# Remedial Action Report:

# BLM Red Top Retort Site
# Wood River, Alaska

**VOLUME II**

**Prepared for AQE, Inc.**

**Prepared by**
**P. Jeffrey Burton**
**Quest Environmental**

**January 1995**

**AQE TO1**

**QE 5231**

Laucks Since 1908
Testing Laboratories, Inc.
940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX (206) 767-5063

Chemistry, Microbiology, and Technical Services

# Certificate of Analysis

Work Order# : 94-10-004
DATE RECEIVED : 10/01/94
DATE OF REPORT: 10/12/94

CLIENT: AQE, Inc.
220 Center Court
Anchorage, AK 99518

ATTN : Cliff Elsman

Work ID : Red Top Mine
Taken By : Client
Transported by: Client
Type : Soil

SAMPLE IDENTIFICATION:

| | Sample Description | Collection Date | | Sample Description | Collection Date |
|---|---|---|---|---|---|
| 01 | 94RTM10-01 | 09/30/94 11:00 | 12 | 94RTM10-12 | 09/30/94 11:00 |
| 02 | 94RTM10-02 | 09/30/94 11:00 | 13 | 94RTM10-13 | 09/30/94 11:00 |
| 03 | 94RTM10-03 | 09/30/94 11:00 | 14 | 94RTM10-14 | 09/30/94 11:00 |
| 04 | 94RTM10-04 | 09/30/94 11:00 | 15 | 94RTM10-15 | 09/30/94 11:00 |
| 05 | 94RTM10-05 | 09/30/94 11:00 | 16 | 94RTM10-16 | 09/30/94 11:00 |
| 06 | 94RTM10-06 | 09/30/94 11:00 | 17 | 94RTM10-17 | 09/30/94 11:00 |
| 07 | 94RTM10-07 | 09/30/94 11:00 | 18 | 94RTM10-18 | 09/30/94 11:00 |
| 08 | 94RTM10-08 | 09/30/94 11:00 | 19 | 94RTM10-19 | 09/30/94 11:00 |
| 09 | 94RTM10-09 | 09/30/94 11:00 | 20 | 94RTM10-20 | 09/30/94 11:00 |
| 10 | 94RTM10-10 | 09/30/94 11:00 | 21 | 94RTM10-21 | 09/30/94 11:00 |
| 11 | 94RTM10-11 | 09/30/94 11:00 | 22 | 94RTM10-22 | 09/30/94 11:00 |

FLAGGING:

The flag "U" indicates the analyte of interest was not detected, to the limit of detection indicated.

ATTACHMENTS:

Following presentation of sample results, the following appendices are attached to this report:

Appendix A: Method Blank Report
Appendix B: MS/MSD and Duplicate Report

This report is submitted for the exclusive use of the person, partnership, or corporation to whom it is addressed. Subsequent use of the name of this company or any member of its staff in connection with the sale, use, or advertisement of any product or process must be granted in writing by the company. This company assumes responsibility only for the due performance of inspection and/or analysis in good faith and according to the rules of the trade and of science.

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CLIENT : AQE, Inc.

# Certificate of Analysis

Work Order# : 94-10-004

Appendix C: Chain-of-Custody

Unless otherwise instructed all samples will be discarded on 11/17/94

Respectfully submitted,
Laucks Testing Laboratories, Inc.

J. M. Owens

J. M. Owens

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CLIENT : AQE, Inc.

