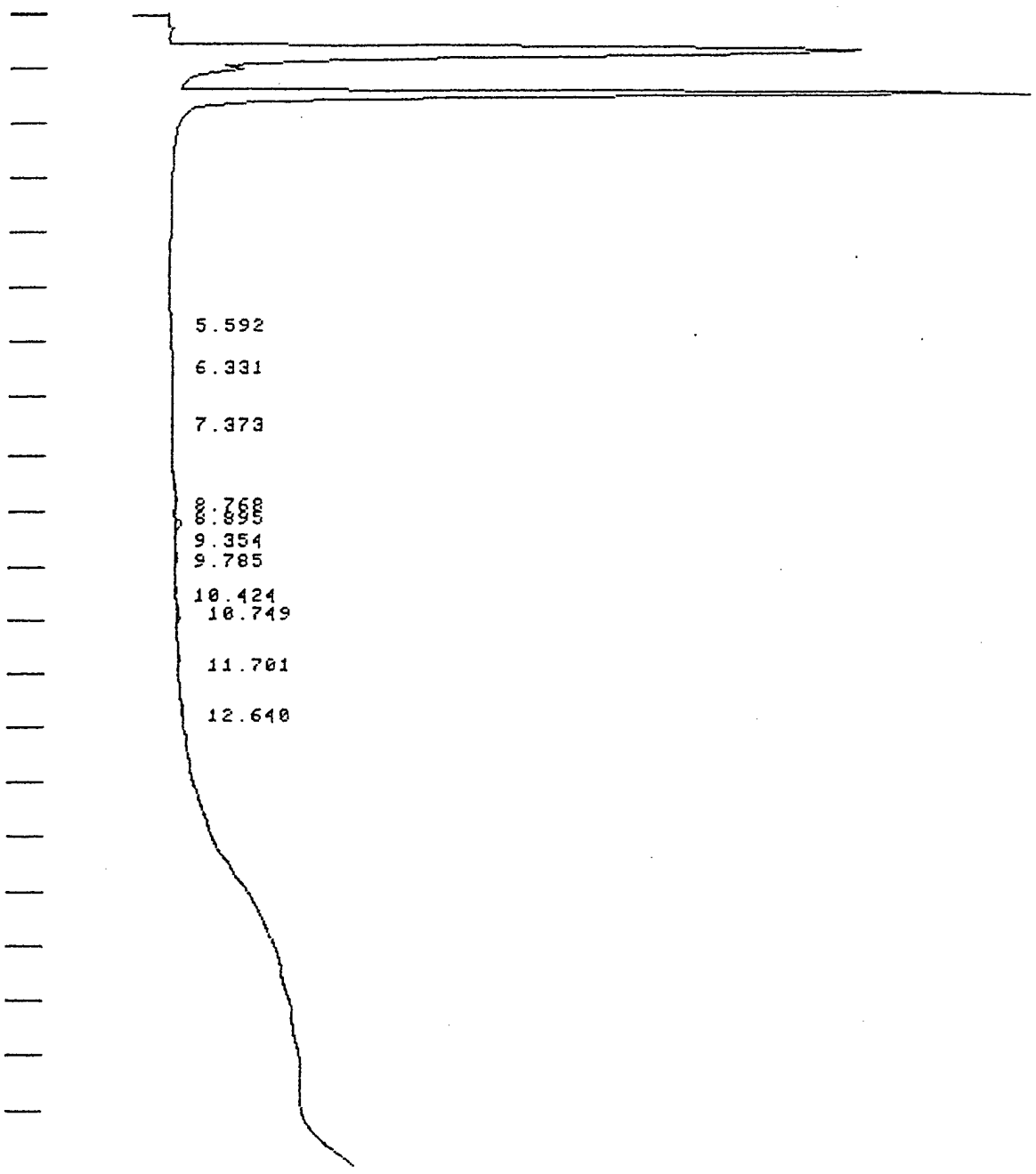
CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 12:17 7 MAR 94

SAMPLE: 552 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 4127

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC130

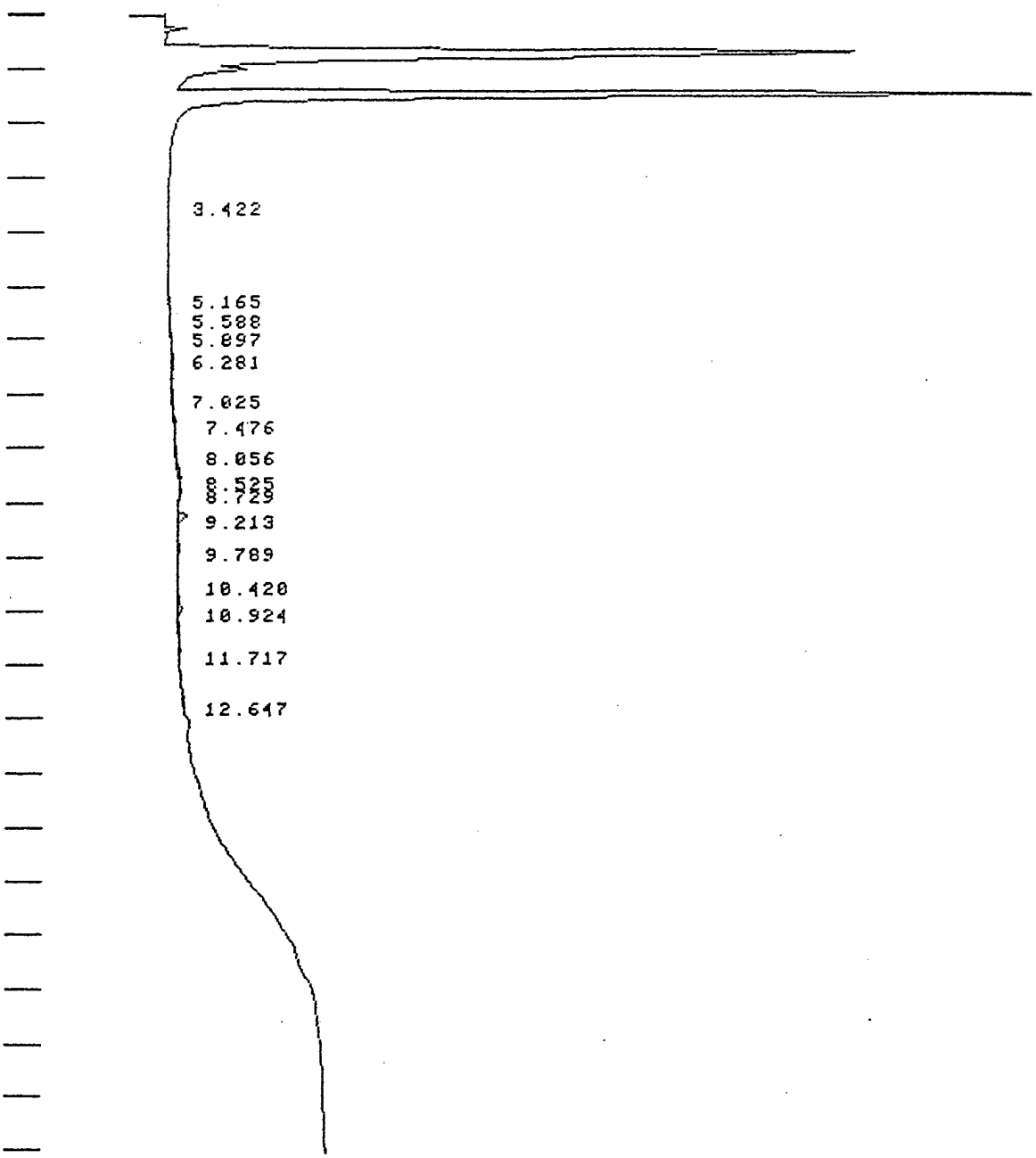
CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 12:46 7 MAR 94

SAMPLE: 553 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 1488

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC131

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 13:21 7 MAR 94

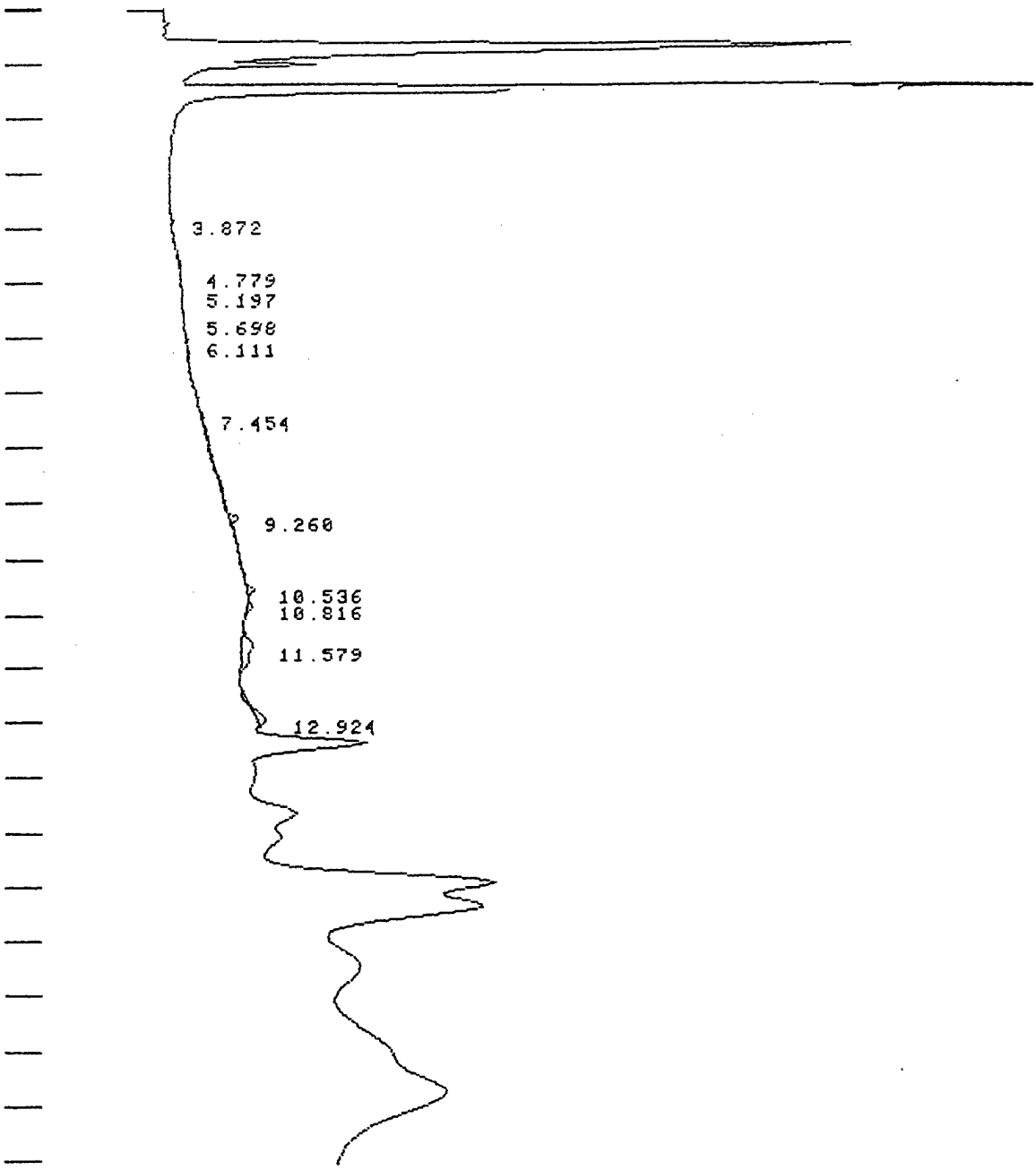
SAMPLE: 554 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 2944

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC142

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 12:18 9 MAR 94

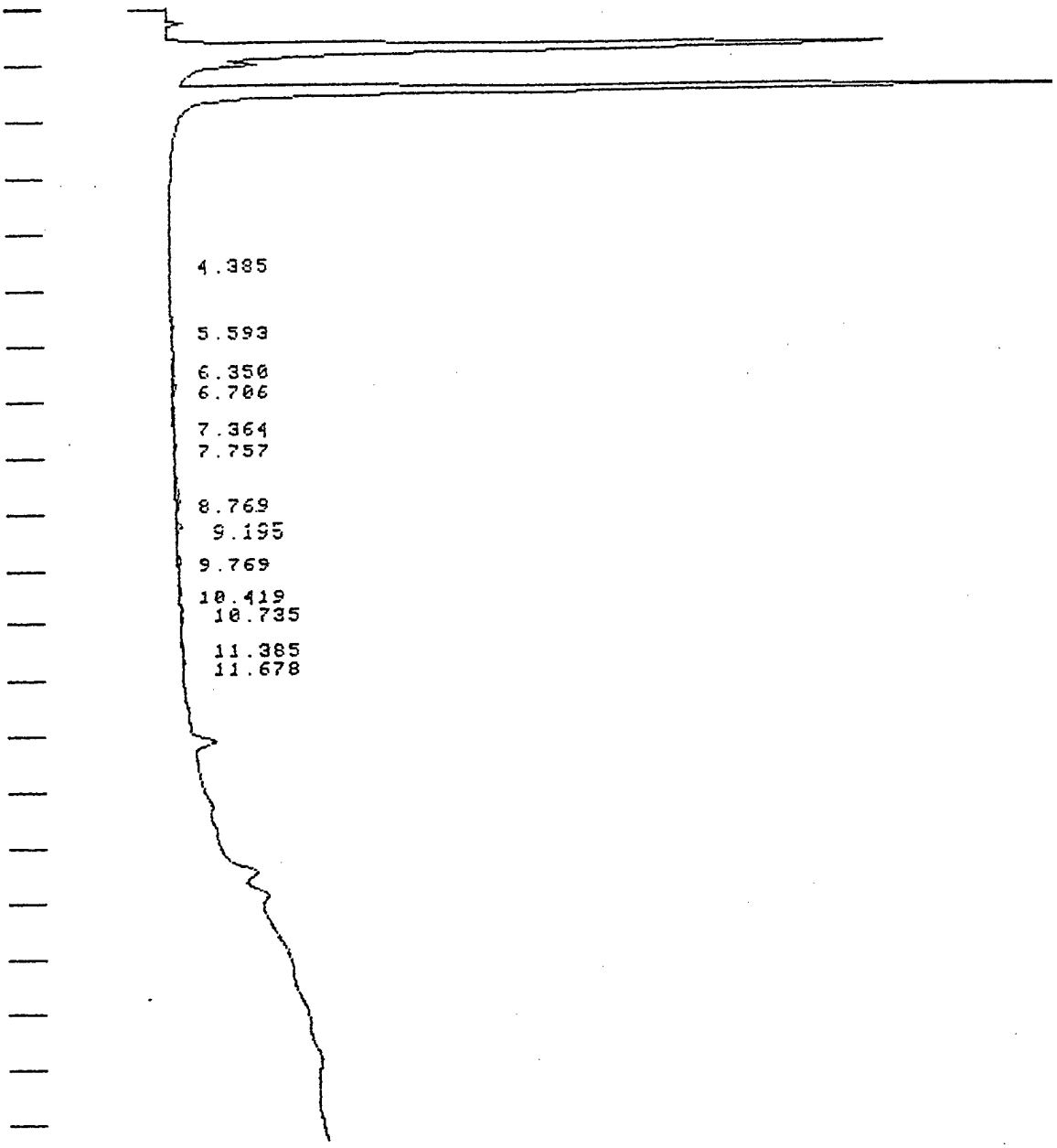
SAMPLE: 555 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 10555

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC132

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 13:50 7 MAR 94

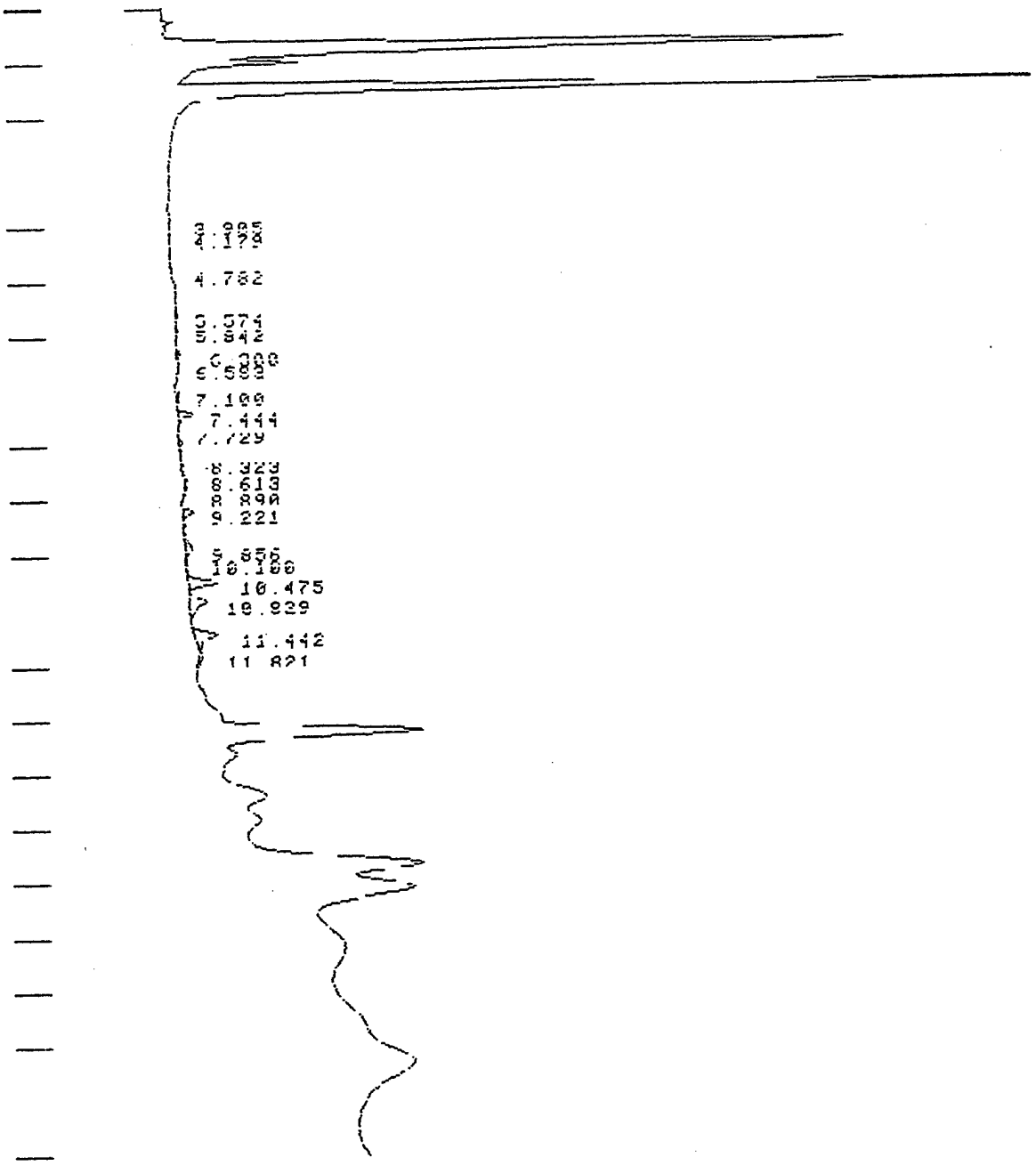
SAMPLE: 556 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 2514

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC143

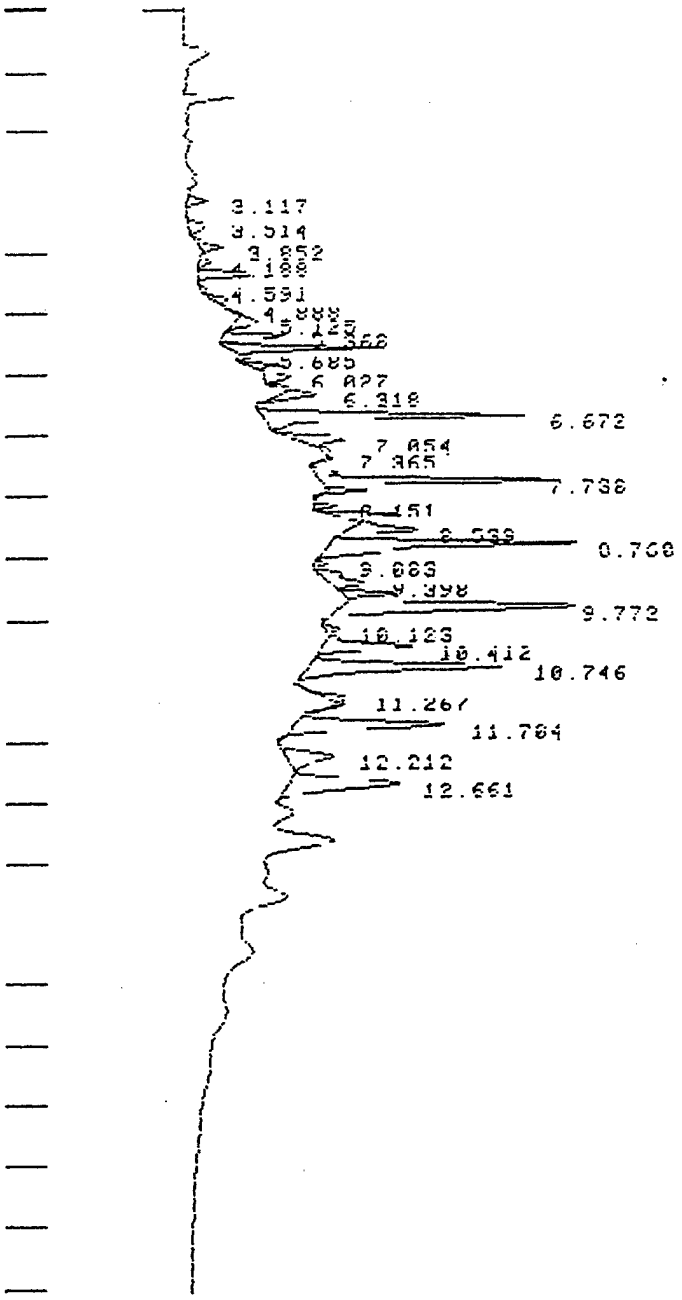
CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 13:02 9 MAR 94

SAMPLE: 557 METHOD: TPHC CALCULATION: A% - ANALYS - DP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 10166

CHART SPEED 0.8 CM/MIN
ATTEN: 256 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC144

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 13:31 9 MAR 94

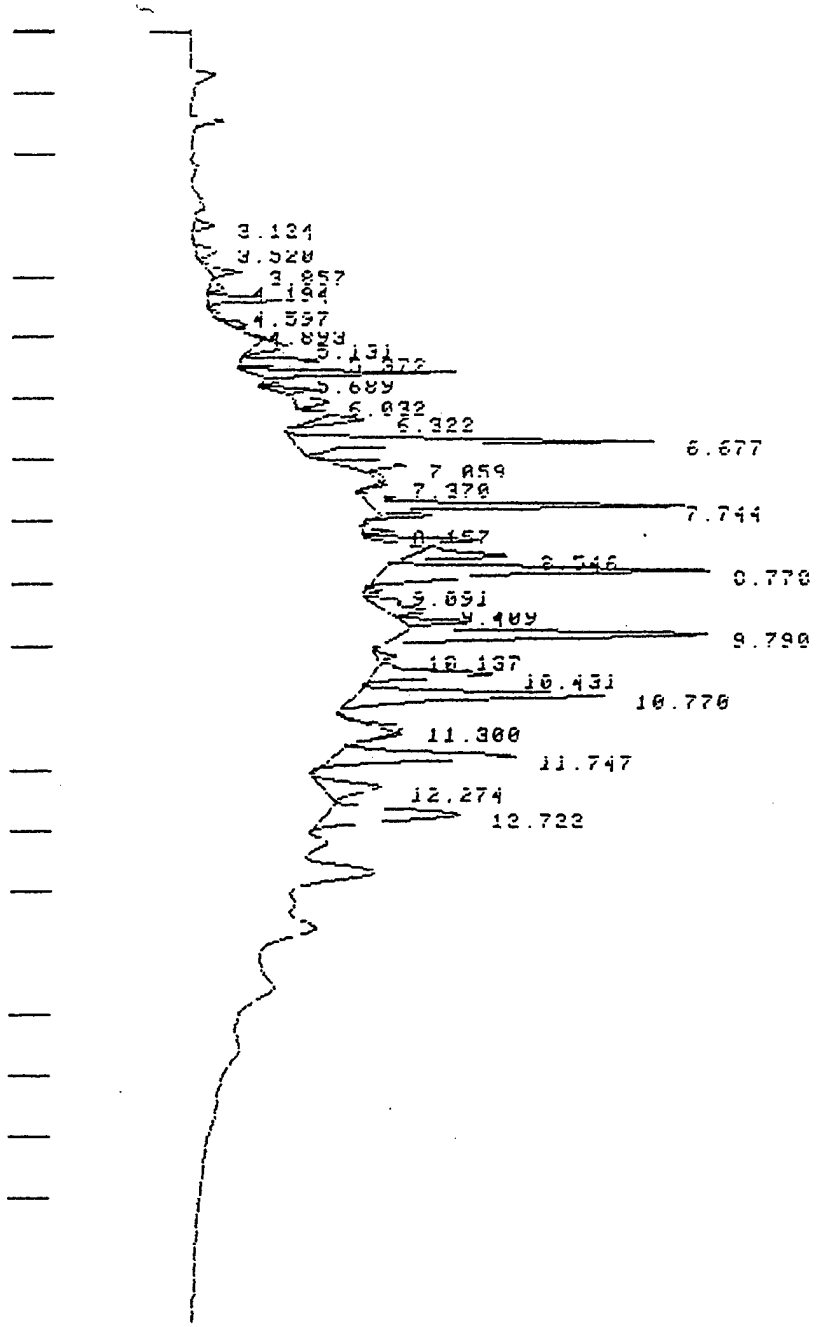
SAMPLE: 557 SPK METHOD: TPHC CALCULATION: A% - ANALYS - DP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 4508078

DILUTION: 1.00000 WT STD: 1.00000 MULTIPLIER: 1.00000

CHART SPEED 0.8 CM/MIN
ATTEN: 256 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC145

CHANNEL: 18 - 1 TITLE: TPHC BY MODIFIED 8015 14:14 9 MAR 94

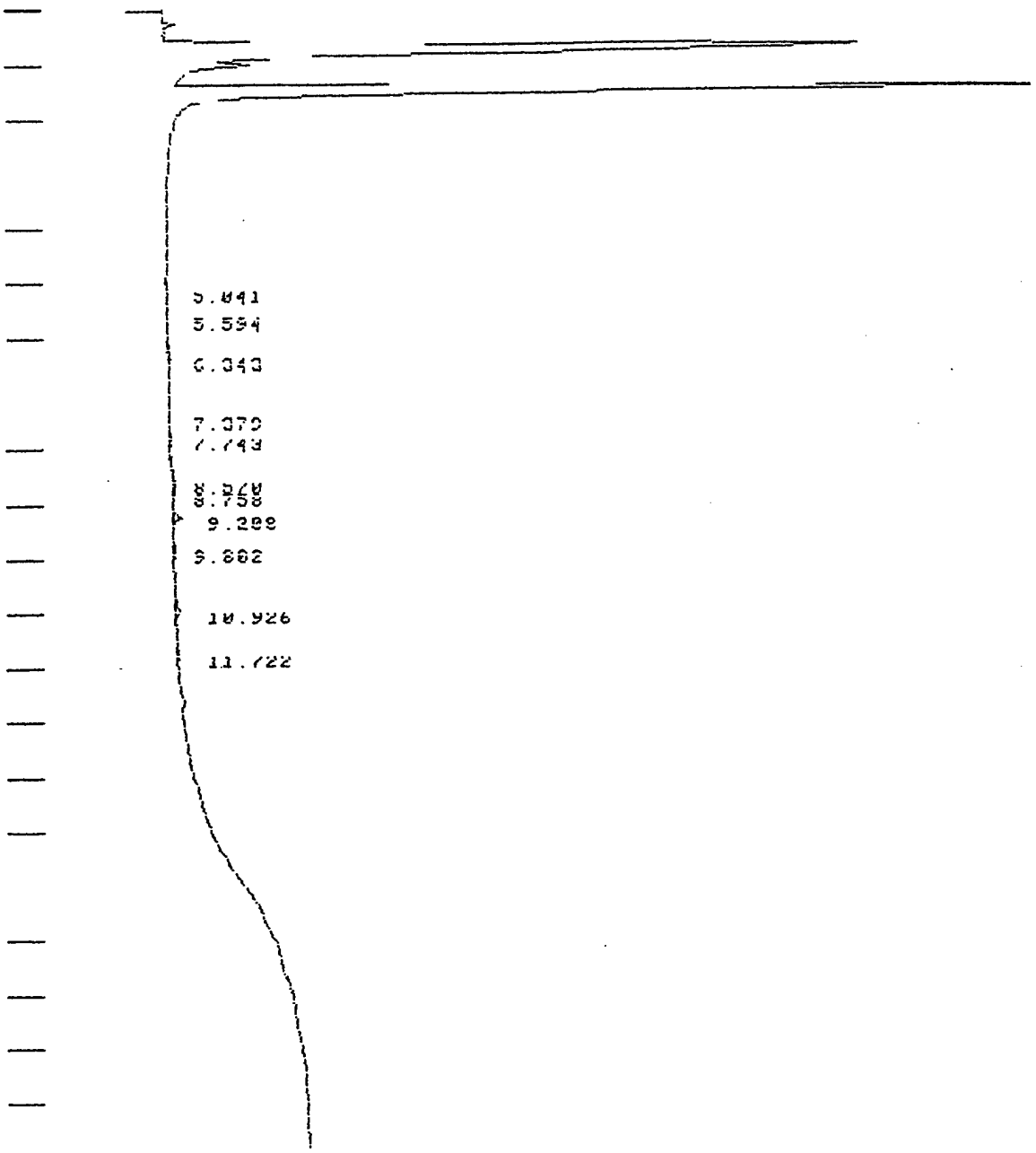
SAMPLE: SPK DUP METHOD: TPHC CALCULATION: A% - ANALYS - DP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 6045594

DIVISOR: 1.000000 AMT STD: 1.000000 MULTIPLIER: 1.000000

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC133

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 14:22 7 MAR 94

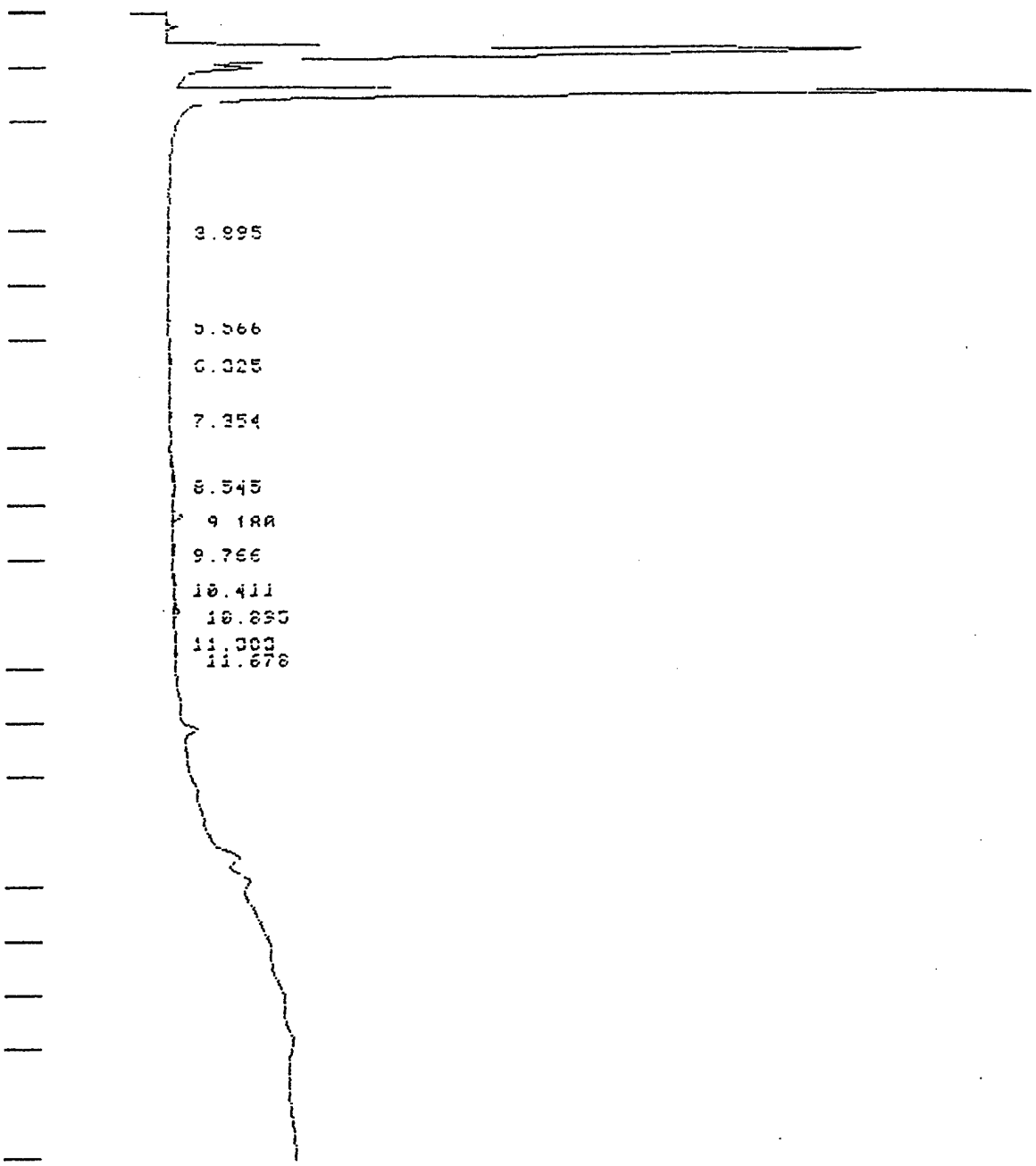
SAMPLE: 558 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 2062

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC134

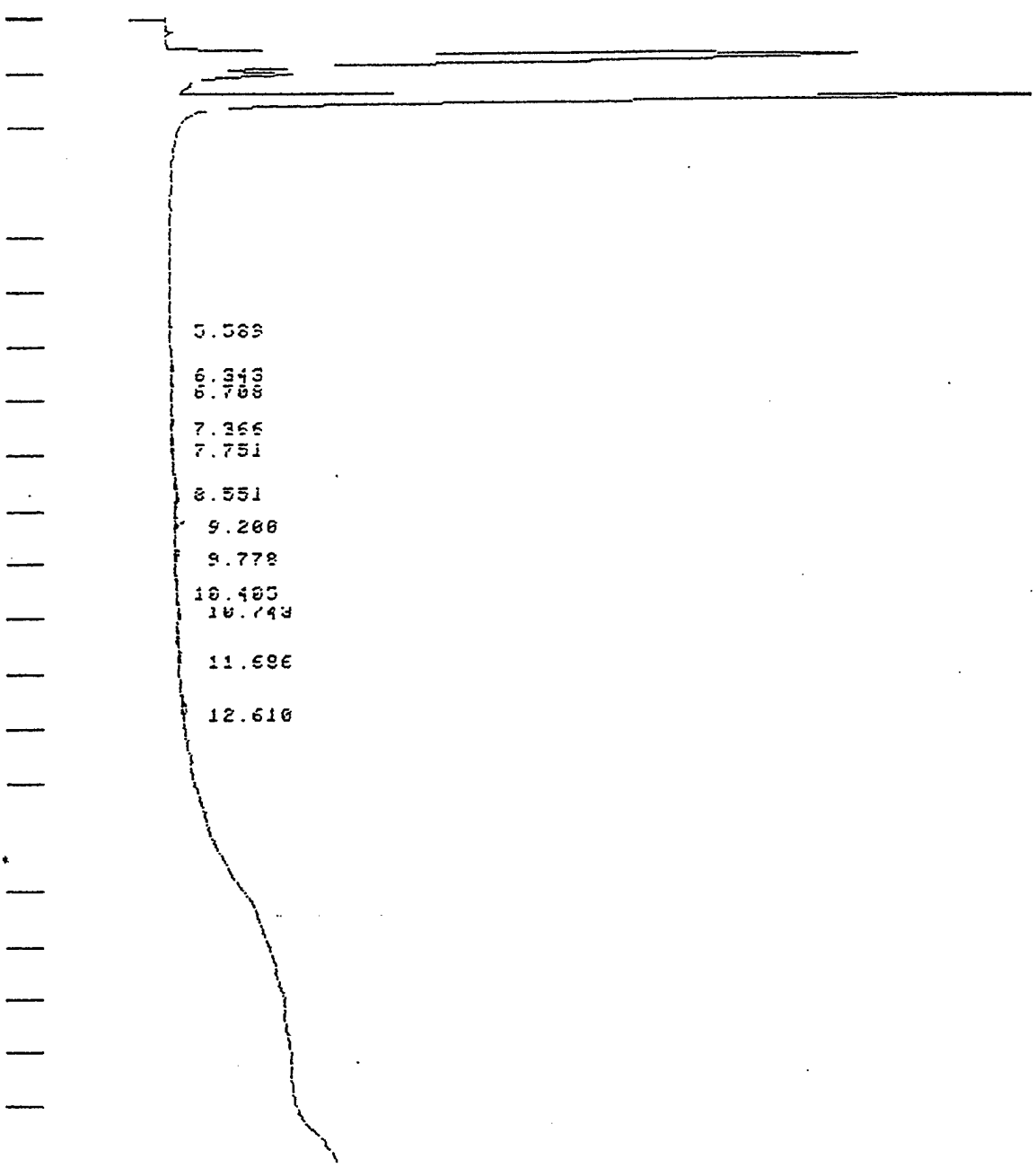
CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 14:53 7 MAR 94

SAMPLE: 559 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 1976

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC135

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 15:28 7 MAR 94

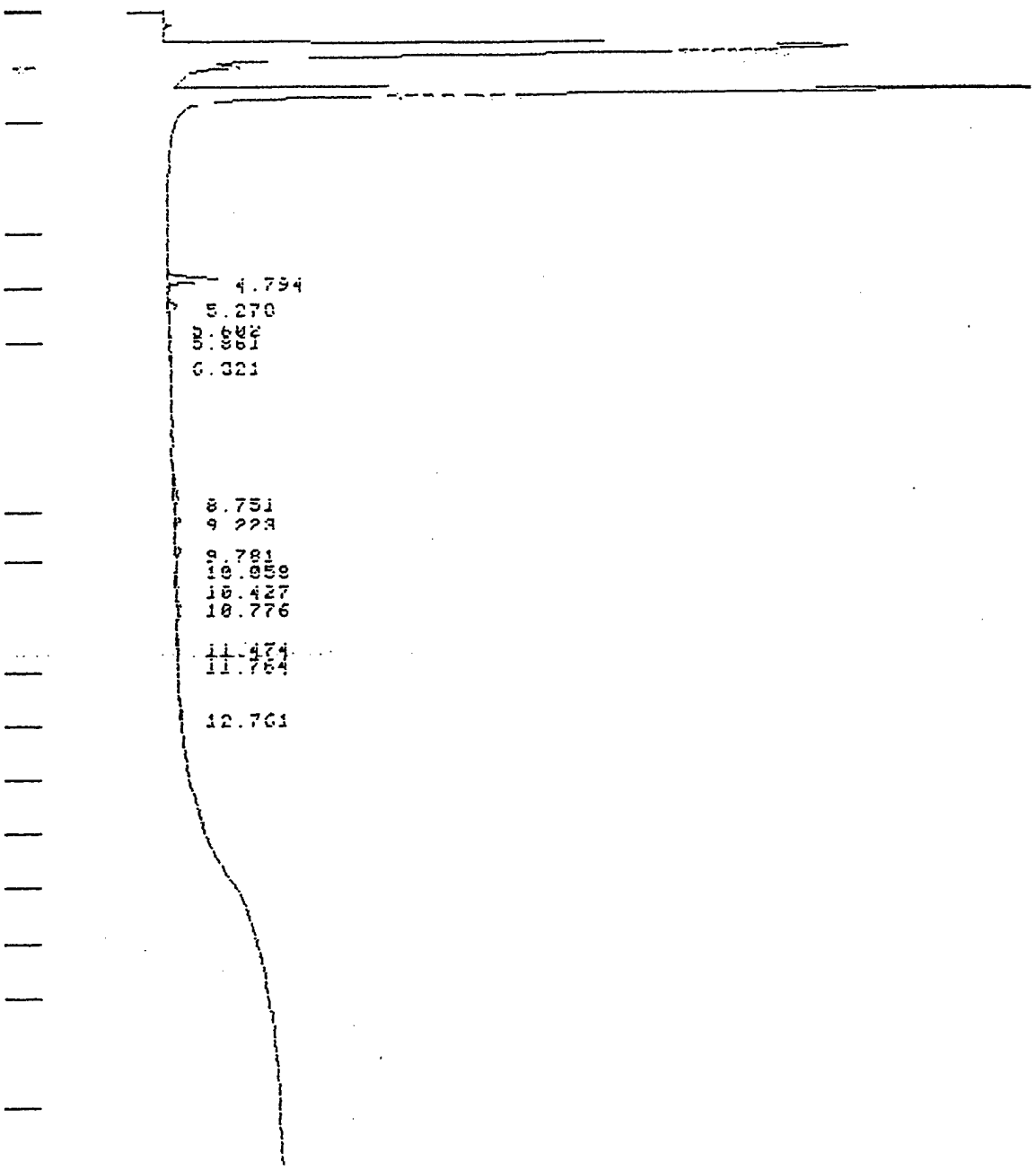
SAMPLE: 560 METHOD: TPHC CALCULATION: A% - ANALYS - DP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 2499

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC136

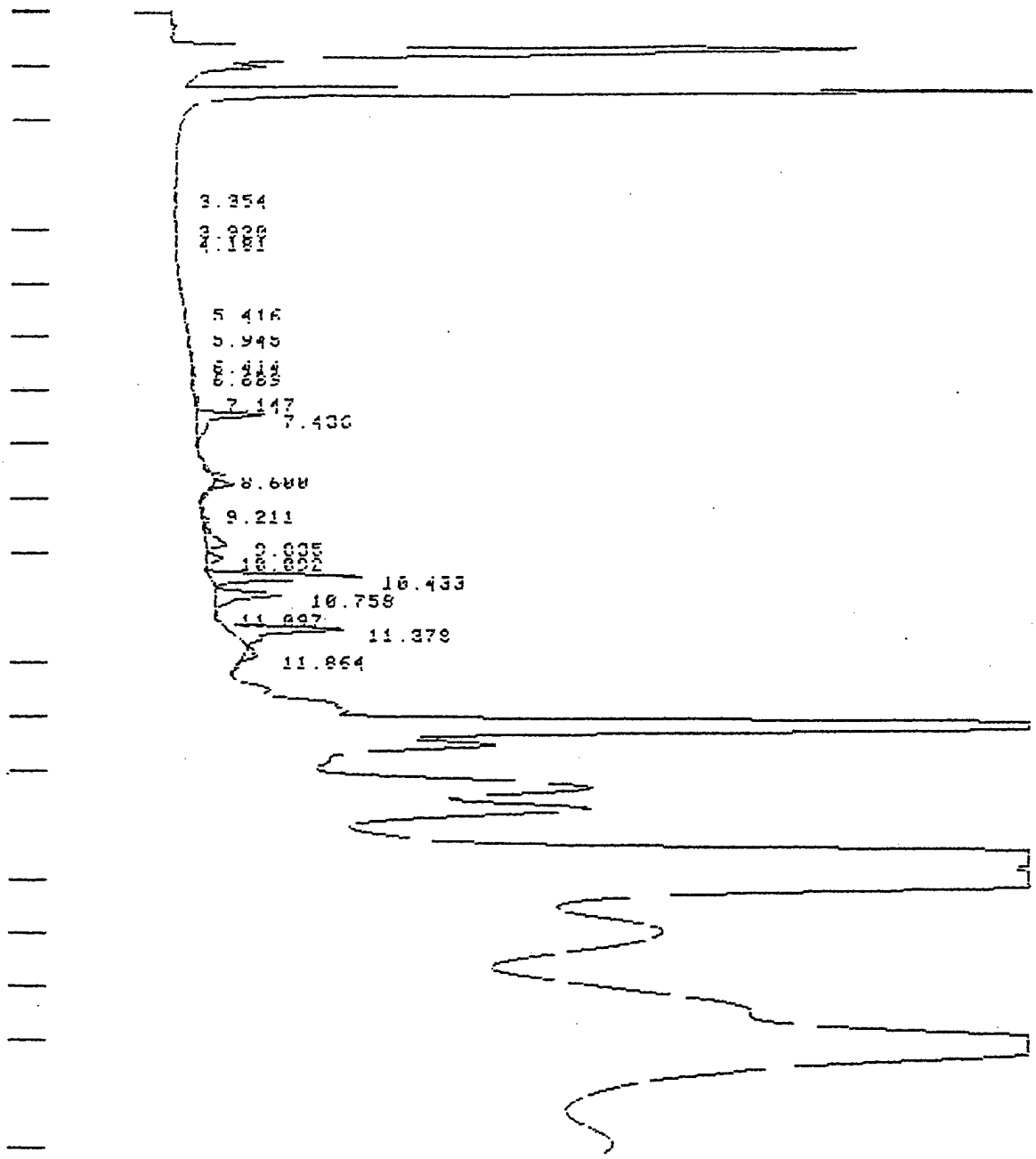
CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 16:24 7 MAR 94

SAMPLE: 561 METHOD: TPHC CALCULATION: A% - ANALYS - DP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 5104

ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC146

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 14:50 9 MAR 94

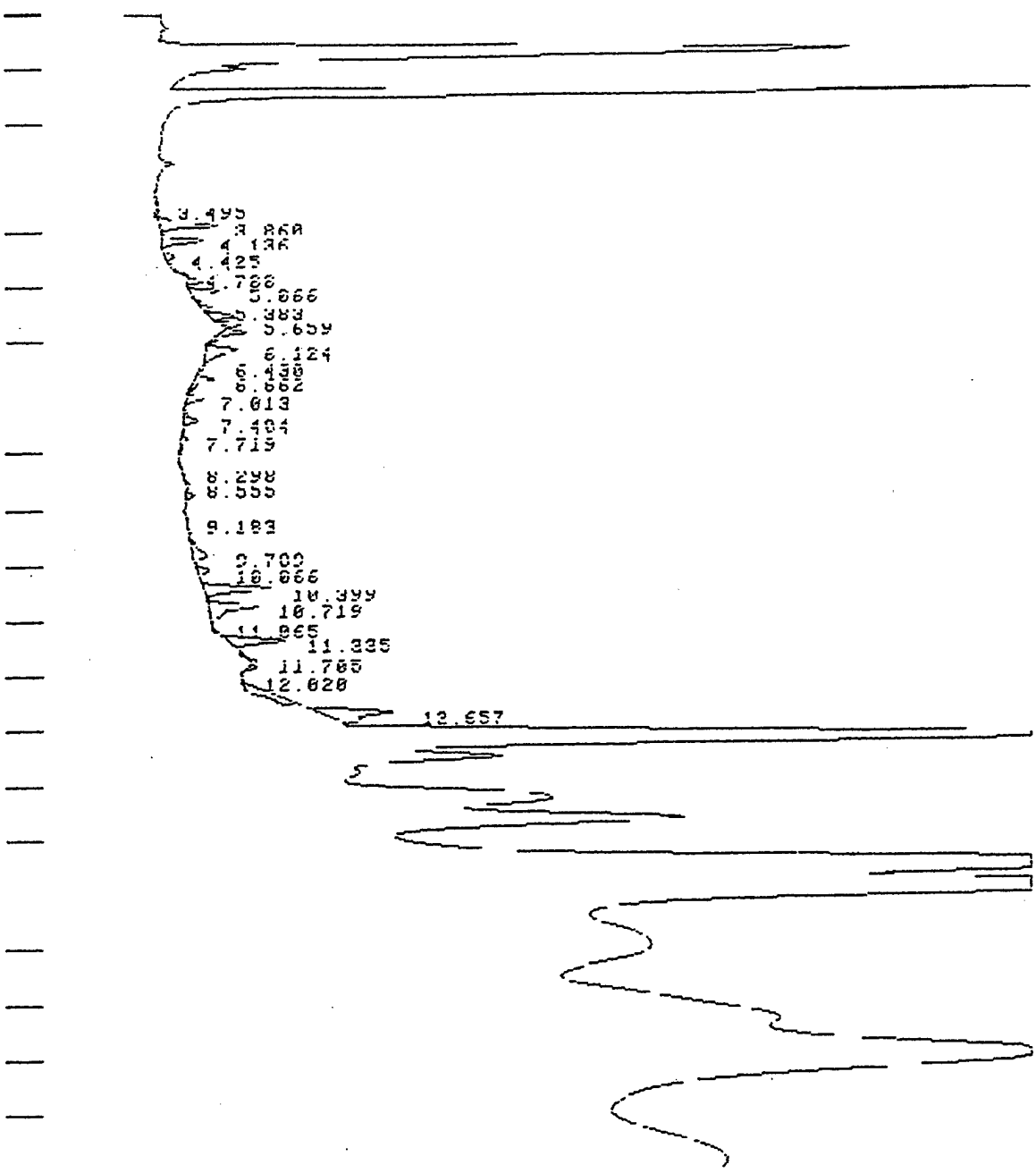
SAMPLE: 562 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 35638

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC147

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 15:18 9 MAR 94

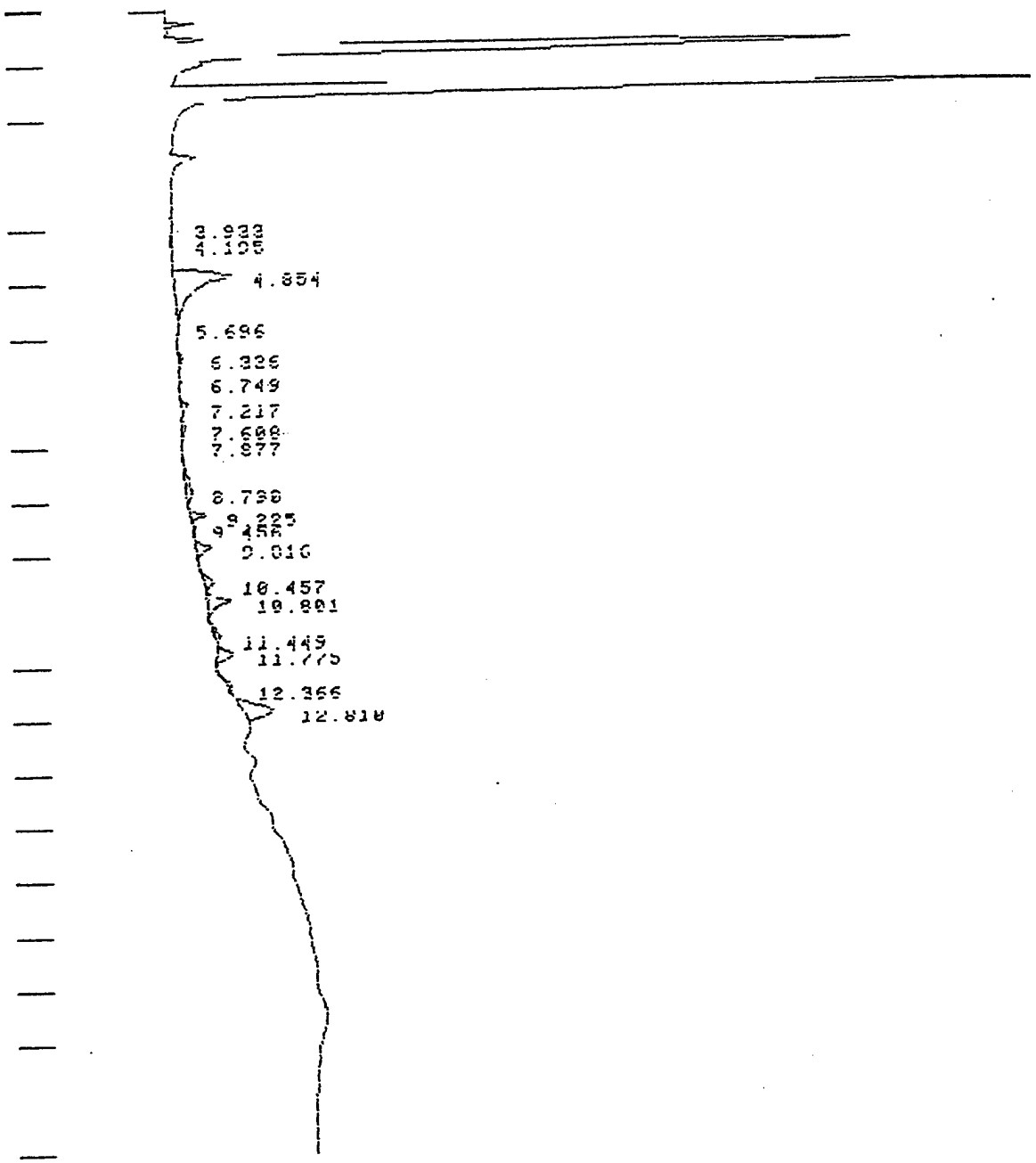
SAMPLE: 563 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 37643

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000

CHART SPEED 0.8 CM/MIN
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC137

CHANNEL: 18 - 1 TITLE: TPHC BY MODIFIED 8015 17:18 7 MAR 94

SAMPLE: 02-572 METHOD: TPHC CALCULATION: A% - ANALYS - DP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
TOTALS:		0.0000		0	

TOTAL UNIDENT AREA/HT: 24446

-192-

CALCULATIONS

$$\frac{\text{Area Counts of Sample}}{\text{Area Counts of Std}} \times \frac{\text{Amount of Std Injected (ng)}}{\text{Initial Vol / Wt (g or ml)}} \times \frac{\text{Final Volume (µL)}}{\text{Volume Inj (µL)}}$$

Control Numbers

531 - MS $\quad \frac{6150120}{7100219} = 0.8662$

- MSD $\quad \frac{6818429}{7100219} = 0.9603$

} 91.33 %.