# Certificate of Analysis

Work Order # 94-10-004

TESTS PERFORMED AND RESULTS:

| Analyte | Units | 01 | 02 | 03 | 04 |
|---|---|---|---|---|---|
| Mercury (Method 7471) | mg/kg DB | 0.1 | 0.5 | 0.5 | 0.4 |
| Total Solids | % | 80.2 | 71.8 | 74.1 | 78.9 |

| Analyte | Units | 05 | 06 | 07 | 08 |
|---|---|---|---|---|---|
| Mercury (Method 7471) | mg/kg DB | 0.3 | 8.7 | 53. | 97. |
| Total Solids | % | 92.9 | 81.9 | 84.4 | 61.8 |

| Analyte | Units | 09 | 10 | 11 | 12 |
|---|---|---|---|---|---|
| Mercury (Method 7471) | mg/kg DB | 23. | 18. | 5.6 | 0.3 |
| Total Solids | % | 77.1 | 87.0 | 72.0 | 94.1 |

| Analyte | Units | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|
| Mercury (Method 7471) | mg/kg DB | 2.5 | 30. | 2.9 | 5.2 |
| Total Solids | % | 55.6 | 76.7 | 93.3 | 83.0 |

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CLIENT : AQE, Inc.

# Certificate of Analysis

Work Order # 94-10-004

TESTS PERFORMED AND RESULTS:

| Analyte | Units | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|
| Mercury (Method 7471) | mg/kg DB | 12. | 39. | 40. | 0.2 |
| Total Solids | % | 83.9 | 81.9 | 54.7 | 94.3 |

| Analyte | Units | 21 | 22 |
|---|---|---|---|
| Mercury (Method 7471) | mg/kg DB | 3.1 | 11. |
| Total Solids | % | 90.4 | 51.3 |

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# APPENDIX A

## Method Blank Report

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Chemistry, Microbiology, and Technical Services

**Quality Control Report**
**Method Blanks for Work Order 9410004**

| Blank Name | Samples Verified | Test Description | Result | Units | Co L |
|---|---|---|---|---|---|
| B100194_HG_S01 | 1-5,12-13,20 | Mercury by Cold Vapor | 0.10 U | mg/kg DB | |
| B100394_HG_S01 | 6-11,14-19,21-22 | Mercury by Cold Vapor | 0.10 U | mg/kg DB | |

A method blank can validate more than one analyte on more than one work order. The method blanks in this report may validate analytes not determined on this work order, but nonetheless determined in the associated blank.

Because they validate more than one work order, method blank results are not always reported in the same concentration units or to the same detection limits that are used for sample results.

* = blank exceeds control limit

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**APPENDIX B**

MS/MSD, MS/Dup and Duplicate Report

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**Quality Control Report**
**MS/MSD Report for Work Order 9410004**

| MS/MSD Name | Sample Fractions Verified | MS/MSD Sample | Analyte | Percent Recovery MS | Percent Recovery MSD | RPD | Cont. LCL |
|---|---|---|---|---|---|---|---|
| K100194_HGS01 | 1-5,12-13,20 | 9410004-01 | Mercury | 115 | 114 | 1 | 65 |
| K100394_HGS01 | 6-11,14-19,21-22 | 9410004-06 | Mercury | 100 | 113 | 12 | 65 |

* = Value Exceeds Control Limit
RPD = Relative Percent Difference
LCL = Lower Control Limit
UCL = Upper Control Limit
-1 for recovery value indicates that recovery could not be calculated

An MS/MSD pair can validate the results for more than one work order. For this reason, results for analyte not requested on this work order may appear in this MS/MSD report.

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Chemistry, Microbiology, and Technical Services

Quality Control Report
Duplicate Report for Work Order 9410004

| Duplicate Name | Sample Fractions Verified | Sample | Analyte | RPD | Limit |
|---|---|---|---|---|---|
| D100394_TSS01 | 1-10 | 9410004-01 | Total Solids | 9.5 | 30 |
| D100394_TSS02 | 11-20 | 9410004-11 | Total Solids | 5.6 | 30 |
| D100394_TSS03 | 21-22 | 9410004-21 | Total Solids | 0.44 | 30 |

* = Value Exceeds Control Limit
RPD = Relative Percent Difference
L = RPD control limit for this analyte is 5x the detection limit. The value appearing in the RPD column is the absolute difference of the duplicates.
-1 for recovery value indicates that recovery could not be calculated

A duplicate pair can validate the results for more than one work order. For this reason, results for analytes not requested on this work order may appear in this duplicate report.