541 - MS $\quad \frac{6780890}{7100219} = \cancel{0.8043}\ 0.9550$

- MSD $\quad \frac{5710393}{7100219} = 0.8043$

} 87.97 %.

557 - MS $\quad \frac{4508078}{7100219} = 0.6349$

- MSD $\quad \frac{6045594}{7100219} = 0.8515$

} 74.32 %.

TPH

CALCULATIONS

$$\frac{\text{Area Counts of Sample}}{\text{Area Counts of Std}} \times \frac{\text{Amount of Std Injected (ng)}}{\text{Initial Vol / Wt (g or ml)}} \times \frac{\text{Final Volume (µL)}}{\text{Volume Inj (µL)}}$$

Control Numbers

50 ppm STD ⟶ 5002 CTS

TOTAL PICEA

02-531 $\frac{1576}{5002} \times \frac{(50\ ng/\mu L)(2\ \mu L)}{30.28\ g} \times \frac{5000\ \mu L}{2\ \mu L} = 2.60$ ppm

02-532 $\frac{5694}{5002} \times \frac{100\ ng}{30.03\ g} \times \frac{5000\ \mu L}{2\ \mu L} = 9.48$ ppm

02-533 $\frac{13067}{5002} \times \frac{100\ ng}{30.31\ g} \times \frac{5000\ \mu L}{2\ \mu L} = 21.55$ ppm

02-534 $\frac{7007}{5002} \times \frac{100\ ng}{30.15} \times \frac{5000}{2\ \mu L} = 11.62$ ppm

02-535 $\frac{5894}{5002} \times \frac{100\ ng}{30.45\ g} \times \frac{5000}{2\ \mu L} = 9.67$ ppm

02-536 $\frac{3346}{5002} \times \frac{100\ ng}{\cancel{30.45}\ 30.16} \times \frac{5000}{2\ \mu L} = 5.54$ ppm

CALCULATIONS

$$\frac{\text{Area Counts of Sample}}{\text{Area Counts of Std}} \times \frac{\text{Amount of Std Injected (ng)}}{\text{Initial Vol / Wt (g or ml)}} \times \frac{\text{Final Volume (µL)}}{\text{Volume Inj (µL)}}$$

Control Numbers

02-537 $\quad \frac{3221}{5002} \times \frac{100\ ng}{30.07\ g} \times \frac{5000\ \mu L}{2\ \mu L} = 5.35\ ppm$

02-538 $\quad \frac{2399}{5002} \times \frac{100\ ng}{30.16\ g} \times \frac{5000\ \mu L}{2\ \mu L} = 3.98\ ppm$

02-539 $\quad \frac{2097}{5002} \times \frac{100\ ng}{30.34\ g} \times \frac{5000\ \mu L}{2\ \mu L} = 3.45\ ppm$

02-540 $\quad \frac{3108}{5002} \times \frac{100\ ng}{30.24\ g} \times \frac{5000\ \mu L}{2\ \mu L} = 5.14\ ppm$

02-541 MATRIX INTERFERENCE (SEE CHROMATOGRAM) $< 10\ ppm$

02-542 $\quad \frac{2728}{5002} \times \frac{100\ ng}{30.26\ g} \times \frac{5000}{2\ \mu L} = 4.51\ ppm$

02-543 $\quad \frac{2245}{5002} \times \frac{100\ ng}{30.66\ g} \times \frac{5000}{2\ \mu L} = 3.66\ ppm$

02-544 $\quad \frac{3350}{5002} \times \frac{100\ ng}{30.12\ g} \times \frac{5000}{2\ \mu L} = 5.56\ ppm$

CALCULATIONS

$$\frac{\text{Area Counts of Sample}}{\text{Area Counts of Std}} \times \frac{\text{Amount of Std Injected (ng)}}{\text{Initial Vol / Wt (g or ml)}} \times \frac{\text{Final Volume (µL)}}{\text{Volume Inj (µL)}}$$

Control Numbers

02-551 $\quad \frac{2243}{5002} \times \frac{100\ ng}{30.07\ g} \times \frac{5000\ \mu L}{2\ \mu L} = 3.73$ ppm

02-552 $\quad \frac{4127}{5002} \times \frac{100}{30.65} \times \frac{5000}{2} = 6.73$ ppm

02-553 $\quad \frac{1488}{5002} \times \frac{100}{30.38} \times \frac{5000}{2} = 2.45$ ppm

02-554 $\quad \frac{2944}{5002} \times \frac{100}{30.03} \times \frac{5000}{2} = 4.90$ ppm

02-555 MATRIX INTERFERENCE (SEE CHROMATOGRAM) $\quad < 100$ ppm

02-556 $\quad \frac{2514}{5002} \times \frac{100}{30.20} \times \frac{5000}{2} = 4.16$ ppm

02-557 MATRIX INTERFERENCE (SEE CHROMATOGRAM) $\quad < 100$ ppm

02-558 $\quad \frac{2062}{5002} \times \frac{100}{30.13} \times \frac{50000}{2} = 3.42$ ppm

02-559 $\quad \frac{1976}{5002} \times \frac{100}{30.40} \times \frac{5000}{2} = 3.25$ ppm

CALCULATIONS

$$\frac{\text{Area Counts of Sample}}{\text{Area Counts of Std}} \times \frac{\text{Amount of Std Injected (ng)}}{\text{Initial Vol / Wt (g or ml)}} \times \frac{\text{Final Volume (µL)}}{\text{Volume Inj (µL)}}$$

Control Numbers

02-560 $\quad \frac{2499}{5002} \times \frac{100\ ng}{30.048\ g} \times \frac{50000\ \mu L}{2\ \mu L} = 4.15\ ppm$

02-561 $\quad \frac{5104}{5002} \times \frac{100}{30.60} \times \frac{5000}{2} = 8.34\ ppm$

02-562 $\quad$ SEE CHROMATOGRAM $\quad < 10\ ppm$

02-563 $\quad$ SEE CHROMATOGRAM $\quad < 10\ ppm$

02-572 $\quad \frac{24446}{5002} \times \frac{1000}{940\ ml} \times \frac{5000}{2} = 1.30\ ppm$

Organic Extraction Log Worksheet

Total Petroleum Hydrocarbons

Date: 02-28-94
Time: ~~12:30~~ 16:30
Analyst: ~~JES~~ NGS

Method: 8015 (DIESEL ONLY)

Control Number	Matrix	Sample Volume/Weight	Spike	Extract Volume	Comments
BLANK		80 ml		5.0 ml	
02-531	SOIL	30.28 g		5.0 ml	
531 MS	SOIL	30.23 g	30 ppm	10.0 ml	300 µL DIESEL FUEL + SOIL
531 MSD	SOIL	30.17 g	30 ppm	10.0 ml	300 µL DIESEL FUEL + SOIL
02-532	SOIL	30.03 g		5.0 ml	
02-533	SOIL	30.31 g		5.0 ml	
02-534	SOIL	30.15 g		5.0 ml	
02-535	SOIL	30.45 g		5.0 ml	
02-536	SOIL	30.16 g		5.0 ml	
02-537	SOIL	30.07 g		5.0 ml	
02-538	SOIL	30.16 g		5.0 ml	↑
02-539	SOIL	30.34 g		5.0 ml	
02-540	SOIL	30.24 g		5.0 ml	TUMBLED 02-24-94
02-541	SOIL	30.50 g		5.0 ml	
541 MS	SOIL	30.20 g	30 ppm	10.0 ml	300 µL DIESEL FUEL + SOIL
541 MSD	SOIL	30.21 g	30 ppm	10.0 ml	300 µL DIESEL FUEL + SOIL
02-542	SOIL	30.26 g		5.0 ml	
02-543	SOIL	30.66 g		5.0 ml	
02-544	SOIL	30.12 g		5.0 ml	
02-551	SOIL	30.07 g		5.0 ml	
02-552	SOIL	30.65 g		5.0 ml	
02-553	SOIL	30.38 g		5.0 ml	
02-554	SOIL	30.03 g		5.0 ml	
02-555	SOIL	30.41 g		5.0 ml	
02-556	SOIL	30.20 g		5.0 ml	

Organic Extraction Log Worksheet

Total Petroleum Hydrocarbons

Date: ~~02-28-94~~ 03-01-94
Time: ~~12:30 (cont'd)~~
Analyst: JES

Method: 8015 (DIESEL ONLY)

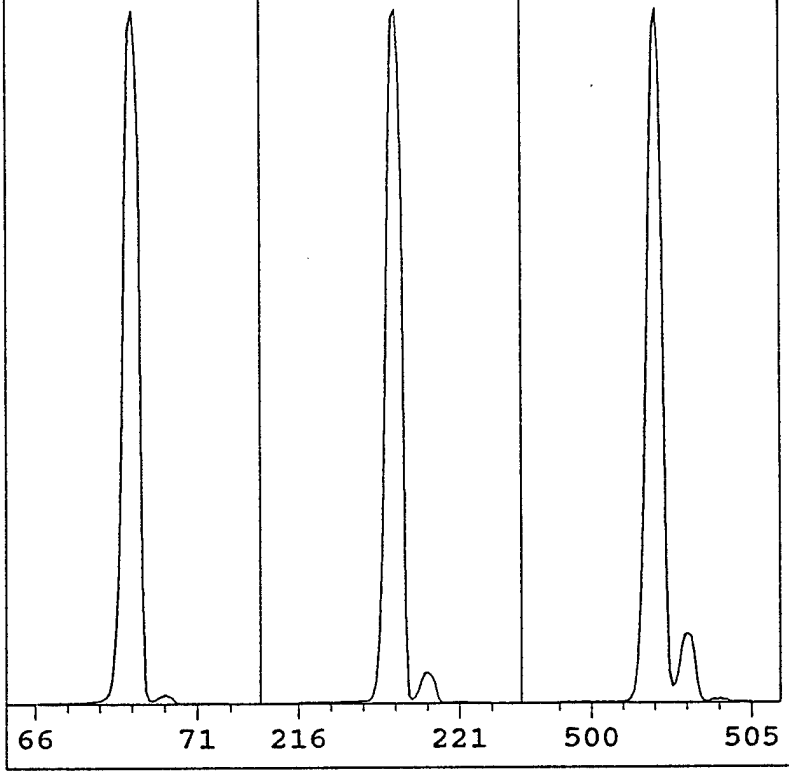
Control Number	Matrix	Sample Volume/Weight	Spike	Extract Volume	Comments
02-557	SOIL	30.18 g		5.0 ml	
557 MS	SOIL	30.09 g	30 ppm	10.0 ml	SOIL + 30 µL DIESEL FUEL
557 MSD	SOIL	30.29 g	30 ppm	10.0 ml	SOIL + 30 µL DIESEL FUEL
02-558	SOIL	30.13 g		5.0 ml	
02-559	SOIL	30.40 g		5.0 ml	
02-560	SOIL	30.08 g		5.0 ml	
02-561	SOIL	30.60 g		5.0 ml	
02-562	SOIL	30.60 g		5.0 ml	
02-563	SOIL	30.26 g		5.0 ml	
BLANK		80 ml			
02-572	Water	940 ml		5.0 ml	
02-558	SOIL	30.08		5.0 mL	
02-559	↓	30.27		↓	
02-562		30.08			
02-563	↓	30.18			

HP5971 Standard Spectra AutoTune

Instrument: GC/MS
Fri Mar 04 14:07:16 1994

C:\HPCHEM\1\5971\ATUNE.U

Mass	69.00	Mass	219.00	Mass	502.10
Ab	298207	Ab	149015	Ab	8539
Pw50	0.52	Pw50	0.53	Pw50	0.54



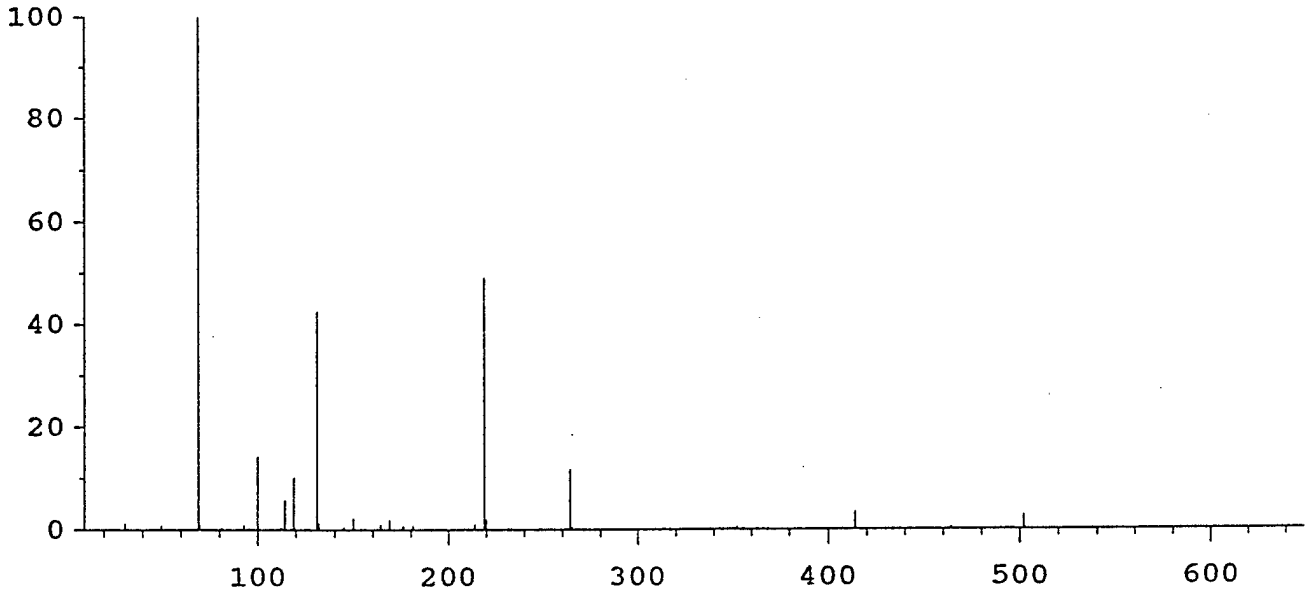
EMVolts	2306	AmuGain	372
Xray	85.5	AmuOffs	66
Emission	ON	219Wid	-0.041
MS Temp	186	TTI	OFF
Vacuum	40	DC Pol	NEG
Samples	16	Repeller	14.99
Averages	1	IonFocus	39.0
StepSize	0.10	EntLens	23.59
MassGain	-326	EntOffs	7.28
MassOffs	-3	Filament	2

PFTBA OPEN

FRIDAY
March 4th 1994

Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10
71 peaks Base: 69.00 Abundance: 261824

'93, 35.

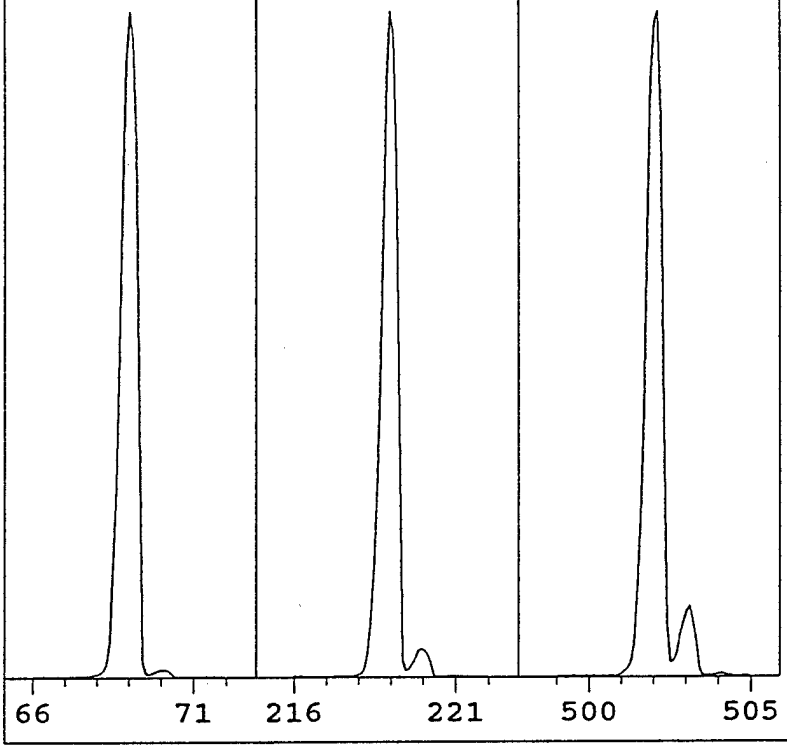


Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	261824	100.00	70.00	2887	1.10
218.95	128368	49.03	219.95	5458	4.25
502.05	7538	2.88	503.05	762	10.11

HP5971 DFTPP Dynamic Target Tune

Fri Mar 04 14:16:07 1994 C:\HPCHEM\1\5971\DFTPP.U

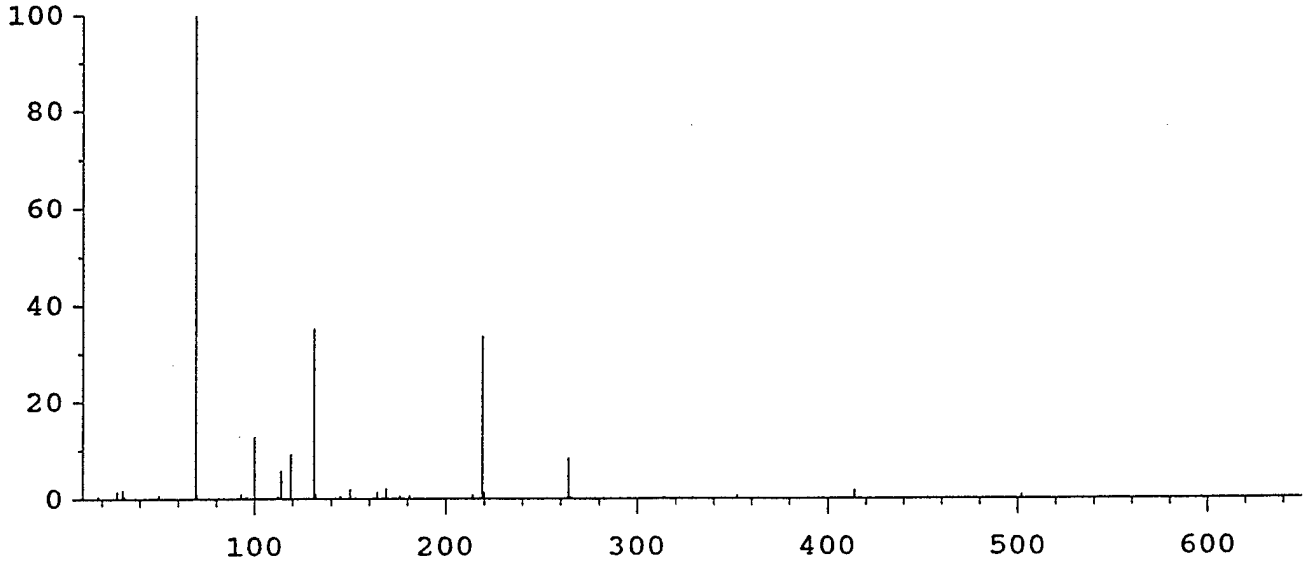
Mass	69.00	Mass	218.95	Mass	502.10
Ab	852967	Ab	295796	Ab	8237
Pw50	0.57	Pw50	0.54	Pw50	0.54



EMVolts	2494	AmuGain	376
Xray	89.8	AmuOffs	68
Emission	ON	219Wid	0.010
MS Temp	185	TTI	OFF
Vacuum	40	DC Pol	NEG
Samples	16	Repeller	18.78
Averages	1	IonFocus	40.0
StepSize	0.10	EntLens	0.00
MassGain	-338	EntOffs	VAR
MassOffs	-3	Filament	2

PFTBA OPEN

Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10
110 peaks Base: 69.00 Abundance: 724992



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	724992	100.00	70.00	7989	1.10
219.00	244672	33.75	220.00	10616	4.34
502.05	6936	0.96	503.05	715	10.31

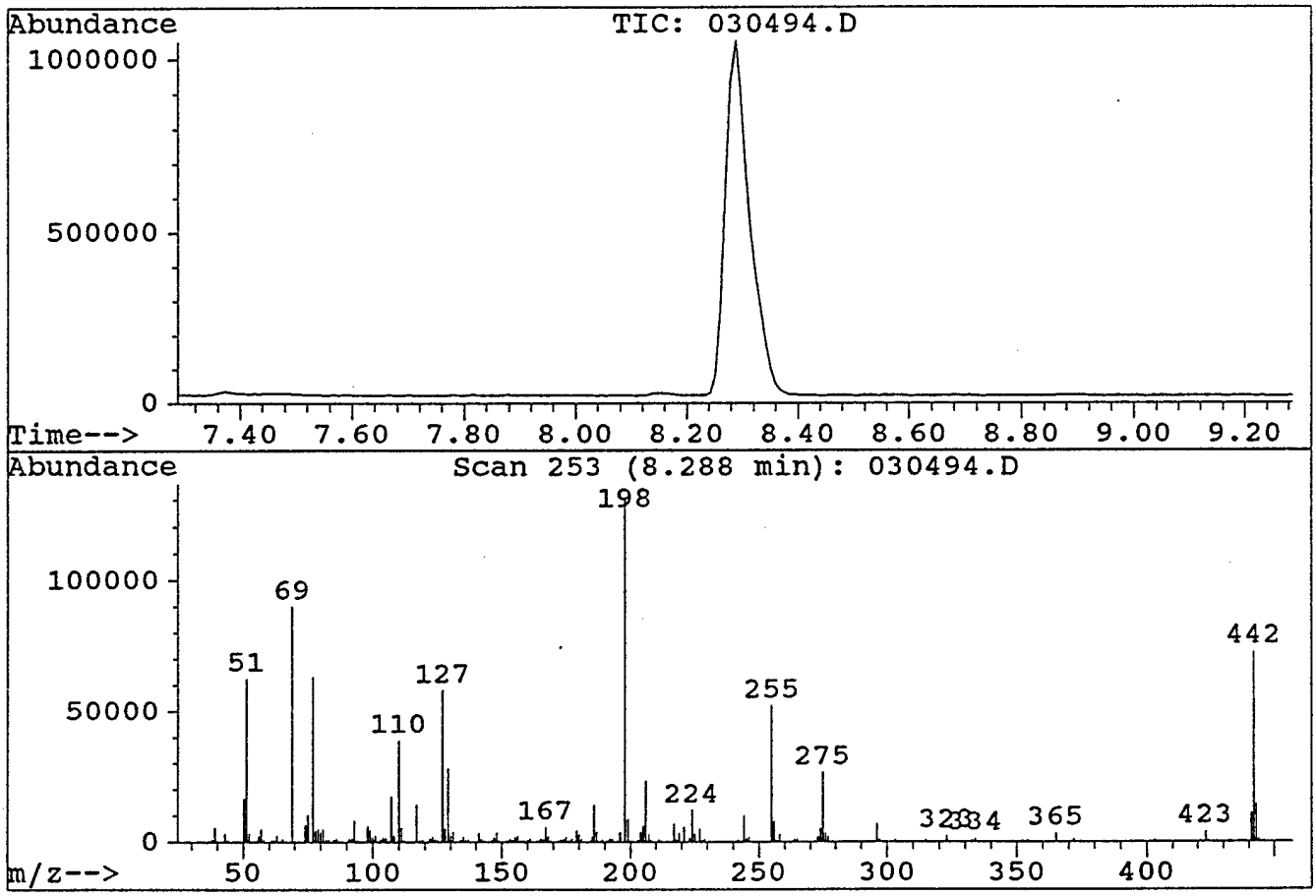
TARGET MASS:	69	131	219	502
DYNAMIC ENT OFFSET:	17.8	17.1	21.3	18.8
TARGET ABUND(%):	100.0	35.0	32.0	0.8
ACTUAL TUNE ABUND(%):	100.0	35.3	33.7	1.0

DFTPP

Data File : C:\HPCHEM\1\DATA\030494.D
Acq Time : 4 Mar 94 2:27 pm
Sample : DFTPP TUNE EVALUATION
Misc : 1uL INJECTION (50nG)

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\DFTPP625.M
Title :



Peak Apex is scan: 253

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	48.2	62544	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	69.3	89984	PASS
70	69	0	2	0.6	556	PASS
127	198	40	60	44.8	58128	PASS
197	198	0	1	0.0	0	PASS
198	198	100	100	100.0	129768	PASS
199	198	5	9	6.9	8898	PASS
275	198	10	30	20.5	26624	PASS
365	198	1	100	2.5	3200	PASS
441	443	0	100	74.3	10644	PASS
442	198	40	100	56.1	72816	PASS
443	442	17	23	19.7	14320	PASS

Simulate Run Sequence Fri Mar 04 14:54:25 1994

Sequence Name: C:\HPCHEM\1\SEQUENCE\0304SV.S
Comment:
Operator: HJV
Data Path: C:\HPCHEM\1\DATA\030494\
Method Path: C:\HPCHEM\1\METHODS\

Line	Type	Vial	DataFile	Method	Sample Name
1)	Sample	1	0304HJV1	8270	SPCC 200PPM
2)	Sample	2	0304HJV2	8270	CCC B/N 100PPM
3)	Sample	3	0304HJV3	8270	CCC A 100PPM
4)	Sample	4	0304HJV4	8270	9402010531
5)	Sample	5	0304HJV5	8270	9402010532
6)	Sample	6	0304HJV6	8270	9402010533
7)	Sample	7	0304HJV7	8270	9402010534
8)	Sample	8	0304HJV8	8270	9402010535

Bytes Needed: 400000 Space on drive C: 27410432
Sequence Verification Done!

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV1.D
Acq Time : 4 Mar 94 3:06 pm
Sample : SPCC 200PPM
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 4 16:14 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.88	152	342601	40.00	ng		0.13
21) Naphthalene-d8	14.76	136	1198676	40.00	ng		0.11
40) Acenaphthene-d10	20.30	164	653432	40.00	ng		0.13
67) Phenanthrene-d10	24.92	188	764078	40.00	ng		0.08
82) Chrysene-d12	33.36	240	95625	40.00	ng		0.22
92) Perylene-d12	38.56	264	36786	40.00	ng		0.50
System Monitoring Compounds							**%Recovery**
5) 2-Fluorophenol	0.00	112	0	0.00	ng		0.00%
8) Phenol-d5	10.88	99	3509	0.31	ng		0.76%
23) Nitrobenzene-d5	12.42	82	2274	0.23	ng		0.56%
45) 2-Fluorobiphenyl	18.35	172	394	0.02	ng		0.04%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng		0.00%
85) Terphenyl-d14	0.00	244	0	0.00	ng		0.00%
Target Compounds							**Qvalue**
20) N-Nitrosodi-n-propylamine	12.42	70	1365589	223.72	ng	m	92
42) Hexachlorocyclopentadiene	17.71	237	192409	102.43	ng	m	97
51) 2,6-Dinitrotoluene	20.30	165	83974	15.75	ng	#	32
54) 2,4-Dinitrophenol	24.92	184	104177	43.22	ng	m	0
55) 4-Nitrophenol	23.11	139	210466	38.53	ng	m	0

Calculation of response factor's:

(1) $\frac{1365589 \times 40}{342601 \times 200} = 0.80$ ✓

(2) Hexachlorocyclopentadiene = $\frac{192409 \times 40}{653432 \times 200} = 0.059$ ✓

(3) 2,4-Dinitrophenol = $\frac{104177 \times 40}{653432 \times 200} = 0.032$

(4) 4-Nitrophenol = $\frac{210466 \times 40}{653432 \times 200} = 0.064$ ✓

SPCC's cleared = 3

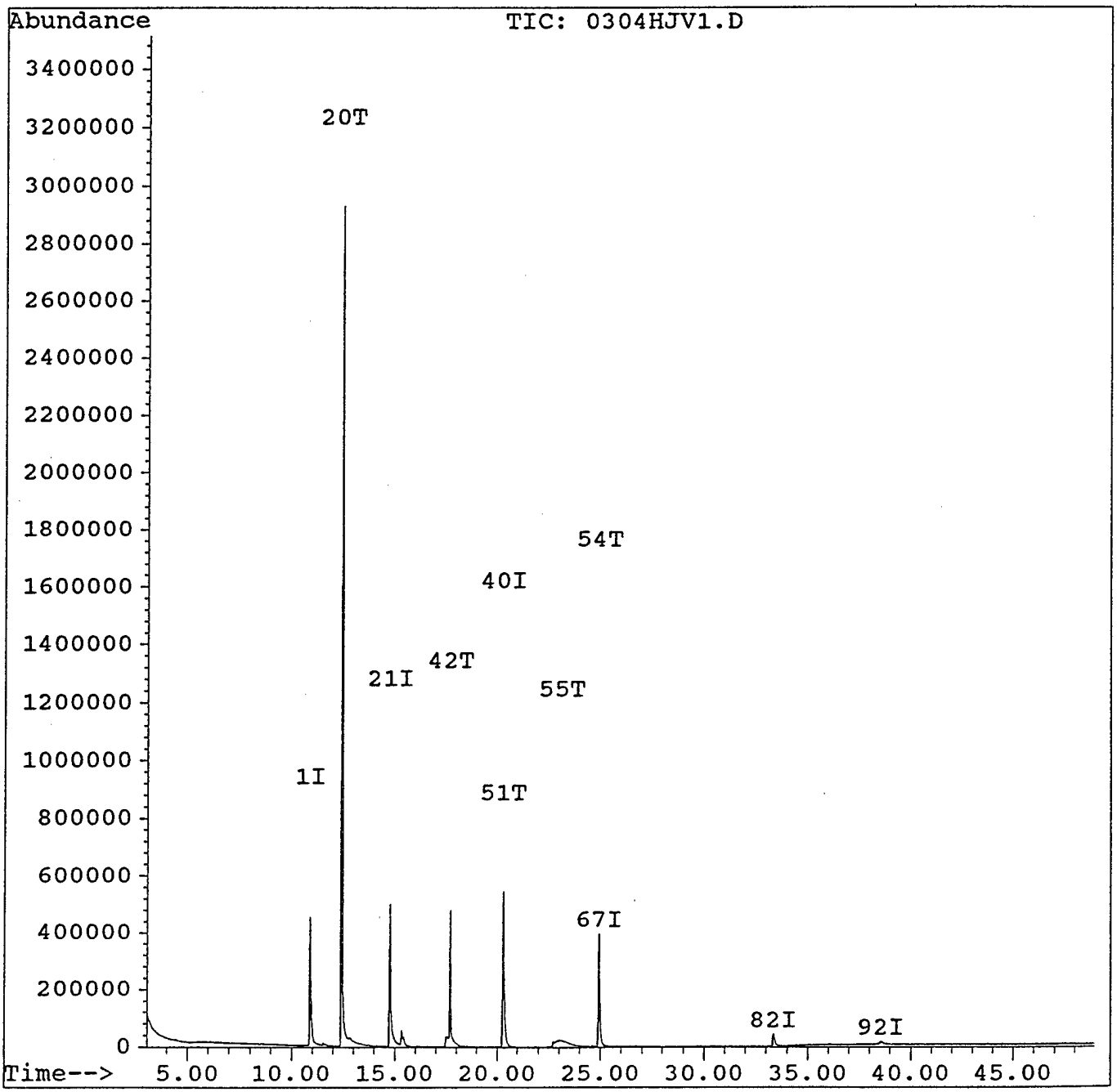
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV1.D
Acq Time : 4 Mar 94 3:06 pm
Sample : SPCC 200PPM
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 4 16:14 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV2.D
Acq Time : 4 Mar 94 4:05 pm
Sample : CCC B/N 100PPM
Misc : 1uL INJECTON, 10uL INTSTD. ADDED
Quant Time: Mar 4 17:24 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.88	152	440963	40.00	ng		0.12
21) Naphthalene-d8	14.76	136	1597362	40.00	ng		0.11
40) Acenaphthene-d10	20.30	164	877402	40.00	ng		0.13
67) Phenanthrene-d10	24.94	188	1048449	40.00	ng		0.09
82) Chrysene-d12	33.33	240	155572	40.00	ng		0.19
92) Perylene-d12	38.50	264	51494	40.00	ng		0.44
System Monitoring Compounds							%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng		0.00%
8) Phenol-d5	10.93	99	10115	0.69	ng		1.71%
23) Nitrobenzene-d5	0.00	82	0	0.00	ng		0.00%
45) 2-Fluorobiphenyl	18.36	172	597	0.02	ng		0.05%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng		0.00%
85) Terphenyl-d14	0.00	244	0	0.00	ng		0.00%
Target Compounds							Qvalue
13) 1,4-Dichlorobenzene	10.93	146	1567511	119.96	ng		100
36) Hexachlorobutadiene	15.42	225	604955	122.57	ng		99
53) Acenaphthene	20.39	154	2174969	83.04	ng		99
69) Diphenylamine + N-Nitrosod	22.61	169	1263257	43.50	ng	m	97
81) Fluoranthene	28.75	202	1822635	72.94	ng	m	98
93) Di-n-octylphthalate	35.72	149	904173	128.87	ng	m	89
97) Benzo(a)pyrene	38.22	252	215085	89.75	ng	m	96

Calculation of response factor — % RPD

1,4 Dichlorobenzene $\frac{1567511 \times 40}{440963 \times 100} = 1.4219$ — $\frac{1.521 - 1.422}{1.521} \times 100 = 6.50$ ✓

Hexa chloro butadiene $\frac{604955 \times 40}{1597362 \times 100} = 0.1515$ — $\frac{0.143 - 0.152}{0.143} \times 100 = 6.29$ ✓

Acenaphthene $\frac{2174969 \times 40}{877402 \times 100} = 0.9915$ — $\frac{1.067 - 0.9915}{1.067} \times 100 = 7.08\%$ ✓

Diphenylamine + N Nitroso $\frac{1263257 \times 40}{1048449 \times 100} = 0.4820$ — $\frac{1.360 - 0.482}{1.360} \times 100 = 64.66\%$

Fluoranthene $\frac{1822635 \times 40}{1048449 \times 100} = 0.6954$ — $\frac{1.026 - 0.708}{1.026} \times 100 = 31.2\%$

Di-n-octylphthalate $\frac{904173 \times 40}{51494 \times 100} = 7.024$ — $\frac{5.271 - 7.024}{5.271} \times 100 = 33.26\%$ ✓

Benzo(a)pyrene $\frac{215085 \times 40}{51494 \times 100} = 1.6708$ — $\frac{1.947 - 1.680}{1.947} \times 100 = 13.71\%$ ✓

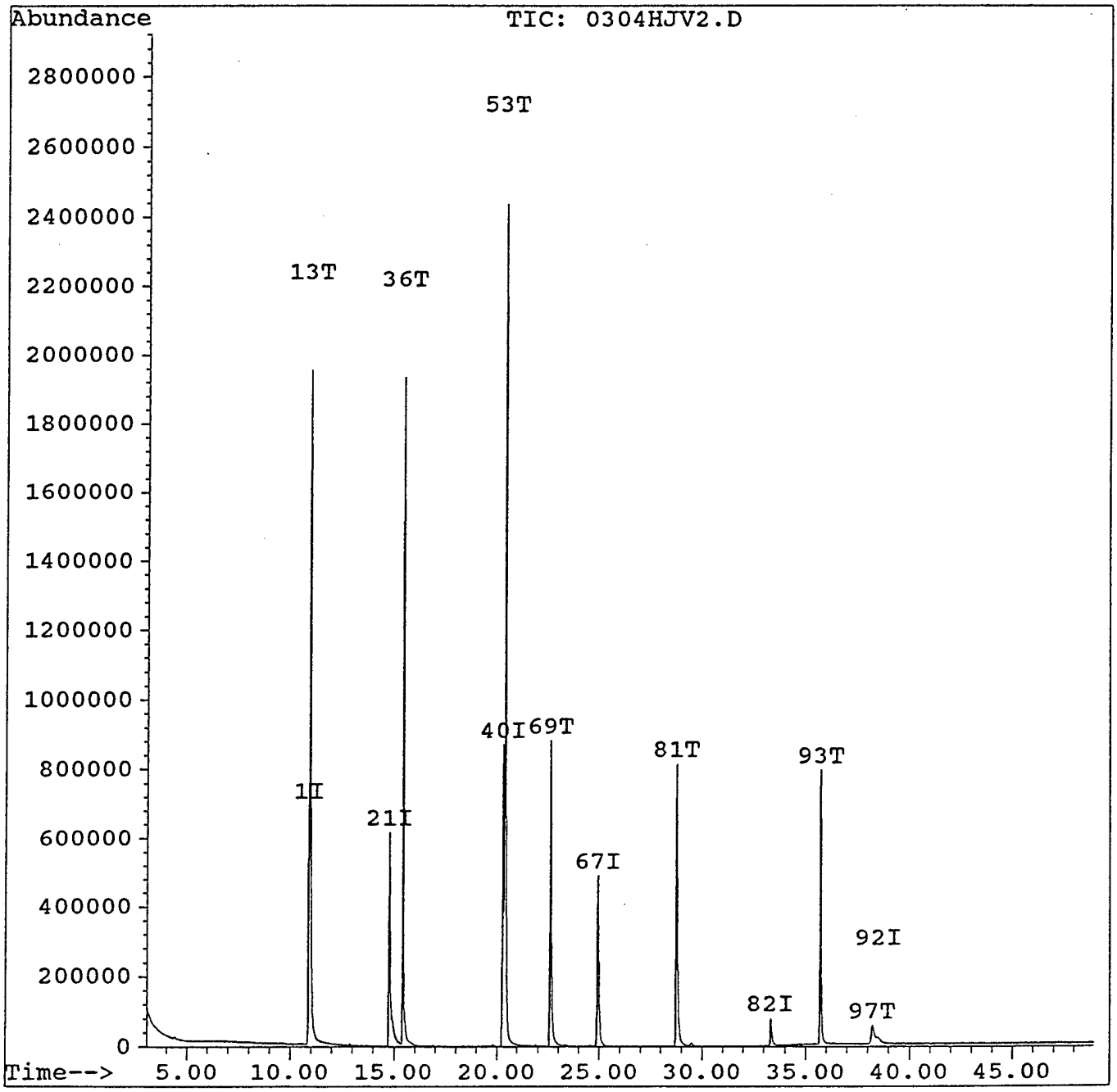
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV2.D
Acq Time : 4 Mar 94 4:05 pm
Sample : CCC B/N 100PPM
Misc : 1uL INJECTON, 10uL INTSTD. ADDED
Quant Time: Mar 4 17:24 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M
Title : Volatiles
Last Update : Tue Nov 30 16:13:40 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV3.D
Acq Time : 4 Mar 94 5:05 pm
Sample : CCC A 100PPM
Misc : 1uL INJECTON, 10uL INTSTD. ADDED
Quant Time: Mar 9 20:06 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.88	152	645717	40.00	ng	0.12
21) Naphthalene-d8	14.75	136	2428706	40.00	ng	0.10
40) Acenaphthene-d10	20.28	164	1277752	40.00	ng	0.11
67) Phenanthrene-d10	24.94	188	1455741	40.00	ng	0.10
82) Chrysene-d12	33.34	240	153772	40.00	ng	0.21
92) Perylene-d12	38.57	264	45271	40.00	ng	0.51
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng	0.00%
8) Phenol-d5	10.88	99	7509	0.35	ng	0.87%
23) Nitrobenzene-d5	0.00	82	0	0.00	ng	0.00%
45) 2-Fluorobiphenyl	18.34	172	1201	0.03	ng	0.06%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng	0.00%
85) Terphenyl-d14	0.00	244	0	0.00	ng	0.00%
Target Compounds						Qvalue
9) Phenol	11.26	94	2326675	120.78	ng	m 0
27) 2-Nitrophenol	13.74	139	1083538	98.48	ng	# 88
30) 2,4-Dichlorophenol	15.20	162	1484532	102.64	ng	m 0
38) 4-Chloro-3-methylphenol	17.63	107	1630269	109.70	ng	m 98
43) 2,4,6-Trichlorophenol	18.34	196	886461	92.23	ng	m 0

Calculation of response factor

% RPD

1) Phenol $\frac{2326675 \times 40}{645717 \times 100} = 1.4413$ $\frac{1.585 - 1.442}{1.585} \times 100 = 9.02\%$ ✓

2) 2- Nitrophenol $\frac{1083538 \times 40}{2428706 \times 100} = 0.1785$ $\frac{0.212 - 0.180}{0.212} \times 100 = 15.09$ ✓

3) 2,4-Dichlorophenol $\frac{1484532 \times 40}{2428706 \times 100} = 0.2445$ $\frac{0.301 - 0.245}{0.301} \times 100 = 25.0\%$ ✓

4) 4-Chloro 3-methyl Phenol $\frac{1630269 \times 40}{2428706 \times 100} = 0.2685$ $\frac{0.322 - 0.270}{0.322} \times 100 = 16.15\%$ ✓

5) 2,4,6 Trichlorophenol $\frac{886461 \times 40}{1277752 \times 100} = 0.2775$ $\frac{0.293 - 0.280}{0.293} \times 100 = 4.44\%$ ✓