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# APPENDIX C

## Chain-of-Custody

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# CHAIN OF CUSTODY RECORD

PROJ. No.

PROJECT NAME: AQE - RED TOP MINE

SAMPLER (SIG.): Gabriele Mehnert

| DATE 1994 | TIME | PRES. | SAMPLE No. | NUMBER OF CONTAINERS | 7471 - MERCURY | | | | | | LOCATION / PURPOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sept. 30 | 1100 | REF TO 4°C | 94RTM10-01 | 1 | 1 | | | | | | SITE LOC. |
| | | | 94RTM10-02 | 1 | 1 | | | | | | SITE LOC 1E |
| | | | 94RTM10-03 | 1 | 1 | | | | | | SITE LOC. 17 |
| | | | 94RTM10-04 | 1 | 1 | | | | | | SITE LOC. 16 |
| | | | 94RTM10-05 | 1 | 1 | | | | | | SITE LOC 1C |
| | | | 94RTM10-06 | 1 | 1 | | | | | | SITE LOC. 1 |
| | | | 94RTM10-07 | 1 | 1 | | | | | | SITE LOC. 1 |
| | | | 94RTM10-08 | 1 | 1 | | | | | | SITE LOC. 2 |
| | | | 94RTM10-09 | 1 | 1 | | | | | | SITE LOC. 8 |
| | | | 94RTM10-10 | 1 | 1 | | | | | | SITE LOC. 6 |

AQE, INC 220 Center Court Anchorage, AK 99518 ATT

SHIP TO (LABORATORY AND ADDRESS): LAUCKS 940 So. HARNEY ST SEATTLE, WASH 98108

BILL TO: AQE

HAZARDS ASSOCIATED WITH SAMPLES: MERCURY

| RELIQUISHED BY: (SIG., DATE, TIME) | RECEIVED BY: (SIG., DATE, TIME) |
|---|---|
| Gabriele Mehnert Sept. 30, 1994 | Tom Johnson 10/1/94 |
| RELIQUISHED BY: (SIG., DATE, TIME) | RECEIVED BY: (SIG., DATE, TIME) |
| RELIQUISHED BY: (SIG., DATE, TIME) | RECEIVED BY: (SIG., DATE, TIME) |
| RELIQUISHED BY: (SIG., DATE, TIME) | RECEIVED BY: (SIG., DATE, TIME) |

TAT AND DATA LEVEL: 24 HRS LE

DELIVER REPORTS TO: DAVE HENRY

QUEST ENVIRONMENTA
220 CENTER COURT
ANCHORAGE, AK 99518
(907) 563-0050, 563-0085 FAX

SHEET 1 OF 3

# CHAIN OF CUSTODY RECORD

PROJ. No.

PROJECT NAME: AQE - RED TOP MINE

SAMPLER (SIG.): Gabriela Mehrert

| DATE '94 | TIME | PRES. | SAMPLE No. | NUMBER OF CONTAINERS | 7471 - Mercury | | | | | | LOCATION / PURP |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sept. 30 | 1100 | REF. TO 4°C | 94 RTM 10-11 | 1 | 1 | | | | | | SITE LOC. |
| | | | 94 RTM 10-12 | 1 | 1 | | | | | | SITE LOC. |
| | | | 94 RTM 10-13 | 1 | 1 | | | | | | SITE LOC. |
| | | | 94 RTM 10-14 | 1 | 1 | | | | | | SITE LOC. |
| | | | 94 RTM 10-15 | 1 | 1 | | | | | | SITE LOC. |
| | | | 94 RTM 10-16 | 1 | 1 | | | | | | SITE LOC. |
| | | | 94 RTM 10-17 | 1 | 1 | | | | | | SITE LOC |
| | | | 94 RTM 10-18 | 1 | 1 | | | | | | SITE LOC. |
| | | | 94 RTM 10-19 | 1 | 1 | | | | | | SITE LOC. |
| | | | 94 RTM 10-20 | 1 | 1 | | | | | | SITE LOC |

SHIP TO (LABORATORY AND ADDRESS): LAUCKS, 940 So. Harney St., Seattle, WA 98108, (206) 767-5060

BILL TO: AQE

HAZARDS ASSOCIATED WITH SAMPLES: MERCURY

RELIQUISHED BY: (SIG., DATE, TIME) Gabriela Mehrert Sept. 30, 1994 → RECEIVED BY: (SIG., DATE, TIME) 9/1/94

TAT AND DATA LEVEL: 24 HR. LEVEL

RELIQUISHED BY: (SIG., DATE, TIME) → RECEIVED BY: (SIG., DATE, TIME)

DELIVER REPORTS TO: DAVE HENRI

RELIQUISHED BY: (SIG., DATE, TIME) → RECEIVED BY: (SIG., DATE, TIME)

QUEST ENVIRONMENT
220 CENTER COURT
ANCHORAGE, AK 99518
(907) 563-0050, 563-0085 FAX

RELIQUISHED BY: (SIG., DATE, TIME) → RECEIVED BY: (SIG., DATE, TIME)

SHEET 2 OF 2

# CHAIN OF CUSTODY RECORD

PROJ. No.

PROJECT NAME: AQE- RED TOP MINE

SAMPLER (SIG.): Gabriele Meinert

| DATE '94 | TIME | PRES. | SAMPLE No. | NUMBER OF CONTAINERS | 7471 - Mercury | | | | | | LOCATION / PURPOS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SEPT. 30 | 1100 | REF. TO 4°C | 94 RTM 10-21 | 1 | 1 | | | | | | SITE LOC. 2 |
| ↓ | ↓ | ↓ | 94 RTM 10-22 | 1 | 1 | | | | | | SITE LOC. |

SHIP TO (LABORATORY AND ADDRESS): LAUCKS, 940 So. HARNEY ST, SEATTLE, WASH 98108, (206) 767-5060

BILL TO: AQE

HAZARDS ASSOCIATED WITH SAMPLES: MERCURY

| RELIQUISHED BY: (SIG., DATE, TIME) | RECEIVED BY: (SIG., DATE, TIME) |
|---|---|
| Gabriele Meinert → | [signature] 10/1/94 |
| RELIQUISHED BY: (SIG., DATE, TIME) → | RECEIVED BY: (SIG., DATE, TIME) |
| RELIQUISHED BY: (SIG., DATE, TIME) → | RECEIVED BY: (SIG., DATE, TIME) |
| RELIQUISHED BY: (SIG., DATE, TIME) → | RECEIVED BY: (SIG., DATE, TIME) |

TAT AND DATA LEVEL: 24 HRS. LEVEL

DELIVER REPORTS TO: DAVE HENRY

QUEST ENVIRONMENTAL
220 CENTER COURT
ANCHORAGE, AK 99518
(907) 563-0050, 563-0085 FAX

SHEET 2 OF 2

Analytical Technologies, Inc.

Anchorage, AK 99502, (907) 248-8273

# AQE
# 220 Center Court
# Anchorage, AK 99518

Project Manager:
**Dave Henry**

Project Name:
**Red Top Mine**

ATI Accession No.:
**410006**

Report Released By:

Charles Homestead 10-31-94

Charles Homestead, Laboratory Manager Date

Corporate Offices: 5550 Morehouse Drive San Diego, CA 92121 (619) 458-9141

# Case Narrative for 410006
## Client: AQE
## Project Name: Red Top Mine

**Sample Control**
The following samples were received in good condition on 10/04/94.
The samples were received cool and the temperature recorded on the COC.