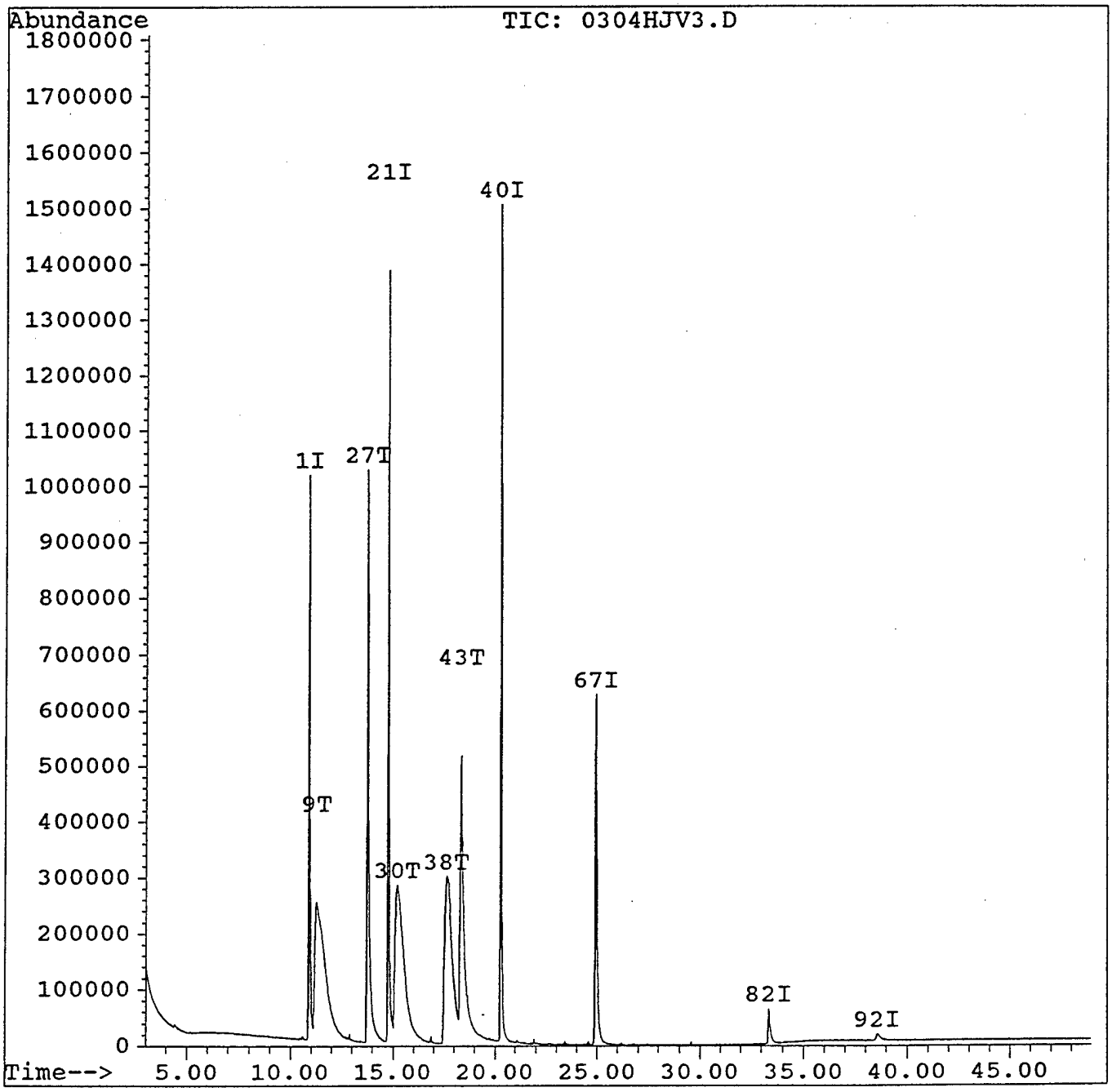
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV3.D
Acq Time : 4 Mar 94 5:05 pm
Sample : CCC A 100PPM
Misc : 1uL INJECTON, 10uL INTSTD. ADDED
Quant Time: Mar 9 20:06 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV4.D
Acq Time : 4 Mar 94 6:04 pm Operator: HJV
Sample : 9402010531 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 20:10 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.87	152	155897	40.00	ng	0.11
21) Naphthalene-d8	14.75	136	702489	40.00	ng	0.10
40) Acenaphthene-d10	20.29	164	324029	40.00	ng	0.12
67) Phenanthrene-d10	24.95	188	428750	40.00	ng	0.11
82) Chrysene-d12	33.39	240	49368	40.00	ng	0.26
92) Perylene-d12	38.69	264	10687	40.00	ng	0.64
System Monitoring Compounds						**%Recovery**
5) 2-Fluorophenol	8.37	112	193549	48.97	ng	122.43%
8) Phenol-d5	11.70	99	287395	55.07	ng	137.66%
23) Nitrobenzene-d5	12.70	82	217148	36.71	ng	91.79%
45) 2-Fluorobiphenyl	18.29	172	293391	24.98	ng	62.45%
66) 2,4,6-Tribromophenol	23.15	330	31392	26.23	ng	65.57%
85) Terphenyl-d14	30.11	244	66087	46.72	ng	116.80%
Target Compounds						**Qvalue**
91) Bis(2-ethylhexyl) phthalat	33.74	149	11396	6.41	ng	m 94

wt. of sample = 30.06 g. % solid = 84.80%

$$\therefore \text{Actual conc.} = \frac{6.41 \times 1000}{30.06 \times 0.848} = 252.25 \text{ ppb.}$$

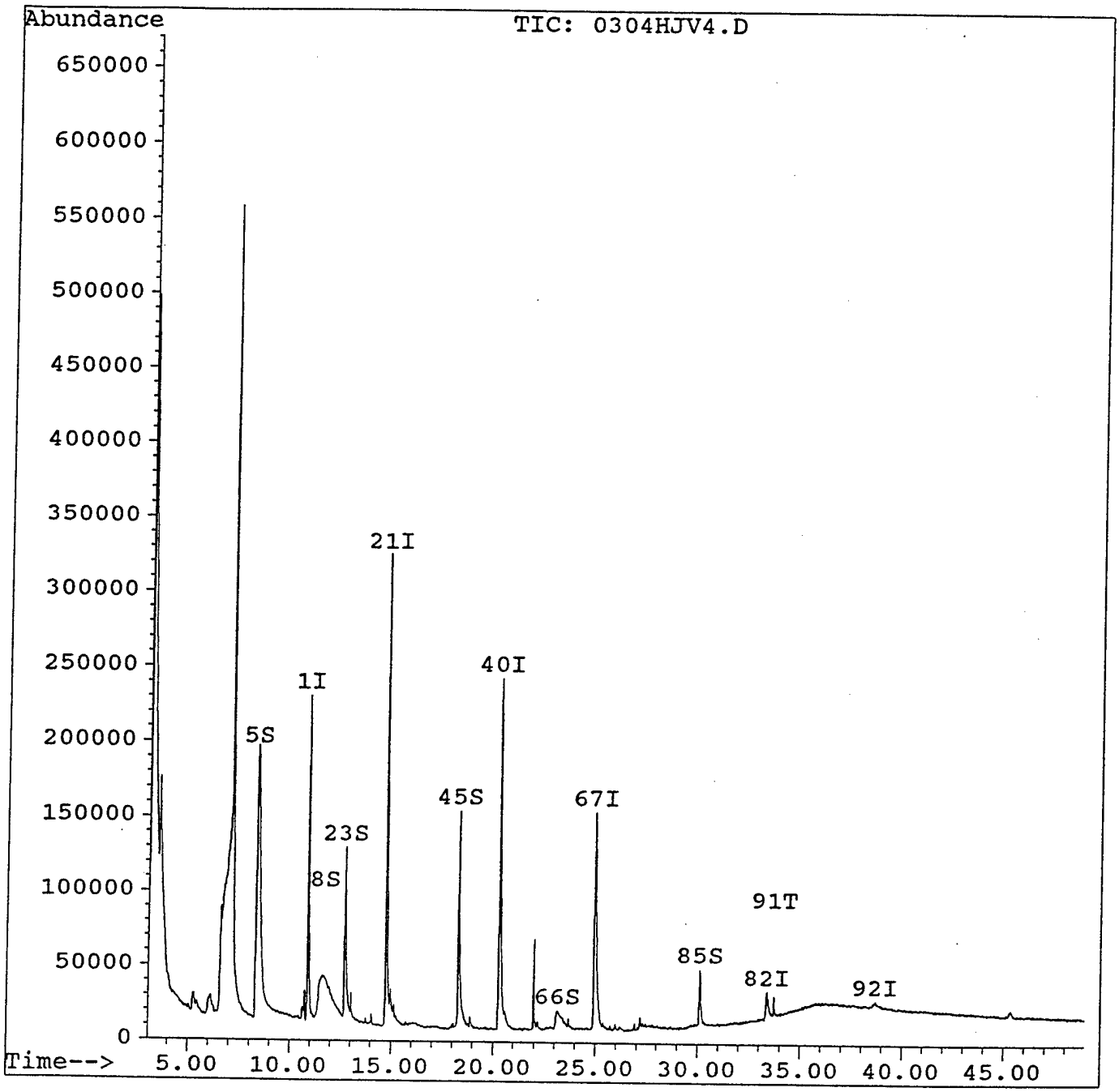
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV4.D
Acq Time : 4 Mar 94 6:04 pm
Sample : 9402010531
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 20:10 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV5.D
Acq Time : 4 Mar 94 7:03 pm Operator: HJV
Sample : 9402010532 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 20:15 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

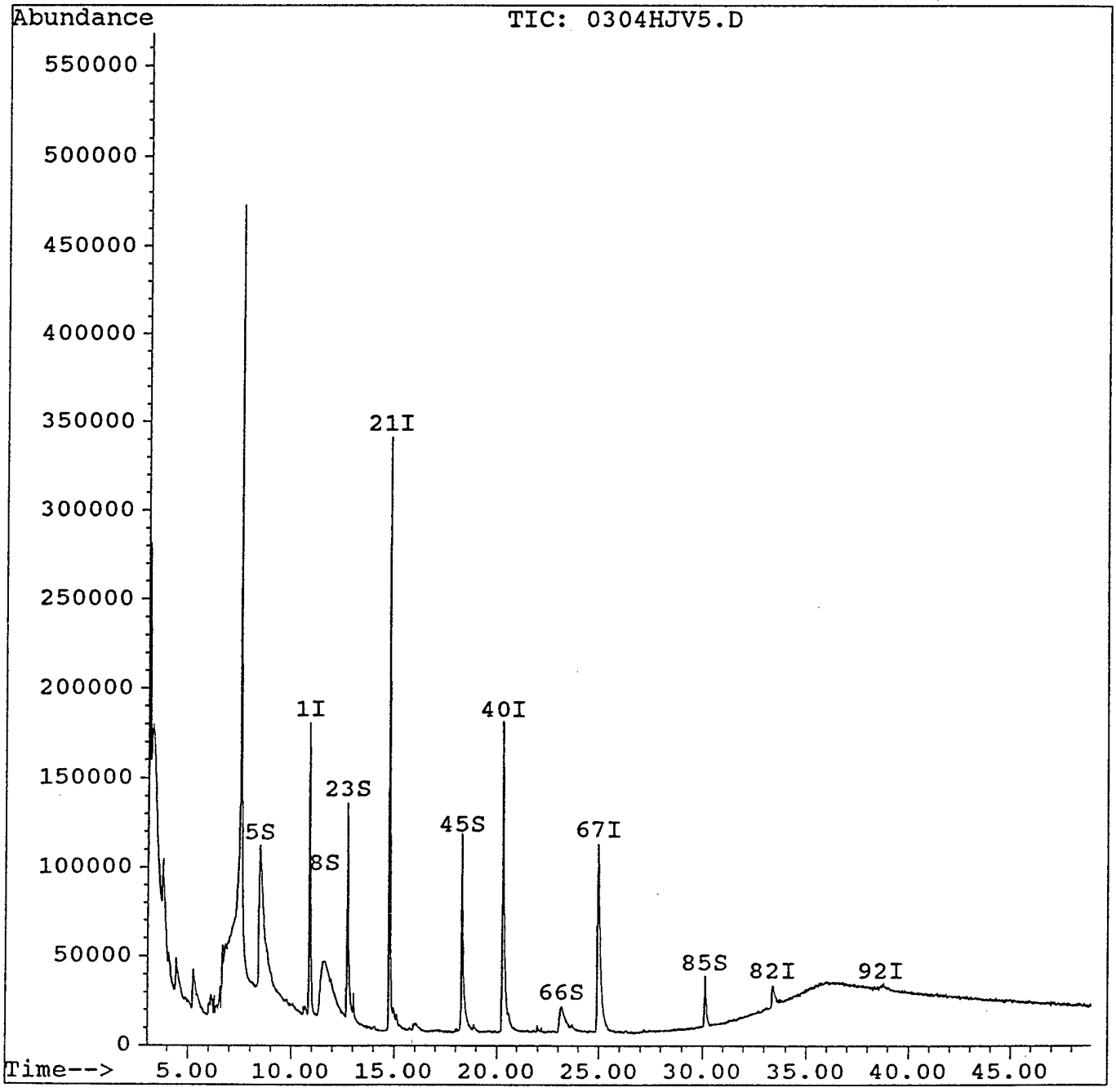
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.87	152	122736	40.00	ng	0.12
21) Naphthalene-d8	14.74	136	615858	40.00	ng	0.09
40) Acenaphthene-d10	20.30	164	251292	40.00	ng	0.13
67) Phenanthrene-d10	24.96	188	380042	40.00	ng	0.12
82) Chrysene-d12	33.41	240	39051	40.00	ng	0.28
92) Perylene-d12	38.67	264	5313	40.00	ng	0.61
System Monitoring Compounds						**%Recovery**
5) 2-Fluorophenol	8.46	112	164453	52.85	ng	132.13%
8) Phenol-d5	11.59	99	218778	53.24	ng	133.11%
23) Nitrobenzene-d5	12.71	82	232106	44.76	ng	111.91%
45) 2-Fluorobiphenyl	18.30	172	222721	24.45	ng	61.13%
66) 2,4,6-Tribromophenol	23.16	330	33374	35.95	ng	89.88%
85) Terphenyl-d14	30.13	244	51348	45.89	ng	114.73%
Target Compounds						**Qvalue**

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV5.D
Acq Time : 4 Mar 94 7:03 pm Operator: HJV
Sample : 9402010532 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 20:15 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV6.D
Acq Time : 4 Mar 94 8:01 pm Operator: HJV
Sample : 9402010533 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 20:22 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.87	152	415899	40.00	ng	0.11
21) Naphthalene-d8	14.74	136	1534913	40.00	ng	0.09
40) Acenaphthene-d10	20.27	164	810528	40.00	ng	0.10
67) Phenanthrene-d10	24.92	188	1015407	40.00	ng	0.08
82) Chrysene-d12	33.33	240	132410	40.00	ng	0.20
92) Perylene-d12	38.54	264	37177	40.00	ng	0.48
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.29	112	354059	33.58	ng	83.95%
8) Phenol-d5	11.58	99	457630	32.87	ng	82.17%
23) Nitrobenzene-d5	12.70	82	467258	36.16	ng	90.39%
45) 2-Fluorobiphenyl	18.27	172	935061	31.83	ng	79.57%
66) 2,4,6-Tribromophenol	23.28	330	38129	12.74	ng	31.84%
85) Terphenyl-d14	30.08	244	276273	72.82	ng	182.05%
Target Compounds						Qvalue
84) Pyrene	29.45	202	54027	8.97	ng	m 100
91) Bis(2-ethylhexyl) phthalat	33.73	149	87185	18.28	ng	m 96

wt. of sample = 30.46 g % solid = 89.85%

Actual conc.

(1) Bis (2 ethyl hexyl) phthalate = $\frac{18.28 \times 1000}{30.46 \times 0.8985} = 667.93$ ppb

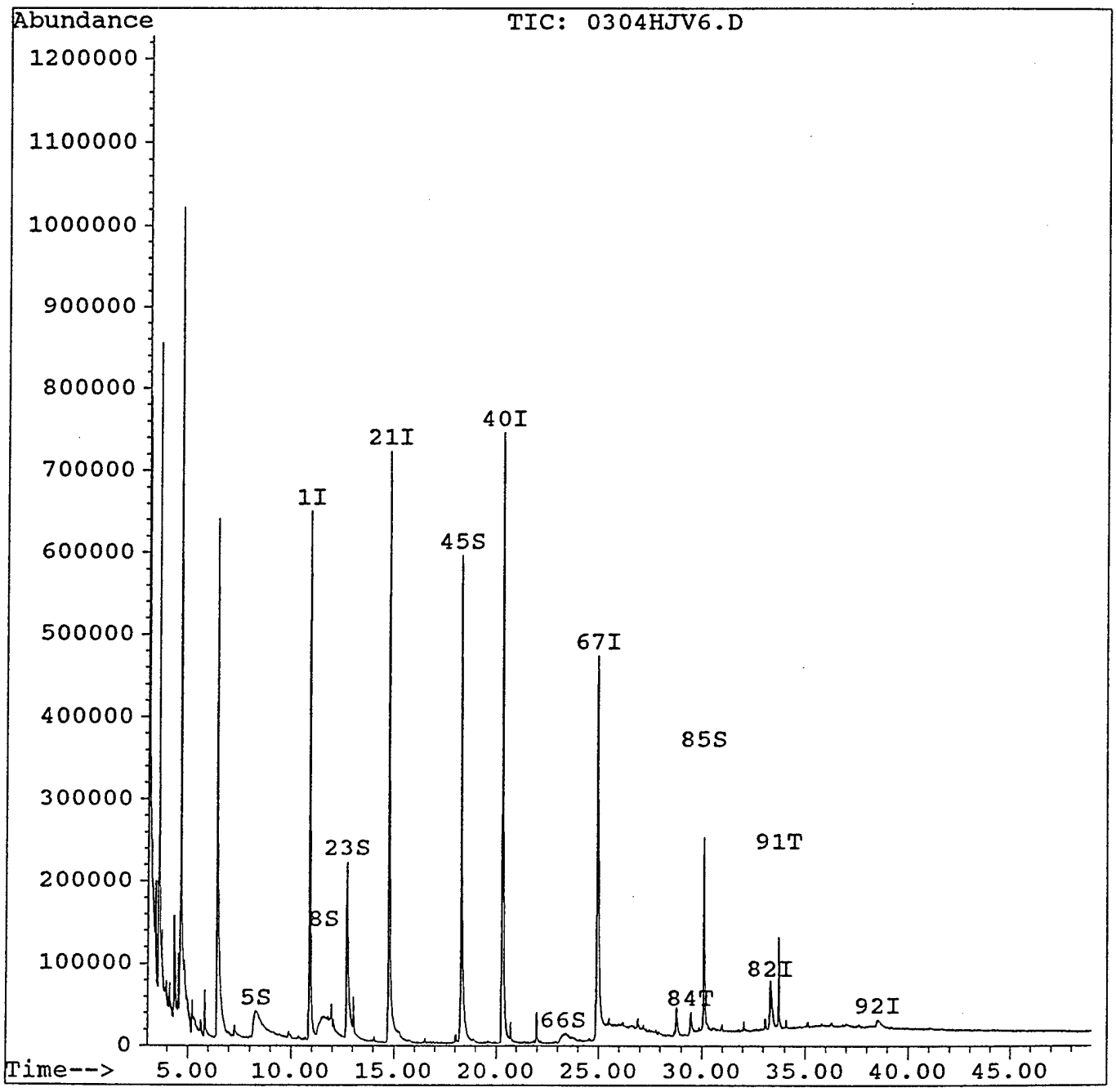
(2) Pyrene = $\frac{8.97 \times 1000}{30.46 \times 0.8985} = 327.75$ ppb.

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV6.D
Acq Time : 4 Mar 94 8:01 pm Operator: HJV
Sample : 9402010533 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 20:22 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV7.D
Acq Time : 4 Mar 94 8:59 pm
Sample : 9402010534
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 20:34 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.87	152	416902	40.00	ng	0.11
21) Naphthalene-d8	14.74	136	1510498	40.00	ng	0.09
40) Acenaphthene-d10	20.28	164	808191	40.00	ng	0.11
67) Phenanthrene-d10	24.92	188	1004154	40.00	ng	0.08
82) Chrysene-d12	33.34	240	142510	40.00	ng	0.21
92) Perylene-d12	38.56	264	35346	40.00	ng	0.51
System Monitoring Compounds						**%Recovery**
5) 2-Fluorophenol	8.29	112	449310	42.51	ng	106.28%
8) Phenol-d5	11.70	99	556390	39.86	ng	99.66%
23) Nitrobenzene-d5	12.71	82	469104	36.89	ng	92.22%
45) 2-Fluorobiphenyl	18.28	172	864849	29.52	ng	73.81%
66) 2,4,6-Tribromophenol	23.33	330	51601	17.28	ng	43.21%
85) Terphenyl-d14	30.10	244	293184	71.80	ng	179.50%
Target Compounds						**Qvalue**
91) Bis(2-ethylhexyl) phthalat	33.72	149	35338	6.88	ng	93

wt. of sample = 30.14 g % solid = 85.75%.

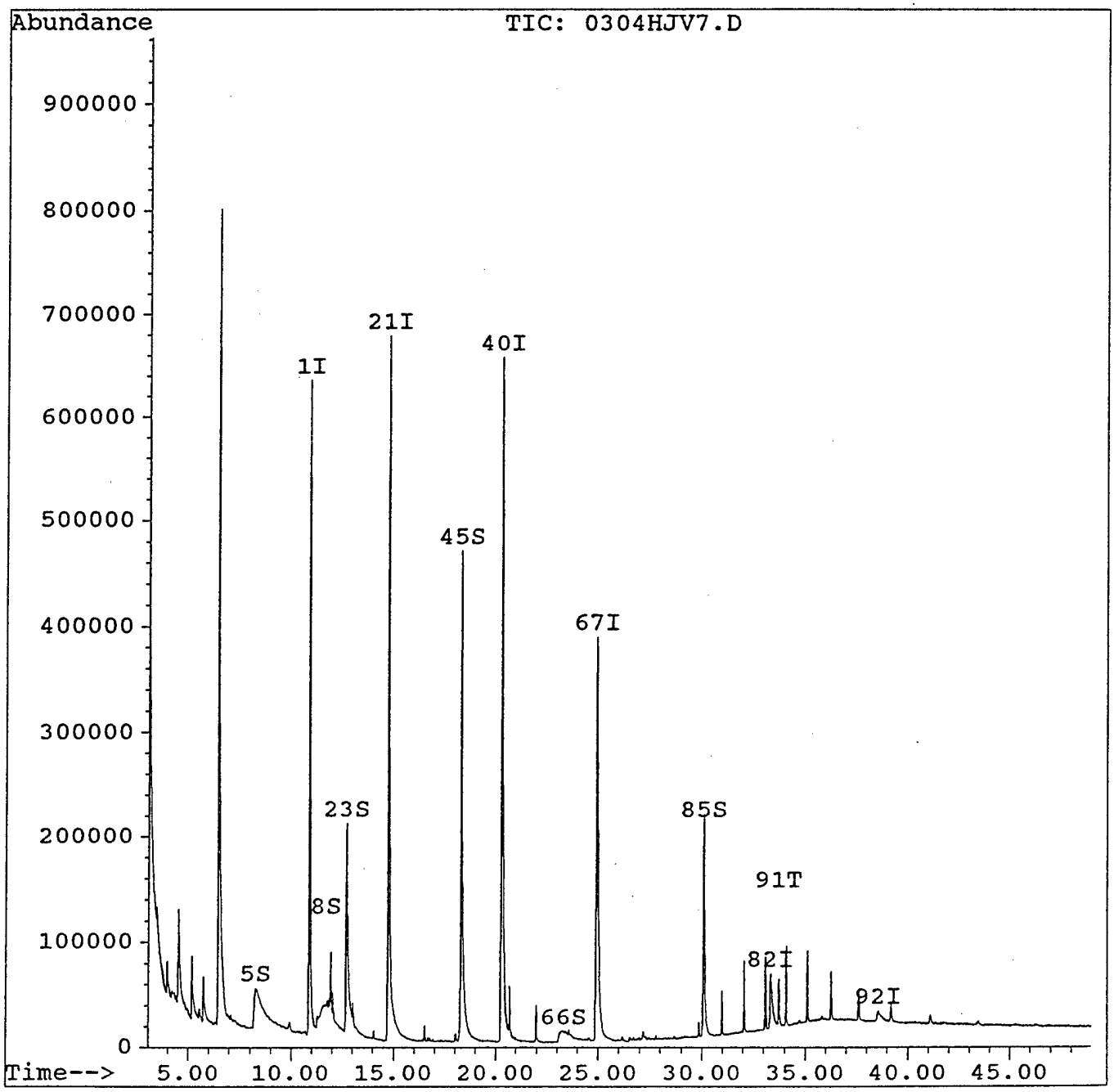
$$\text{Actual conc.} = \frac{6.88 \times 1000}{30.14 \times 0.8575} = 266.20 \text{ ppb.}$$

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV7.D
Acq Time : 4 Mar 94 8:59 pm Operator: HJV
Sample : 9402010534 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 20:34 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Information from Data File:
File: C:\HPCHEM\1\DATA\030494\0304HJV7.D
Operator: HJV
Date Acquired: 4 Mar 94 8:59 pm
Method File: 8270
Sample Name: 9402010534
Misc Info: 1uL INJECTION, 10uL INTSTD. ADDED
Vial Number: 7

Search Libraries: C:\DATABASE\NBS54K.L Minimum Quality: 0

Unknown Spectrum: Apex
Integration Events: AutoIntegrate

Pk#	RT	Area%	Library/ID	Ref#	CAS#	Qual
1	3.46	3.80	C:\DATABASE\NBS54K.L			
			3-Oxetanol, 2,2,3-trimethyl-	2918	025910-96-7	25
			Pentanoic acid, 2,2-dimethyl-, 1,2	47891	057346-62-0	17
			Pyrrolidine, 3-methyl-	594	034375-89-8	16
2	6.46	15.86	C:\DATABASE\NBS54K.L			
			Hydroperoxide, 1,1-dimethylethyl	854	000075-91-2	33
			N,N'-Bis(2-methyl-2-nitrosopentan-	30086	094514-30-4	7
3	8.31	4.81	C:\DATABASE\NBS54K.L			
			Phenol, 2-fluoro-	2246	000367-12-4	94
			Propanoic acid, 2-chloro-	1861	000598-78-7	23
			Phenol, 4-fluoro-	2247	000371-41-5	22
4	10.87	11.36	C:\DATABASE\NBS54K.L			
			No matches found			
5	12.71	5.73	C:\DATABASE\NBS54K.L			
			1H-Imidazole, 4-methyl-	436	000822-36-6	28
			1H-Pyrazole, 3-methyl-	433	001453-58-3	25
			1,2-Benzenediol, 3-fluoro-	4276	000363-52-0	7
6	14.74	14.47	C:\DATABASE\NBS54K.L			
			4H-Pyrazolo[3,4-d]pyrimidin-4-one,	5539	000315-30-0	42
			2H-Quinolizine, 1,3,4,6,7,9a-hexah	5905	001004-90-6	38
			Benzamide, 3-amino-	5603	003544-24-9	38
7	18.28	12.30	C:\DATABASE\NBS54K.L			
			1,1'-Biphenyl, 4-fluoro-	13567	000324-74-3	96
			1,1'-Biphenyl, 2-fluoro-	13566	000321-60-8	96
			4-(2-Hydroxyphenyl)pyrimidine	13454	068535-55-7	50
8	20.28	15.29	C:\DATABASE\NBS54K.L			
			Thiophene, 2-bromo-	10970	001003-09-4	50
			Thiophene, 3-bromo-	10971	000872-31-1	28
			3-Pyridinecarbonitrile, 1,2-dihydr	11498	000524-40-3	12
9	24.92	11.58	C:\DATABASE\NBS54K.L			
			Naphthalene, 1,7-dimethoxy-	16978	005309-18-2	36
			Pyrrolo[2,3-b]indole, 1,2,3,3a,8,8	16985	004089-16-1	36
			PENTACYCLO[8.4.0.0(3,7).0(4,14).0(	17015	000000-00-0	36

Pk#	RT	Area%	Library/ID	Ref#	CAS#	Qual
10	30.08	4.80	C:\DATABASE\NBS54K.L			
			1,4-Cyclohexadiene, 6-methylene-3,	27845	018636-59-4	40
			Benzene, 1,1',1''-methylidynetris-	27846	000519-73-3	40
			[1,1'-Biphenyl]-4,4'-diamine, 3,3'	27768	000119-90-4	40

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV8.D
Acq Time : 4 Mar 94 9:57 pm Operator: HJV
Sample : 9402010535 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 20:40 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.87	152	440733	40.00	ng	0.11
21) Naphthalene-d8	14.74	136	1619479	40.00	ng	0.09
40) Acenaphthene-d10	20.28	164	867641	40.00	ng	0.11
67) Phenanthrene-d10	24.92	188	1119049	40.00	ng	0.08
82) Chrysene-d12	33.33	240	181428	40.00	ng	0.19
92) Perylene-d12	38.54	264	46876	40.00	ng	0.48
System Monitoring Compounds						**%Recovery**
5) 2-Fluorophenol	8.29	112	371134	33.22	ng	83.04%
8) Phenol-d5	11.75	99	463894	31.44	ng	78.60%
23) Nitrobenzene-d5	12.71	82	411678	30.19	ng	75.48%
45) 2-Fluorobiphenyl	18.28	172	806073	25.63	ng	64.08%
66) 2,4,6-Tribromophenol	23.33	330	41909	13.08	ng	32.69%
85) Terphenyl-d14	30.08	244	294455	56.64	ng	141.61%
Target Compounds						**Qvalue**
84) Pyrene	29.47	202	42923	5.20	ng	m 98

sample wt. = 30.44g % solid = 86.70 %.

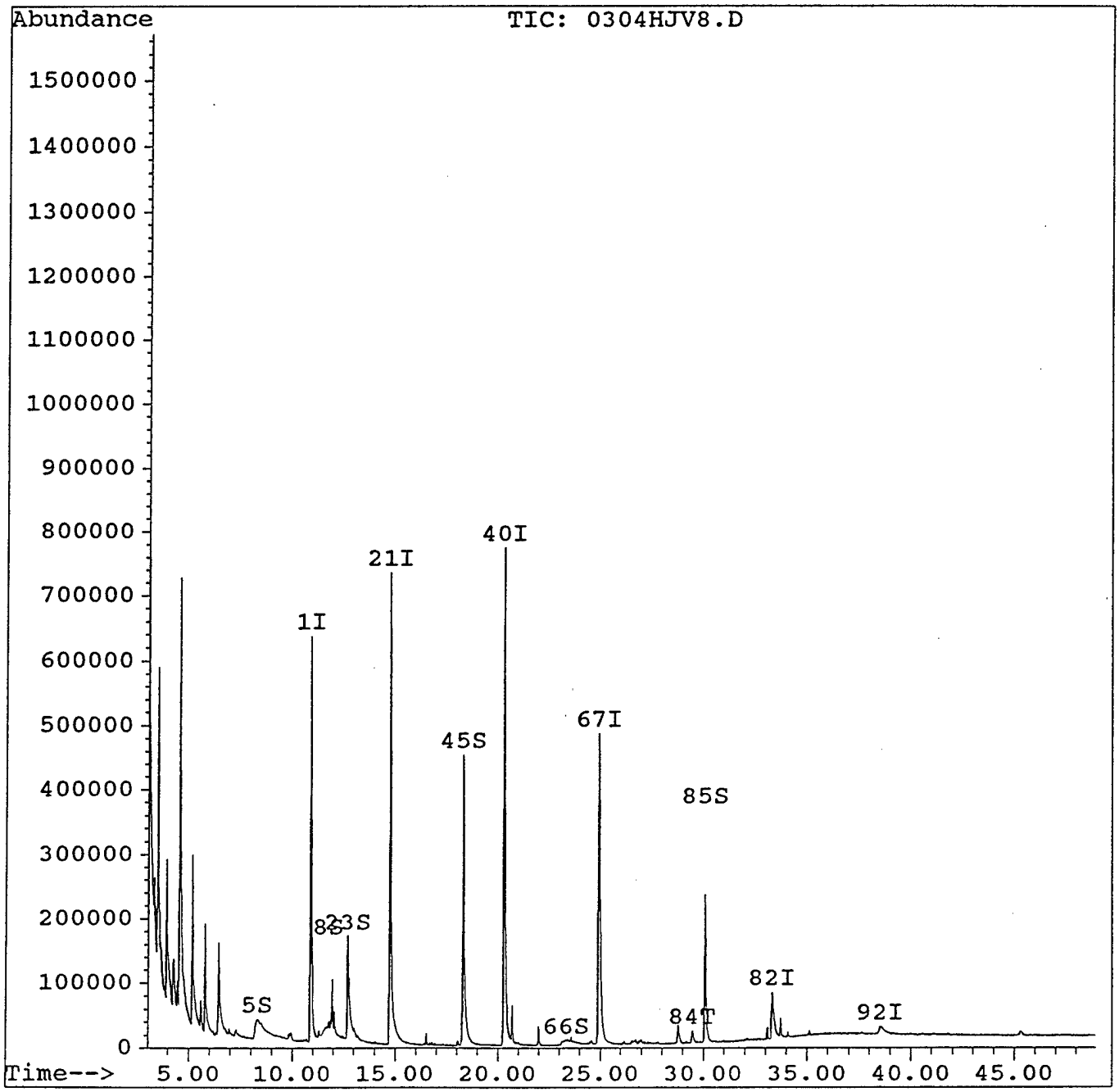
Actual conc. = $\frac{5.20 \times 1000}{30.44 \times 0.867}$ = 197.03 ppb.

(#) = qualifier out of range (m) = manual integration

Quantitation Report

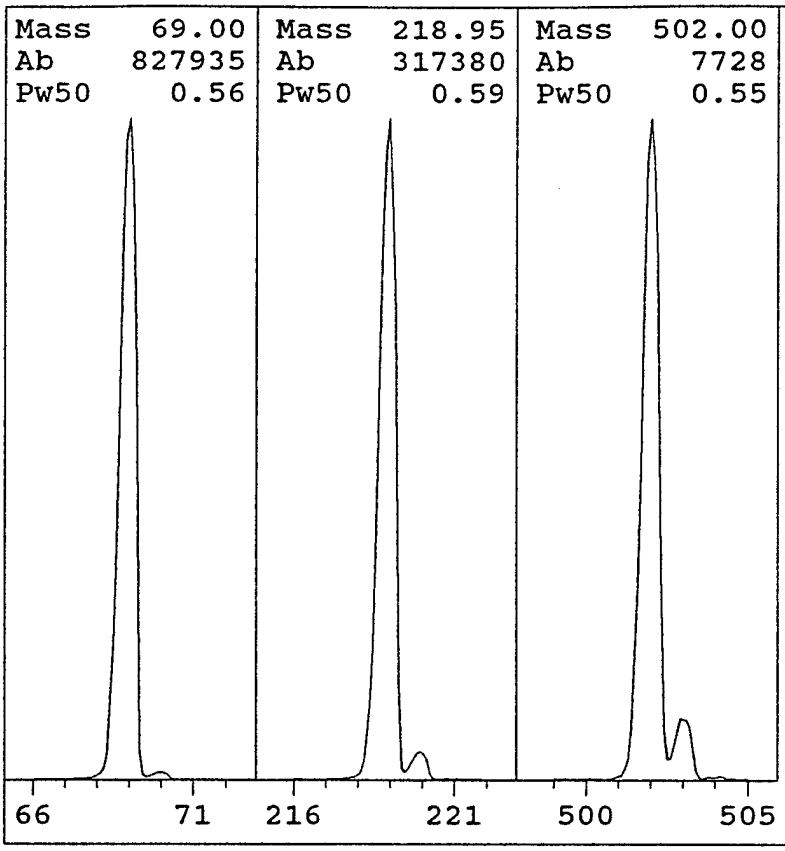
Data File : C:\HPCHEM\1\DATA\030494\0304HJV8.D
Acq Time : 4 Mar 94 9:57 pm Operator: HJV
Sample : 9402010535 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 20:40 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



HP5971 DFTPP Dynamic Target Tune

Sat Mar 05 16:05:32 1994 C:\HPCHEM\1\5971\DFTPP.U



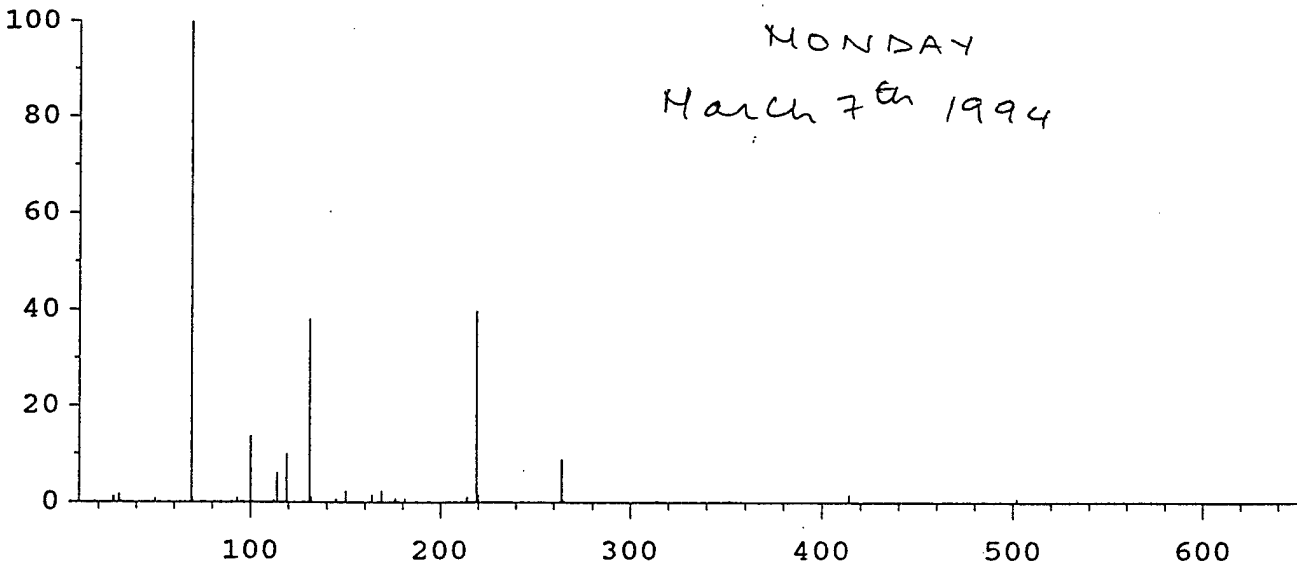
EMVolts	2588	AmuGain	377
Xray	89.8	AmuOffs	71
Emission	ON	219Wid	0.022
MS Temp	184	TTI	OFF
Vacuum	41	DC Pol	NEG
Samples	16	Repeller	19.17
Averages	1	IonFocus	37.0
StepSize	0.10	EntLens	0.00
MassGain	-324	EntOffs	VAR
MassOffs	-4	Filament	2

PFTBA OPEN

Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10
104 peaks Base: 69.00 Abundance: 690496

541

MONDAY
March 7th 1994



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	690496	100.00	70.00	7749	1.12
218.95	274880	39.81	219.95	11850	4.31
501.95	6616	0.96	502.95	670	10.13

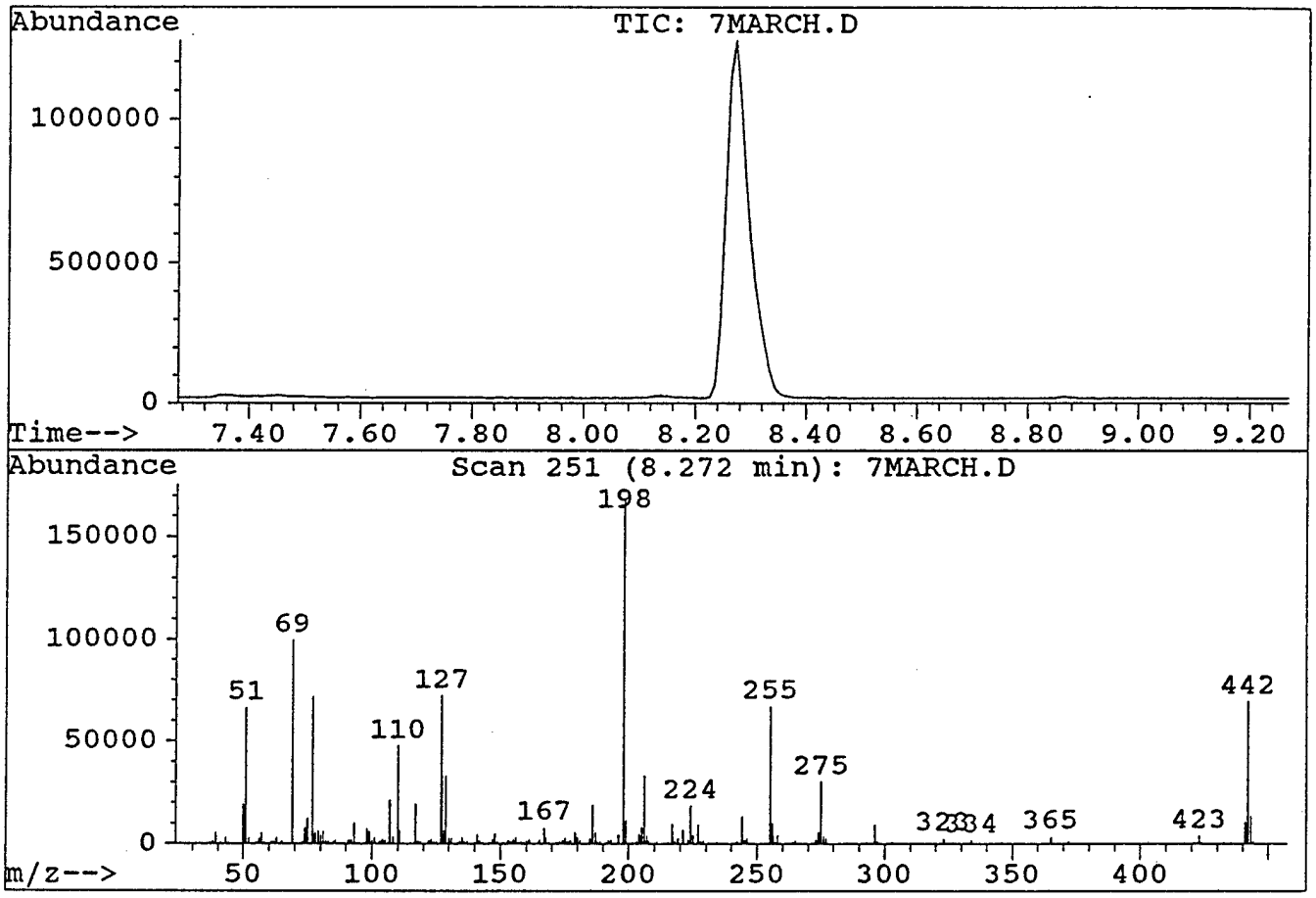
TARGET MASS:	69	131	219	502
DYNAMIC ENT OFFSET:	17.8	18.3	16.3	16.8
TARGET ABUND(%):	100.0	35.0	32.0	0.8
ACTUAL TUNE ABUND(%):	100.0	38.1	39.8	1.0

DFTPP

Data File : C:\HPCHEM\1\DATA\7MARCH.D
Acq Time : 5 Mar 94 4:22 pm
Sample : DFTPP TUNE EVALUATION
Misc : 1uL INJECTION (50nG)

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\DFTPP625.M
Title :



Peak Apex is scan: 251

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.5	66216	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	59.4	99488	PASS
70	69	0	2	0.5	541	PASS
127	198	40	60	43.1	72224	PASS
197	198	0	1	0.0	0	PASS
198	198	100	100	100.0	167424	PASS
199	198	5	9	6.7	11278	PASS
275	198	10	30	18.0	30096	PASS
365	198	1	100	2.0	3399	PASS
441	443	0	100	77.9	10499	PASS
442	198	40	100	41.4	69344	PASS
443	442	17	23	19.4	13482	PASS

Simulate Run Sequence Sat Mar 05 16:42:02 1994

Sequence Name: C:\HPCHEM\1\SEQUENCE\0307SV.S
Comment:
Operator: HJV
Data Path: C:\HPCHEM\1\DATA\0307942\
Method Path: C:\HPCHEM\1\METHODS\

Line	Type	Vial	DataFile	Method	Sample Name
1)	Sample	1	0307HV1	8270	SPCC 200PPM
2)	Sample	2	0307HV2	8270	CCC B/N 100PPM
3)	Sample	3	0307HV3	8270	CCC A 100PPM
4)	Sample	4	0307HV4	8270	9402010536
5)	Sample	5	0307HV5	8270	9402010537
6)	Sample	6	0307HV6	8270	9402010538
7)	Sample	7	0307HV7	8270	9402010539
8)	Sample	8	0307HV8	8270	9402010540
9)	Sample	9	0307HV9	8270	9402010541
10)	Sample	10	0307HV10	8270	9402010543
11)	Sample	11	0307HV11	8270	9402010544

Bytes Needed: 550000 Space on drive C: 19464192
Sequence Verification Done!

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV1.D
Acq Time : 5 Mar 94 4:50 pm Operator: HJV
Sample : SPCC 200PPM Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 20:44 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) 1,4-Dichlorobenzene-d4	10.88	152	326897	40.00	ng	0.12
21) Naphthalene-d8	14.74	136	1148283	40.00	ng	0.
40) Acenaphthene-d10	20.28	164	644737	40.00	ng	0.
67) Phenanthrene-d10	24.92	188	690138	40.00	ng	0.08
82) Chrysene-d12	33.36	240	80229	40.00	ng	0.
92) Perylene-d12	38.58	264	8188	40.00	ng	0.
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng	0.
8) Phenol-d5	10.88	99	3591	0.33	ng	0.
23) Nitrobenzene-d5	12.41	82	2126	0.22	ng	0.55
45) 2-Fluorobiphenyl	18.33	172	390	0.02	ng	0.
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng	0.
85) Terphenyl-d14	0.00	244	0	0.00	ng	0.00
Target Compounds						Qvalue
20) N-Nitrosodi-n-propylamine	12.41	70	1481163	254.31	ng	m 97
42) Hexachlorocyclopentadiene	17.68	237	405161	218.59	ng	96
54) 2,4-Dinitrophenol	22.59	184	25299	10.64	ng	m
55) 4-Nitrophenol	23.23	139	231386	42.93	ng	m

Calculation of RF :-

(1) N-Nitrosodi-n-propylamine = $\frac{1481163 \times 40}{326897 \times 200} = 0.90$ ✓

(2) Hexachlorocyclopentadiene = $\frac{405761 \times 40}{644737 \times 200} = 0.125$ ✓

(3) 2,4-Dinitrophenol = $\frac{25299 \times 40}{644737 \times 200} = 0.008$

(4) 4-Nitrophenol = $\frac{231386 \times 40}{644737 \times 200} = 0.072$ ✓

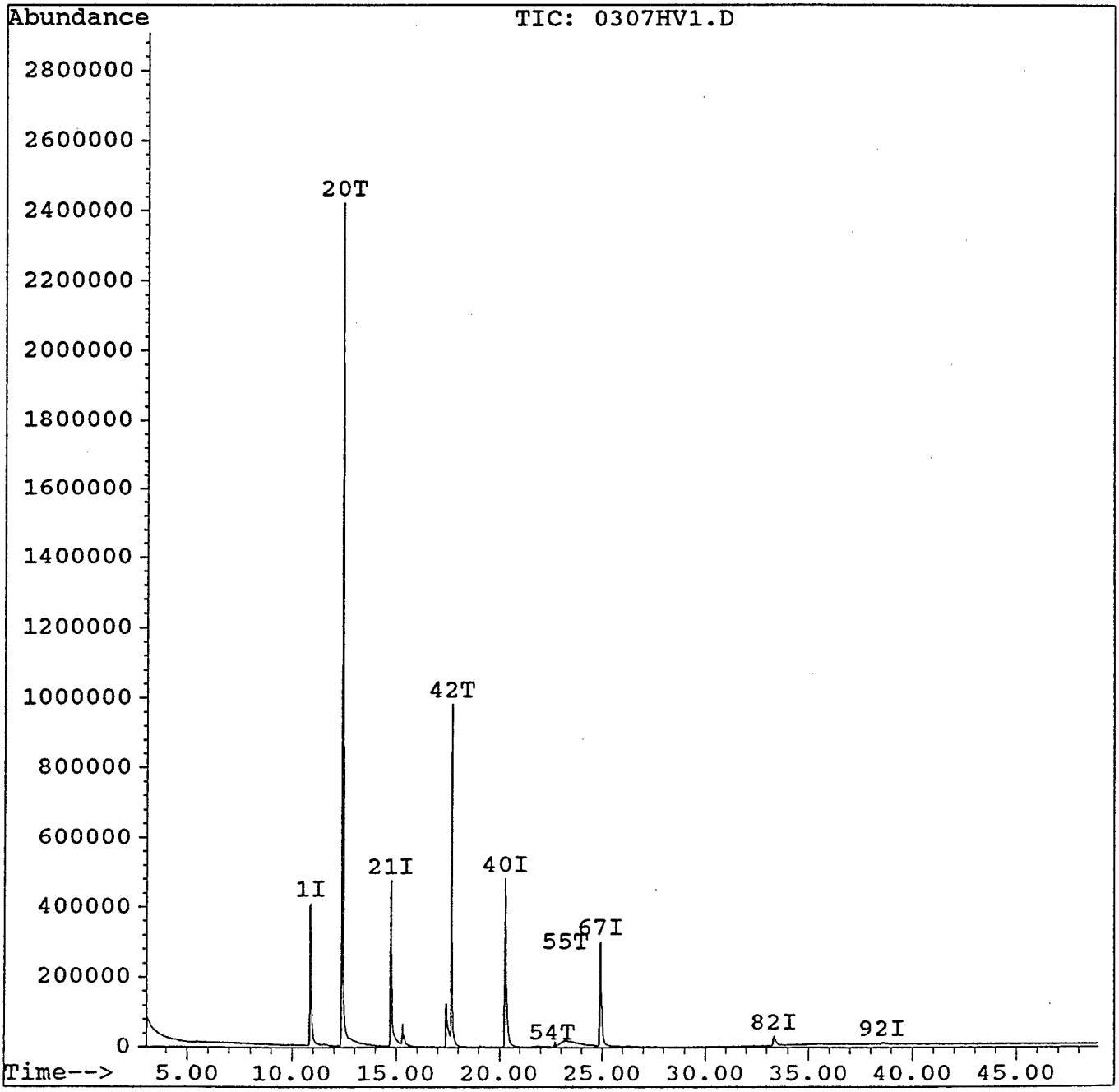
SPCC's 3 cleared.