| Client ID | Laboratory ID | | Client ID | Laboratory ID | |
|---|---|---|---|---|---|
| 94RTM10-26 | 410006 | -1 | 94RTM11-01 | 410006 | -11 |
| 94RTM10-27 | 410006 | -2 | 94RTM11-02 | 410006 | -12 |
| 94RTM10-28 | 410006 | -3 | 94RTM12-01 | 410006 | -13 |
| 94RTM10-29 | 410006 | -4 | 94RTM12-02 | 410006 | -14 |
| 94RTM10-30 | 410006 | -5 | 94RTM12-03 | 410006 | -15 |
| 94RTM10-31 | 410006 | -6 | 94RTM9001 | 410006 | -16 |
| 94RTM10-23 | 410006 | -7 | 94RTM9002 | 410006 | -17 |
| 94RTM10-24 | 410006 | -8 | 94RTM9003 | *410006 | -18 |
| 94RTM10-25 | 410006 | -9 | 94RTM9004 | 410006 | -19 |
| 94RTM13-01 | 410006 | -10 | | | |

* This is a water sample.

Samples submitted for Mercury analysis by EPA 7471 and Total recoverable petroleum hydrocarbons by EPA 418.1 were performed in the ATI-Renton laboratory due to ATI-Anchorage's scope of analytical capabilities. The results for these analyses can be found attached in appendix A.

**DRO by 8100** Analysis: 8100m

The samples were extracted on October 4, 1994. The method blanks were free of all target analytes. The water method blank surrogate was outside ATI specified control limits. There was insufficient sample to re-extract the entire QC batch, since all associated QC was deemed acceptable the data was reported.
The following surrogates were outside ATI criteria: sample 410006-2 & 7.
The samples necessitated a dilution which caused the surrogates to be unrecoverable. The surrogate recovery was qualified with the "I" flag. All associated QC was within ATI specified criteria. All sample hold times were met.

Analytical Technologies, Alaska

2000 West Intr'l Airport Rd. C6
Anchorage, Ak 99502

# SUMMARY REPORT of ANALYSIS

Client: AQE
220 Center Court
Anchorage, AK 99518

Lab Accession: 410006
Date Received: 10/4/94
Matrix: Water
Units: mg/L

Project Name: Red Top Mine
Project Number:
Project Manager: Dave Henry

Reviewed By: SMS

| Client Sample | Lab Accession # | Date Collected | % Moisture | Conc. Benzene | Conc. Toluene | Conc. Ethyl-Benzene | Conc. Total Xylene | Conc. GRO as Gasoline | Conc DRO as Diesel | Conc RRO as 10w40 oi |
|---|---|---|---|---|---|---|---|---|---|---|
| 94RTM9003 | 410006 -18 | 10/1/94 | | | | | | | 13 | |
| | | | | | | | | | | |
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| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Methods:

B.T.E.X. = 8020M.
GRO = 8015M.
DRO= 8100M.
RRO= 8100M.

Analytical Technologies, Alaska

2000 West intr'l Airport Rd. C6
Anchorage. Ak 99502

# SUMMARY REPORT of ANALYSIS

Client: AQE
220 Center Court
Anchorage, AK 99518

Lab Accession: 410006
Date Received: 10/4/94
Matrix: SOIL
Units: mg/Kg

Project Name: Red Top Mine
Project Number:
Project Manager: Dave Henry

Reviewed By: _____

| Client Sample | Lab Accession # | Date Collected | % Moisture | Conc. Benzene | Conc. Toluene | Conc. Ethyl-Benzene | Conc. Total Xylene | Conc. GRO as Gasoline | Conc DRO as Diesel | Conc RRO as 10w40 |
|---|---|---|---|---|---|---|---|---|---|---|
| 94RTM10-26 | 410006 -1 | 10/2/94 | 6.5 | | | | | | <11 | <21 |
| 94RTM10-27 | 410006 -2 | 10/2/94 | 46 | | | | | | 5800 | <740 |
| 94RTM10-28 | 410006 -3 | 10/2/94 | 41 | | | | | | <17 | <34 |
| 94RTM10-29 | 410006 -4 | 10/2/94 | 20 | | | | | | 170 | 390 |
| 94RTM10-30 | 410006 -5 | 10/2/94 | 35 | | | | | | 28 | <31 |
| 94RTM10-31 | 410006 -6 | 10/2/94 | 45 | | | | | | 730 | 140 |
| 94RTM10-23 | 410006 -7 | 10/2/94 | 47 | | | | | | 110000 | 8300 |
| 94RTM10-24 | 410006 -8 | 10/2/94 | 53 | | | | | | 3200 | 350( |
| 94RTM10-25 | 410006 -9 | 10/2/94 | 52 | | | | | | 2100 | 250( |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Methods:

B.T.E.X. = 8020M.
GRO = 8015M.
DRO= 8100M.
RRO= 8100M.

Technologies, Inc.

ATI I.D. # 410006

# DIESEL RANGE ORGANICS
## DATA SUMMARY

| | | | |
|---|---|---|---|
| CLIENT | : AQE | DATE SAMPLED | : N/A |
| PROJECT # | : | DATE RECEIVED | : N/A |
| PROJECT NAME | : RED TOP MINE | DATE EXTRACTED | : 10/04/94 |
| CLIENT I.D. | : METHOD BLANK | DATE ANALYZED | : 10/07/94 |
| SAMPLE MATRIX | : WATER | UNITS | : mg/L |
| METHOD | : AK DEC DRO | DILUTION FACTOR | : 1 |

| COMPOUNDS | RESULTS |
|---|---|
| FUEL HYDROCARBONS | <0.25 |
| HYDROCARBON RANGE | C10 - C28 |
| HYDROCARBON QUANTITATION USING | DIESEL |

| SURROGATE PERCENT RECOVERY | | | LIMITS |
|---|---|---|---|
| O-TERPHENYL | 58 | H | 60-140 |

H = Out of limits see case narrative.

Analyst [illegible] Date [illegible]
Reviewer [illegible] Date 10/7/94



Sample File : A074FC09.D

Analytical Technologies, Inc.

ATI I.D. # 410006-18

# DIESEL RANGE ORGANICS
## DATA SUMMARY

| | | | |
|---|---|---|---|
| CLIENT | : AQE | DATE SAMPLED | : 10/01/94 |
| PROJECT # | : | DATE RECEIVED | : 10/04/94 |
| PROJECT NAME | : RED TOP MINE | DATE EXTRACTED | : 10/04/94 |
| CLIENT I.D. | : 94RTM9003 | DATE ANALYZED | : 10/08/94 |
| SAMPLE MATRIX | : WATER | UNITS | : mg/L |
| METHOD | : AK DEC DRO | DILUTION FACTOR | : 1 |

| COMPOUNDS | RESULTS |
|---|---|
| FUEL HYDROCARBONS | 13 |
| HYDROCARBON RANGE | C10 - C28 |
| HYDROCARBON QUANTITATION USING | DIESEL |

| SURROGATE PERCENT RECOVERY | | LIMITS |
|---|---|---|
| O-TERPHENYL | 61 | 60-140 |

Analyst [illegible] Date [illegible]
Reviewer [illegible] Date 10/7/94



Sample File : A074FC20.D

Technologies,

ATI I.D. # 410006

DIESEL RANGE ORGANICS
QUALITY CONTROL DATA

CLIENT : AQE
PROJECT # :
PROJECT NAME : RED TOP MINE
SAMPLE MATRIX : WATER
METHOD : AK DEC DRO

SAMPLE I.D. # : BLANK
DATE EXTRACTED : 10/04/94
DATE ANALYZED : 10/07/94
UNITS : mg/L

| COMPOUNDS | SAMPLE RESULT | SPIKE ADDED | SPIKED RESULT | % REC. | DUP. SPIKED SAMPLE | DUP. % REC. | RP |
|---|---|---|---|---|---|---|---|
| DIESEL | <0.250 | 2.50 | 1.65 | 66 | 1.66 | 66 | 1 |