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV1.D
Acq Time : 5 Mar 94 4:50 pm Operator: HJV
Sample : SPCC 200PPM Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 20:44 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV2.D
Acq Time : 5 Mar 94 5:49 pm Operator: HJV
Sample : CCC B/N 100PPM Inst : GC/MS
Misc : 1uL INJECTON, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 20:48 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

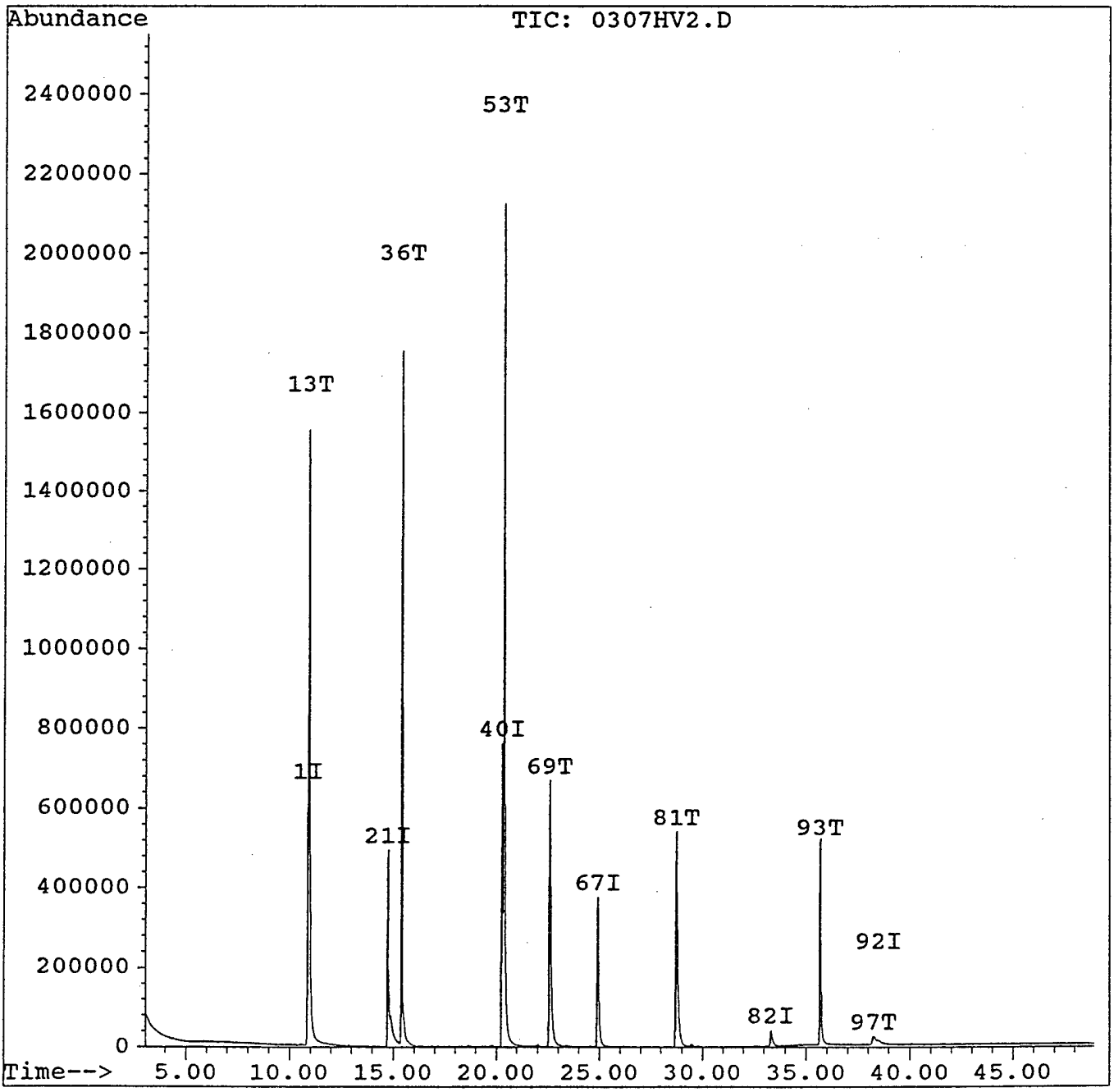
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(M
1) 1,4-Dichlorobenzene-d4	10.88	152	419469	40.00	ng		0.12
21) Naphthalene-d8	14.74	136	1396501	40.00	ng		0.[illegible]9
40) Acenaphthene-d10	20.27	164	807322	40.00	ng		0.[illegible]0
67) Phenanthrene-d10	24.91	188	844804	40.00	ng		0.07
82) Chrysene-d12	33.33	240	100031	40.00	ng		0.[illegible]0
92) Perylene-d12	38.51	264	22325	40.00	ng		0.[illegible]5
System Monitoring Compounds							%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng		0.[illegible]0
8) Phenol-d5	10.91	99	9348	0.67	ng		1.[illegible]6
23) Nitrobenzene-d5	0.00	82	0	0.00	ng		0.00
45) 2-Fluorobiphenyl	18.34	172	576	0.02	ng		0.[illegible]5
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng		0.[illegible]0
85) Terphenyl-d14	0.00	244	0	0.00	ng		0.00
Target Compounds							Qvalue
13) 1,4-Dichlorobenzene	10.93	146	1389559	111.79	ng		100
36) Hexachlorobutadiene	15.40	225	551660	127.85	ng	m	99
53) Acenaphthene	20.37	154	2058587	85.42	ng	m	[illegible]9
69) Diphenylamine + N-Nitrosod	22.59	169	1099747	46.99	ng	m	[illegible]7
81) Fluoranthene	28.74	202	1422643	70.65	ng	m	98
93) Di-n-octylphthalate	35.68	149	368588	121.17	ng	m	[illegible]6
97) Benzo(a)pyrene	38.27	252	102783	98.92	ng		[illegible]5

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV2.D
Acq Time : 5 Mar 94 5:49 pm Operator: HJV
Sample : CCC B/N 100PPM Inst : GC/MS
Misc : 1uL INJECTON, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 20:48 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV3.D
Acq Time : 5 Mar 94 6:47 pm Operator: HJV
Sample : CCC A 100PPM Inst : GC/MS
Misc : 1uL INJECTON, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 20:52 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M[illegible]n)
1) 1,4-Dichlorobenzene-d4	10.86	152	411400	40.00	ng	0.10
21) Naphthalene-d8	14.73	136	1409744	40.00	ng	0.[illegible]
40) Acenaphthene-d10	20.27	164	787867	40.00	ng	0.[illegible]
67) Phenanthrene-d10	24.93	188	767081	40.00	ng	0.08
82) Chrysene-d12	33.38	240	98702	40.00	ng	0.24
92) Perylene-d12	38.65	264	22352	40.00	ng	0.[illegible]
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng	0.[illegible]%
8) Phenol-d5	10.86	99	3950	0.29	ng	0.[illegible]%
23) Nitrobenzene-d5	0.00	82	0	0.00	ng	0.00%
45) 2-Fluorobiphenyl	18.32	172	706	0.02	ng	0.[illegible]%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng	0.[illegible]%
85) Terphenyl-d14	0.00	244	0	0.00	ng	0.00%
Target Compounds						Qvalue
9) Phenol	11.26	94	1406741	114.62	ng	m [illegible]
27) 2-Nitrophenol	13.74	139	653602	102.34	ng	91
30) 2,4-Dichlorophenol	15.31	162	920800	109.68	ng	m
38) 4-Chloro-3-methylphenol	17.75	107	911397	105.66	ng	m
43) 2,4,6-Trichlorophenol	18.33	196	510557	86.15	ng	m 0

Calculation of response factor

% RPD :-

1) Phenol = $\frac{1406741 \times 40}{411400 \times 100} = 1.3678$ $\quad \frac{1.585 - 1.37}{1.585} \times 100 = 13.56$ %

2) 2-Nitro phenol = $\frac{653602 \times 40}{1409744 \times 100} = 0.1855$ $\quad \frac{0.212 - 0.186}{0.212} \times 100 = 12.2$

3) 2,4-Dichlorophenol = $\frac{920800 \times 40}{1409744 \times 100} = 0.2613$ $\quad \frac{0.301 - 0.262}{0.301} \times 100 = 12$

4) 4-chloro3-methyl phenol = $\frac{911397 \times 40}{1409744 \times 100} = 0.2580$ $\quad \frac{0.322 - 0.270}{0.322} \times 100 = 16.1$

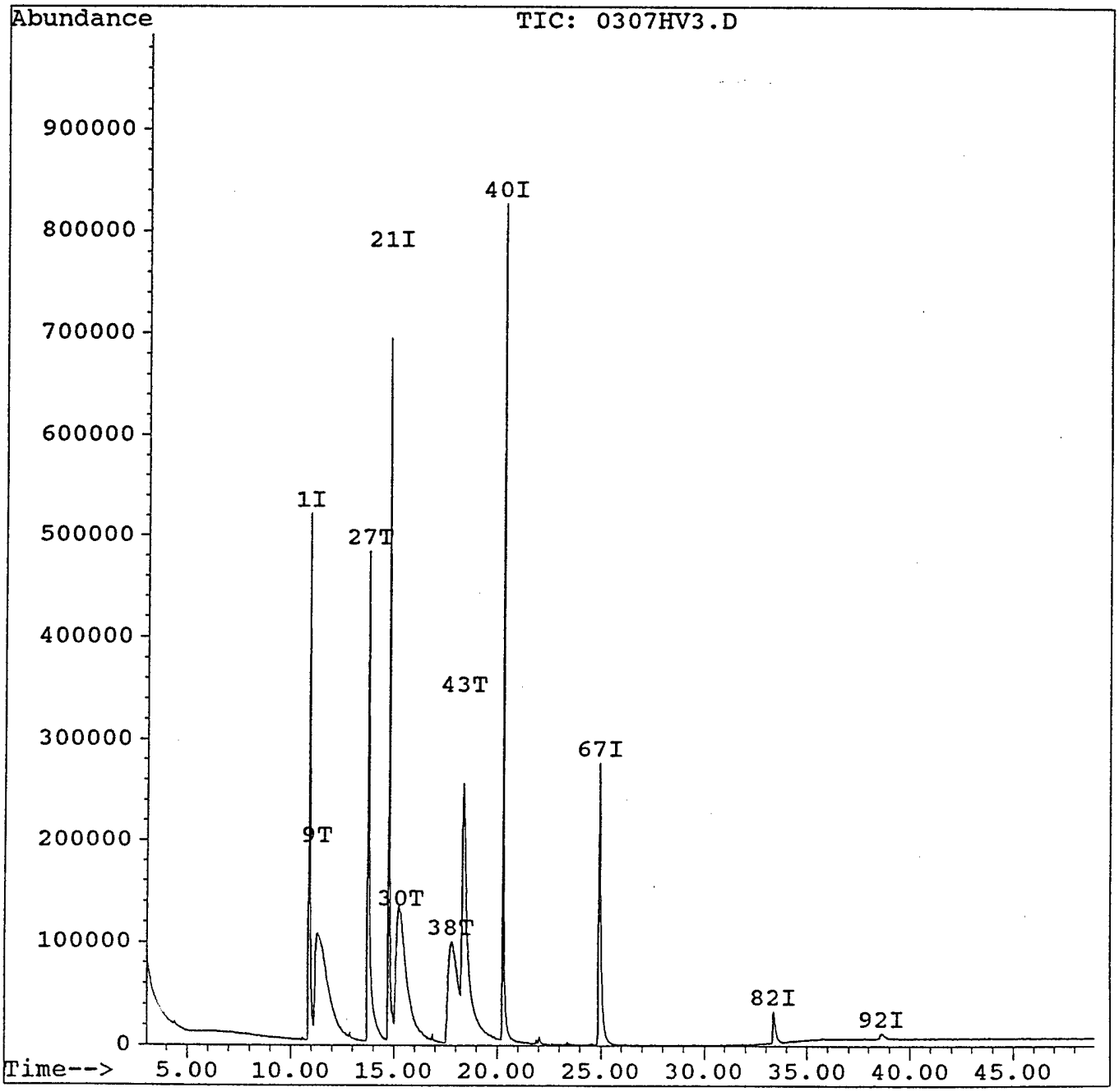
5) 2,4,6 Trichlorophenol = $\frac{510557 \times 40}{787867 \times 100} = 0.260$ $\quad \frac{0.293 - 0.260}{0.293} \times 100 = 11.$

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV3.D
Acq Time : 5 Mar 94 6:47 pm Operator: HJV
Sample : CCC A 100PPM Inst : GC/MS
Misc : 1uL INJECTON, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 20:52 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV4.D
Acq Time : 5 Mar 94 7:45 pm Operator: HJV
Sample : 9402010536 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 20:56 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) 1,4-Dichlorobenzene-d4	10.87	152	477551	40.00	ng	0.11
21) Naphthalene-d8	14.73	136	1582949	40.00	ng	0.
40) Acenaphthene-d10	20.27	164	906010	40.00	ng	0.
67) Phenanthrene-d10	24.91	188	900347	40.00	ng	0.06
82) Chrysene-d12	33.32	240	149219	40.00	ng	0.
92) Perylene-d12	38.54	264	46119	40.00	ng	0.
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.27	112	212886	17.58	ng	43.
8) Phenol-d5	11.64	99	329163	20.59	ng	51.
23) Nitrobenzene-d5	12.68	82	453308	34.01	ng	85.03
45) 2-Fluorobiphenyl	18.27	172	924369	28.15	ng	70.
66) 2,4,6-Tribromophenol	23.37	330	15216	4.55	ng	11.
85) Terphenyl-d14	30.08	244	214827	50.24	ng	125.61
Target Compounds						Qvalu
91) Bis(2-ethylhexyl) phthalat	33.70	149	66114	12.30	ng	96

wt. of sample = 29.60 g % solid = 91.90%

$$\text{Actual conc.} = \frac{12.30 \times 1000}{29.60 \times 0.919} = 452.17 \text{ ppb}$$

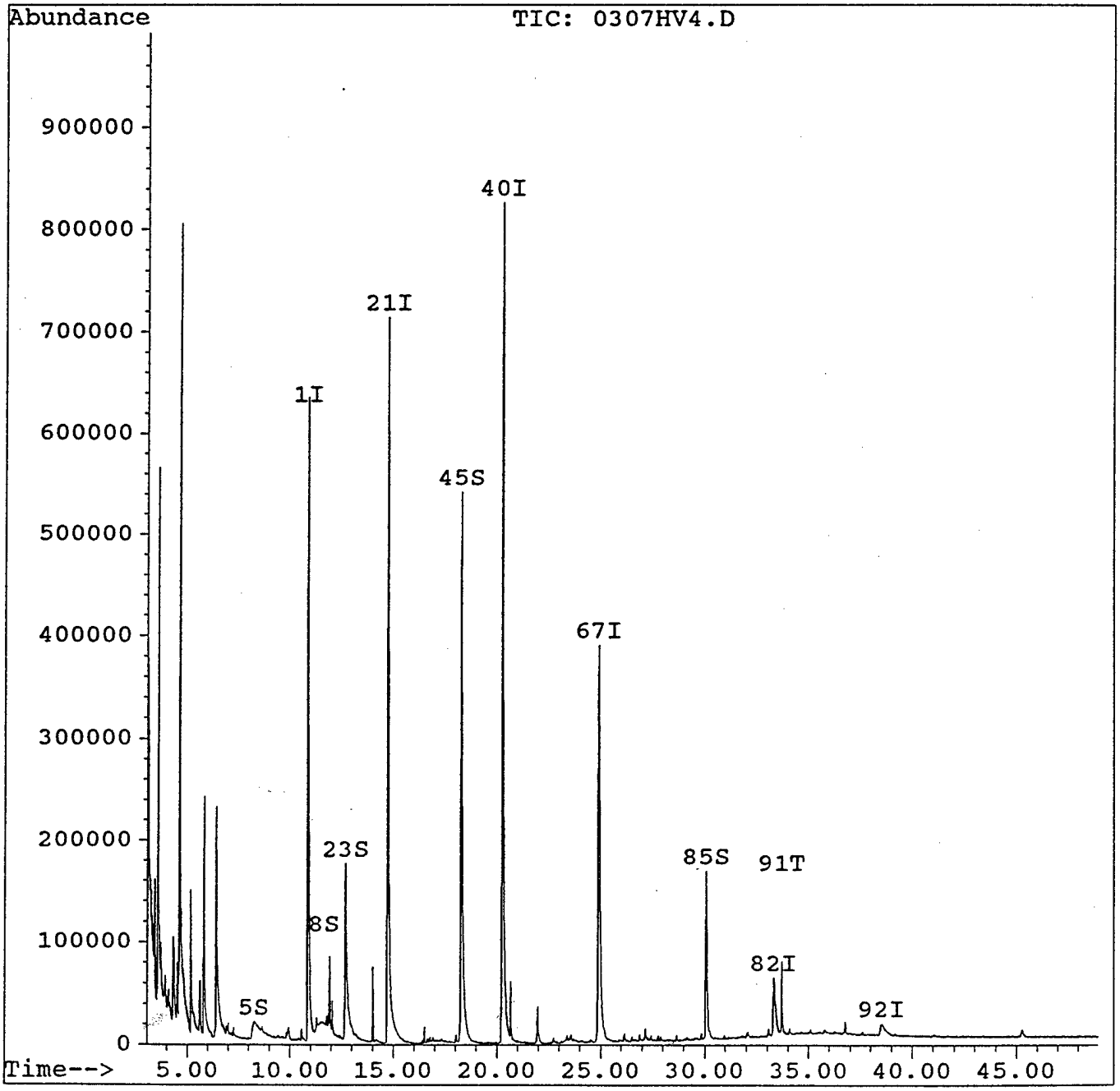
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV4.D
Acq Time : 5 Mar 94 7:45 pm
Sample : 9402010536
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 20:56 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV5.D
Acq Time : 5 Mar 94 8:43 pm Operator: HJV
Sample : 9402010537 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 21:05 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) 1,4-Dichlorobenzene-d4	10.85	152	478325	40.00	ng	0.09
21) Naphthalene-d8	14.73	136	1596234	40.00	ng	0.[redacted]8
40) Acenaphthene-d10	20.26	164	917817	40.00	ng	0.[redacted]0
67) Phenanthrene-d10	24.90	188	854435	40.00	ng	0.06
82) Chrysene-d12	33.34	240	103870	40.00	ng	0.[redacted]1
92) Perylene-d12	38.58	264	26133	40.00	ng	0.[redacted]2
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.24	112	234692	19.35	ng	48.[redacted]9
8) Phenol-d5	11.58	99	384011	23.98	ng	59.[redacted]5
23) Nitrobenzene-d5	12.68	82	471748	35.10	ng	87.76
45) 2-Fluorobiphenyl	18.27	172	904971	27.20	ng	68.[redacted]1
66) 2,4,6-Tribromophenol	23.47	330	13099	3.86	ng	9.[redacted]6
85) Terphenyl-d14	30.09	244	174769	58.72	ng	146.81
Target Compounds						Qvalue
91) Bis(2-ethylhexyl) phthalat	33.71	149	24551	6.56	ng	94

wt. of sample = 29.90 g % solid = 89.52 %

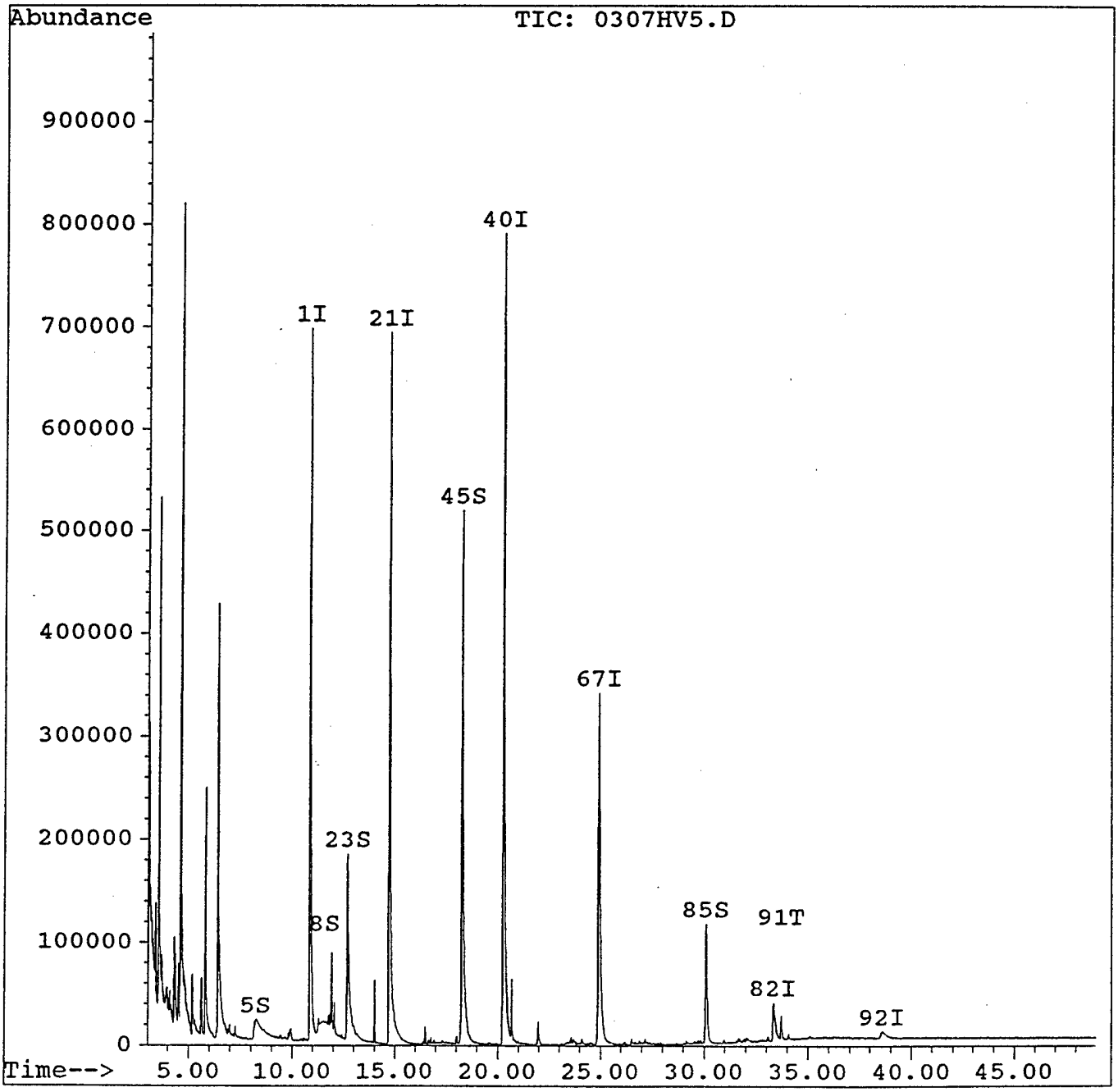
$$\text{Actual conc.} = \frac{6.56 \times 1000}{29.90 \times 0.8959} = 244.95 \text{ ppb.}$$

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV5.D
Acq Time : 5 Mar 94 8:43 pm Operator: HJV
Sample : 9402010537 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 21:05 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV6.D
Acq Time : 5 Mar 94 9:41 pm Operator: HJV
Sample : 9402010538 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 21:09 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) 1,4-Dichlorobenzene-d4	10.85	152	524827	40.00	ng	0.09
21) Naphthalene-d8	14.72	136	1760336	40.00	ng	0.
40) Acenaphthene-d10	20.26	164	1006366	40.00	ng	0.
67) Phenanthrene-d10	24.90	188	1006664	40.00	ng	0.06
82) Chrysene-d12	33.34	240	125685	40.00	ng	0.
92) Perylene-d12	38.60	264	26284	40.00	ng	0.
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.27	112	268748	20.20	ng	50.
8) Phenol-d5	11.63	99	297115	16.91	ng	42.
23) Nitrobenzene-d5	12.68	82	423852	28.60	ng	71.50
45) 2-Fluorobiphenyl	18.27	172	851853	23.35	ng	58.
66) 2,4,6-Tribromophenol	23.35	330	14307	3.85	ng	9.
85) Terphenyl-d14	30.07	244	210933	58.57	ng	146.43
Target Compounds						Qvalue

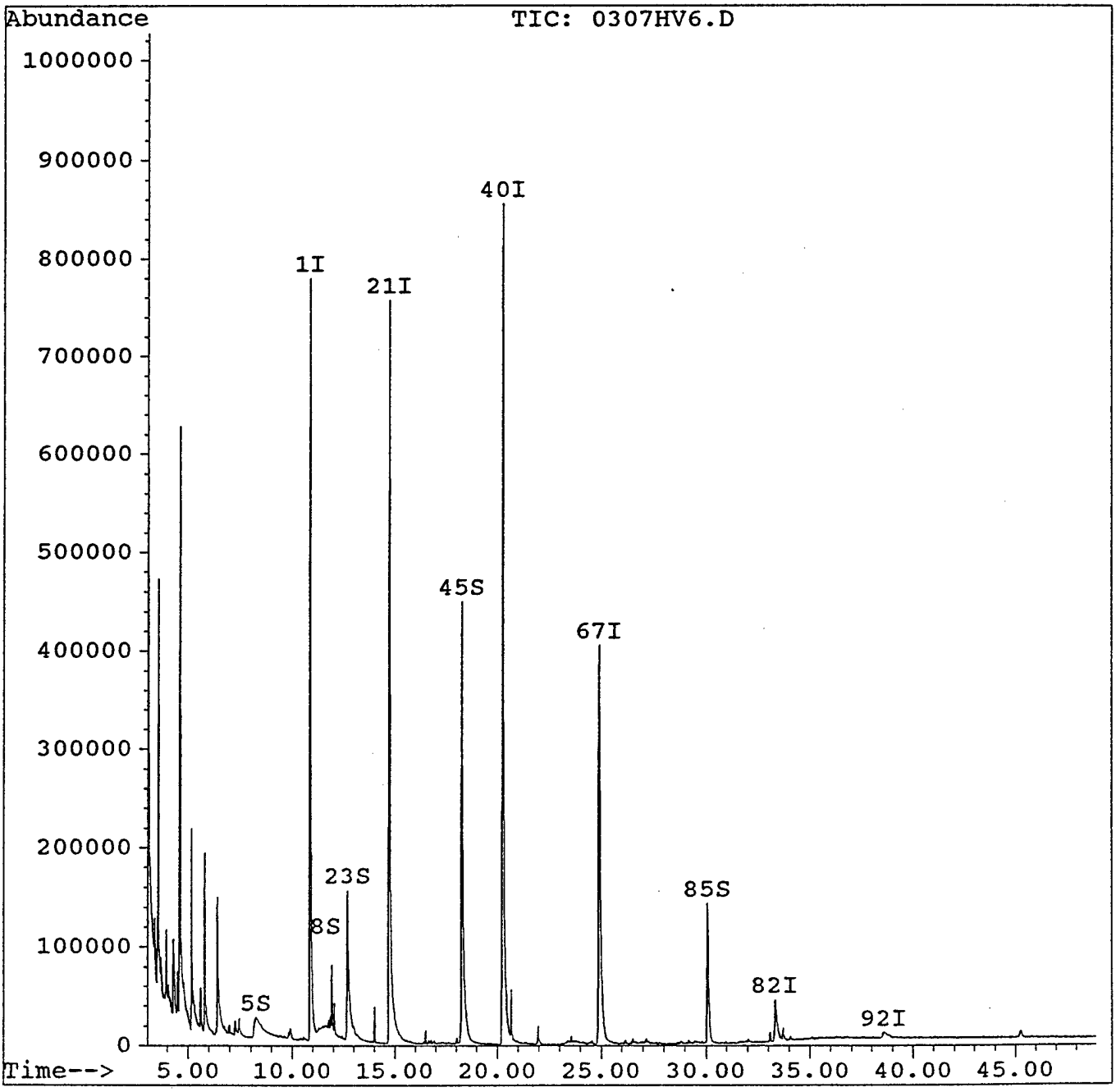
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV6.D
Acq Time : 5 Mar 94 9:41 pm
Sample : 9402010538
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 21:09 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV7.D
Acq Time : 5 Mar 94 10:39 pm Operator: HJV
Sample : 9402010539 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 21:12 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(M
1) 1,4-Dichlorobenzene-d4	10.85	152	406124	40.00 ng	0.09
21) Naphthalene-d8	14.72	136	1500768	40.00 ng	0.[illegible]
40) Acenaphthene-d10	20.27	164	863756	40.00 ng	0.[illegible]
67) Phenanthrene-d10	24.91	188	874256	40.00 ng	0.07
82) Chrysene-d12	33.33	240	112490	40.00 ng	0.19
92) Perylene-d12	38.57	264	26246	40.00 ng	0.[illegible]
System Monitoring Compounds					%Recovery
5) 2-Fluorophenol	8.26	112	356868	34.66 ng	86.[illegible]
8) Phenol-d5	11.64	99	475975	35.01 ng	87.[illegible]
23) Nitrobenzene-d5	12.69	82	475258	37.61 ng	94.03
45) 2-Fluorobiphenyl	18.27	172	925444	29.56 ng	73.[illegible]
66) 2,4,6-Tribromophenol	23.46	330	27613	8.65 ng	21.[illegible]
85) Terphenyl-d14	30.07	244	221277	68.65 ng	171.63
Target Compounds					Qval[illegible]
87) Butylbenzylphthalate	31.82	149	36463	11.63 ng	[illegible]
91) Bis(2-ethylhexyl) phthalat	33.71	149	49007	12.10 ng	96

wt. of sample = 30.43 g % solid = 84.35 %

Actual conc.

(87) $\frac{11.63 \times 1000}{30.43 \times 0.8435} = 453.10$ ppb

(91) $\frac{12.10 \times 1000}{30.43 \times 0.8435} = 471.41$ ppb.

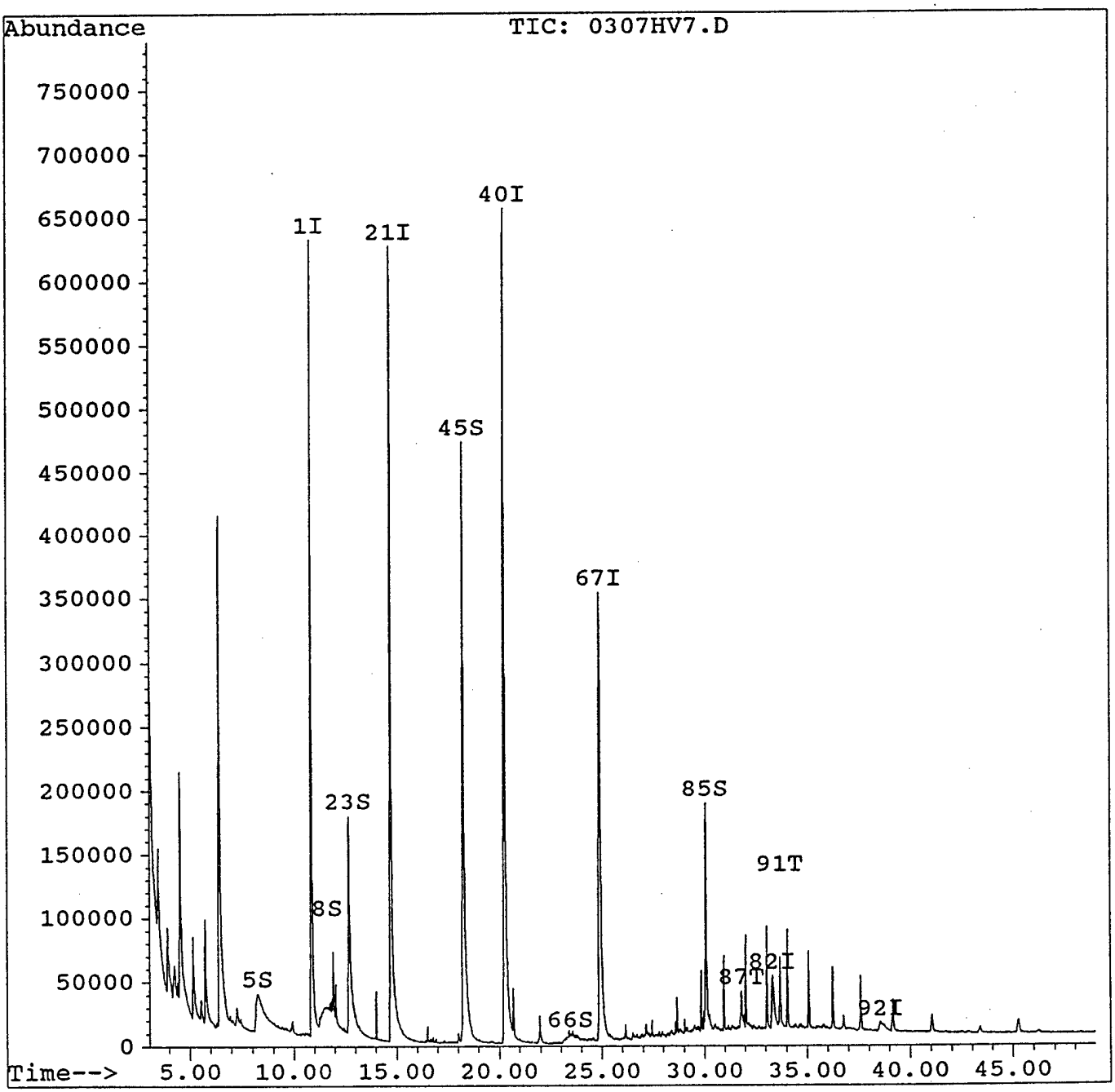
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV7.D
Acq Time : 5 Mar 94 10:39 pm
Sample : 9402010539
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 21:12 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV8.D
Acq Time : 5 Mar 94 11:37 pm Operator: HJV
Sample : 9402010540 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 21:18 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

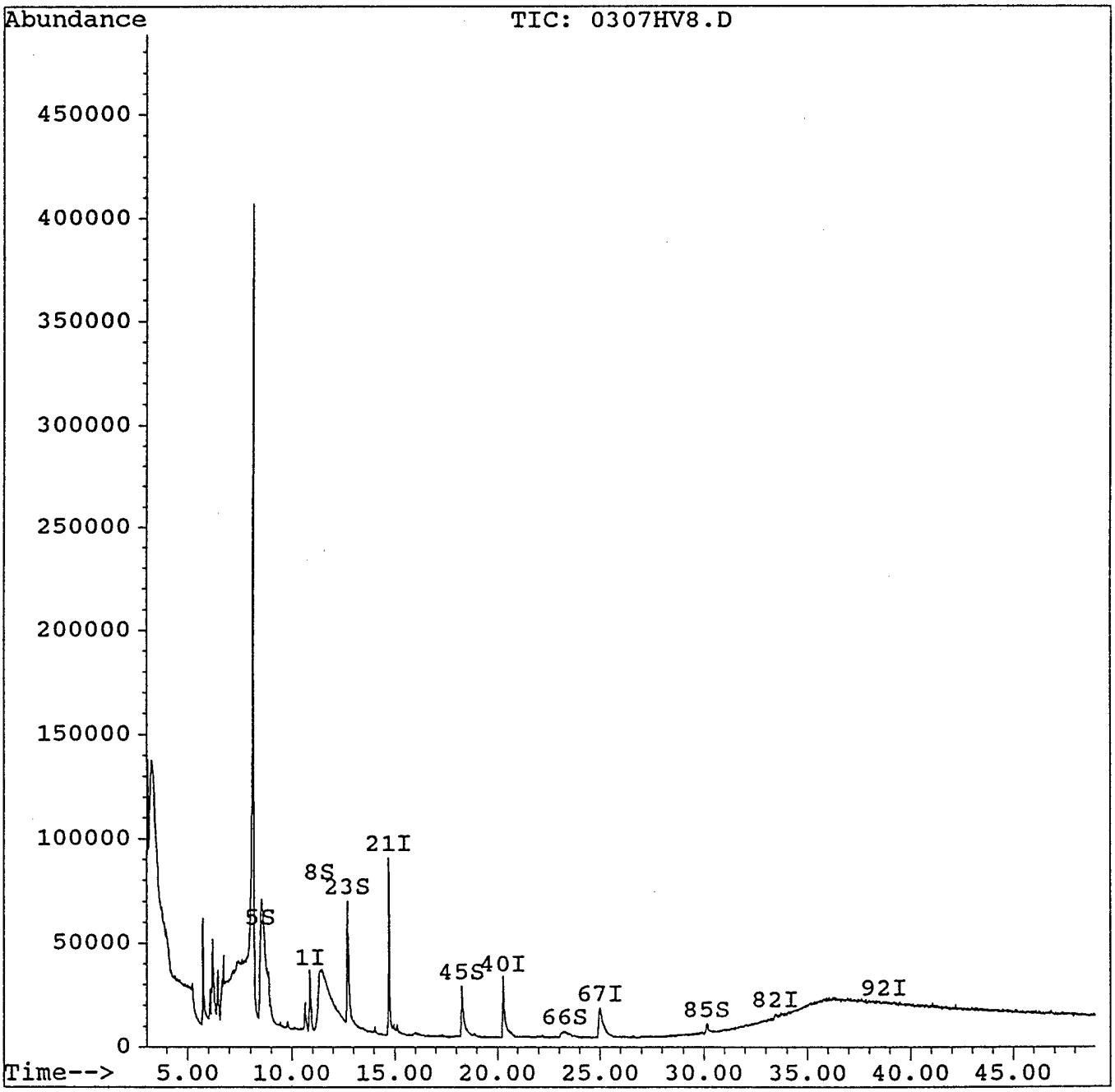
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) 1,4-Dichlorobenzene-d4	10.87	152	27165	40.00	ng	0.12
21) Naphthalene-d8	14.72	136	167157	40.00	ng	0.07
40) Acenaphthene-d10	20.29	164	56087	40.00	ng	0.1
67) Phenanthrene-d10	25.01	188	77881	40.00	ng	0.17
82) Chrysene-d12	33.47	240	5985	40.00	ng	0.34
92) Perylene-d12	38.70	264	603	40.00	ng	0.
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.49	112	26529	38.52	ng	96.
8) Phenol-d5	11.35	99	54883	60.35	ng	150.
23) Nitrobenzene-d5	12.71	82	91205	64.81	ng	162.02
45) 2-Fluorobiphenyl	18.27	172	66491	32.71	ng	81.77
66) 2,4,6-Tribromophenol	23.28	330	9118	44.01	ng	110.
85) Terphenyl-d14	30.15	244	9220	53.76	ng	134.
Target Compounds						Qval

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV8.D
Acq Time : 5 Mar 94 11:37 pm Operator: HJV
Sample : 9402010540 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 21:18 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV9.D
Acq Time : 6 Mar 94 12:35 am Operator: HJV
Sample : 9402010541 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 21:24 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min
1) 1,4-Dichlorobenzene-d4	10.86	152	39916	40.00	ng	0.10
21) Naphthalene-d8	14.73	136	223731	40.00	ng	0.08
40) Acenaphthene-d10	20.27	164	79750	40.00	ng	0.10
67) Phenanthrene-d10	24.97	188	99897	40.00	ng	0.13
82) Chrysene-d12	33.44	240	8891	40.00	ng	0.31
92) Perylene-d12	38.66	264	2338	40.00	ng	0.61
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.51	112	49579	48.99	ng	122.49
8) Phenol-d5	11.39	99	55327	41.40	ng	103.51
23) Nitrobenzene-d5	12.70	82	112379	59.66	ng	149.15%
45) 2-Fluorobiphenyl	18.27	172	87808	30.38	ng	75.95%
66) 2,4,6-Tribromophenol	23.26	330	8956	30.40	ng	76.00
85) Terphenyl-d14	30.13	244	14190	55.70	ng	139.25%
Target Compounds						Qvalue
84) Pyrene	29.50	202	3961	9.80	ng	m 79

Actual wt. of sample = 30.44g % solid = 82.53%.

$$\text{conc.} = \frac{9.80 \times 1000}{30.44 \times 0.8253} = 390.24 \text{ ppb.}$$

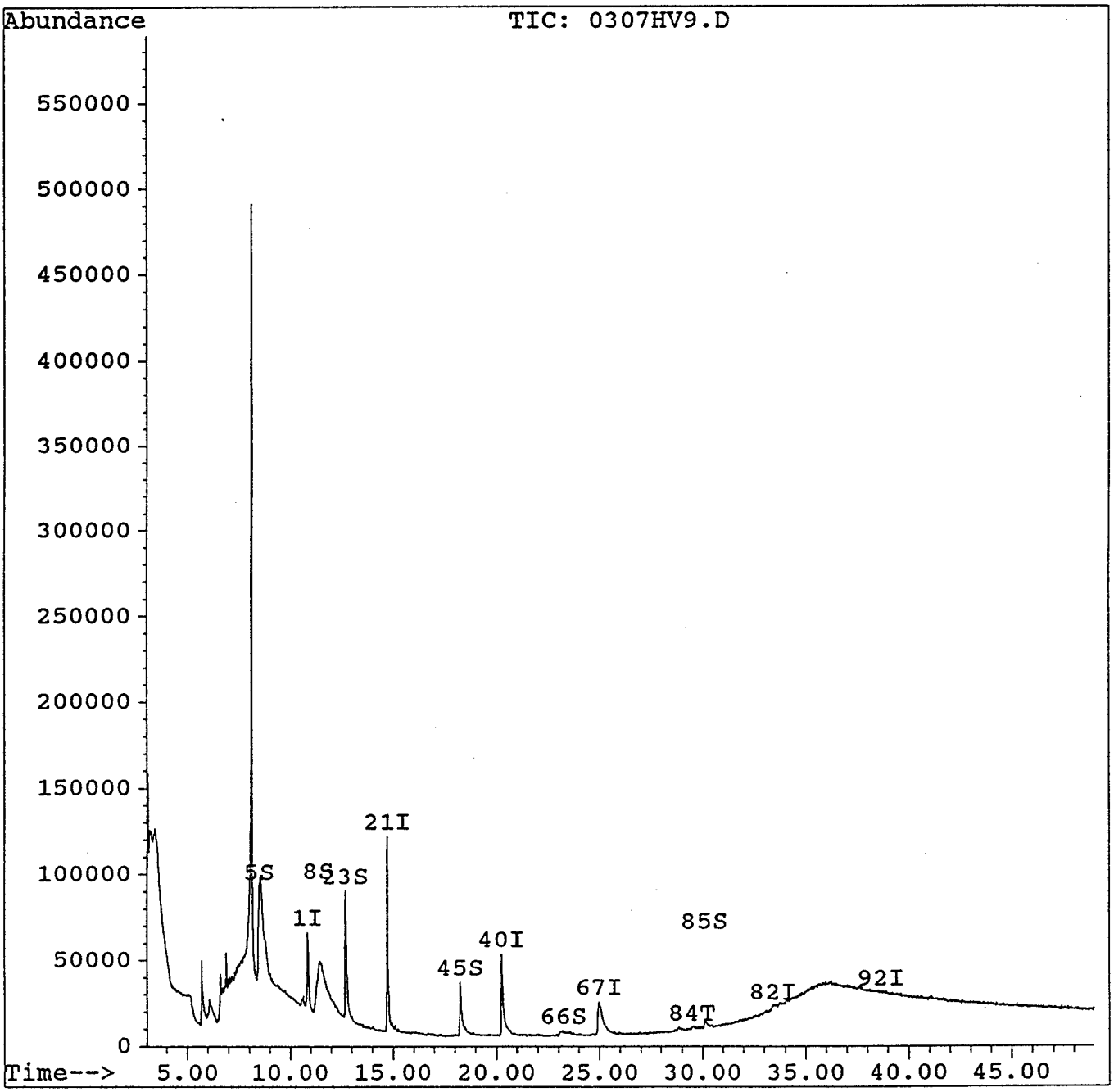
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV9.D
Acq Time : 6 Mar 94 12:35 am
Sample : 9402010541
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 21:24 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV10.D
Acq Time : 6 Mar 94 1:33 am Operator: HJV
Sample : 9402010543 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 21:28 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) 1,4-Dichlorobenzene-d4	10.85	152	458759	40.00	ng	0.09
21) Naphthalene-d8	14.73	136	1505116	40.00	ng	0.
40) Acenaphthene-d10	20.26	164	900648	40.00	ng	0.
67) Phenanthrene-d10	24.91	188	945788	40.00	ng	0.06
82) Chrysene-d12	33.34	240	127552	40.00	ng	0.21
92) Perylene-d12	38.57	264	22518	40.00	ng	0.
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng	0.
8) Phenol-d5	11.92	99	1559	0.10	ng	0.
23) Nitrobenzene-d5	12.68	82	211673	16.70	ng	41.76
45) 2-Fluorobiphenyl	18.26	172	468182	14.34	ng	35.
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng	0.
85) Terphenyl-d14	30.08	244	144476	39.53	ng	98.83
Target Compounds						Qvalu

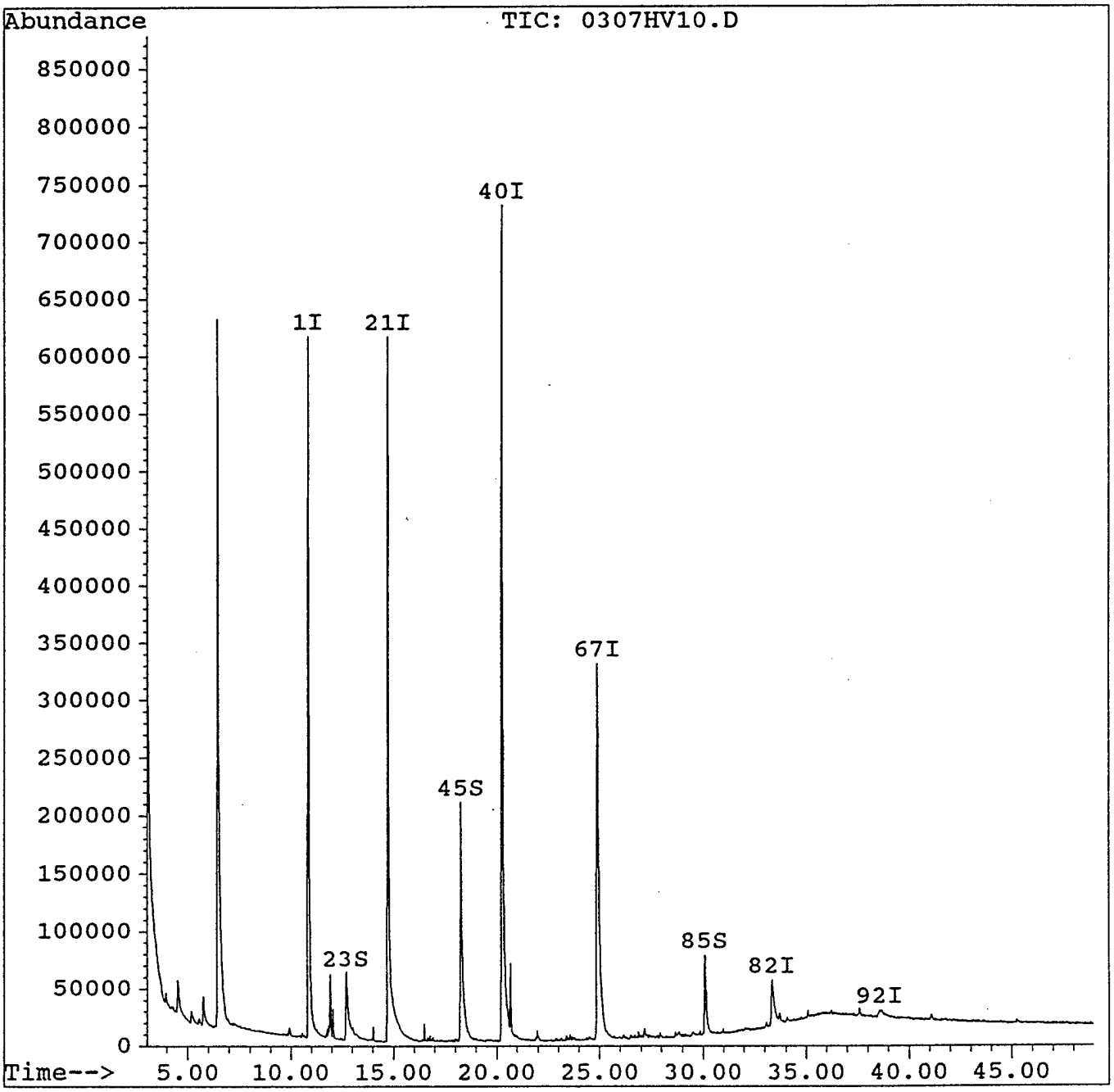
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV10.D
Acq Time : 6 Mar 94 1:33 am
Sample : 9402010543
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 21:28 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV11.D
Acq Time : 6 Mar 94 2:31 am Operator: HJV
Sample : 9402010544 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 21:31 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) 1,4-Dichlorobenzene-d4	10.85	152	434130	40.00	ng	0.09
21) Naphthalene-d8	14.72	136	1420434	40.00	ng	0.06
40) Acenaphthene-d10	20.25	164	843886	40.00	ng	0.03
67) Phenanthrene-d10	24.90	188	881640	40.00	ng	0.05
82) Chrysene-d12	33.33	240	118311	40.00	ng	0.19
92) Perylene-d12	38.61	264	19848	40.00	ng	0.15
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.20	112	369567	33.58	ng	83.95
8) Phenol-d5	11.69	99	436823	30.06	ng	75.15
23) Nitrobenzene-d5	12.68	82	424021	35.46	ng	88.64
45) 2-Fluorobiphenyl	18.27	172	836385	27.35	ng	68.36
66) 2,4,6-Tribromophenol	23.29	330	39670	12.73	ng	31.82
85) Terphenyl-d14	30.07	244	224152	66.12	ng	165.30
Target Compounds						Qvalue

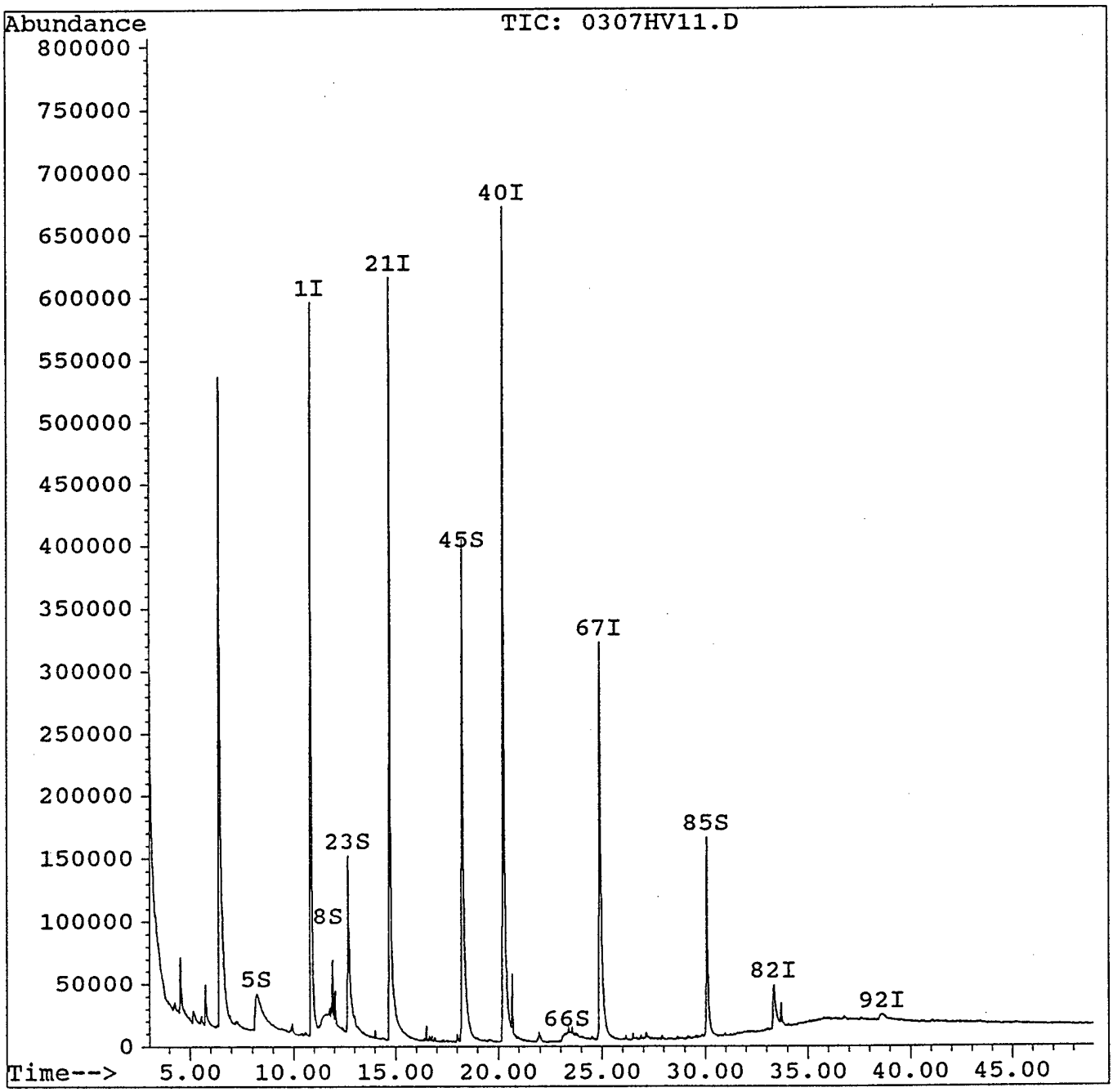
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV11.D
Acq Time : 6 Mar 94 2:31 am
Sample : 9402010544
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 21:31 1994

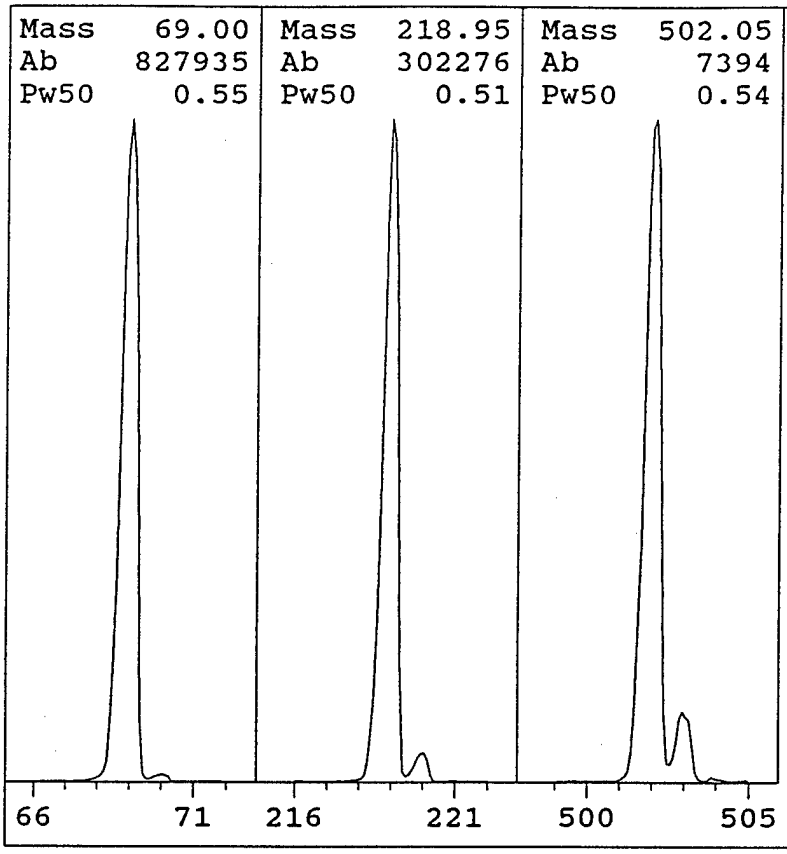
Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



HP5971 DFTPP Dynamic Target Tune

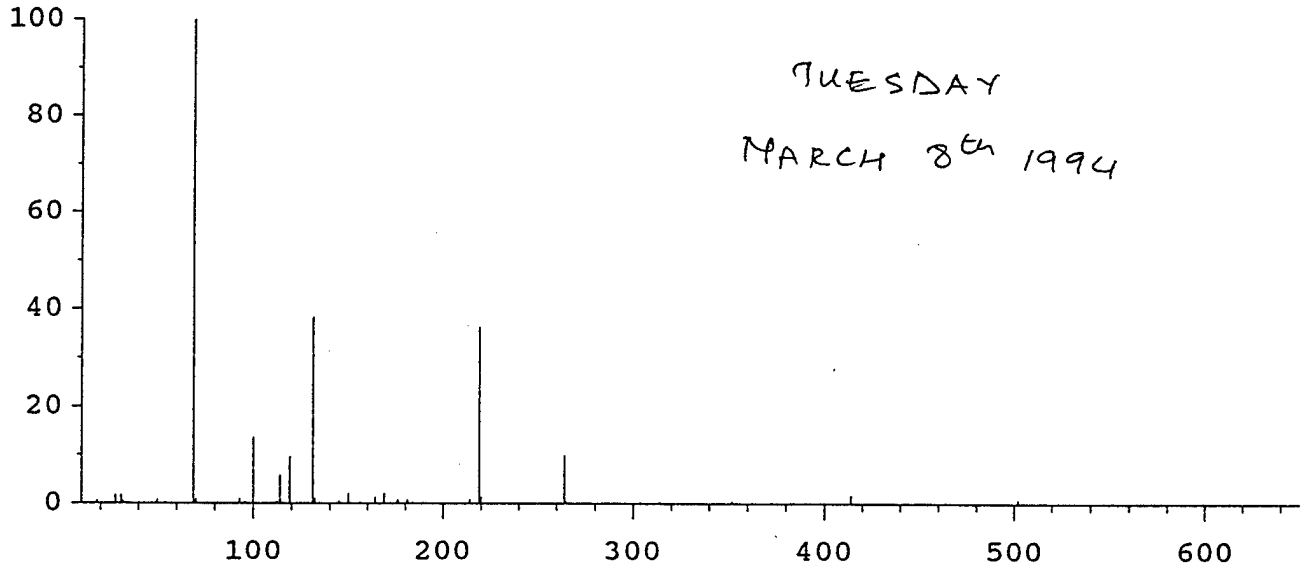
Sun Mar 06 16:10:56 1994 C:\HPCHEM\1\5971\DFTPP.U



EMVolts	2729	AmuGain	380
Xray	94.1	AmuOffs	65
Emission	ON	219Wid	-0.019
MS Temp	184	TTI	OFF
Vacuum	40	DC Pol	NEG
Samples	16	Repeller	19.17
Averages	1	IonFocus	37.0
StepSize	0.10	EntLens	0.00
MassGain	-322	EntOffs	VAR
MassOffs	-3	Filament	2

PFTBA OPEN

Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10
114 peaks Base: 68.95 Abundance: 681216



TUESDAY

MARCH 8th 1994

Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
68.95	681216	100.00	70.05	7291	1.07
219.00	248000	36.41	220.00	10413	4.20
502.00	6399	0.94	503.00	634	9.91

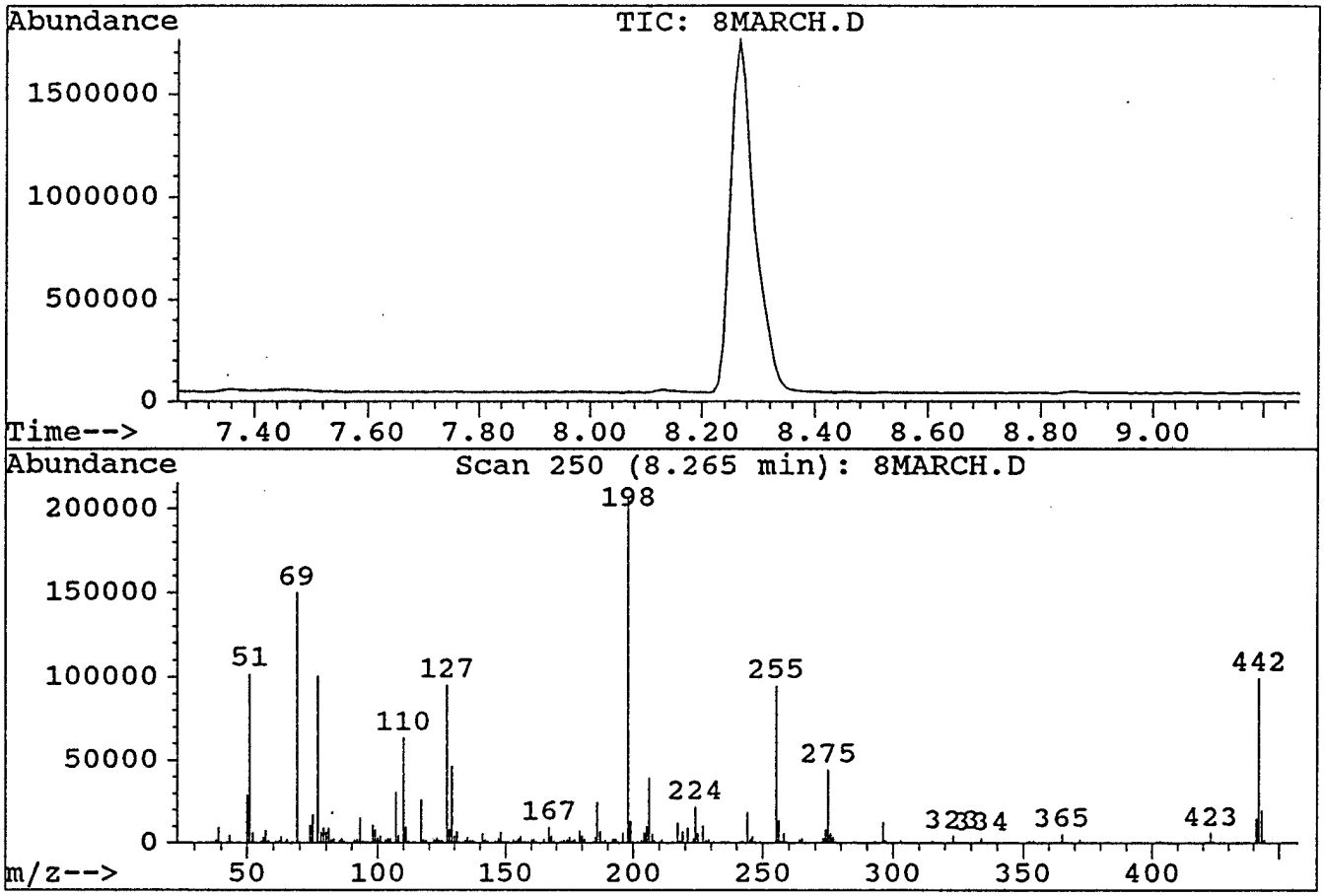
TARGET MASS:	69	131	219	502
DYNAMIC ENT OFFSET:	18.3	17.1	19.3	16.6
TARGET ABUND(%):	100.0	35.0	32.0	0.8
ACTUAL TUNE ABUND(%):	100.0	38.4	36.4	0.9

DFTPP

Data File : C:\HPCHEM\1\DATA\8MARCH.D
Acq Time : 6 Mar 94 4:25 pm
Sample : DFTPP TUNE EVALUATION
Misc : 1uL INJECTION (50nG)

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\DFTPP625.M
Title :



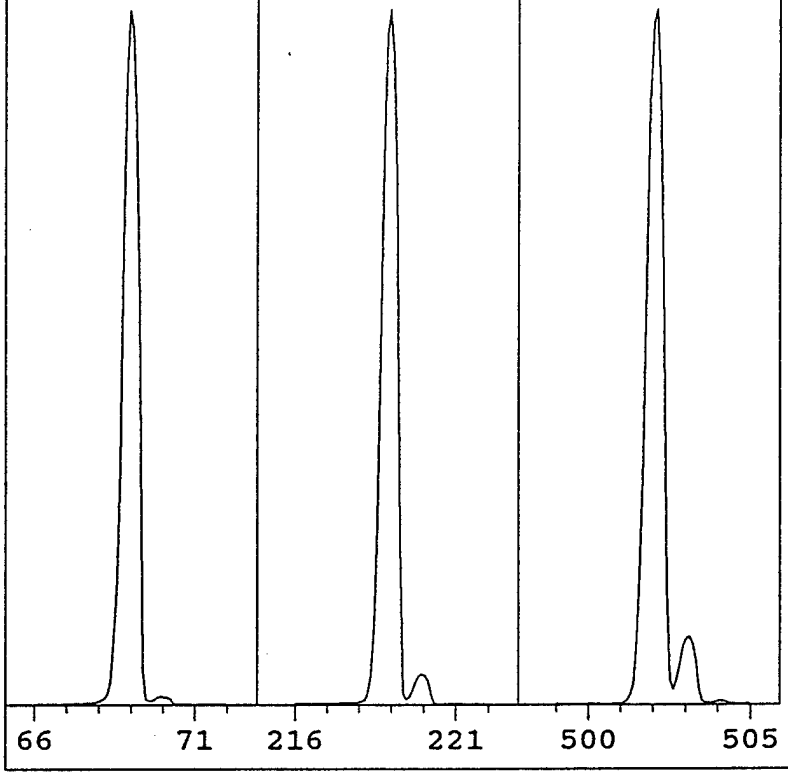
Peak Apex is scan: 250

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	49.4	101664	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	72.8	149824	PASS
70	69	0	2	0.5	819	PASS
127	198	40	60	46.2	95000	PASS
197	198	0	1	0.0	0	PASS
198	198	100	100	100.0	205696	PASS
199	198	5	9	6.3	13010	PASS
275	198	10	30	21.5	44176	PASS
365	198	1	100	2.4	4935	PASS
441	443	0	100	74.9	14719	PASS
442	198	40	100	48.2	99216	PASS
443	442	17	23	19.8	19664	PASS

HP5971 Standard Spectra AutoTune

Instrument: GC/MS
Mon Mar 07 14:41:46 1994 C:\HPCHEM\1\5971\ATUNE.U

Mass	68.95	Mass	219.00	Mass	502.10
Ab	313110	Ab	200778	Ab	12451
Pw50	0.56	Pw50	0.55	Pw50	0.57



EMVolts	2447	AmuGain	374
Xray	89.8	AmuOffs	66
Emission	ON	219Wid	-0.032
MS Temp	185	TTI	OFF
Vacuum	40	DC Pol	NEG
Samples	16	Repeller	14.99
Averages	1	IonFocus	38.0
StepSize	0.10	EntLens	26.10
MassGain	-319	EntOffs	6.02
MassOffs	-3	Filament	2

PFTBA OPEN

Formulae :-

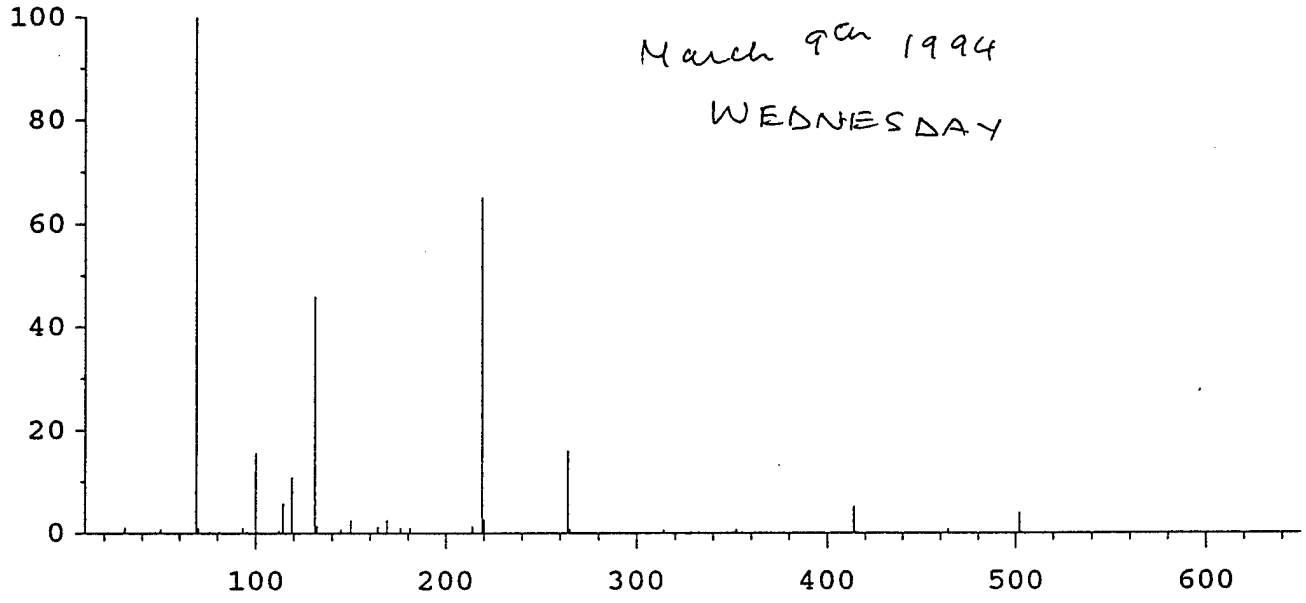
$$\text{conc (mg/kg or ppb)} = \frac{(A_x)(I_s)(V_t)}{(A_{Is})(RF)(V_i)(W_s)(D)}$$

$$\therefore \% = \frac{\text{conc. obt.} \times 1000}{\text{Wt. of sample} \times \%\text{ solid}}$$

Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10
81 peaks Base: 68.95 Abundance: 266816

March 9th 1994

WEDNESDAY



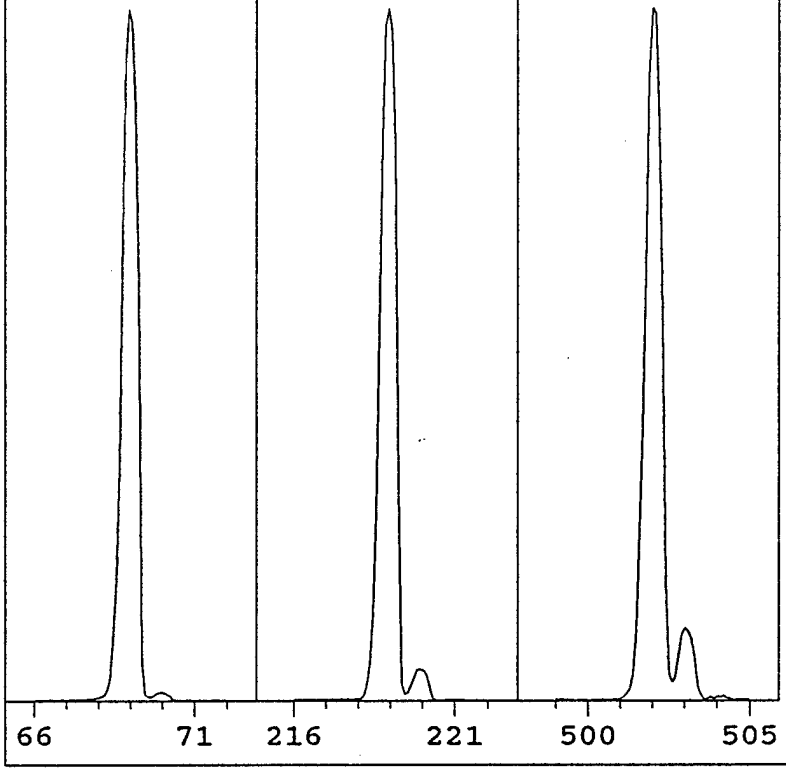
Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
68.95	266816	100.00	69.95	2989	1.12
218.95	173888	65.17	219.90	7434	4.28
502.05	11093	4.16	503.05	1165	10.50

HP5971 Standard Spectra AutoTune

Instrument: GC/MS

Wed Mar 09 02:49:58 1994 C:\HPCHEM\1\5971\ATUNE.U

Mass	68.95	Mass	219.00	Mass	502.00
Ab	241394	Ab	115177	Ab	9325
Pw50	0.57	Pw50	0.58	Pw50	0.57

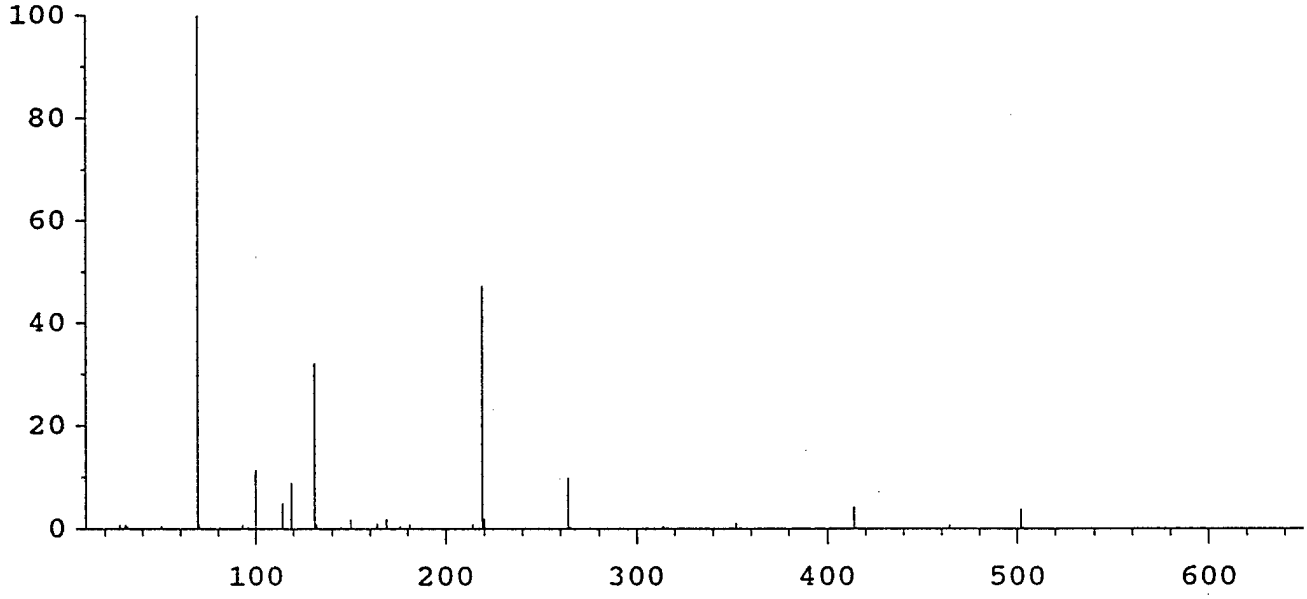


EMVolts	2588	AmuGain	373
Xray	98.3	AmuOffs	69
Emission	ON	219Wid	-0.008
MS Temp	185	TTI	OFF
Vacuum	39	DC Pol	NEG
Samples	16	Repeller	14.99
Averages	1	IonFocus	65.0
StepSize	0.10	EntLens	24.09
MassGain	-318	EntOffs	6.02
MassOffs	-3	Filament	2

PFTBA OPEN

Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10

73 peaks Base: 69.00 Abundance: 216576

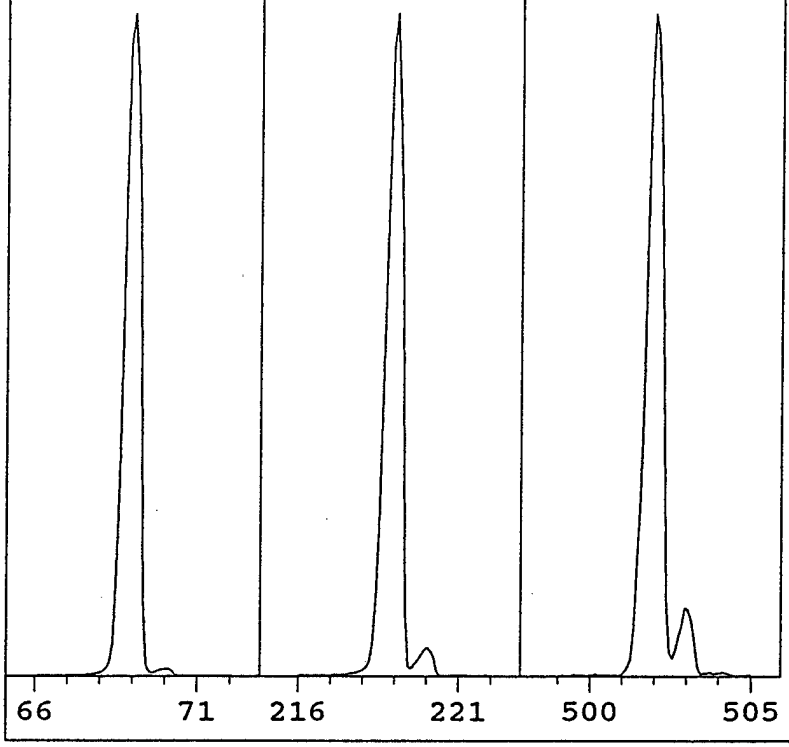


Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	216576	100.00	70.00	2271	1.05
219.00	102776	47.45	220.00	4498	4.38
502.00	8656	4.00	503.00	827	9.55

HP5971 DFTPP Dynamic Target Tune

Wed Mar 09 02:58:27 1994 C:\HPCHEM\1\5971\DFTPP.U

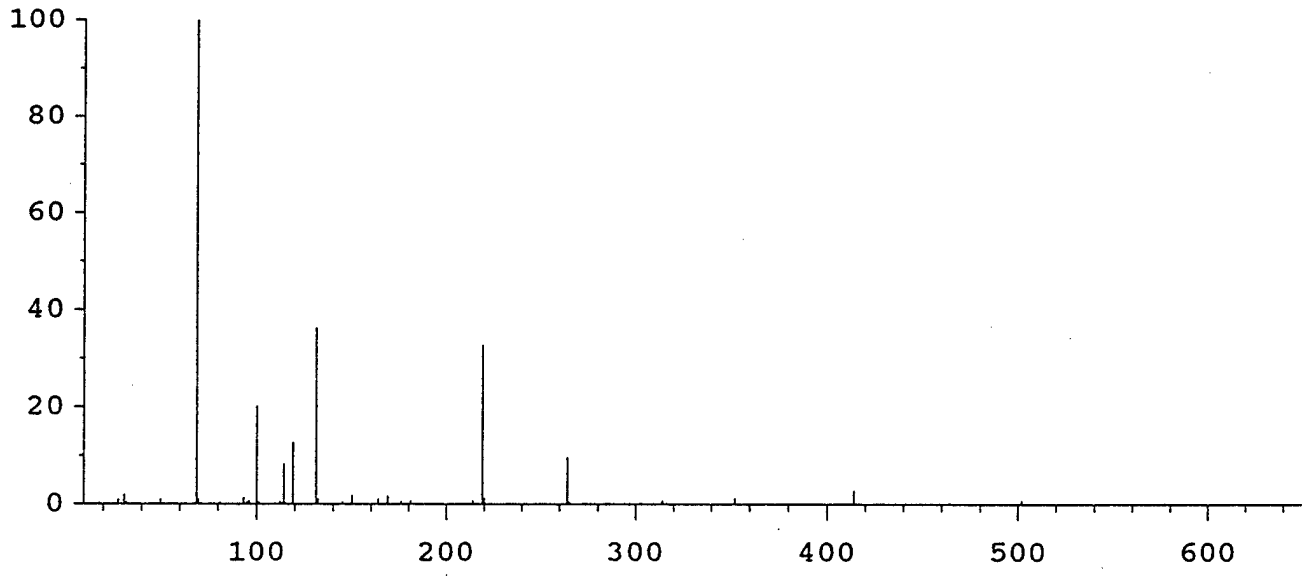
Mass	69.00	Mass	219.00	Mass	501.95
Ab	890738	Ab	300644	Ab	8258
Pw50	0.54	Pw50	0.57	Pw50	0.57



EMVolts	2824	AmuGain	373
Xray	102.6	AmuOffs	67
Emission	ON	219Wid	-0.025
MS Temp	185	TTI	OFF
Vacuum	40	DC Pol	NEG
Samples	16	Repeller	17.23
Averages	1	IonFocus	44.0
StepSize	0.10	EntLens	0.00
MassGain	-329	EntOffs	VAR
MassOffs	-3	Filament	2

PFTBA OPEN

Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10
130 peaks Base: 68.95 Abundance: 732928



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
68.95	732928	100.00	69.95	8236	1.12
219.00	241344	32.93	220.00	10299	4.27
501.95	7251	0.99	502.95	808	11.14

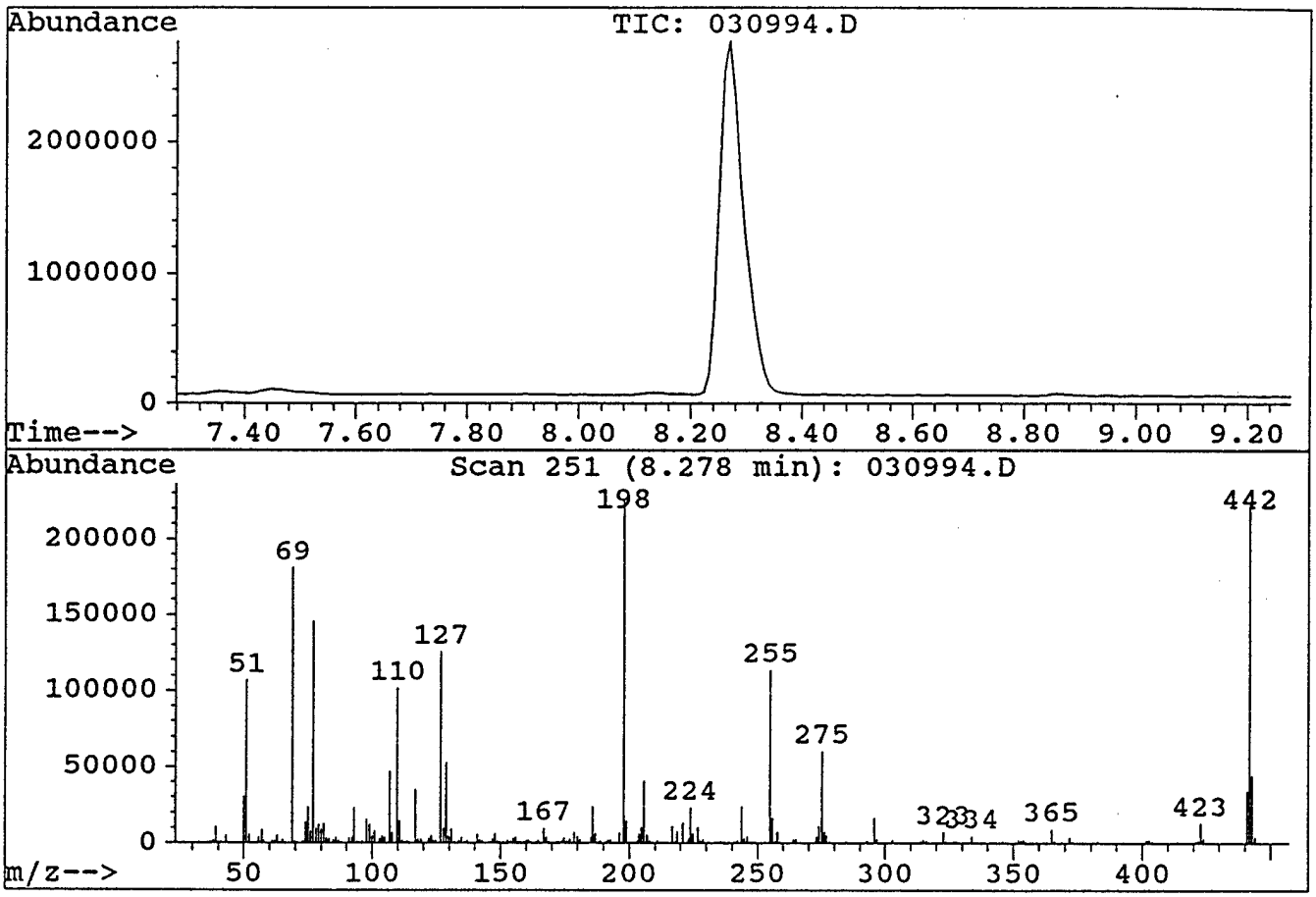
TARGET MASS:	69	131	219	502
DYNAMIC ENT OFFSET:	12.0	23.6	27.4	15.1
TARGET ABUND(%):	100.0	35.0	32.0	0.8
ACTUAL TUNE ABUND(%):	100.0	36.4	32.9	1.0

DFTPP

Data File : C:\HPCHEM\1\DATA\030994.D
Acq Time : 9 Mar 94 3:05 am
Sample : DFTPP TUNE EVALUATION
Misc : 1uL INJECTION (50nG)

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\DFTPP625.M
Title :



Peak Apex is scan: 251

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	47.5	106752	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	80.5	181120	PASS
70	69	0	2	0.6	1158	PASS
127	198	40	60	55.8	125616	PASS
197	198	0	1	0.0	0	PASS
198	198	100	100	100.0	224960	PASS
199	198	5	9	6.4	14479	PASS
275	198	10	30	26.8	60376	PASS
365	198	1	100	4.1	9148	PASS
441	443	0	100	77.0	34304	PASS
442	198	40	100	100.0	224960	PASS
443	442	17	23	19.8	44536	PASS

Simulate Run Sequence Wed Mar 09 03:36:20 1994

Sequence Name: C:\HPCHEM\1\SEQUENCE\0309SV.S
Comment:
Operator: HJV
Data Path: C:\HPCHEM\1\DATA\030994\
Method Path: C:\HPCHEM\1\METHODS\

Line	Type	Vial	DataFile	Method	Sample Name
1)	Sample	1	0309HJV1	8270	SPCC 200PPM
2)	Sample	2	0309HJV2	8270	CCC B/N 100PPM
3)	Sample	3	0309HJV3	8270	CCC A 100PPM
4)	Sample	4	0309HJV4	8270	9402010542
5)	Sample	5	0309HJV5	8270	9402010551
6)	Sample	6	0309HJV6	8270	9402010558
7)	Sample	7	0309HJV7	8270	9402010559
8)	Sample	8	0309HJV8	8270	9402010560
9)	Sample	9	0309HJV9	8270	9402010561
10)	Sample	10	0309HV10	8270	9402010562
11)	Sample	11	0309HV11	8270	9402010563
12)	Sample	12	0309HV12	8270	EXTR. BLANK

Bytes Needed: 600000 Space on drive C: 67125248
Sequence Verification Done!

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV1.D
Acq Time : 9 Mar 94 3:44 am Operator: HJV
Sample : SPCC 200PPM Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 22:30 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

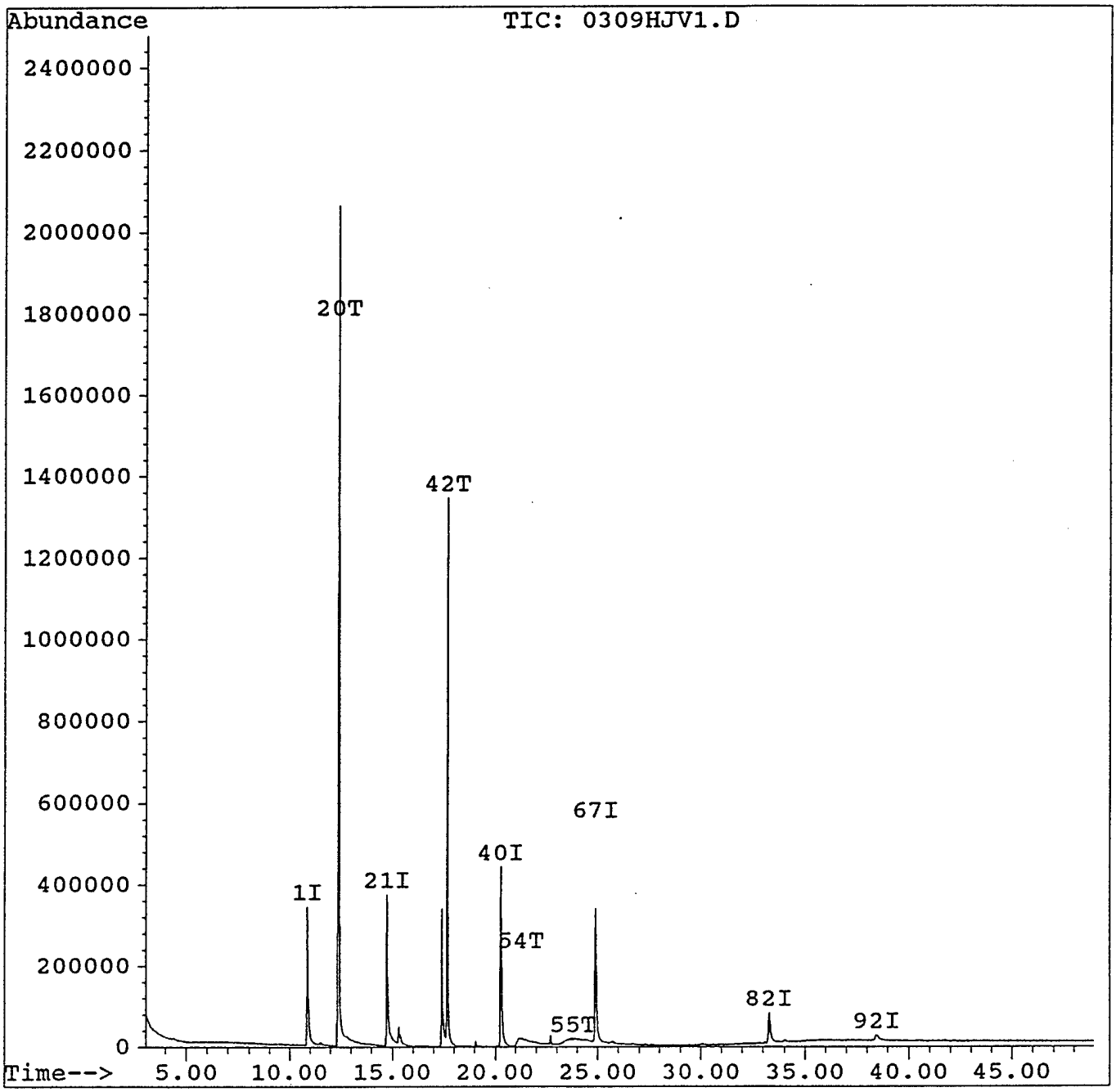
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.86	152	230236	40.00	ng		0.11
21) Naphthalene-d8	14.73	136	880591	40.00	ng		0.08
40) Acenaphthene-d10	20.26	164	424387	40.00	ng		0.09
67) Phenanthrene-d10	24.89	188	552230	40.00	ng		0.05
82) Chrysene-d12	33.29	240	148474	40.00	ng		0.15
92) Perylene-d12	38.45	264	50223	40.00	ng		0.39
System Monitoring Compounds							**%Recovery**
5) 2-Fluorophenol	0.00	112	0	0.00	ng		0.00%
8) Phenol-d5	10.86	99	3296	0.43	ng		1.07%
23) Nitrobenzene-d5	12.41	82	1878	0.25	ng		0.63%
45) 2-Fluorobiphenyl	18.33	172	124	0.01	ng		0.02%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng		0.00%
85) Terphenyl-d14	0.00	244	0	0.00	ng		0.00%
Target Compounds							**Qvalue**
20) N-Nitrosodi-n-propylamine	12.40	70	909428	221.70	ng	m	95
42) Hexachlorocyclopentadiene	17.69	237	244150	200.12	ng	m	97
54) 2,4-Dinitrophenol	21.25	184	161060	102.88	ng	m	87
55) 4-Nitrophenol	23.82	139	293289	82.66	ng	m	0

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV1.D
Acq Time : 9 Mar 94 3:44 am Operator: HJV
Sample : SPCC 200PPM Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 22:30 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV2.D
Acq Time : 9 Mar 94 4:41 am
Sample : CCC B/N 100PPM
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 22:34 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

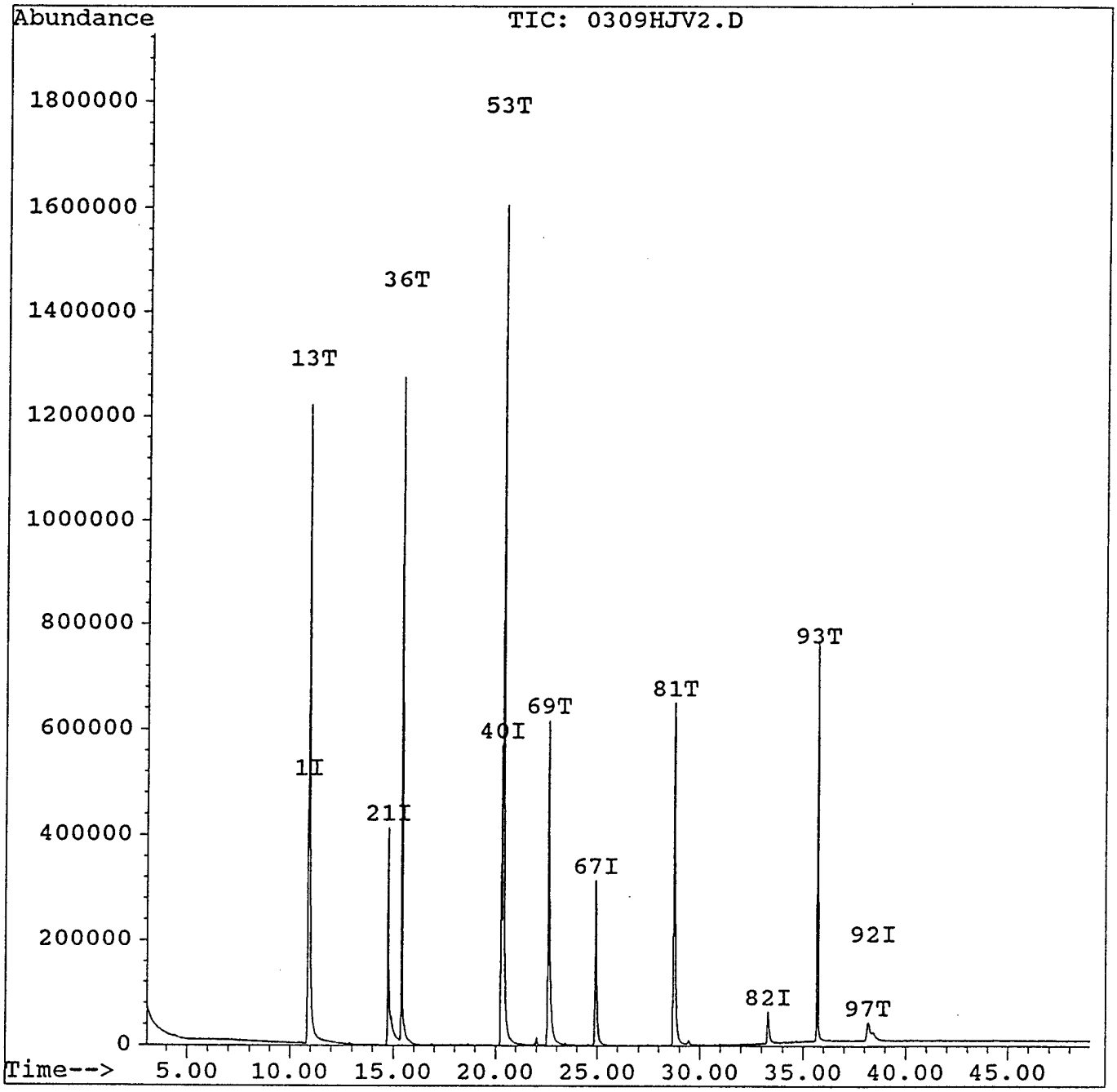
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.88	152	262461	40.00	ng	0.12
21) Naphthalene-d8	14.74	136	1040819	40.00	ng	0.09
40) Acenaphthene-d10	20.27	164	477816	40.00	ng	0.10
67) Phenanthrene-d10	24.90	188	608927	40.00	ng	0.05
82) Chrysene-d12	33.30	240	114652	40.00	ng	0.17
92) Perylene-d12	38.41	264	36623	40.00	ng	0.36
System Monitoring Compounds						**%Recovery**
5) 2-Fluorophenol	0.00	112	0	0.00	ng	0.00%
8) Phenol-d5	10.91	99	8273	0.94	ng	2.35%
23) Nitrobenzene-d5	0.00	82	0	0.00	ng	0.00%
45) 2-Fluorobiphenyl	18.33	172	225	0.01	ng	0.03%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng	0.00%
85) Terphenyl-d14	0.00	244	0	0.00	ng	0.00%
Target Compounds						**Qvalue**
13) 1,4-Dichlorobenzene	10.93	146	899850	115.70	ng	m 87
36) Hexachlorobutadiene	15.40	225	354220	110.15	ng	98
53) Acenaphthene	20.37	154	1359805	95.33	ng	m 96
69) Diphenylamine + N-Nitrosod	22.57	169	875473	51.90	ng	m 97
81) Fluoranthene	28.73	202	1188092	81.86	ng	m 77
93) Di-n-octylphthalate	35.68	149	526378	105.49	ng	m 89
97) Benzo(a)pyrene	38.17	252	145853	85.57	ng	m 100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV2.D
Acq Time : 9 Mar 94 4:41 am Operator: HJV
Sample : CCC B/N 100PPM Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 22:34 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV3.D
Acq Time : 9 Mar 94 5:39 am Operator: HJV
Sample : CCC A 100PPM Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 22:39 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