| CONTROL LIMITS | % REC. | RP |
|---|---|---|
| DIESEL | 60 - 140 | 30 |

| SURROGATE RECOVERIES | SPIKE | DUP. SPIKE | LIMITS |
|---|---|---|---|
| O-TERPHENYL | 79 | 77 | 60 - 140 |

Analyst [illegible] Date [illegible]
Reviewer [illegible] Date 101794



Sample File : A074FC09
MS File : A074FC10
MSD File : A074FC11

Analytical Technologies, Inc.

ATI I.D. # 410006

# DIESEL RANGE ORGANICS
## DATA SUMMARY

| | | | |
|---|---|---|---|
| CLIENT | : AQE | DATE SAMPLED | : N/A |
| PROJECT # | : | DATE RECEIVED | : N/A |
| PROJECT NAME | : RED TOP MINE | DATE EXTRACTED | : 10/04/94 |
| CLIENT I.D. | : METHOD BLANK | DATE ANALYZED | : 10/05/94 |
| SAMPLE MATRIX | : SOIL | UNITS | : mg/Kg |
| METHOD | : AK DEC DRO & RRO | DILUTION FACTOR | : 1 |
| RESULTS ARE CORRECTED FOR MOISTURE CONTENT | | %MOISTURE | : .0 |

| COMPOUNDS | RESULTS |
|---|---|
| FUEL HYDROCARBONS | <10 |
| HYDROCARBON RANGE | C10 - C28 |
| HYDROCARBON QUANTITATION USING | DIESEL |
| FUEL HYDROCARBONS | <20 |
| HYDROCARBON RANGE | C28 - C34 |
| HYDROCARBON QUANTITATION USING | MOTOR OIL |

| SURROGATE PERCENT RECOVERY | | LIMITS |
|---|---|---|
| O-TERPHENYL | 79 | 50-150 |

Analyst _____ Date _____

Reviewer _____ Date _____



Sample File : A014FX38.D

Analytical Technologies, Inc.

ATI I.D. # 410006-1

# DIESEL RANGE ORGANICS
## DATA SUMMARY

| | | | |
|---|---|---|---|
| CLIENT | : AQE | DATE SAMPLED | : 10/02/94 |
| PROJECT # | : | DATE RECEIVED | : 10/04/94 |
| PROJECT NAME | : RED TOP MINE | DATE EXTRACTED | : 10/04/94 |
| CLIENT I.D. | : 94RTM10-26 | DATE ANALYZED | : 10/05/94 |
| SAMPLE MATRIX | : SOIL | UNITS | : mg/Kg |
| METHOD | : AK DEC DRO & RRO | DILUTION FACTOR | : 1 |
| RESULTS ARE CORRECTED FOR MOISTURE CONTENT | | %MOISTURE | : 6.5 |

| COMPOUNDS | RESULTS |
|---|---|
| FUEL HYDROCARBONS | <11 |
| HYDROCARBON RANGE | C10 - C28 |
| HYDROCARBON QUANTITATION USING | DIESEL |
| FUEL HYDROCARBONS | <21 |
| HYDROCARBON RANGE | C28 - C34 |
| HYDROCARBON QUANTITATION USING | MOTOR OIL |