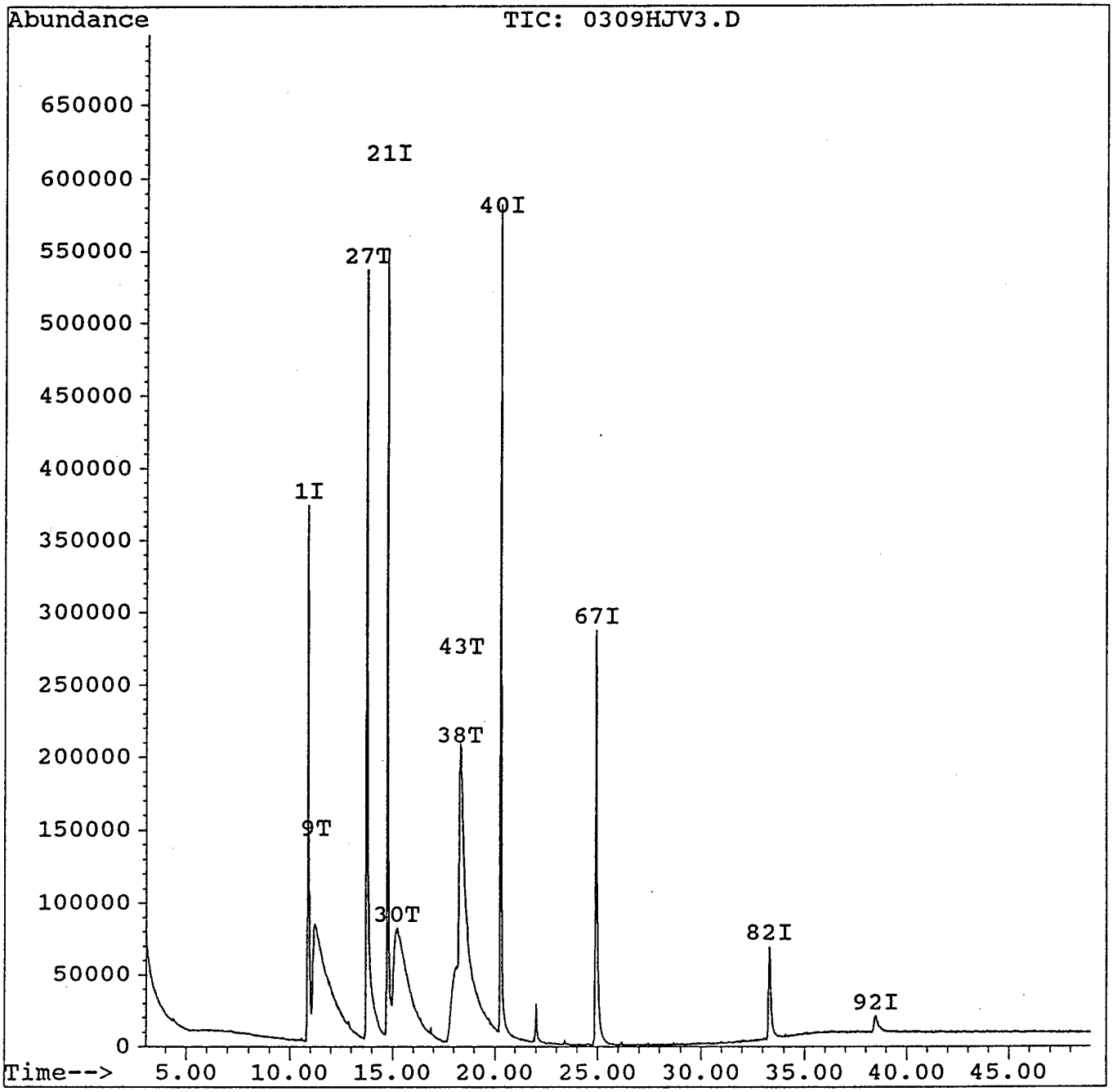
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.88	152	254974	40.00	ng		0.12
21) Naphthalene-d8	14.73	136	1071692	40.00	ng		0.08
40) Acenaphthene-d10	20.27	164	475030	40.00	ng		0.10
67) Phenanthrene-d10	24.91	188	605621	40.00	ng		0.07
82) Chrysene-d12	33.30	240	143296	40.00	ng		0.17
92) Perylene-d12	38.50	264	44890	40.00	ng		0.44
System Monitoring Compounds							**%Recovery**
5) 2-Fluorophenol	0.00	112	0	0.00	ng		0.00%
8) Phenol-d5	10.88	99	3690	0.43	ng		1.08%
23) Nitrobenzene-d5	0.00	82	0	0.00	ng		0.00%
45) 2-Fluorobiphenyl	18.32	172	270	0.02	ng		0.04%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng		0.00%
85) Terphenyl-d14	0.00	244	0	0.00	ng		0.00%
Target Compounds							**Qvalue**
9) Phenol	11.27	94	847231	111.38	ng	m	0
27) 2-Nitrophenol	13.72	139	552440	113.79	ng	#	83
30) 2,4-Dichlorophenol	15.19	162	605512	94.87	ng	m	0
38) 4-Chloro-3-methylphenol	18.30	107	808951	123.37	ng	m	0
43) 2,4,6-Trichlorophenol	18.34	196	349669	97.86	ng	m	0

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV3.D
Acq Time : 9 Mar 94 5:39 am Operator: HJV
Sample : CCC A 100PPM Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 22:39 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV4.D
Acq Time : 9 Mar 94 6:37 am
Sample : 9402010542
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 22:42 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	342218	40.00	ng	0.09
21) Naphthalene-d8	14.73	136	1506390	40.00	ng	0.08
40) Acenaphthene-d10	20.27	164	677385	40.00	ng	0.10
67) Phenanthrene-d10	24.89	188	855723	40.00	ng	0.05
82) Chrysene-d12	33.29	240	179813	40.00	ng	0.15
92) Perylene-d12	38.45	264	79012	40.00	ng	0.39
System Monitoring Compounds						**%Recovery**
5) 2-Fluorophenol	8.16	112	266471	30.71	ng	76.79%
8) Phenol-d5	11.68	99	424780	37.08	ng	92.69%
23) Nitrobenzene-d5	12.68	82	333181	26.27	ng	65.68%
45) 2-Fluorobiphenyl	18.27	172	374838	15.27	ng	38.17%
66) 2,4,6-Tribromophenol	23.39	330	29936	11.96	ng	29.91%
85) Terphenyl-d14	30.06	244	190738	37.02	ng	92.55%
Target Compounds						**Qvalue**

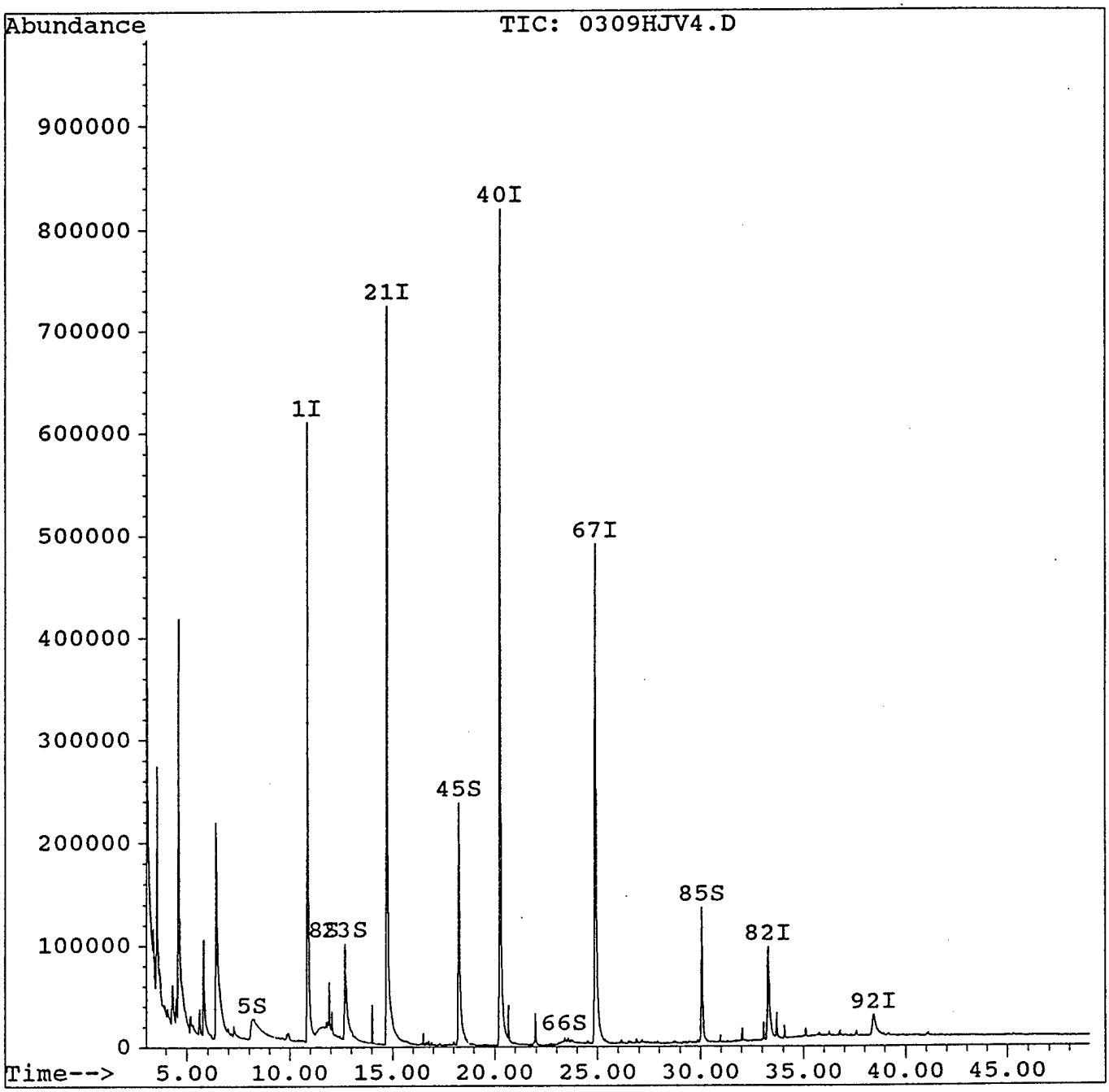
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV4.D
Acq Time : 9 Mar 94 6:37 am
Sample : 9402010542
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 22:42 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV5.D
Acq Time : 9 Mar 94 7:34 am
Sample : 9402010551
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 22:46 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	285945	40.00	ng	0.09
21) Naphthalene-d8	14.72	136	1166293	40.00	ng	0.06
40) Acenaphthene-d10	20.26	164	530041	40.00	ng	0.10
67) Phenanthrene-d10	24.89	188	662508	40.00	ng	0.05
82) Chrysene-d12	33.28	240	137142	40.00	ng	0.15
92) Perylene-d12	38.45	264	61756	40.00	ng	0.39
System Monitoring Compounds						**%Recovery**
5) 2-Fluorophenol	8.17	112	258075	35.60	ng	89.00%
8) Phenol-d5	11.61	99	399836	41.77	ng	104.42%
23) Nitrobenzene-d5	12.68	82	379187	38.62	ng	96.54%
45) 2-Fluorobiphenyl	18.25	172	483531	25.17	ng	62.92%
66) 2,4,6-Tribromophenol	23.39	330	32479	16.59	ng	41.47%
85) Terphenyl-d14	30.06	244	180629	45.97	ng	114.92%
Target Compounds						**Qvalue**
91) Bis(2-ethylhexyl) phthalat	33.70	149	31882	6.45	ng	m 91

wt. of sample = 30.25g % solid = 89.46%

Actual conc.

$$= \frac{6.45 \times 1000}{30.25 \times 0.8946} = 238.35 \text{ ppb.}$$

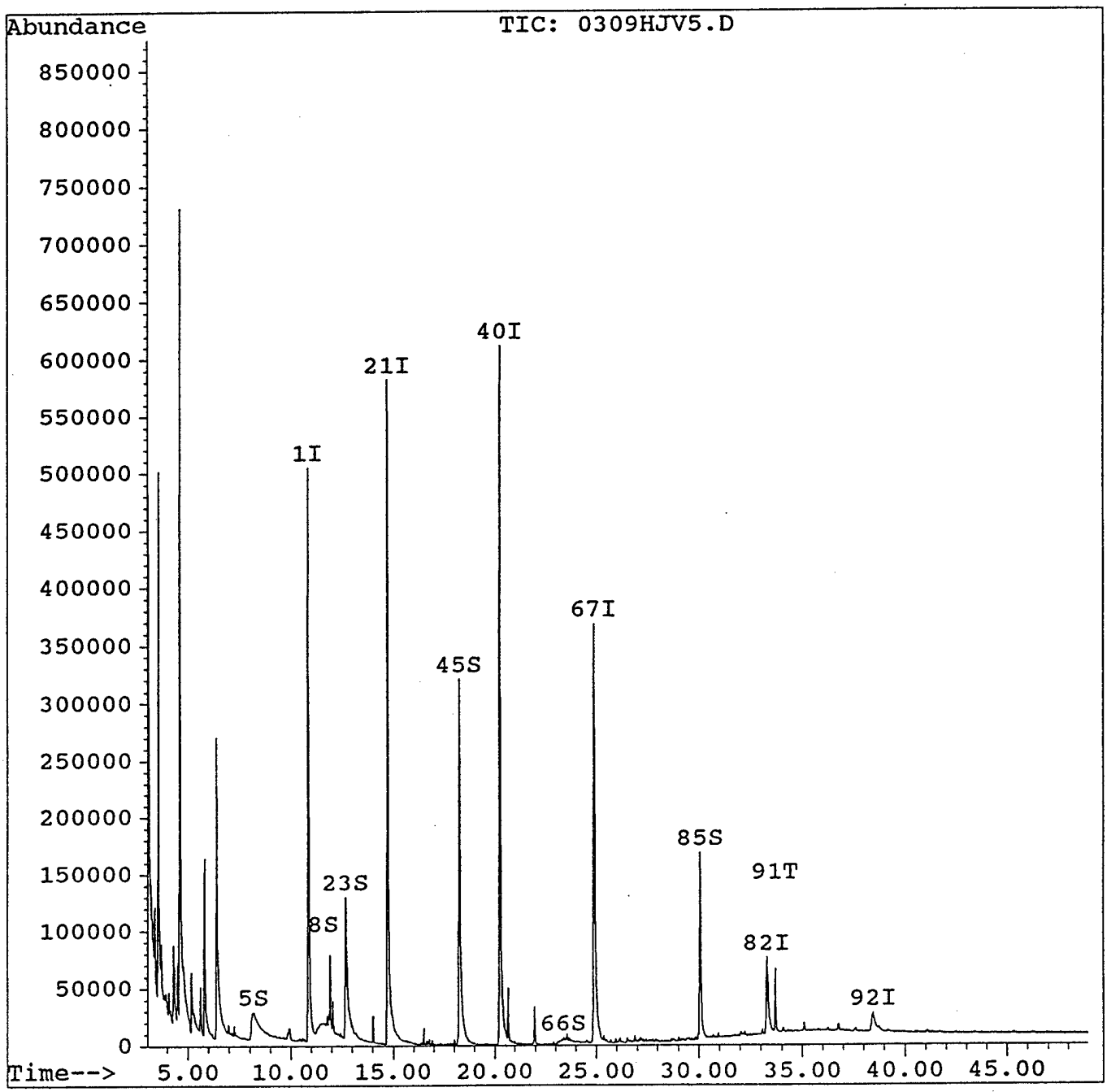
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV5.D
Acq Time : 9 Mar 94 7:34 am
Sample : 9402010551
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 22:46 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV6.D
Acq Time : 9 Mar 94 8:31 am
Sample : 9402010558
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 22:50 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	216162	40.00	ng	0.09
21) Naphthalene-d8	14.72	136	861892	40.00	ng	0.06
40) Acenaphthene-d10	20.25	164	397635	40.00	ng	0.08
67) Phenanthrene-d10	24.90	188	515258	40.00	ng	0.05
82) Chrysene-d12	33.28	240	98743	40.00	ng	0.15
92) Perylene-d12	38.47	264	42152	40.00	ng	0.41
System Monitoring Compounds						**%Recovery**
5) 2-Fluorophenol	8.19	112	234730	42.83	ng	107.08%
8) Phenol-d5	11.64	99	320089	44.23	ng	110.58%
23) Nitrobenzene-d5	12.68	82	317450	43.75	ng	109.37%
45) 2-Fluorobiphenyl	18.25	172	442514	30.70	ng	76.76%
66) 2,4,6-Tribromophenol	23.31	330	59209	40.31	ng	100.78%
85) Terphenyl-d14	30.06	244	179133	63.31	ng	158.28%
Target Compounds						**Qvalue**

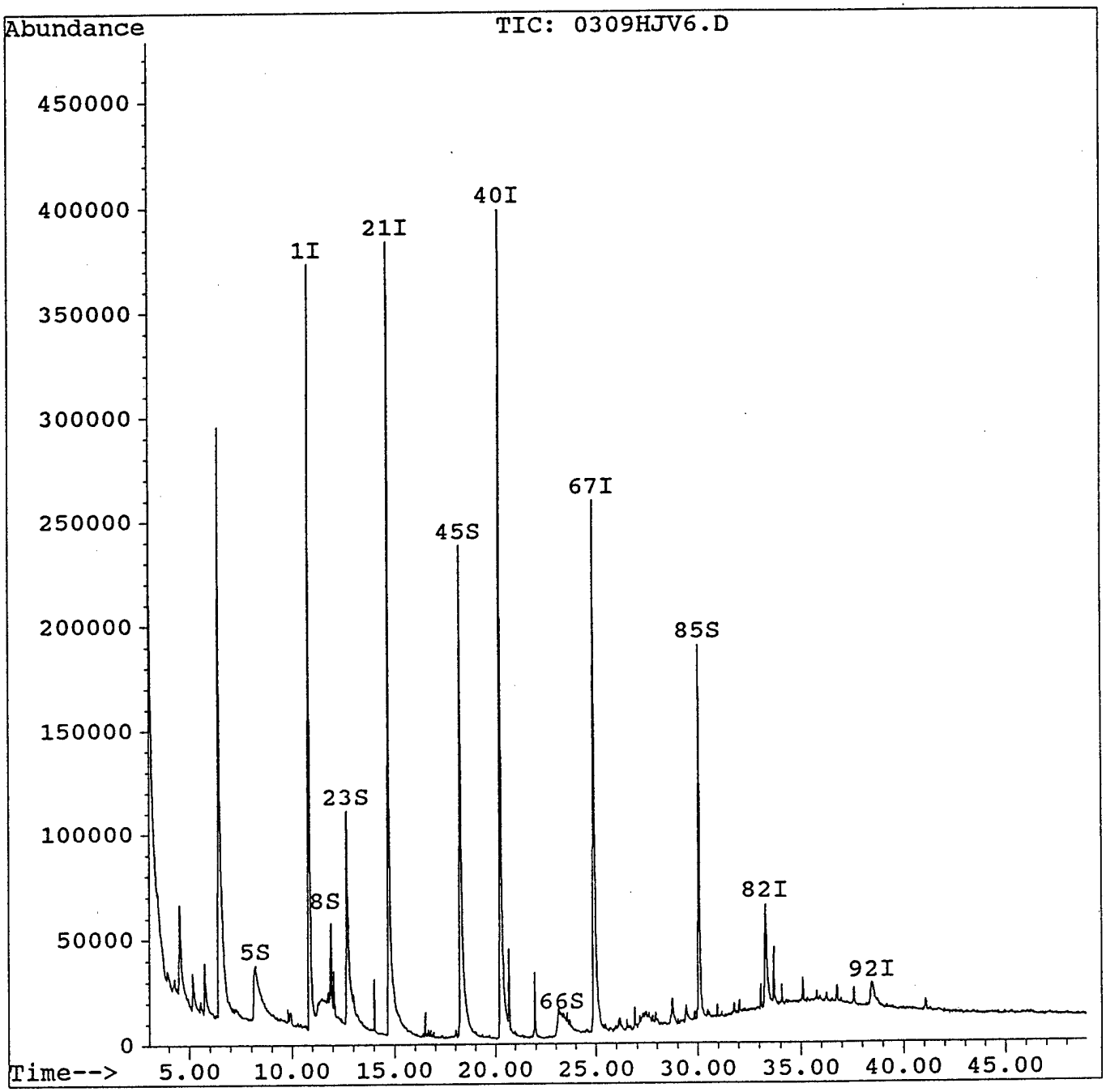
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV6.D
Acq Time : 9 Mar 94 8:31 am
Sample : 9402010558
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 22:50 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV7.D
Acq Time : 9 Mar 94 9:29 am
Sample : 9402010559
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 22:55 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	236668	40.00	ng	0.09
21) Naphthalene-d8	14.72	136	864191	40.00	ng	0.06
40) Acenaphthene-d10	20.25	164	401659	40.00	ng	0.08
67) Phenanthrene-d10	24.90	188	537399	40.00	ng	0.06
82) Chrysene-d12	33.31	240	106095	40.00	ng	0.18
92) Perylene-d12	38.47	264	42954	40.00	ng	0.41
System Monitoring Compounds						**%Recovery**
5) 2-Fluorophenol	8.17	112	249639	41.61	ng	104.02%
8) Phenol-d5	11.44	99	336373	42.45	ng	106.14%
23) Nitrobenzene-d5	12.68	82	332847	45.75	ng	114.37%
45) 2-Fluorobiphenyl	18.25	172	452712	31.10	ng	77.74%
66) 2,4,6-Tribromophenol	23.21	330	62563	42.17	ng	105.42%
85) Terphenyl-d14	30.06	244	198904	65.43	ng	163.57%
Target Compounds						**Qvalue**
81) Fluoranthene	28.74	202	70181	5.48	ng	m 79
84) Pyrene	29.42	202	52264	10.83	ng	m 98

wt. of sample = 31.06 g % solid = 88.11%

∴ Actual conc.

(1) Fluoranthene = $\frac{1000 \times 5.48}{31.06 \times 0.8811}$ = 200.24 ppb

(2) Pyrene = $\frac{10.83 \times 1000}{31.06 \times 0.8811}$ = 395.74 ppb.

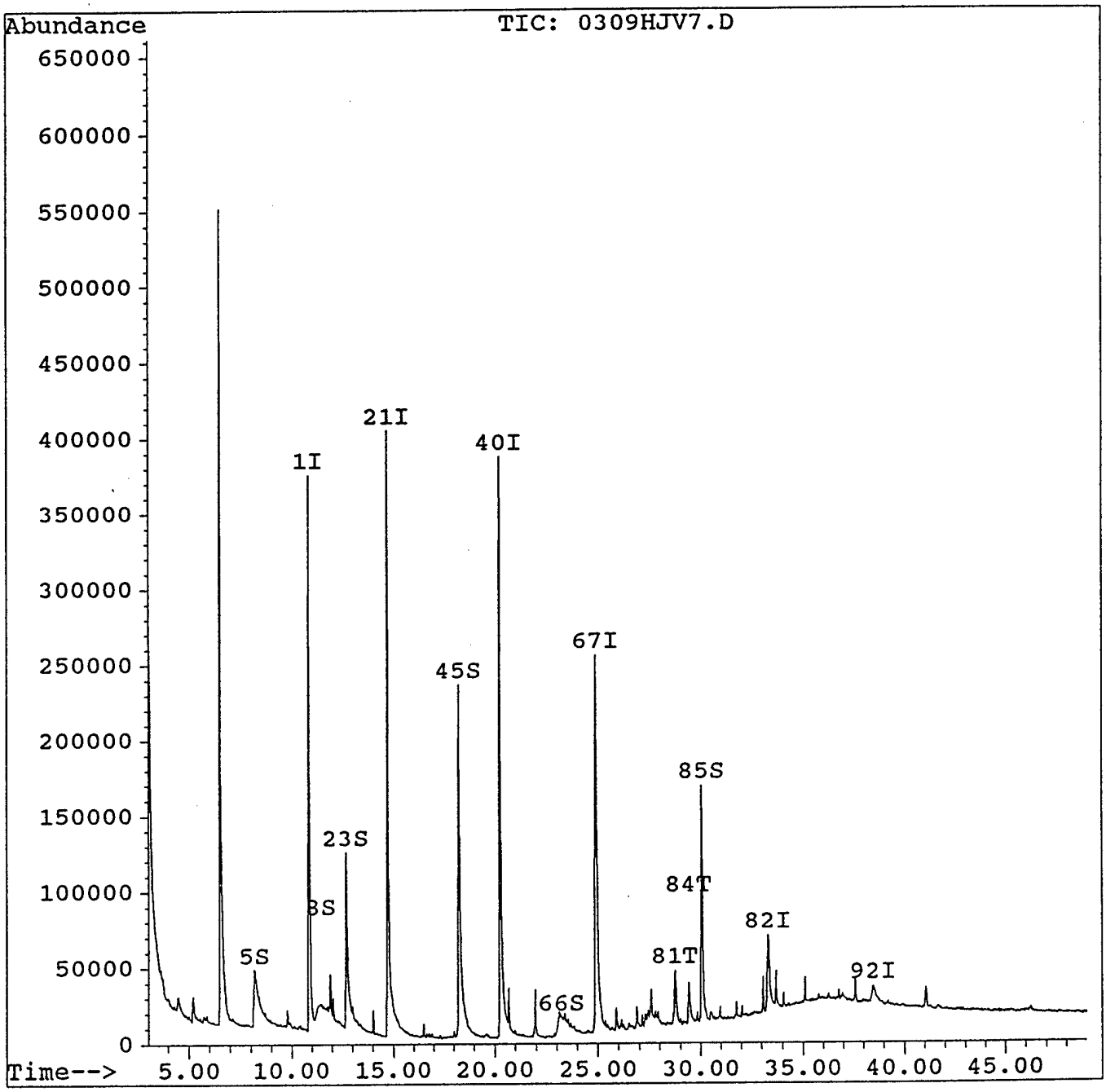
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV7.D
Acq Time : 9 Mar 94 9:29 am
Sample : 9402010559
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 22:55 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV8.D
Acq Time : 9 Mar 94 10:26 am
Sample : 9402010560
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 22:59 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	252602	40.00	ng	0.09
21) Naphthalene-d8	14.71	136	935487	40.00	ng	0.06
40) Acenaphthene-d10	20.25	164	429226	40.00	ng	0.08
67) Phenanthrene-d10	24.89	188	549649	40.00	ng	0.05
82) Chrysene-d12	33.29	240	115881	40.00	ng	0.16
92) Perylene-d12	38.45	264	47906	40.00	ng	0.39
System Monitoring Compounds						**%Recovery**
5) 2-Fluorophenol	8.22	112	253276	39.55	ng	98.88%
8) Phenol-d5	11.81	99	360906	42.68	ng	106.69%
23) Nitrobenzene-d5	12.68	82	287773	36.54	ng	91.34%
45) 2-Fluorobiphenyl	18.27	172	381578	24.53	ng	61.32%
66) 2,4,6-Tribromophenol	23.50	330	41501	26.18	ng	65.44%
85) Terphenyl-d14	30.06	244	191521	57.68	ng	144.20%
Target Compounds						**Qvalue**

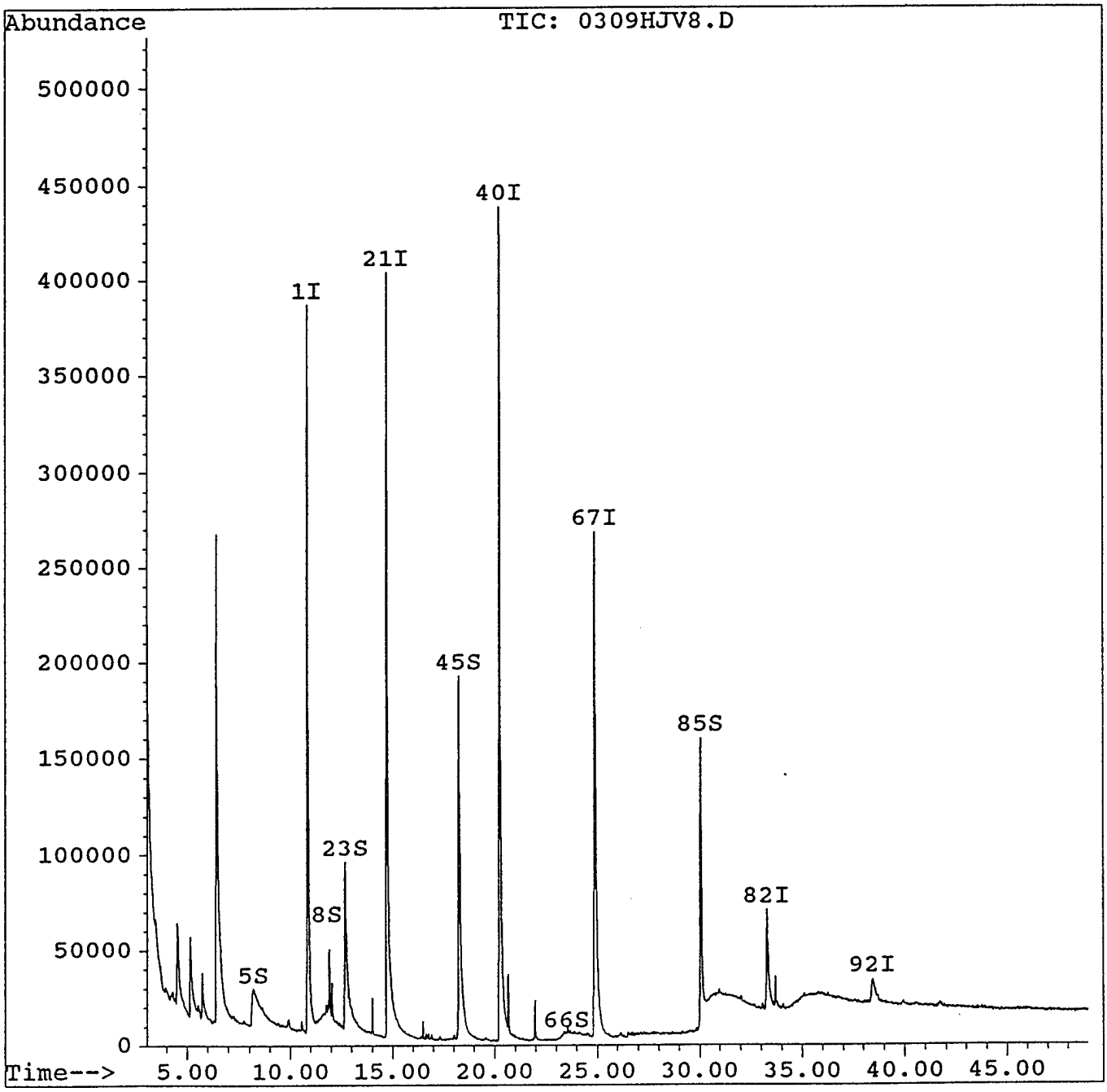
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV8.D
Acq Time : 9 Mar 94 10:26 am
Sample : 9402010560
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 22:59 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

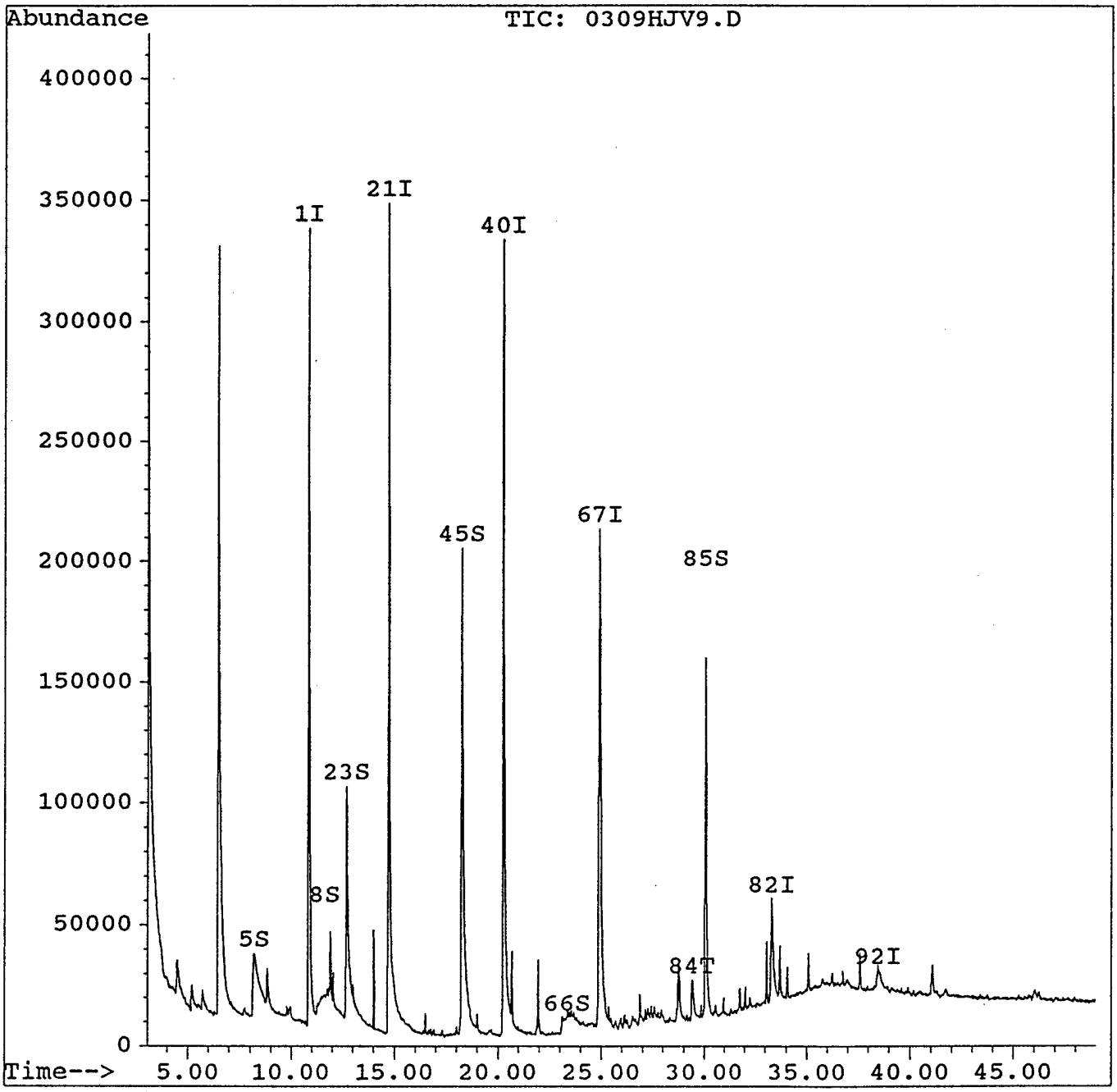
Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV9.D
Acq Time : 9 Mar 94 11:24 am Operator: HJV
Sample : 9402010561 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 23:03 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV9.D
Acq Time : 9 Mar 94 11:24 am
Sample : 9402010561
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 23:03 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) 1,4-Dichlorobenzene-d4	10.85	152	212531	40.00	ng	0.09
21) Naphthalene-d8	14.72	136	768678	40.00	ng	0.06
40) Acenaphthene-d10	20.25	164	351759	40.00	ng	0.
67) Phenanthrene-d10	24.90	188	469478	40.00	ng	0.
82) Chrysene-d12	33.31	240	93844	40.00	ng	0.18
92) Perylene-d12	38.45	264	36219	40.00	ng	0.
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.20	112	228445	42.40	ng	106.
8) Phenol-d5	11.63	99	298867	42.00	ng	105.
23) Nitrobenzene-d5	12.68	82	253403	39.16	ng	97.8
45) 2-Fluorobiphenyl	18.25	172	419161	32.88	ng	82.1
66) 2,4,6-Tribromophenol	23.34	330	49211	37.87	ng	94.
85) Terphenyl-d14	30.06	244	181088	67.35	ng	168.
Target Compounds						Qval
84) Pyrene	29.42	202	30828	7.22	ng	m

wt. of sample = 30.37 g % solid = 91.92 %

Actual conc. =

(1) Pyrene = $\frac{7.22 \times 1000}{30.37 \times 0.9192}$ = 258.63 ppb.

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HV10.D
Acq Time : 9 Mar 94 12:21 pm
Sample : 9402010562
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 23:13 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	220314	40.00	ng		0.10
21) Naphthalene-d8	14.72	136	929990	40.00	ng		0.07
40) Acenaphthene-d10	20.26	164	405433	40.00	ng		0.10
67) Phenanthrene-d10	24.98	188	503254	40.00	ng		0.14
82) Chrysene-d12	33.33	240	111528	40.00	ng		0.20
92) Perylene-d12	38.41	264	45566	40.00	ng		0.35
System Monitoring Compounds							%Recovery
5) 2-Fluorophenol	8.26	112	208959	37.41	ng		93.53%
8) Phenol-d5	11.76	99	304534	41.29	ng		103.22%
23) Nitrobenzene-d5	12.67	82	312559	39.92	ng		99.80%
45) 2-Fluorobiphenyl	18.25	172	423176	28.80	ng		71.99%
66) 2,4,6-Tribromophenol	24.31	330	38365	25.62	ng		64.04%
85) Terphenyl-d14	30.11	244	207593	64.96	ng		162.40%
Target Compounds							Qvalue
32) Naphthalene	14.77	128	1208122	52.81	ng	m	100
39) 2-Methylnaphthalene	16.96	142	290527	20.37	ng		93
53) Acenaphthene	20.36	154	1347243	111.32	ng		98
56) Dibenzofuran	20.88	168	864935	46.54	ng	m	87
62) Fluorene	21.98	166	1314768	107.54	ng		99
78) Phenanthrene	25.13	178	16760355	1293.86	ng		96
79) Anthracene	25.13	178	4629592	396.03	ng		98
81) Fluoranthene	28.95	202	17783360	1482.55	ng	#	90
84) Pyrene	29.60	202	11425285	2252.74	ng	m	99
88) Benzo(a)anthracene	33.28	228	1662679	525.43	ng	m	95
90) Chrysene	33.43	228	1922960	744.71	ng		96
91) Bis(2-ethylhexyl) phthalat	33.72	149	182635	45.47	ng	m	90
94) Benzo(b)fluoranthene	36.94	252	1625986	311.81	ng		96
95) Benzo(k)fluoranthene	37.94	252	448771	225.21	ng	m	98
97) Benzo(a)pyrene	38.16	252	585908	276.28	ng	m	75
100) Indeno(1,2,3-cd)pyrene	44.23	276	318614	151.36	ng	m	81
102) Benzo(g,h,i)perylene	45.96	276	269802	187.58	ng	m	95

wt. of sample = 31.14g % solid = 63.25 %
MF = 50.77

(32) 2681.25 ppb.
(39) 1034.18 ppb
(53) 5651.72 ppb.
(56) 2362.84 ppb
(62) 5459.81 ppb
(78) 65689.27 ppb
(79) 20106.44 ppb
(81) 75269.06 ppb
(84) 114371.61 ppb
(88) 26676.08 ppb
(90) 37808.93 ppb
(91) 2308.51 ppb
(94) 15830.59 ppb
(95) 11433.92 ppb
(97) 14026.74 ppb
(100) 7684.55 ppb
(102) 9523.44 ppb.

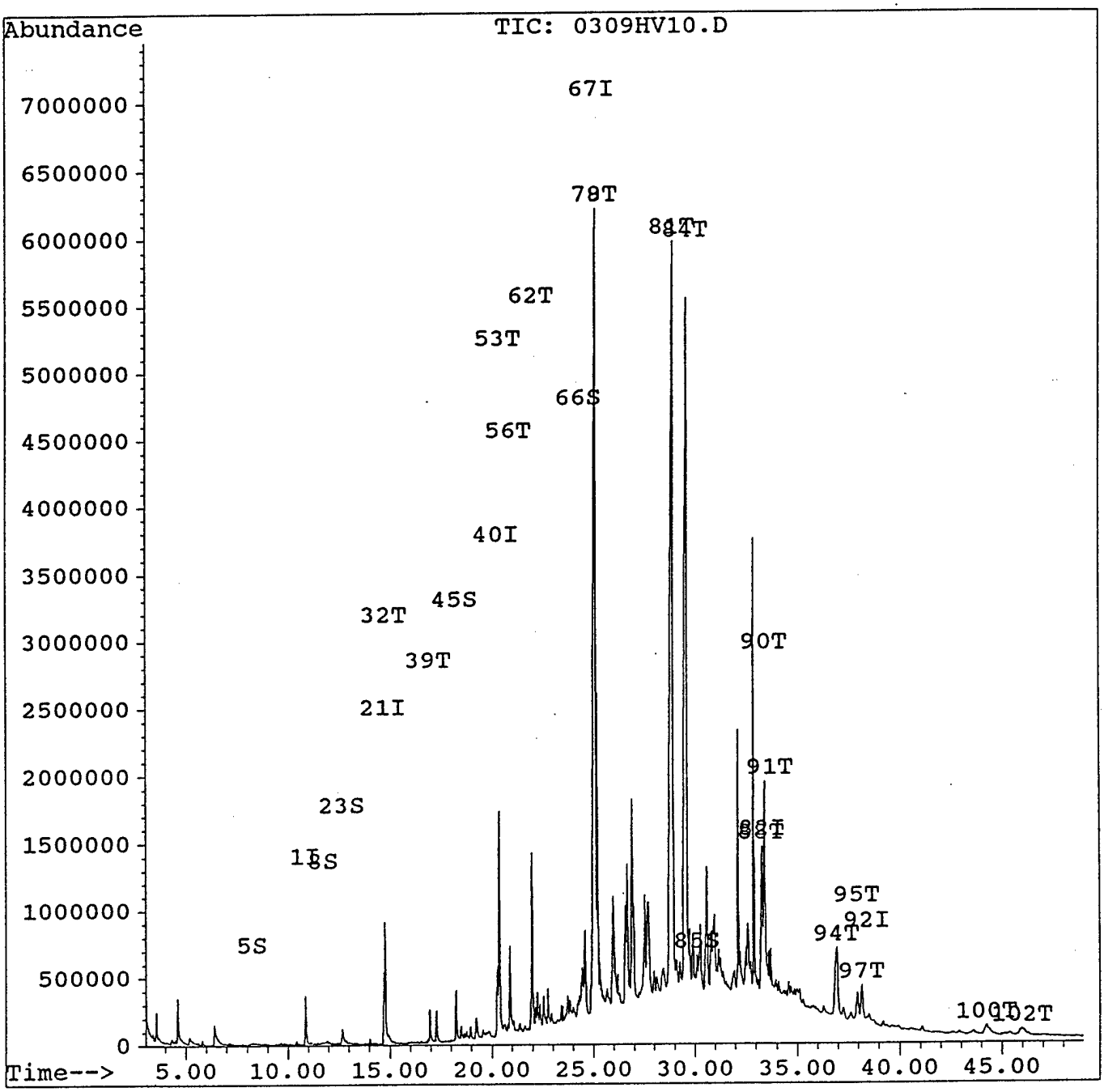
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HV10.D
Acq Time : 9 Mar 94 12:21 pm
Sample : 9402010562
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 23:13 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HV11.D
Acq Time : 9 Mar 94 1:19 pm
Sample : 9402010563
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 23:25 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.86	152	213695	40.00	ng		0.10
21) Naphthalene-d8	14.72	136	825410	40.00	ng		0.07
40) Acenaphthene-d10	20.26	164	370871	40.00	ng		0.10
67) Phenanthrene-d10	24.97	188	482553	40.00	ng		0.12
82) Chrysene-d12	33.32	240	108224	40.00	ng		0.18
92) Perylene-d12	38.42	264	41087	40.00	ng		0.36
System Monitoring Compounds							%Recovery
5) 2-Fluorophenol	8.27	112	221731	40.93	ng		102.32%
8) Phenol-d5	11.59	99	315085	44.04	ng		110.11%
23) Nitrobenzene-d5	12.68	82	261628	37.65	ng		94.12%
45) 2-Fluorobiphenyl	18.25	172	369326	27.48	ng		68.69%
66) 2,4,6-Tribromophenol	24.15	330	52573	38.38	ng		95.94%
85) Terphenyl-d14	30.11	244	163951	52.87	ng		132.18%
Target Compounds							Qvalue
32) Naphthalene	14.78	128	246158	12.12	ng		99
39) 2-Methylnaphthalene	16.96	142	66539	5.26	ng		97
53) Acenaphthene	20.35	154	475568	42.96	ng		97
56) Dibenzofuran	20.88	168	520032	30.59	ng		89
62) Fluorene	21.96	166	637708	57.02	ng		99
78) Phenanthrene	25.12	178	13303495	1071.05	ng		96
79) Anthracene	25.12	178	11923442	1063.72	ng	m	83
81) Fluoranthene	28.94	202	14497556	1260.47	ng	#	90
84) Pyrene	29.59	202	8832064	1794.60	ng	m	99
88) Benzo(a)anthracene	33.29	228	1234197	401.93	ng	m	93
90) Chrysene	33.42	228	1589015	634.17	ng	m	96
91) Bis(2-ethylhexyl) phthalat	33.72	149	241274	61.90	ng	m	91
94) Benzo(b)fluoranthene	36.93	252	1485494	315.92	ng		97
95) Benzo(k)fluoranthene	37.97	252	422544	235.16	ng	m	97
97) Benzo(a)pyrene	38.17	252	544769	284.89	ng	m	74
100) Indeno(1,2,3-cd)pyrene	44.27	276	369810	194.83	ng	m	83
101) Dibenz(a,h)anthracene	44.44	278	131716	93.95	ng	m	85
102) Benzo(g,h,i)perylene	46.01	276	311612	240.27	ng	m	93

sample wt = 30-98 % solid = 68-50 % HF = 47-12

(32) 571-12 ppb
(39) 247-95 ppb
(53) 2024-26 ppb
(56) 1441-40 ppb
(62) 2686-78 ppb
(78) 50467-88 ppb
(79) 50122-49 ppb
(81) 59393-35 ppb
(84) 84561-55 ppb
(88) 14938-94 ppb
(90) 29882-09 ppb
(91) 2916-728
(94) 14886-15 ppb
(95) 11080-74 ppb
(97) 13424-02 ppb
(100) 9180-39 ppb
(101) 4426-92 ppb
(102) 11321-52 ppb

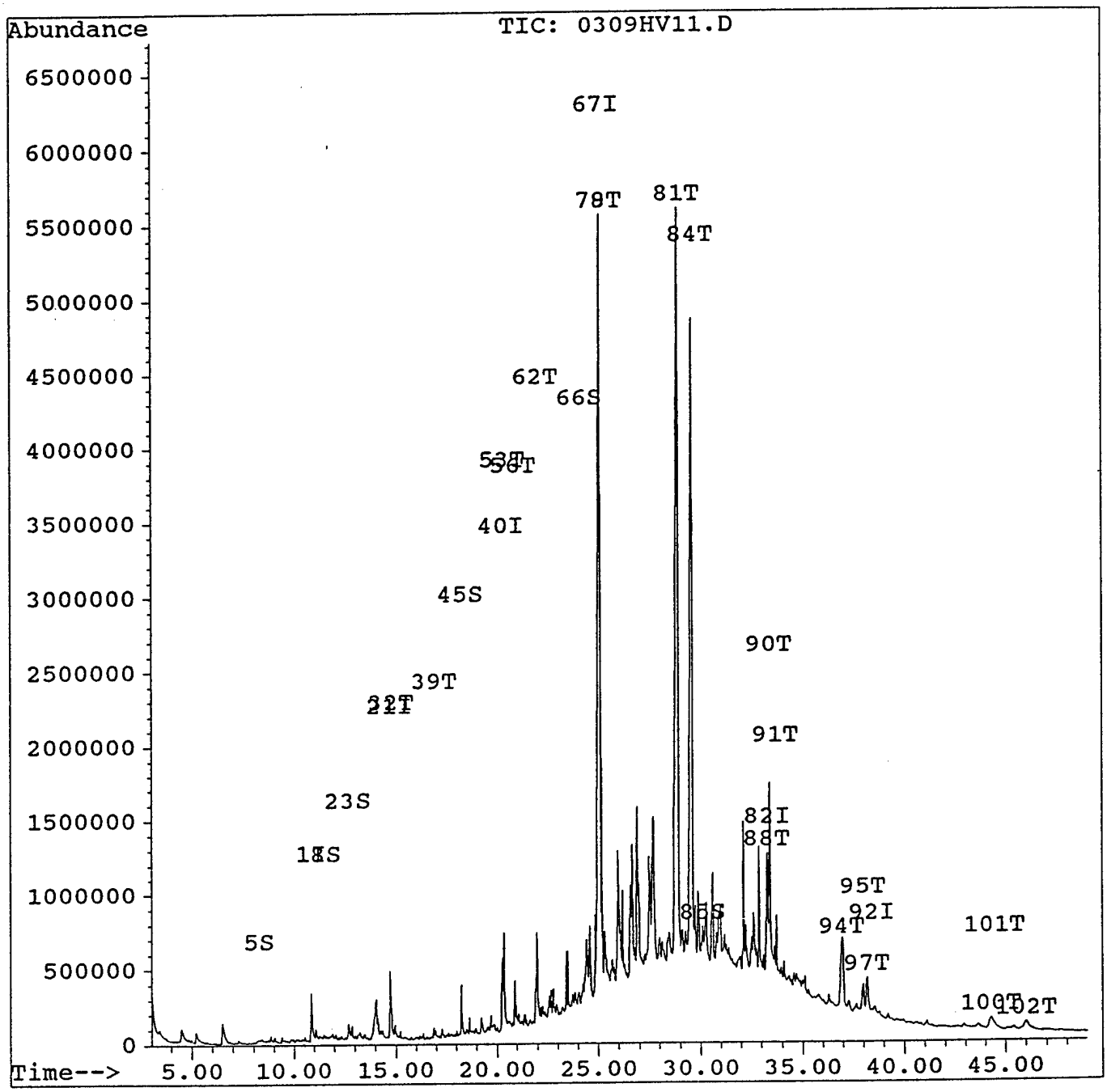
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HV11.D
Acq Time : 9 Mar 94 1:19 pm
Sample : 9402010563
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 23:25 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Simulate Run Sequence Sun Mar 06 16:43:20 1994

Sequence Name: C:\HPCHEM\1\SEQUENCE\0308SV.S
Comment:
Operator: HJV
Data Path: C:\HPCHEM\1\DATA\0308942\
Method Path: C:\HPCHEM\1\METHODS\

Line	Type	Vial	DataFile	Method	Sample Name
1)	Sample	1	0308HV1	8270	40 PPM SURR. STD.
2)	Sample	2	0308HV2	8270	CCC B/N 100PPM
3)	Sample	3	0308HV3	8270	CCC A 100PPM
4)	Sample	4	0308HV4	8270	9402010552
5)	Sample	5	0308HV5	8270	9402010553
6)	Sample	6	0308HV6	8270	9402010554
7)	Sample	7	0308HV7	8270	9402010555
8)	Sample	8	0308HV8	8270	9402010556
9)	Sample	9	0308HV9	8270	9402010557

Bytes Needed: 450000 Space on drive C: 9715712
Sequence Verification Done!

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV1.D
Acq Time : 6 Mar 94 4:51 pm Operator: HJV
Sample : 40 PPM SURR. STD. Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 21:35 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.87	152	262121	40.00	ng	0.[illegible]
21) Naphthalene-d8	14.73	136	918291	40.00	ng	0.08
40) Acenaphthene-d10	20.27	164	478513	40.00	ng	0.[illegible]
67) Phenanthrene-d10	24.91	188	512489	40.00	ng	0.[illegible]
82) Chrysene-d12	33.40	240	55551	40.00	ng	0.26
92) Perylene-d12	38.65	264	9002	40.00	ng	0.59
System Monitoring Compounds						**%Recovery**
5) 2-Fluorophenol	8.26	112	289834	43.62	ng	109.04%
8) Phenol-d5	11.42	99	372981	42.50	ng	106.[illegible]%
23) Nitrobenzene-d5	12.69	82	366523	47.41	ng	118.[illegible]%
45) 2-Fluorobiphenyl	18.26	172	681058	39.27	ng	98.17%
66) 2,4,6-Tribromophenol	23.30	330	20458	11.57	ng	28.[illegible]%
85) Terphenyl-d14	30.09	244	130270	81.84	ng	204.[illegible]%
Target Compounds						**Qvalue**

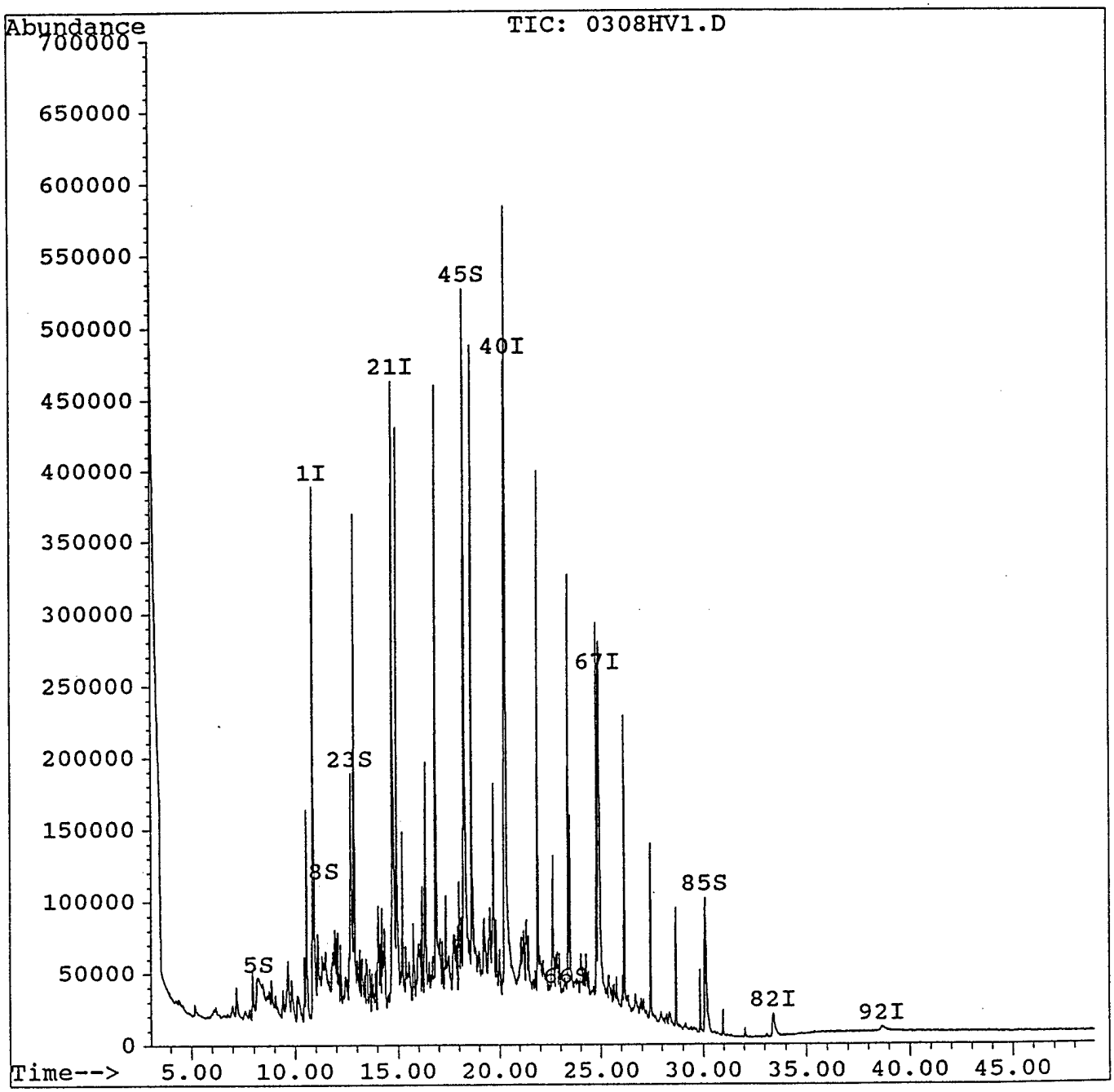
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV1.D
Acq Time : 6 Mar 94 4:51 pm
Sample : 40 PPM SURR. STD.
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 21:35 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV2.D
Acq Time : 6 Mar 94 5:48 pm Operator: HJV
Sample : CCC B/N 100PPM Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 21:40 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625.
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.86	152	325804	40.00	ng		0.11
21) Naphthalene-d8	14.73	136	1128241	40.00	ng		0.07
40) Acenaphthene-d10	20.26	164	635946	40.00	ng		0.0
67) Phenanthrene-d10	24.92	188	693827	40.00	ng		0.0
82) Chrysene-d12	33.33	240	89247	40.00	ng		0.20
92) Perylene-d12	38.51	264	23575	40.00	ng		0.4
System Monitoring Compounds							%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng		0.00%
8) Phenol-d5	10.91	99	8599	0.79	ng		1.9%
23) Nitrobenzene-d5	0.00	82	0	0.00	ng		0.00%
45) 2-Fluorobiphenyl	18.33	172	514	0.02	ng		0.06%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng		0.0%
85) Terphenyl-d14	0.00	244	0	0.00	ng		0.0%
Target Compounds							Qvalue
13) 1,4-Dichlorobenzene	10.91	146	1119917	116.00	ng		9
36) Hexachlorobutadiene	15.40	225	404915	116.15	ng	m	98
53) Acenaphthene	20.36	154	1619660	85.32	ng	m	100
69) Diphenylamine + N-Nitrosod	22.57	169	898454	46.75	ng	m	9
81) Fluoranthene	28.73	202	1140335	68.95	ng	m	9
93) Di-n-octylphthalate	35.68	149	365720	113.85	ng	m	89
97) Benzo(a)pyrene	38.27	252	108929	99.28	ng	m	8

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV2.D
Acq Time : 6 Mar 94 5:48 pm Operator: HJV
Sample : CCC B/N 100PPM Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 21:40 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.86	152	325804	40.00	ng		0.11
21) Naphthalene-d8	14.73	136	1128241	40.00	ng		0.07
40) Acenaphthene-d10	20.26	164	635946	40.00	ng		0.09
67) Phenanthrene-d10	24.92	188	693827	40.00	ng		0.07
82) Chrysene-d12	33.33	240	89247	40.00	ng		0.20
92) Perylene-d12	38.51	264	23575	40.00	ng		0.45
System Monitoring Compounds							**%Recovery**
5) 2-Fluorophenol	0.00	112	0	0.00	ng		0.00%
8) Phenol-d5	10.91	99	8599	0.79	ng		1.97%
23) Nitrobenzene-d5	0.00	82	0	0.00	ng		0.00%
45) 2-Fluorobiphenyl	18.33	172	514	0.02	ng		0.06%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng		0.00%
85) Terphenyl-d14	0.00	244	0	0.00	ng		0.00%
Target Compounds							**Qvalue**
13) 1,4-Dichlorobenzene	10.91	146	1119917	116.00	ng		99
36) Hexachlorobutadiene	15.40	225	404915	116.15	ng	m	98
53) Acenaphthene	20.36	154	1619660	85.32	ng	m	100
69) Diphenylamine + N-Nitrosod	22.57	169	898454	46.75	ng	m	98
81) Fluoranthene	28.73	202	1140335	68.95	ng	m	96
93) Di-n-octylphthalate	35.68	149	365720	113.85	ng	m	89
97) Benzo(a)pyrene	38.27	252	108929	99.28	ng	m	80

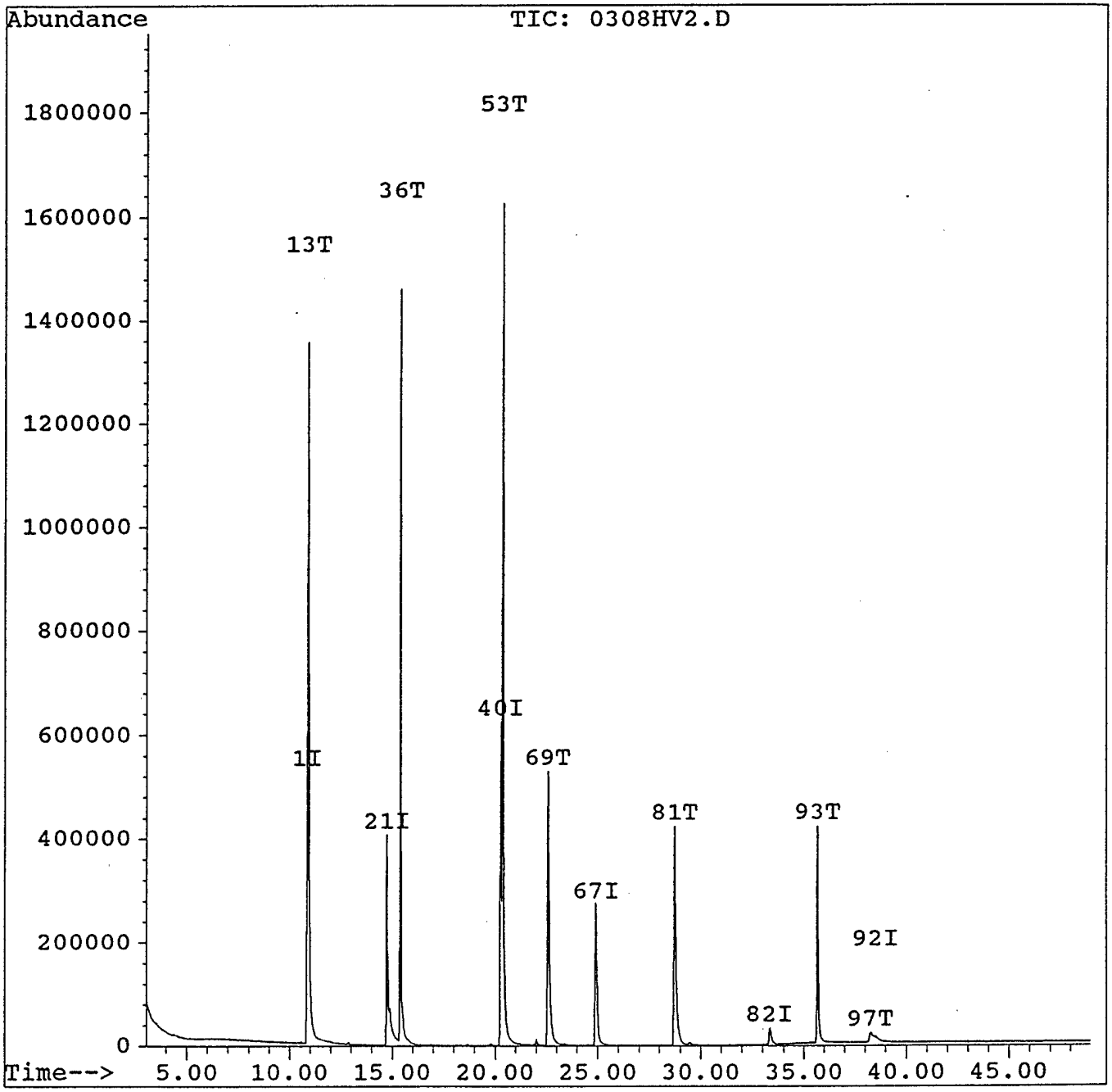
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV2.D
Acq Time : 6 Mar 94 5:48 pm
Sample : CCC B/N 100PPM
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 21:40 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV3.D
Acq Time : 6 Mar 94 6:46 pm Operator: HJV
Sample : CCC A 100PPM Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 21:49 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.86	152	341737	40.00	ng	0.10
21) Naphthalene-d8	14.73	136	1220260	40.00	ng	0.08
40) Acenaphthene-d10	20.26	164	651440	40.00	ng	0.09
67) Phenanthrene-d10	24.93	188	652658	40.00	ng	0.08
82) Chrysene-d12	33.39	240	91350	40.00	ng	0.26
92) Perylene-d12	38.68	264	23679	40.00	ng	0.62
System Monitoring Compounds						**%Recovery**
5) 2-Fluorophenol	0.00	112	0	0.00	ng	0.00%
8) Phenol-d5	10.86	99	4070	0.36	ng	0.89%
23) Nitrobenzene-d5	0.00	82	0	0.00	ng	0.00%
45) 2-Fluorobiphenyl	18.32	172	565	0.02	ng	0.06%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng	0.00%
85) Terphenyl-d14	0.00	244	0	0.00	ng	0.00%
Target Compounds						**Qvalue**
9) Phenol	11.21	94	1092208	107.13	ng	m 0
27) 2-Nitrophenol	13.72	139	573782	103.79	ng	# 83
30) 2,4-Dichlorophenol	15.19	162	670997	92.33	ng	m 0
38) 4-Chloro-3-methylphenol	17.77	107	706831	94.67	ng	m 0
43) 2,4,6-Trichlorophenol	18.30	196	467019	95.31	ng	m 0

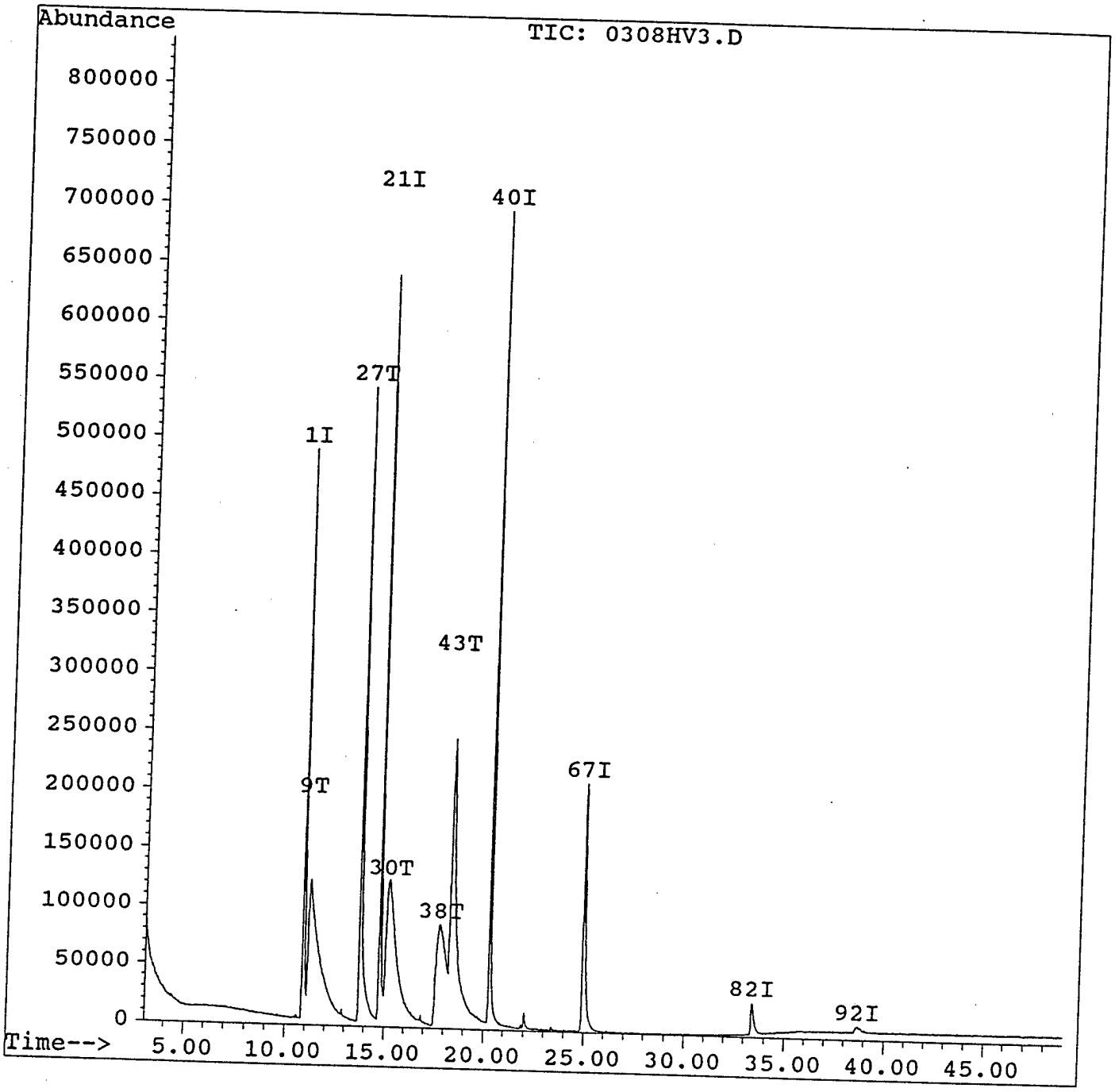
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV3.D
Acq Time : 6 Mar 94 6:46 pm
Sample : CCC A 100PPM
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 21:49 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV4.D
Acq Time : 6 Mar 94 7:43 pm
Sample : 9402010552
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 21:53 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	293393	40.00	ng	0.09
21) Naphthalene-d8	14.73	136	985225	40.00	ng	0.08
40) Acenaphthene-d10	20.27	164	550687	40.00	ng	0.10
67) Phenanthrene-d10	24.92	188	559515	40.00	ng	0.08
82) Chrysene-d12	33.38	240	82877	40.00	ng	0.24
92) Perylene-d12	38.63	264	31962	40.00	ng	0.57
System Monitoring Compounds						**%Recovery**
5) 2-Fluorophenol	8.27	112	294300	39.57	ng	98.92%
8) Phenol-d5	11.66	99	397402	40.46	ng	101.15%
23) Nitrobenzene-d5	12.68	82	328589	39.61	ng	99.03%
45) 2-Fluorobiphenyl	18.27	172	623580	31.24	ng	78.11%
66) 2,4,6-Tribromophenol	23.49	330	21005	10.33	ng	25.82%
85) Terphenyl-d14	30.11	244	120898	50.91	ng	127.28%
Target Compounds						**Qvalue**

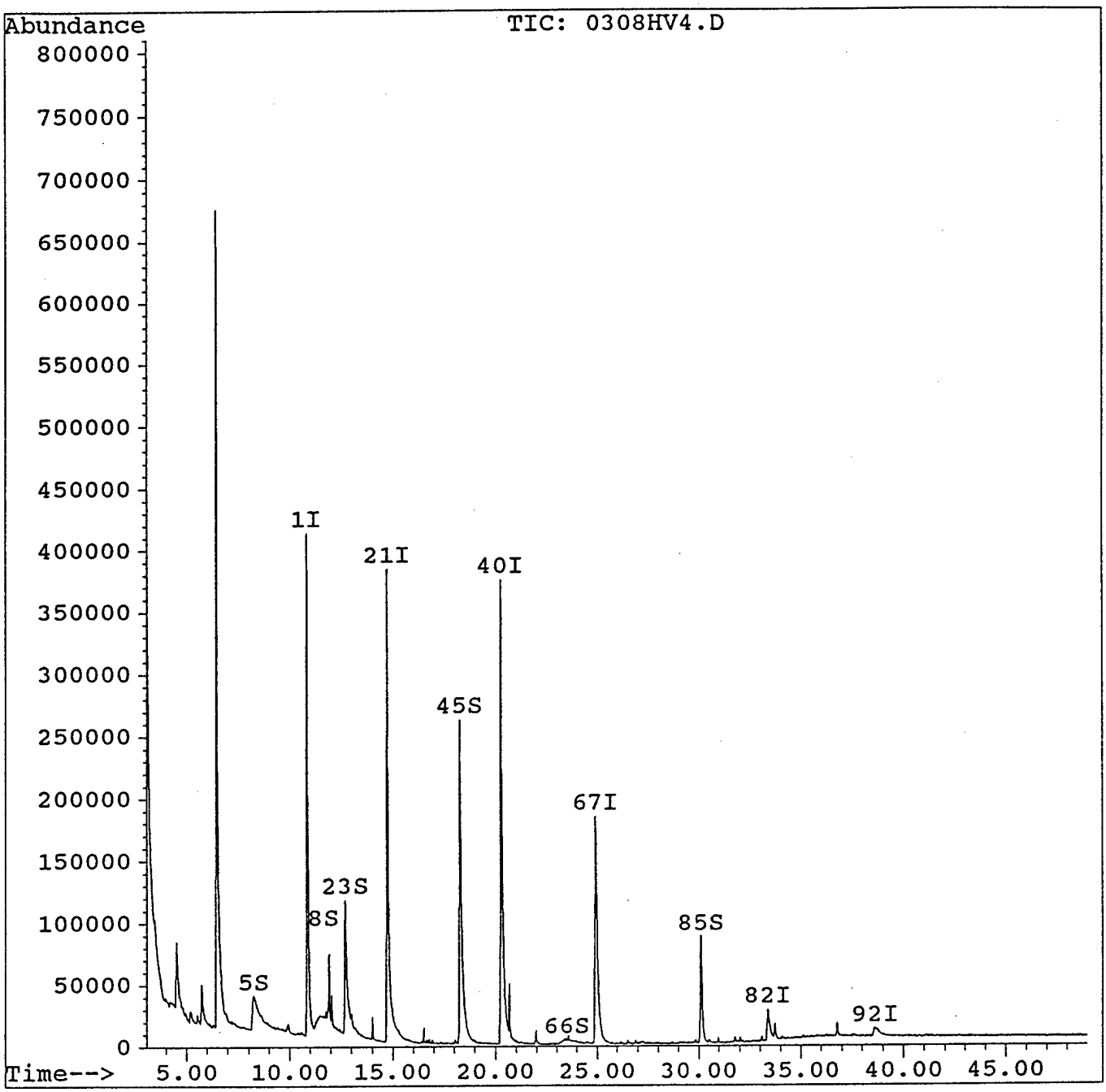
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV4.D
Acq Time : 6 Mar 94 7:43 pm
Sample : 9402010552
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 21:53 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV5.D
Acq Time : 6 Mar 94 8:40 pm
Sample : 9402010553
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 22:03 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	299437	40.00	ng		0.09
21) Naphthalene-d8	14.72	136	1020912	40.00	ng		0.07
40) Acenaphthene-d10	20.25	164	594372	40.00	ng		0.08
67) Phenanthrene-d10	24.88	188	768463	40.00	ng		0.04
82) Chrysene-d12	33.25	240	190860	40.00	ng		0.12
92) Perylene-d12	38.39	264	89189	40.00	ng		0.34
System Monitoring Compounds							**%Recovery**
5) 2-Fluorophenol	8.26	112	228209	30.06	ng		75.16%
8) Phenol-d5	11.60	99	328957	32.82	ng		82.04%
23) Nitrobenzene-d5	12.69	82	276146	32.13	ng		80.32%
45) 2-Fluorobiphenyl	18.26	172	491549	22.82	ng		57.04%
66) 2,4,6-Tribromophenol	23.32	330	43589	19.85	ng		49.63%
85) Terphenyl-d14	30.05	244	254793	46.59	ng		116.48%
Target Compounds							**Qvalue**
53) Acenaphthene	20.35	154	95312	5.37	ng		97
78) Phenanthrene	24.97	178	1235474	62.46	ng		97
79) Anthracene	25.10	178	245845	13.77	ng		98
81) Fluoranthene	28.73	202	2067316	112.87	ng		98
84) Pyrene	29.40	202	1558817	179.60	ng	m	99
88) Benzo(a)anthracene	33.22	228	263162	48.60	ng	m	95
90) Chrysene	33.34	228	335648	75.96	ng		97
91) Bis(2-ethylhexyl) phthalat	33.71	149	243883	35.48	ng	m	97
94) Benzo(b)fluoranthene	36.86	252	362036	35.47	ng	m	94
95) Benzo(k)fluoranthene	37.91	252	118489	30.38	ng	m	72
97) Benzo(a)pyrene	38.13	252	127220	30.65	ng	m	72
100) Indeno(1,2,3-cd)pyrene	44.20	276	92031	22.34	ng	m	76
102) Benzo(g,h,i)perylene	45.97	276	81778	29.05	ng	m	40

wt. of sample = 30.61g % solid = 91.51%

35-3c

Actual conc.

(53) $\frac{5.37 \times 1000}{30.61 \times 0.9151}$ = 191.71 ppb

(78) 2229.82 ppb

(79) 491.60 ppb

(81) 4029.46 ppb

(84) 6411.72 ppb

(88) 1735.02 ppb

(90) 2711.77 ppb

(91) 1266.64 ppb

(94) 1266.28 ppb

(95) 1084.57 ppb

(97) 1094.21 ppb

(100) 797.54 ppb

(102) 1037.09 ppb

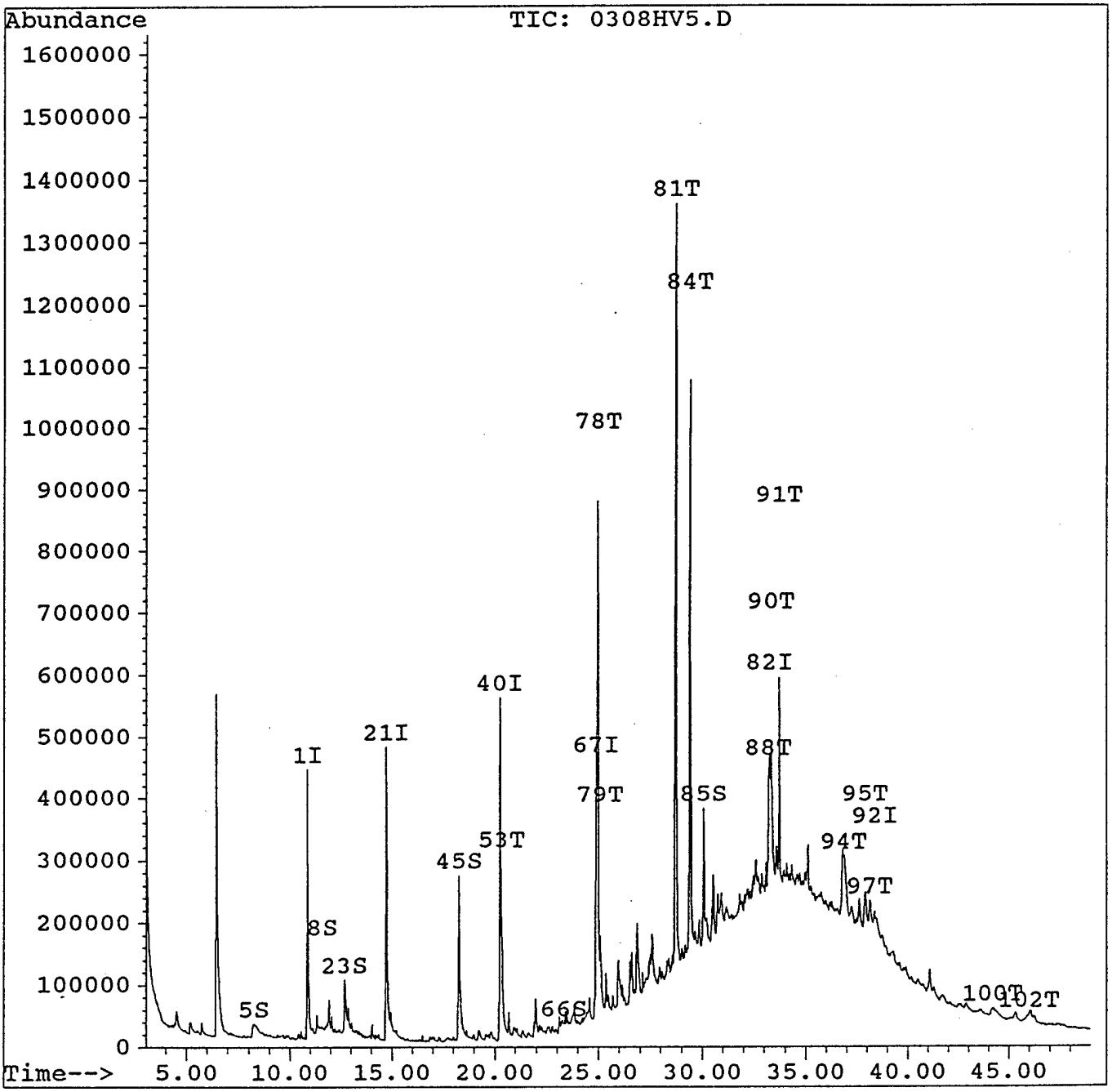
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV5.D
Acq Time : 6 Mar 94 8:40 pm
Sample : 9402010553
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 22:03 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV6.D
Acq Time : 6 Mar 94 9:38 pm
Sample : 9402010554
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 22:07 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	303026	40.00	ng	0.10
21) Naphthalene-d8	14.72	136	1041994	40.00	ng	0.07
40) Acenaphthene-d10	20.26	164	600727	40.00	ng	0.09
67) Phenanthrene-d10	24.90	188	790714	40.00	ng	0.05
82) Chrysene-d12	33.29	240	167625	40.00	ng	0.16
92) Perylene-d12	38.47	264	77224	40.00	ng	0.41
System Monitoring Compounds						**%Recovery**
5) 2-Fluorophenol	8.22	112	280106	36.46	ng	91.15%
8) Phenol-d5	11.55	99	376772	37.14	ng	92.85%
23) Nitrobenzene-d5	12.69	82	324232	36.96	ng	92.40%
45) 2-Fluorobiphenyl	18.26	172	626109	28.76	ng	71.89%
66) 2,4,6-Tribromophenol	23.36	330	50308	22.67	ng	56.68%
85) Terphenyl-d14	30.05	244	265704	55.32	ng	138.30%
Target Compounds						**Qvalue**
87) Butylbenzylphthalate	31.81	149	37336	7.99	ng	88
91) Bis(2-ethylhexyl) phthalat	33.71	149	75386	12.49	ng	98

wt. of sample = 30.98 g % solid = 83.29%

Actual conc.

(87) $\frac{7.99 \times 1000}{30.98 \times 0.8329} = 309.65$ ppb.

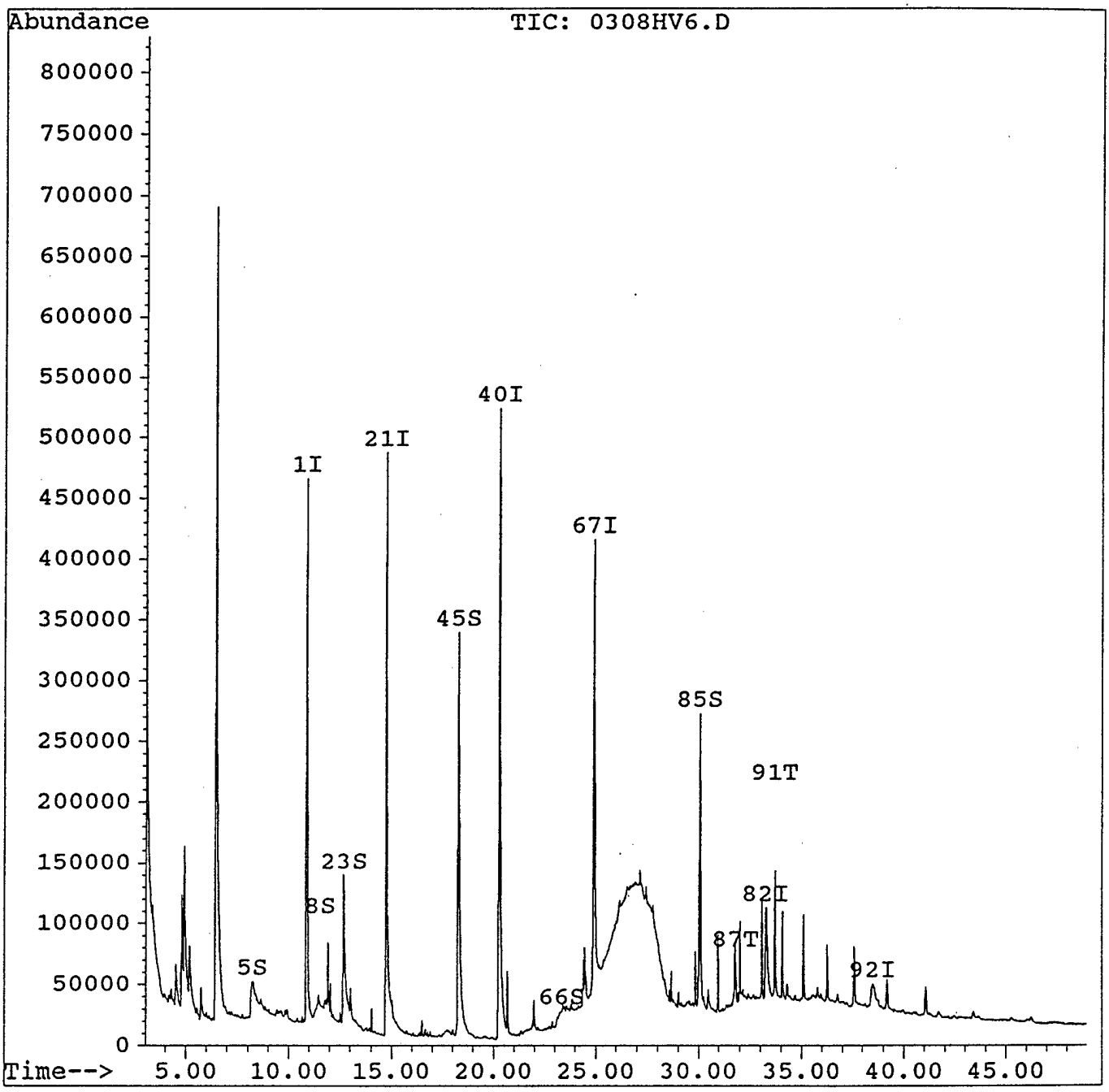
(91) $\frac{12.49 \times 1000}{30.98 \times 0.8329} = 491.99$ ppb.

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV6.D
Acq Time : 6 Mar 94 9:38 pm Operator: HJV
Sample : 9402010554 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 22:07 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV7.D
Acq Time : 6 Mar 94 10:35 pm
Sample : 9402010555
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 22:15 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	244254	40.00	ng		0.09
21) Naphthalene-d8	14.72	136	851824	40.00	ng		0.07
40) Acenaphthene-d10	20.26	164	495669	40.00	ng		0.09
67) Phenanthrene-d10	24.90	188	659131	40.00	ng		0.06
82) Chrysene-d12	33.25	240	161557	40.00	ng		0.11
92) Perylene-d12	38.37	264	75303	40.00	ng		0.32
System Monitoring Compounds							**%Recovery**
5) 2-Fluorophenol	8.24	112	245021	39.57	ng		98.92%
8) Phenol-d5	11.61	99	328062	40.12	ng		100.30%
23) Nitrobenzene-d5	12.69	82	293888	40.98	ng		102.45%
45) 2-Fluorobiphenyl	18.26	172	586938	32.67	ng		81.68%
66) 2,4,6-Tribromophenol	23.40	330	41311	22.56	ng		56.41%
85) Terphenyl-d14	30.06	244	276352	59.70	ng		149.25%
Target Compounds							**Qvalue**
53) Acenaphthene	20.36	154	83945	5.67	ng		97
62) Fluorene	21.98	166	102376	6.85	ng		98
78) Phenanthrene	24.97	178	2040304	120.26	ng		97
79) Anthracene	25.10	178	424081	27.70	ng		98
81) Fluoranthene	28.74	202	3130106	199.24	ng		99
84) Pyrene	29.41	202	2124957	289.24	ng	m	99
88) Benzo(a)anthracene	33.21	228	382195	83.38	ng		97
90) Chrysene	33.33	228	495968	132.60	ng		98
91) Bis(2-ethylhexyl) phthalat	33.70	149	44093	7.58	ng		98
94) Benzo(b)fluoranthene	36.86	252	441923	51.28	ng	m	93
95) Benzo(k)fluoranthene	37.89	252	138070	41.93	ng	m	73
97) Benzo(a)pyrene	38.11	252	159041	45.38	ng	m	75
100) Indeno(1,2,3-cd)pyrene	44.20	276	90950	26.14	ng	#	85
102) Benzo(g,h,i)perylene	45.89	276	84933	35.73	ng	m	40

wt. of sample = 30-20 g % Solid = 85-66 %.

Actual conc. Multiplication factor = 38.66.

(53) 219.18 ppb.
(62) 264.82 ppb
(78) 4649.25 ppb
(79) 1670.88 ppb
(81) 7725.69 ppb
(84) 11182.02 ppb
(89) 3223.47 ppb.
(90) 5126.32 ppb
(91) 293.04 ppb
(94) 1982.48 ppb
(95) 1621.02 ppb
(97) 1254.39 ppb
(100) 1010.57 ppb
(102) 1381.32 ppb.

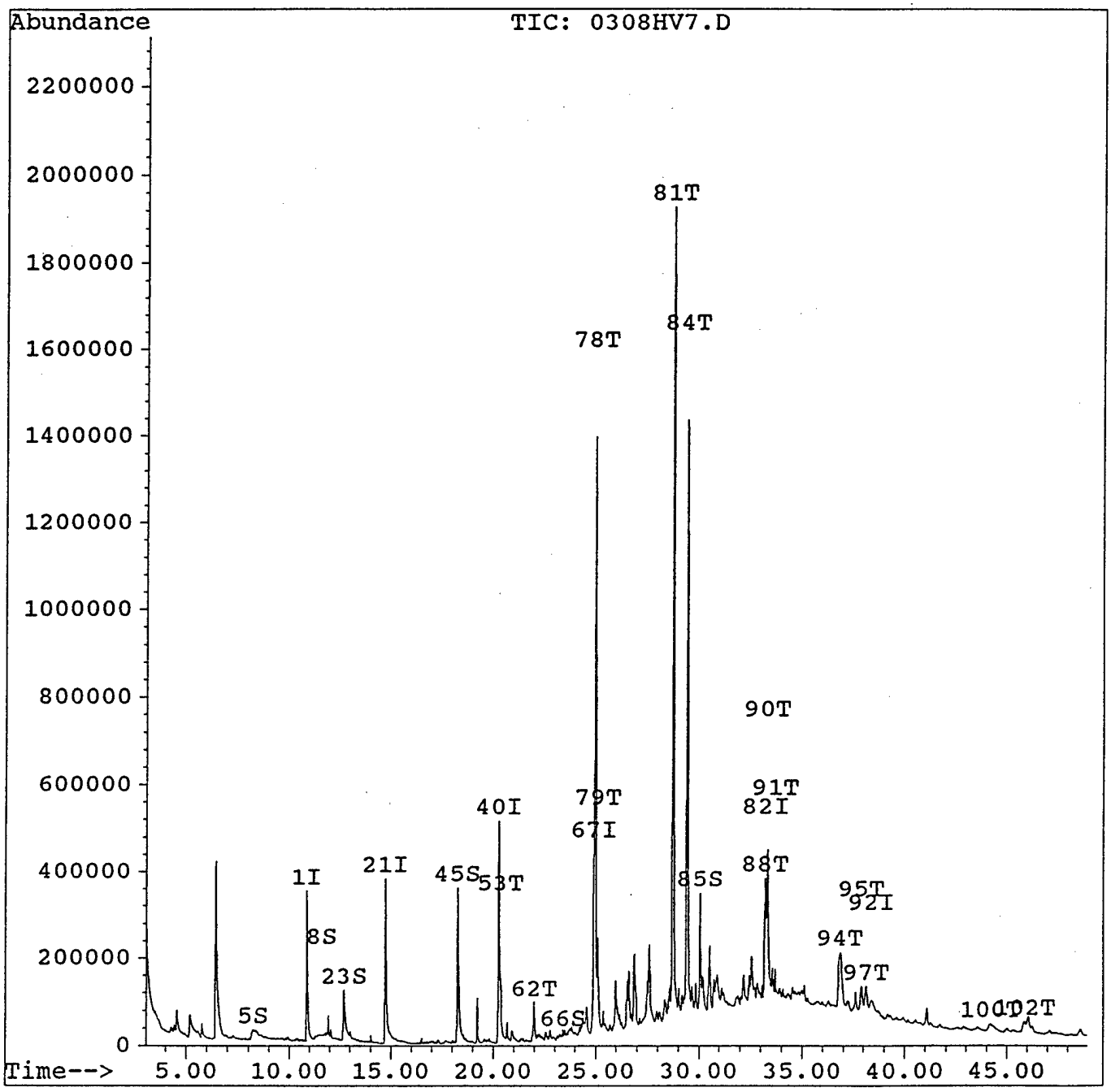
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV7.D
Acq Time : 6 Mar 94 10:35 pm
Sample : 9402010555
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 22:15 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV8.D
Acq Time : 6 Mar 94 11:33 pm
Sample : 9402010556
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 22:22 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.87	152	251936	40.00	ng		0.11
21) Naphthalene-d8	14.73	136	883085	40.00	ng		0.08
40) Acenaphthene-d10	20.27	164	519262	40.00	ng		0.10
67) Phenanthrene-d10	24.90	188	667734	40.00	ng		0.06
82) Chrysene-d12	33.27	240	133346	40.00	ng		0.14
92) Perylene-d12	38.42	264	59534	40.00	ng		0.36
System Monitoring Compounds							%Recovery
5) 2-Fluorophenol	8.29	112	261883	41.00	ng		102.51%
8) Phenol-d5	11.64	99	354977	42.09	ng		105.22%
23) Nitrobenzene-d5	12.68	82	265355	35.69	ng		89.23%
45) 2-Fluorobiphenyl	18.27	172	537002	28.53	ng		71.33%
66) 2,4,6-Tribromophenol	23.54	330	41973	21.88	ng		54.71%
85) Terphenyl-d14	30.05	244	208868	54.67	ng		136.67%
Target Compounds							Qvalue
78) Phenanthrene	24.97	178	149383	8.69	ng		98
81) Fluoranthene	28.72	202	251935	15.83	ng		97
84) Pyrene	29.40	202	175431	28.93	ng	m	99
88) Benzo(a)anthracene	33.22	228	25477	6.73	ng	m	90
90) Chrysene	33.34	228	33309	10.79	ng		93
91) Bis(2-ethylhexyl) phthalat	33.70	149	29448	6.13	ng		95
94) Benzo(b)fluoranthene	36.91	252	35287	5.18	ng	m	72

wt. of sample = 30.38 g % solid. = 89.37 %
Multiplication Factor = 36.47

Actual conc. =

(78) 316.94 ppb
(81) 577.32 ppb
(84) 1055.08 ppb
(88) 245.44 ppb
(90) 393.51 ppb
(91) 223.56 ppb
(94) 188.92 ppb.

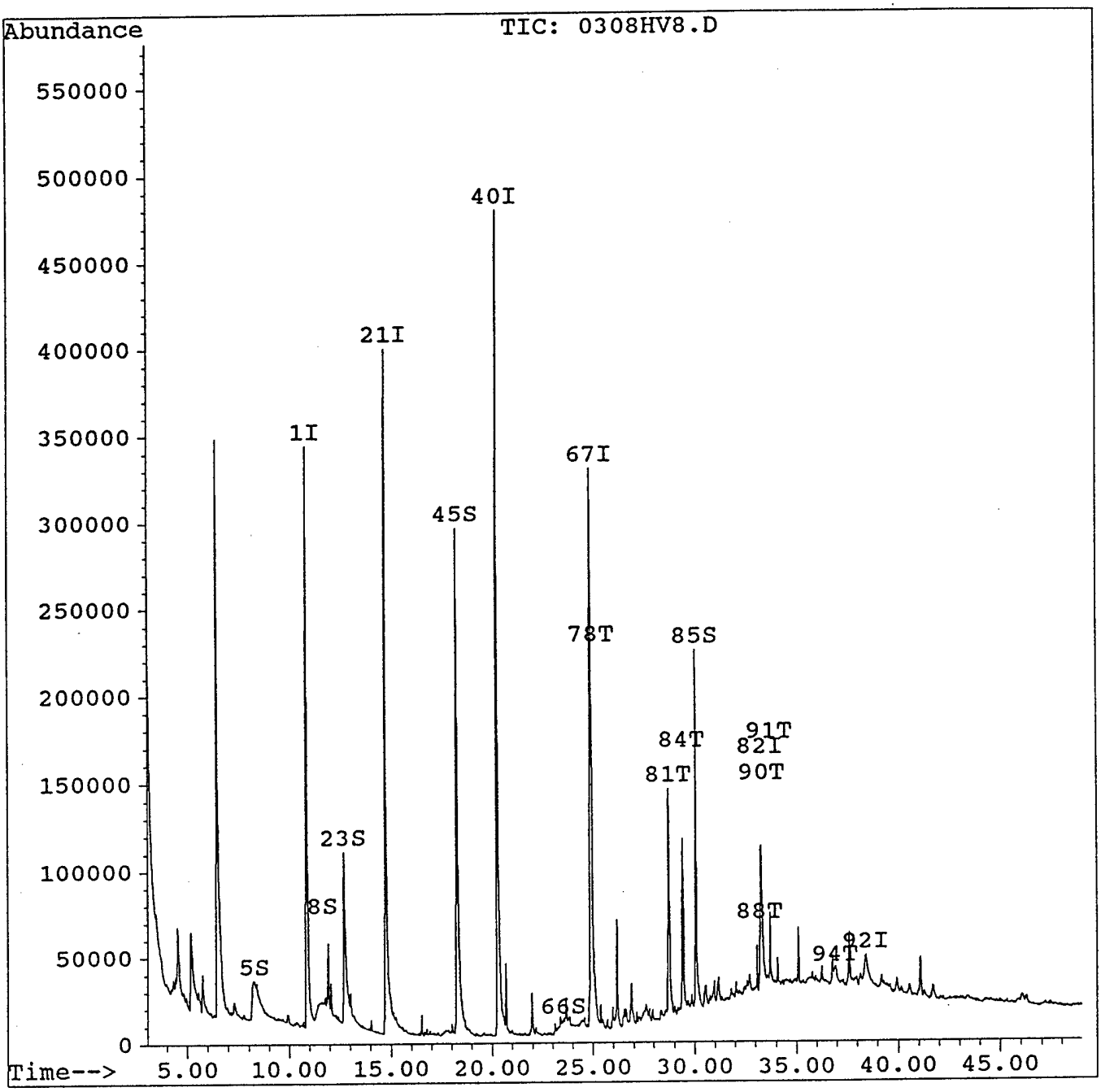
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV8.D
Acq Time : 6 Mar 94 11:33 pm
Sample : 9402010556
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 22:22 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV9.D
Acq Time : 7 Mar 94 12:30 am
Sample : 9402010557
Misc : 1uL INJECTION, 10uL INTSTD. ADDED
Quant Time: Mar 9 22:26 1994

Operator: HJV
Inst : GC/MS
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.86	152	255167	40.00	ng		0.11
21) Naphthalene-d8	14.73	136	894777	40.00	ng		0.08
40) Acenaphthene-d10	20.27	164	522134	40.00	ng		0.10
67) Phenanthrene-d10	24.90	188	667680	40.00	ng		0.06
82) Chrysene-d12	33.27	240	130188	40.00	ng		0.14
92) Perylene-d12	38.42	264	55213	40.00	ng		0.36
System Monitoring Compounds							%Recovery
5) 2-Fluorophenol	8.25	112	252801	39.08	ng		97.70%
8) Phenol-d5	11.66	99	320404	37.51	ng		93.77%
23) Nitrobenzene-d5	12.68	82	271591	36.05	ng		90.13%
45) 2-Fluorobiphenyl	18.27	172	537385	28.40	ng		70.99%
66) 2,4,6-Tribromophenol	23.58	330	36472	18.91	ng		47.28%
85) Terphenyl-d14	30.07	244	205943	55.21	ng		138.02%
Target Compounds							Qvalue
78) Phenanthrene	24.97	178	151541	8.82	ng		97
81) Fluoranthene	28.73	202	211329	13.28	ng		97
84) Pyrene	29.41	202	149080	25.18	ng	m	99
88) Benzo(a)anthracene	33.22	228	21975	5.95	ng		94
90) Chrysene	33.36	228	24613	8.17	ng	#	93
91) Bis(2-ethylhexyl) phthalat	33.71	149	29039	6.19	ng		99

wt of sample = 30.02g % solid = 86.72%.
Multiplication factor = 38.39

∴ Actual conc.

(1) Phenanthrene = 338.60 ppb

(2) Fluoranthene = 509.82 ppb

(3) Pyrene = 966.66 ppb.

(4) Benzo (a) anthracene = 228.42 ppb.

(5) Chrysene = 313.65 ppb.

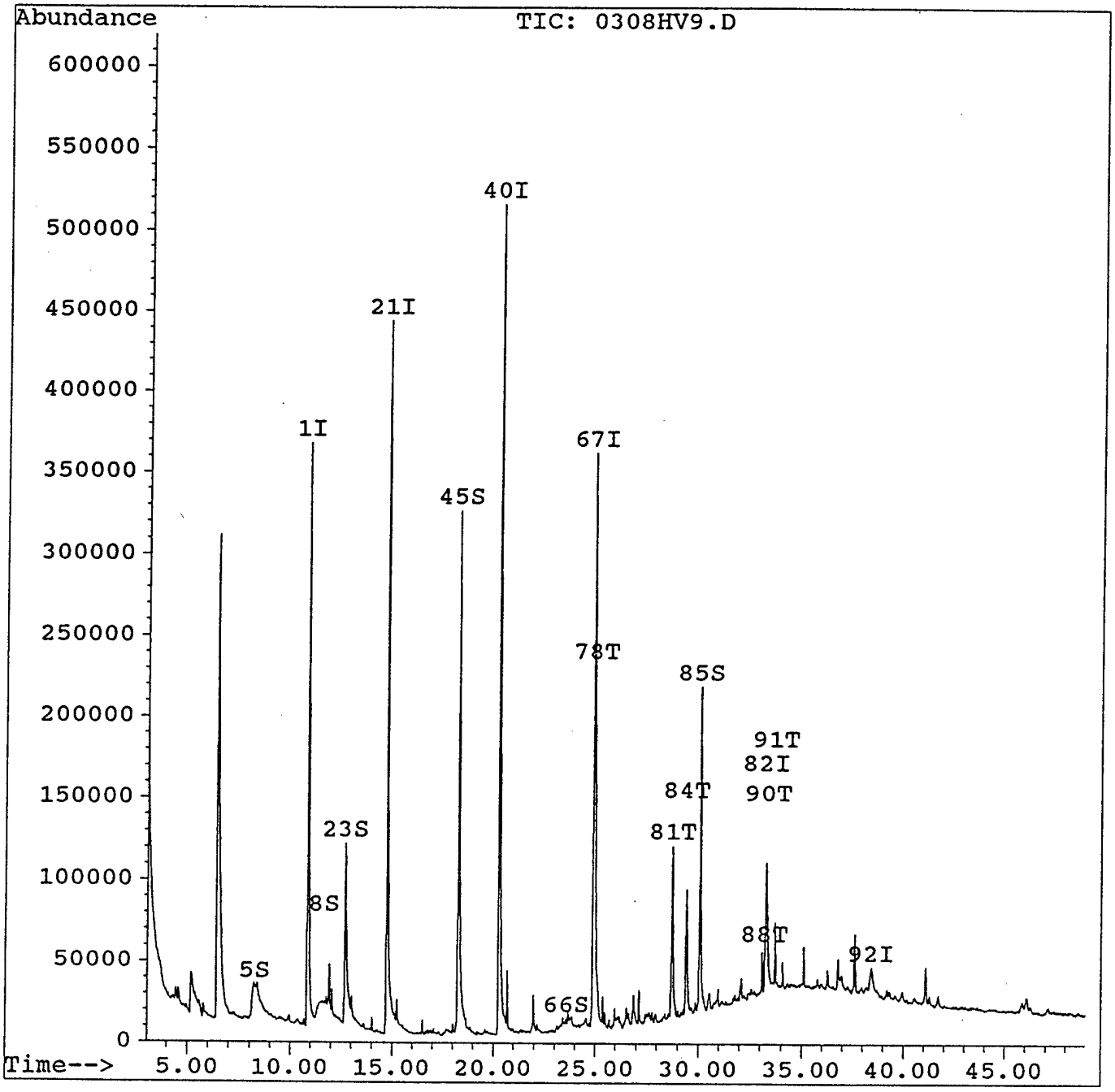
(6) Bis (2-ethyl hexyl) phthalate = ~~619~~ 237.63 ppb.

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV9.D
Acq Time : 7 Mar 94 12:30 am Operator: HJV
Sample : 9402010557 Inst : GC/MS
Misc : 1uL INJECTION, 10uL INTSTD. ADDED Multiplr: 1.00
Quant Time: Mar 9 22:26 1994

Method : C:\HPCHEM\1\METHODS\8270.M
Title : Modified EPA Method 8270B covering 8250 and 625
Last Update : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration



Organic Extraction Log Worksheet

Semi-Volatiles

Date: 03/04/94
Time: 0830
Analyst: HAV

Method: 8270

	Control Number	Matrix	Sample Volume/Weight	Spike	Extract Volume	Comments
	9402010531		30.06g			
	0532		30.06g			
	0533		30.46g			
	0534		30.14g			
	0535		30.44g			
03/07/94	0536		29.60g			
	0537		29.90g			
	0538		30.72g			
	0539		30.43g			
	0540		30.20g			
	0541		30.44g			⊕ Concentrator broke
	0542		31.96g			
	0543		30.94g			
	0544		30.54g			
03/08/94	0551		31.09g			⊕ concentrator slipped off
	0552		30.37g			
	0553		30.61g			
	0554		30.95g			
	0555		30.20g			
	0556		30.38g			
	0557		30.02g			
03/09/94	0558		30.36g			
	0559		31.06g			
	0560		31.45g			
	0561		30.37g			
	0562		31.14g			
	0563		30.98g			
	0542		30.37g			
	0551		30.25g			

Organic Extraction Log Worksheet

Semi-Volatiles

Date: 03/11/94
Time: 1400
Analyst: MJV

Method: 8270

Control Number	Matrix	Sample Volume/Weight	Spike	Extract Volume	Comments
Blank		1000 mL		1 mL	
9402010572		920 mL		↓	
9403010055		880 mL		↓	
940301 0044		800 mL		↓	

APPENDIX F

FIELD CHANGE REQUEST FORMS

OPERATIONAL TECHNOLOGIES

DEVIATIONS FROM WORK PLAN DURING FIELD WORK

ORIGINATOR/DATE: Matt Alexander 2/24/94

ANG BASE/STATION: Hot Springs, Arkansas

WORK PLAN TOPIC: Number of Soil Samples per borehole. Work plan indicates 2 samples per borehole at each AOC, as given in Table 5.2

DEVIATION IN FIELD WORK: Only one (1) Soil sample was obtained at one of three boreholes at Current Temporary Waste Storage AOC (CTS-001BH), as bedrock was encountered during HSA drilling at 1.75 feet BLS. Two samples/borehole were obtained at the other two boreholes at this AOC. Because of nearby rock outcropping, a similar one sample/borehole result is anticipated later today at two boreholes (NEF-003BH & 004BH) at Northeast Fence Line AOC.

ANGRC PROJECT MANAGER ACCEPTANCE:

OPERATIONAL TECHNOLOGIES

MODIFICATION TO WORK PLAN FOR FIELD WORK

ORIGINATOR/DATE: Matt Alexander 2/18/94

ANG BASE/STATION: Hot Springs, Arkansas

WORK PLAN TOPIC: Drumming of soil cuttings for each drilling location, Sect. 10.1, pg 10-1.

SUGGESTED MODIFICATION FOR FIELD WORK: Drum soil cuttings in 55 gallon steel drums, by AOC rather than by individual drill location. If contamination is encountered during drilling, as evidenced by field PID readings >100 ppm, such cuttings will be drummed separately.

REASON FOR MODIFICATION: There will be 3-4 times fewer drums for the Station to deal with. Containerization will be more space efficient, since only small amounts of cuttings will be generated ~~at~~ by hand augering at each drill location.

ANGRC PROJECT MANAGER APPROVAL:

APPENDIX G

CHAIN-OF-CUSTODY

ENVIRONMENTAL SERVICES COMPANY, INC.

Branch Office:
1704 Shelby Oaks Dr. N
Memphis, TN 38134
Phone: (901) 372-9332
Fax: (901) 372-9334

Corporate Office:
13715 W. Markham
Little Rock, AR 72215
Phone: (501) 221-2565
Fax: (501) 221-1341

Branch Office:
1107 Century Ave
Springdale, AR 72764
Phone: (501) 750-1170
Fax: (501) 750-1172

1.25 41.28 41.23 97.4 extractable
41.6 41.24 41.19 99.W Diesel RANGE
41.20 41.10 41.7 98.A only
41.15 41.26 41.27
41.11

#1345

Chain of Custody

Company Name: Operational Technologies Corporation
Address: 4100 NW Loop 410 St 230
San Antonio Tx 78229
Phone Number: (210) 731-0000 Customer Number: 1308-193
Fax Number: (210) 731-0008 Pur. Order Number: N/A
Location: HOT SPRINGS ANGS

Sample Identification	Date & Time Collected	Matrix	G	C	F	Container Size &Type	No.	Preservative	VOC / SW 8240	SVOC / SW 8270	Metals / SW Method	TPH / CA Mod 8015	None
NEF-005, Int 1	2/24/0940	Soil				1 Brass Sleeve	1	None	✓	✓	✓	✓	940201053
NEF-005, Int 2	2/24/1015	"				"	1	"	✓	✓	✓	✓	940201053
CTS-003, Int 1	2/24/1109	"				"	1	"	✓	✓	✓	✓	940201053
CTS-003, Int 2	2/24/1120	"				"	1	"	✓	✓	✓	✓	940201053
CTS-002, Int 1	2/24/1145	"				"	1	"	✓	✓	✓	✓	940201053
CTS-002, Int 2	2/24/1200	"				"	1	"	✓	✓	✓	✓	940201053
CTS-001, Int 1	2/24/1225	"				"	1	"	✓	✓	✓	✓	940201053
NEF-004, Int 1	2/24/1430	"				"	1	"	✓	✓	✓	✓	940201053
NEF-003, Int 1	2/24/1445	"				"	1	"	✓	✓	✓	✓	940201053
NEF-003, Int 2	2/24/1500	"				"	1	"	✓	✓	✓	✓	940201054
NEF-002, Int 1	2/24/1520	"				"	1	"	✓	✓	✓	✓	940201054
NEF-002, Int 2	2/24/1540	Soil				Brass Sleeve	1	None	✓	✓	✓	✓	940201054

Parameter

Turn Around: Regular | 48 Hour | 24 Hour | Special: As per Contract | Lab ID Number

Sampled By:	Date:	Time:	Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Earl E Parker OPTECH Sft Manager	2/24/94		Earl E Parker	2/24/94	1745	Mark Shackelford	2-24	17.45
Shipped By:	Date:	Time:	Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Shipped Through:						Debi Cooper	22594	1100
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Received For Lab By:	Date:	Time:
						A Bowman	02/25/94	1200.

Comments: PAGE 1 of 2

ENVIRONMENTAL SERVICES COMPANY, INC.

Branch Office:
1704 Shelby Oaks Dr. N
Memphis, TN 38134
Phone: (901) 372-9332
Fax: (901) 372-9334

Corporate Office:
13715 W. Markham
Little Rock, AR 72215
Phone: (501) 221-2565
Fax: (501) 221-1341

Branch Office:
1107 Century Ave
Springdale, AR 72764
Phone: (501) 750-1170
Fax: (501) 750-1172

Chain of Custody

Company Name: Operational Technologies Corporation
Address: 4100 NW Loop 410, St. 230
San Antonio Tx 78229
Phone Number: (210) 731-0000 Customer Number: 1308-193
Fax Number: (210) 731-0008 Pur. Order Number: N/A
Location: Hot Springs PA/SI

Turn Around: Regular / 48 Hour / 24 Hour / Special: As per Contract

Sample Identification	Date & Time Collected	Matrix	G	C	F	Container Size & Type	No.	Preservative	VOC / SW 8240	SVOC / SW 8270	Metals / SW Method	TPH / Ca Mod 8015	Lab ID Number
NEF-001 Int 1	2/24/1550	Soil				Brass Sleeve	1	None	✓	✓	✓	✓	94030105 43
NEF-002 Int 2	2/24/1600	Soil				Brass Sleeve	1	None	✓	✓	✓	✓	9403010544
sleeve labelled "001"													

Sampled By: EARL E PARKER, OPTECH SITE MANAGER Date: 2/24/94 Time:	Relinquished By: Earl E Parker Date: 2/24/94 Time: 1745	Received By: [signature] Date: 2-24 Time: 17:45
Shipped By: Date: Time:	Relinquished By: Date: Time:	Received By: Date: Time:
Shipped Through:		
Relinquished By: Date: Time:	Received By: Date: Time:	Received For Lab By: [signature] Date: 02/25/94 Time: 1200

Comments: PAGE 2 of 2

ENVIRONMENTAL SERVICES COMPANY, INC.

Branch Office:
1704 Shelby Oaks Dr. N
Memphis, TN 38134
Phone: (901) 372-9332
Fax: (901) 372-9334

Corporate Office:
13715 W. Markham
Little Rock, AR 72215
Phone: (501) 221-2565
Fax: (501) 221-1341

Branch Office:
1107 Century Ave
Springdale, AR 72764
Phone: (501) 750-1170
Fax: (501) 750-1172

Chain of Custody

Company Name: Operational Technologies Corp. Cust. Number: 1308-193
Address: 4100 NW Loop 410 St 230
San Antonio Tx 78229
Phone Number: (210) 731-0000
Fax Number: (210) 731-0008
Location: HOT SPRINGS ANGS

Sample Identification	Date & Time Collected	Matrix	G	C	F	Container Size &Type	No.	Preservative	VOC - SW 8240	SVOC - SW 8270	TPH - 8015 Calmod	METALS - SW Meth.	Lab ID Number
ODS-004 BH, Int 1	2/25/94 /0940	Soil				Brass Sleeve	1	NONE	✓	✓	✓	✓	9402.01-551
ODS-002 BH, Int 1	2/25/94 /0950	"				"	1	"	✓	✓	✓	✓	552
ODS-001 BH, Int 1	2/25/94 /1010	"				"	1	"	✓	✓	✓	✓	553
ODS-001 BH, Int 2	2/25/94 /1120	"				"	1	"	✓	✓	✓	✓	554
ODS-003 BH, Int 1	2/25/94 /1140	"				"	1	"	✓	✓	✓	✓	555
NWD-001 BH, Int 1	2/25/94 /1210	"				"	1	"	✓	✓	✓	✓	556
NWD-002 BH, Int 1	2/25/94 /1225	"				"	1	"	✓	✓	✓	✓	557
NWD-002 BH, Int 2	2/25/94 /1250	"				"	1	"	✓	✓	✓	✓	558
NWD-003 BH, Int 1	2/25/94 /1300	"				"	1	"	✓	✓	✓	✓	559
NWD-003 BH, Int 2	2/25/94 /1330	"				"	1	"	✓	✓	✓	✓	560
NWD-004 BH, Int 1	2/25/94 /1410	"				Brass Sleeve	1	"	✓	✓	✓	✓	561
CTS-004 SF	2/25/94	Soil				Glass Jar	1	NONE	✓	✓	✓	✓	562

Turn Around: Regular | 48 Hour | 24 Hour
Special: See Contract

Sampled By: Earl Parker Date: 2/25/94 Time:
Site Manager / Optech

Relinquished By: Earl Parker 2/25/94 1845 Date: Time:

Received By: Date: Time:

Shipped By: Date: Time:

Shipped Through:

Relinquished By: Date: Time:

Relinquished By: Date: Time:

Received By: Date: Time:

Received By: Date: Time:

Received For Lab By: Debbie Wesley 2/25 17:45 Date: Time:

Comments: Page 1 of 2

ENVIRONMENTAL SERVICES COMPANY, INC.

Branch Office:
1704 Shelby Oaks Dr. N
Memphis, TN 38134
Phone: (901) 372-9332
Fax: (901) 372-9334

Corporate Office:
13715 W. Markham
Little Rock, AR 72215
Phone: (501) 221-2565
Fax: (501) 221-1341

Branch Office:
1107 Century Ave
Springdale, AR 72764
Phone: (501) 750-1170
Fax: (501) 750-1172

Chain of Custody

Company Name: Operational Technologies Corp
Address: 4100 NW Loop 410 St. 230 San Antonio Tx 78229
Cust. Number: 1308-193
Phone Number: (210) 731-0000
Fax Number: (210) 731-0008
Location: Hot Springs ANGS

Sample Identification	Date & Time Collected	Matrix	G	C	F	Container Size & Type	No.	Preservative	VOC - SW 8240	SVOC - SW 8270	TPH - 8015 Cal Mod	Metals - SW methods	Turn Around / Special / Lab ID Number
NWD-006 SD	2/25/94/1555	Soil				Glass Jar	1	None	/	/	/	/	563
NWD-005 SW	2/25/94/1450	WATER				Bottle Set	5	VOC - HCL Met - HNO_3	/	/	/	/	9402.0105.12
NONE FOLLOWS													

Turn Around: Regular / 48 Hour / 24 Hour
Special: See Contract

Sampled By: EARL PARKER, SITE MANAGER, OpTech Date: 2/25/94 Time:

Relinquished By: Earl Parker Date: 2/25/94 Time: 1745

Received By: Date: Time:

Shipped By: Date: Time:

Shipped Through:

Relinquished By: Date: Time:

Received By: Date: Time:

Relinquished By: Date: Time:

Received By: Date: Time:

Received For Lab By: Debbi Wesley Date: 2/25 Time: 17:45

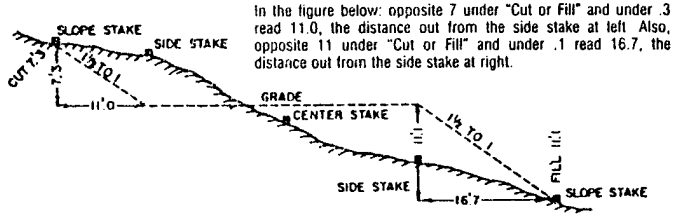
Comments: PAGE 2 of 2

APPENDIX H

FIELD NOTES

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width. Side Slopes 1½ to 1.



In the figure below: opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.

Cut or Fill	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	Cut or Fill
	Distance out from Side or Shoulder Stake										
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

FED EX 134264861

"Rite in the Rain"
ALL-WEATHER WRITING PAPER ®

Name EARL PARKER
OPTECH
Address 4100 NW LOOP 410
SAN ANTONIO TX
Phone (210) 731-0000

Project HOT SPRINGS ANGS
H[redacted] -
1308-193

"Rite in the Rain"—a unique all-weather writing surface created to shed water and to enhance the written image. Makes it possible to write sharp, legible field data in any kind of weather.

a product of

J. L. DARLING CORPORATION
TACOMA, WA 98421-3696 USA

CONTENTS

PAGE NO.	REFERENCE	DATE

HOT SPRINGS ANGS
1308 - 193

TRAVEL

1000 DEPART for Airport. Earl and Mark Hanson

1530 Arrive at Little Rock Municipal Airport.

Get Rental Car and depart for Lab to obtain sample kit.

1610 Arrive at Environmental Services Co, Inc. And meet with Debra Woosley. Go over Analytical program. Obtain ice chests and sampling bottles.

1645 Depart Lab for Hot Springs.

1800 Arrive at Hotel. Check in and meet with Joe Byrd.

DAY 1

WEDNESDAY 23 FEB 94

0800 Arrive at Hot Springs ANGS. Meet with MSG Cavnor. the POC for the Station. Earl Parker (EP), Mark Henson (MH), Joe Byrd (JB) from OpTech. Brief MSG on the investigation. He gives us a room to operate from.

0830 Walk sites. No serious obstructions at any AOC. Gas line at Current Temporary Waste Storage AOC (CTS-AOC).

0900 MH and JB unload VAN and prepare for staking AOCs.

EP. phone Mat Alexander to inform him of our progress. Find out on Arrival of HAZWRAP representative.

E.P. phone Quin Baber at B&F Engineering to coordinate meeting w/ Registered Geologist And Surveyors.

E.P. Phone Scott Anderson - Anderson Engineering Consultants (Drillers) to coordinate activities. Drillers have delivered 8 drums already to site. Will Arrive to drill tomorrow (24 FEB) At 9:00 AM to drill.

1000 Stake boring locations At the AOCs.

WEATHER:

Cool, cloudy and windy. TEMP: 40's. Overcast. Forcast Cool and windy today. Hi: Low 50's turning partly cloudy by Afternoon. No rain in the forcast. Soil is saturated from rain over the past 2 days.

1030 hrs.

SAFETY BRIEFING:

Given by Earl Parker OpTech

Attending Mark Henson OpTech

Joe Byrd OpTech

Mark Henson Assigned: Site Safety Officer

Discuss site conditions And what will be covered in Safety briefing for drillers

1100 Go to B&F Engineering to meet with Quin Baber (Reg Prof. Geologist) and John Thorton (Surveyor). Discussed sampling program and when he will come out to verify and certify soil descriptions. He will come out at least twice per day; at 11 am and 5 pm to check samples and descriptions.

Met with John Thorton on surveying. Crew will come out on Monday at 7:30 am to go over sampling locations and identification.

1200 Go to Lunch

1300 Return to Station.
Picked up supplies ie Wheelbarrow, hoe, breaker bar for grouting and drilling.

1330 Called Matt Alexander to confirm

HAZWRAP Arrival. Says rep may be in this afternoon.

MH working on GC
JB decon sleeves, caps, samplers

1420 David Bunn from HAZWRAP arrives at Station.

MH continues to work on GC
JB decons equipment. wraps in foil after dry.

1530 JB breaks through asphalt at side of hand Augers

1635 E.P. and J.B. begin to depart Area
David Bunn departs site.

1645 E.P. and JB depart site.
M.H. works more on GC.
We go to purchase last supplies.
Check on Fed-Ex drop for Samples.

1700 Arrive at Hotel, call driller. California sampler has not yet arrived at drillers office.

1705 Call John Morris and Matt Alexander and inform them of sampler situation.

Matt calls supplier and will have a sampler sent to the Hotel for next day AM pickup (Thu -24 Feb).

Call driller to inform him of the situation. He will arrive on schedule. We will pick up sampler at 9:30 AM and then continue to proceed.

1820 Mark Henson checks in from Station. Has good 1PPM calibration on field G.C. Will be ready to proceed in the morning.

Matt Alexander's package w/ work plans arrive along with HSP sign sheets. Hazco regulator arrives FED-EX.

2030 Begin to prepare sample packages for field sampling. Prepare baggies, teflon, aluminum foil squares and sample labels.

2400 Lights out for the day.

Earl Ebaugh 2-23-94 (11.5 hrs)

THURS DAY 2 24 FEB 94

0710 E.P., J.B, And MH Arrive At Site. Begin to set up for operations.

0800 Safety Briefing
SSO Mark Henson } OpTech
Earl Parker
Joe Byrd

Discussed daily Activities, HSA drilling And sampling along NE Fence line AOC. Discussed barriers, entry, hearing protection, env hazards. Will have another Safety Briefing for drillers.
WEATHER
Clear, Sunny, Cool
Hi: Mid 50's
Light winds. Should be a nice day.

0815 EP And JB go to set up over NE Fence Line AOC.
Set up decon station And sample table.

0820 Paul Bunn Arrives At Site.

0840 Set up over NEF 005 BH

Calibrate PID 100 PPM Isobutylene
Using a HNu DL-101.

0910 Drillers arrive at Station. Spoon has not Arrived. Have a Safety Meeting with drillers.
Earl Parker gives briefing to
Dennis Young } Anderson Drilling.
James Hargrove
Sign compliance form. Discuss hazards And history of CTS - AOC.

0920 Begin sampling
NEF 005 BH
Interval 1 0.0' - 1.0' BLS
PID BG - 1.2 PPM -
Opening - 1.2 PPM
ATHA= 0.0 PPM
Recovery = 100%
Lt. Brown to yellow clayey silt, silt, and sandy silt. Many Angular slate and Sandstone fragments. No odor. Slightly moist.

0940 NEF 005 BH INT 2
Interval 1.0'-2.0' BGS
PID = 1.2 BG
1.2 Opening
ATHA : 1.1 PPM
Recovery : 100%
Lt. Brown to yellowish clay and silt with some sand and small Angular rock grains. Moist and moderately cohesive. Silty clay. No odor. Soft Bedrock interface. HA refusal.

1020 Spoon Arrives at HOTEL. Mark Henson goes to the Hotel to get the spoon. Break down table at NEF 006 and move to CTS Area. Have the drillers move equipment to CTS area.

1100 Drillers set up over CTS-003 BH
Interval 1
0.0-1.5' BGS
SPT 0.0'-0.5' - 10
0.5'-1.0' - 4
1.0'-1.5' - 5

PID OPENING 1.0 PPM BG
25.0 PPM Opening
Poorly sorted fill material. Silty, sandy matrix with rounded to Angular chert and gravel material. Slightly moist. No odor

ATHA : 13.4 PPM
Recovery : 75%

Interval 2
1.5'-3.0' BGS

	SPT	
SP 3.0'-3.5'	5	- 1.5'-2.0'
SP 3.5-4.0'	18	- 2.0'-2.5'
	50	- 2.5'-3.0'

Pid opening 1.0 PPM
24.5 PPM Pid Opening
ATHA : 7.8 PPM
% Recovery : 90%
Lt. Brown to Lt. gray sandy silt becoming A silty clay near bottom. Sandy silt is loose and slightly moist. Silty clay is lighter and very cohesive. Many Angular rock fragments throughout. No odor.

1130 Move to CTS-002 BH

Interval: 0.0-1.5' BLS INT 1

STP

0.0-0.5' - 4

0.5-1.0' - 8

1.0-1.5' - 9

PID = 0.8 BG

= 28.5 Opening

ATHA: 6.1 PPM

% Recovery: 100%

Brown, very poorly sorted fill material Sandy, silty clay. Very moist and cohesive with Abundant medium gravel particles And some larger cobble particles. No odor. Becoming more sandy at the bottom.

Interval: 1.5'-3.0' BLS Int 2

SPT

1.5'-2.0' - 9

2.0'-2.5' - 22

2.5'-3.0' - 50+ At 2.7' BLS

PID = 0.8 PPM

= 4.7 PPM Opening

ATHA = 4.7 PPM

% = 100% Recovery

Lt. Brown sandy, clayey, silt. Slightly moist And cohesive. Some larger sand grains and Angular small to medium gravel. Probable fill material More clayey And cohesive At the bottom.

1220 HRS Setting up on CTS 001 BH

Interval 0.0-1.5' BLS

SPT

0.0-0.5' = 8

0.5-1.0' = 24

1.0-1.5' = 48

PID = 0.8 PPM

= 7.4 PPM

ATHA : 4.3 PPM

% Recovery: 100%

Brown to gray sandy silt, mottled. Very cohesive And moist. Very poorly sorted with Abundant small gravel and sand grains. Becomes more consolidated clay at bottom.

1305 Drillers finished at CTS AOC. Break to decon Area to Steam clean Augers. Grout holes. Prepare drillers report

1315 1.5 hrs drilling
0.5 hrs Decon
0.5 hrs Grout
1.5 Standby
4.0 hrs on Site.

Drillers grout holes, decon augers, drum decon water, and depart site.

1330 JB goes to get more ice for samples. EP calls Matt Alexander for check in and briefing on progress. David Bunn departs site for an hour or so.

1400 E.P. and J.B return to NorthEast and East Fence line AOC. Recalibrate PID using 100 PPM Isobutylene

NEF 004 BH INT 1
Interval 0.0-1.0' BLS
Bedrock at 0.8' BLS
PID = 0.8 BG
= 0.9 Opening
ATHA: 0.8 PPM
Recovery: 100%

Lt. Brown to yellowish silt, clayey silt. Sandy silt. Some small angular gravel. Mostly dry and not cohesive. No odor. Bedrock is soft. HA and Post hole refusal.

NEF 003 BH INT 1
0.0-1.0' BLS
PID = 0.8 BG
1.8 Opening
ATHA: 0.7 PPM
Recovery: 100%
Lt. Brown silt, clayey silt and sandy silt. small Angular gravel. Slightly cohesive. No odor. Very poorly sorted with larger angular rock fragments throughout.

NEF 003 BH (Int 2 - Pg 17)
1.0-2.0' BLS
PID = 0.8 PPM NOT SENT
= 1.3 PPM TO
ATHA: 1.6 PPM LAB AS
Recovery: 100% SECOND INT.
Lt. Brown to yellow sandy silt. becoming more silty and clayey with sand

grains. Becomming more consolidated at the bottom. HA refusal at 2.0'

1510 NEF-002 BH Interval ~~2~~ 1 EP
0.0-~~2~~1.0' BLS EP
PID = 0.9 BG
= 1.1 Open Sampler
ATHA: 1.2 PPM
% Recovery: 100%

Brown silty clay. Abundant sand and angular small gravel particles. Moist and cohesive. Some larger, angular rock fragments. Root fragments. No odor.

1520 NEF-002 BH Interval 2
2.0'-3.0' BLS
PID: 1.0 BG
: 2.1 PPM Open Sampler
ATHA: 1.1 PPM
% Recovery: 100%

Lt. Brown silty clay becomming more silty and sandy near the bottom. Many sand and angular small gravel particles.

Becomming less moist and cohesive at depth. HA refusal at 3.0'

1540 NEF-001BH Int 1
0.0'-1.0' BLS
PID: 0.8 BG
= 0.8 Open Sampler
ATHA: 0.7 PPM
% Recovery: 100%

Brown silty clay, sandy clay with sand and angular gravel particles throughout. Root fragments. Moist and cohesive. Some chert particles. No odor. Becomming saturated at 0.8' BLS.

1555 NEF-001BH Int 2
Interval 1.75'-2.75' Auger Refusal. Bedrock. (Soft)
PID = 0.8 BG
: 0.9 Open Sampler
ATHA: 1.1 PPM
% Recovery: 100%

Lt. Brown silty clay with sand and angular small gravel fragments. Saturated but very cohesive clay and silt.

HA Refusal at 2.75' soft bedrock.
Water in hole once HA removed.

1610 WEF-003 BH Int 2
Int 2.0'-3.0' BGS
PID = 0.8 BG
= 1.3 PPM Sampler Opening
ATHA = 1.1 PPM
% Recovery = 100 %
Lt. Brown to yellowish sandy silt. clayey silt. Many sand and small gravel particles with larger angular rock fragments near the bottom. HA refusal at 30'.

1630 Complete sampling for the day
E.P. prepares Chain of Custody and samples for shipment.
J.B. Breaks down decon station and grouts holes.

1715 E.P. departs site for FED-EX to ship samples.
Debriefing from David Dunn
HAZWRAP Auditor.

Debriefing Comments:
+ No deviations (unauthorized) were noted or observed.
- REPORTED TO ANGRC
  - Should not use zip-locks for GC samples.
  - Should not use duct tape to secure caps on soil samples
  - Should use solvents to calibrate field GC in areas of likely solvent contamination.
- Not to be Reported to ANGRC
  - Should set up decon station and sample prep table @ upwind of drill rig
  - Should let equipment completely Air dry before loading sleeves.
- Other comments
  - Excellent sample preparation table protocols and procedures. Best he has seen.
  - GC SOP is very good idea. And SOP was followed.

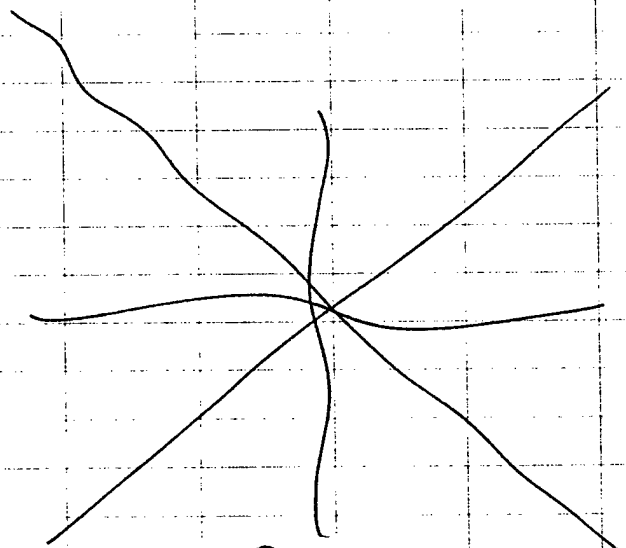
HAZWRAP AUDITOR will depart HOT SPRINGS tonight.

1735 Sign samples over to FED-EX. Return to Station.

M.H. performing remaining Analysis on field GC.

Clean-up and pack up for the night.

1820 E.P., J.B., and M.H. depart Site



Earl E Parker III 2/24/94 (11 hrs)

FRI DAY 3 25 FEB 94

0730 E.P., J.B., M.H. Arrive at Site.
E.P. prepares daily report and FAXes to John Morris.

J.B. prepares for operations.
M.H. GC set-up.

0830 Call Debra Woosly (Lab) to inform of yesterdays shippment and on what to expect tomorrow

Call Scott Anderson (Driller) to thank him and inform him of the great job his drillers did.

0900 Prepare to sample for the day. Begin at Old Drum Storage AOC.

0930 ODS-004 BH Int L
0.0'-1.0' BGS BEDROCK at 1.0'
PID = 1.0 PPM BG
= 1.0 PPM Open Sampler.
ATHA : 0.9 PPM
% Recovery : 90%

Asphalt and basematerial to 0.5' BLS. Becomes very poorly sorted fill to dark moist sandy silt to bedrock.

0950 ODS-002 BH Int 1
1.0 - 1.8' BLS (Bedrock at 1.8')
PID = 0.8 BG 0.0-1.0 Asphalt and
= 0.8 Sampler Asphalt road base.
ATHA:
% Recovery = 95%
Very poorly sorted fill material. Coarse sand and gravel becoming dark, moist, poorly sorted sandy silt near bottom. Many large rock fragments.

1010 ODS-001 BH
Int 1 0.0'-5.0' BGS Bedrock (5.1' BLS)
PID: 0.9 BG
= 1.1 Sampler Opening
ATHA: 3.4 PPM
% Recovery: 100%
Int 2 ODS-001 BH - Saturated below 1.0' BLS
4.0' - 5.0' BLS
PID = 0.8 BG ATHA = 1.0 PPM
= 0.8 Open Spoon % Recov = 100%
Dark, very poorly sorted soil. to lgt. Gray very consolidated silty clay. Saturated.

1145 ODS-003 BH Int. 1
0.0'-0.8' BGS Bedrock 0.8'
PID = 0.9 BGS
= 4.0 BGS
ATHA: N/A No Soil
% Recovery: 60%
Very dark, organic rich soil. Silty to sandy soil with abundant root fragments and organic material. Gravel and small gravel.

1200 Move to Northwest Ditch AOC

1210 NWD-001 BH Int 1
0.0 - 0.8' BGS Hand Auger Refusal
PID = 1.2 BG
= 1.2 PPM Open Sampler
ATHA = 1.9
% Recovery = 90%
Dark, organic rich silty sandy soil with more clay. Moist and more consolidated. Bedrock exposures nearby. Slate fragments. Slate bedrock encountered with Post Hole digger at 0.8'.

1230 NWD 002 BH Int 1

Int 0.0 - 1.0

PID = 0.8 BG

= 0.8 Open Spoon

ATHA :

% Recovery = 95%

Dark, organic rich soil. Sandy silt. Clayey silt. Moderately cohesive and moist. Many small gravel particles.

NWD - 002 BH Int 2

Int 3.0' - 4.2' Bedrock at 4.2'

PID : 0.8 PPM

= 1.0 PPM Open Sampler

ATHA : 5.9 PPM

% Rec : 90%

Darker brown silty, sandy material w/ clay. Cohesive, slightly moist.

1300 NWD - 003 BH

Int 0.0' - 1.0'

PID = 0.8 BG

0.8 PPM Open Sampler

ATHA : 0.9

% Recovery : 100%

Dark brown, organic rich soil. Mostly poorly sorted sand, silt, and gravel soil.

NWD - 003 BH Int 2

Int 4.2 - 5.2' BLS Bedrock at 5.2' BLS

PID = 0.8 BG

= 0.8 Open Spoon

ATHA : 1.0 PPM

% Recovery = 100%

Saturated at 2.3' BLS. Becoming Lt. Brown to tan clayey silt. Mostly silty clay at bottom. Saturated and consolidated.

NWD - 004 BH Int 1

Int 0.0 - 1.0'

Bedrock at 1.0' Auger Refusal & Post-Hole Refusal

PID = 0.8 BG

= 0.8 Open Sampler

ATHA : 0.8 PPM

% Recovery : 90%

Soil. Poorly sorted, dark, organic rich soil. Sandy silt. Gravel.

1410 Complete Sampling at AOCs boreholes
J.B. Begins to Grout borings

E.P. & M.H. obtain NWD-005 SW
and NWD-005 SD.

Surface Water Sample
Field Parameters
Temp 64.1° F
Cond: 16:50 at x10 at 64°
pH: 9.45 at 64°

Calibrated pH meter w/ 7.0 ph buffer
and 10 pH buffer solution. Took 6
iterations w/ zero & slope to stabilize.

1510 Obtained Surface water samples from
area of Culvert.

2	40 ml vials	HCl	VOCs
1	1 qt Jar	—	SVOCs
1	bottle	1:1 NO_3	Metals
1	1Qt Jar	—	TPH

Obtained Sediment Sample from
Culvert Area

1530 Obtained CTS-004 SF Surface
Sediment Sample.

Completed Sampling at Hot Springs ANGS

1540 Begin Chain-of-Custody for
sampling.

1545 Quin Barker arrives at the Site to
describe the last set of soil samples.

E.P. continues to prepare samples for
shippment.
J.B. Grouts holes and prepares waste
drums. Moving drums to storage
Area.
MH continues to Analyze samples on
field GC.

1615 Finish preparing samples. E.P. will
drive samples w/ extra ice chests
to Lab in Little Rock.

J.B and M.H. pack all supplies

in the classroom for the weekend. Will pack all GC items in the van to practice on the weekend.

1630 E.P. departs Station for Little Rock.

1730 Arrive at Environmental Services Company, Inc. to deliver samples. Custody relinquished to Debra Woosley at 1745 hrs. Depart Lab.

1845 Arrive back at Hotel.

Review word that equipment for follow on work has Arrived.

1900 Conclude work related activities.

Earl E Parker 2/25/94 (11.5 hrs)

SAT DAY 4 26 FEB 94

1100 Review GC data.

1200 End of Hot Springs ANGS work related experience.

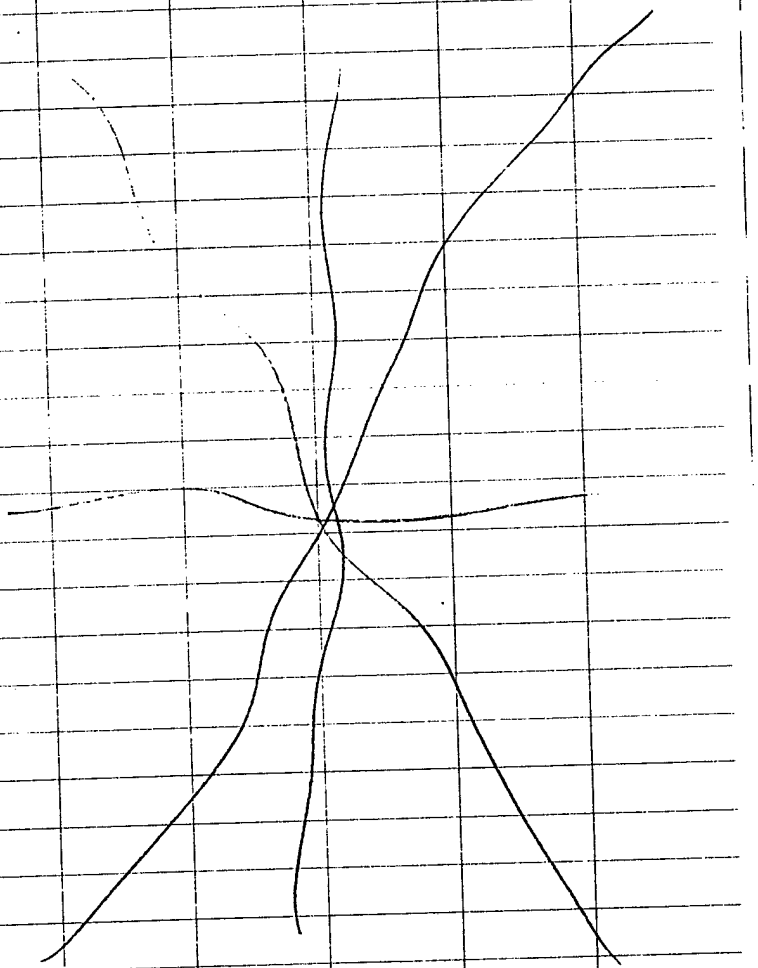
Earl E Parker 2/26/94 (1 hr)

SUN

DAY 5

27 FEB 94

No Work Related Activities



2/27/94

MON

DAY 6

28 FEB 94

0730 Arrive At Station to pack supplies And complete demobilization.

0740 B&F Engineering Surveyors Arrive At Site Walk through the AOCs And show All the sampling locations to be surveyed.

0800 Begin to load the VAM.

0830 Secure drums in storage Area

Drums: 3 TOTAL

1 - DECON WATER 3/4 full

1 - Soil Cuttings

NWD - 002 BH
NWD - 003 BH
NWD - 004 BH
ODS - 002 BH
ODS - 004 BH

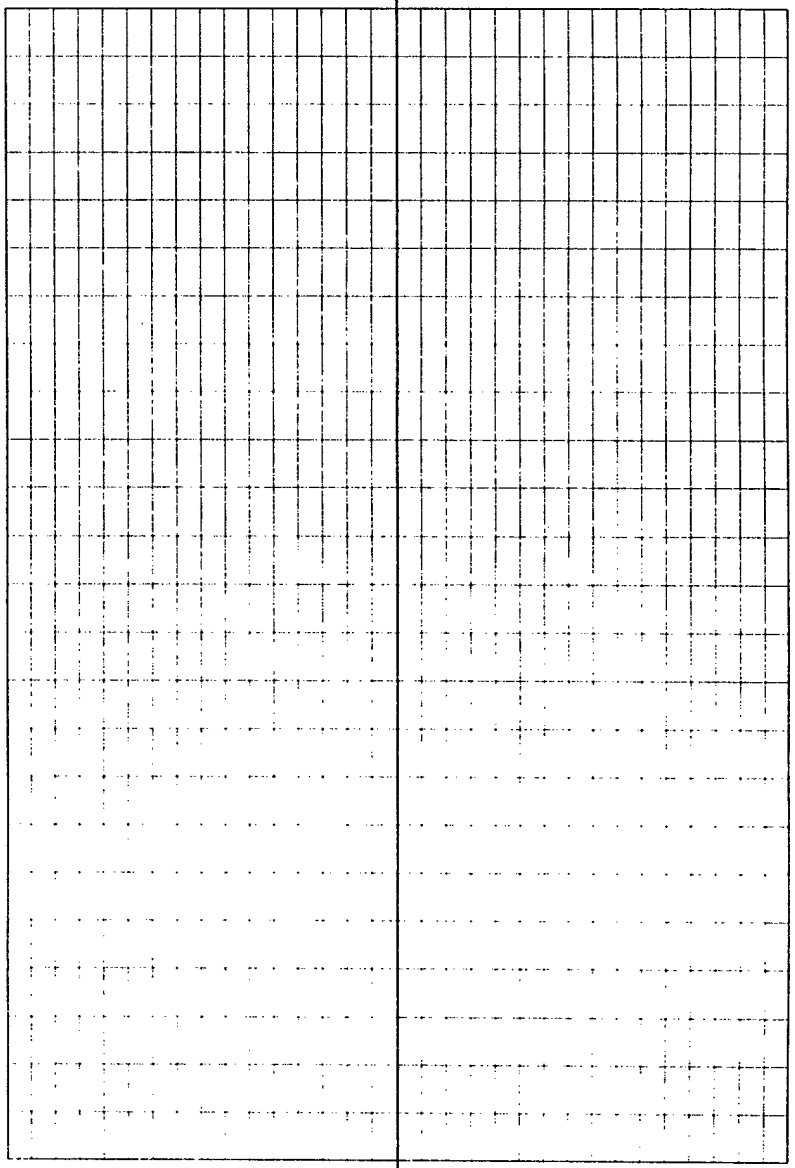
} 2 ft³

1 - Soil Cuttings

CTS - 001 BH
CTS - 002 BH
CTS - 003 BH

} 1 ft³

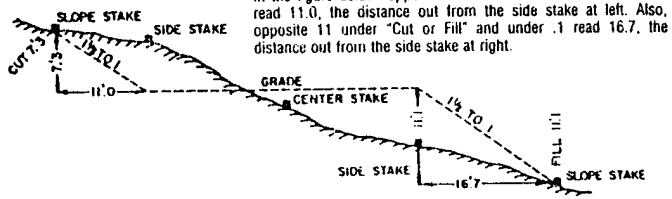
0915	Debrief cleanup.	MSG Site	Cavnar Clean	on site
0930	DEPART	Hot Springs	ANGS	



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width. Side Slopes 1½ to 1.

In the figure below opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.



Cut or Fill	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	Cut or Fill
	Distance out from Side or Shoulder Stake										
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.9	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

ENV. Scientist

Name Joe Byrd, Jr.

OP Tech, Inc.

Address 4100 N.W. loop 410, # 230

San Antonio, TX 78229

Phone (210) 731-0000

Project Hot Springs

CONTENTS

PAGE NO.	REFERENCE	DATE

Wednesday

February 23 1994

(1)

0750 Leave hotel

0810 At station

Check-in w/ MSgT Cannon
Tour site.

0845 Unload van into storage Room

Decon'ing Equipment

1025 E.P. & I go out to stake & mark location

1030 Safety Meeting
EP, MH, SB

Appointed MH as SSO
- Discussed drill safety
- Route to Hospital

Thursday

24 February 1994

0615 Leave hotel

Eat breakfast (35 min)

0710 On base.

Loading Van

0800 Safety Mtg. EP, MH, JB

0810 at NEF Site
Set-up & drill.
hand auger holes

Driller Arrive

Move to CTS site
Sample 3 holes

1330 Go to WALMART for Supplies

1050 At Engineers & Surveyors
Met Quinn Baber & John
Thornton

1135 Go to Fedex

1200 Lunch

1254 at Station.

Decomming

1544 Go out start busting
Asphalt on
Old Drum Storage Area
(ODS)

1635 Leave Base

At Walmart
Get Supplies

1715 at Hotel

Jan Byrd

1405 Move back to NEF Site

Do hand auger borings
NEF-001 BH
NEF-002 BH
NEF-003 BH
NEF-004 BH
NEF-005 BH

1645 Grout holes. Clean-up Location

1715 Break down Decon AREA. Load VAN

1800 Leave base

1815 At Hotel

Jan Byrd Jr

Friday

(5)

25 February 1994

0630 Leave hotel

Eat Breakfast (45 min)

0728 On Base

Set up Decon AREA at old Wash RACK

Taking Samples at SIZE ODS & NWF.

Grout holes

1530 PACK-up equipment

1600 PREPARE samples for delivery to LAB

UnLoad VAN into STORE Room. WAIT for GC. data

Early drive samples to Little Rock

1840 Leave Base

1900 At Hotel

Joe Byrd Jr

MONDAY

(7)

28 February 1954

0730 QN Base

Packing Van
&
Double checking all
site to make sure
all is clean

0918 Team back.

At hotel