| SURROGATE PERCENT RECOVERY | | LIMITS |
|---|---|---|
| O-TERPHENYL | 74 | 50-150 |

Analyst [illegible] Date 10/14/94
Reviewer [illegible] Date 10/17/94



Sample File : A014FX41.D

Technologies

ATI I.D. # 410006-2

# DIESEL RANGE ORGANICS
## DATA SUMMARY

| | | | |
|---|---|---|---|
| CLIENT | : AQE | DATE SAMPLED | : 10/02/94 |
| PROJECT # | : | DATE RECEIVED | : 10/04/94 |
| PROJECT NAME | : RED TOP MINE | DATE EXTRACTED | : 10/04/94 |
| CLIENT I.D. | : 94RTM10-27 | DATE ANALYZED | : 10/06/94 |
| SAMPLE MATRIX | : SOIL | UNITS | : mg/Kg |
| METHOD | : AK DEC DRO & RRO | DILUTION FACTOR | : 20 |
| RESULTS ARE CORRECTED FOR MOISTURE CONTENT | | %MOISTURE | : 46.0 |

| COMPOUNDS | RESULTS |
|---|---|
| FUEL HYDROCARBONS | 5800 |
| HYDROCARBON RANGE | C10 - C28 |
| HYDROCARBON QUANTITATION USING | DIESEL |
| FUEL HYDROCARBONS | <740 |
| HYDROCARBON RANGE | C28 - C34 |
| HYDROCARBON QUANTITATION USING | MOTOR OIL |

| SURROGATE PERCENT RECOVERY | | LIMITS |
|---|---|---|
| O-TERPHENYL | I | 50-150 |

I = Surrogate out of limits due to sample dilution.

Analyst _____ Date _____

Reviewer _____ Date _____



Sample File : A014FX69.D

Analytical Technologies, Inc.

ATI I.D. # 410006-3

# DIESEL RANGE ORGANICS
## DATA SUMMARY

| | | | |
|---|---|---|---|
| CLIENT | : AQE | DATE SAMPLED | : 10/02/94 |
| PROJECT # | : | DATE RECEIVED | : 10/04/94 |
| PROJECT NAME | : RED TOP MINE | DATE EXTRACTED | : 10/04/94 |
| CLIENT I.D. | : 94RTM10-28 | DATE ANALYZED | : 10/05/94 |
| SAMPLE MATRIX | : SOIL | UNITS | : mg/Kg |
| METHOD | : AK DEC DRO & RRO | DILUTION FACTOR | : 1 |
| RESULTS ARE CORRECTED FOR MOISTURE CONTENT | | %MOISTURE | : 41.0 |

| COMPOUNDS | RESULTS |
|---|---|
| FUEL HYDROCARBONS | <17 |
| HYDROCARBON RANGE | C10 - C28 |
| HYDROCARBON QUANTITATION USING | DIESEL |
| FUEL HYDROCARBONS | <34 |
| HYDROCARBON RANGE | C28 - C34 |
| HYDROCARBON QUANTITATION USING | MOTOR OIL |

| SURROGATE PERCENT RECOVERY | | LIMITS |
|---|---|---|
| O-TERPHENYL | 78 | 50-150 |

Analyst [illegible] Date [illegible]
Reviewer [illegible] Date 10/7/94



Sample File : A014FX43.D

Analytical Technologies, Inc.

ATI I.D. # 410006-4

# DIESEL RANGE ORGANICS
## DATA SUMMARY

| | | | |
|---|---|---|---|
| LIENT | : AQE | DATE SAMPLED | : 10/02/94 |
| PROJECT # | : | DATE RECEIVED | : 10/04/94 |
| PROJECT NAME | : RED TOP MINE | DATE EXTRACTED | : 10/04/94 |
| LIENT I.D. | : 94RTM10-29 | DATE ANALYZED | : 10/05/94 |
| AMPLE MATRIX | : SOIL | UNITS | : mg/Kg |
| METHOD | : AK DEC DRO & RRO | DILUTION FACTOR | : 2 |
| RESULTS ARE CORRECTED FOR MOISTURE CONTENT | | %MOISTURE | : 20.0 |

| COMPOUNDS | RESULTS |
|---|---|
| UEL HYDROCARBONS | 170 |
| HYDROCARBON RANGE | C10 - C28 |
| HYDROCARBON QUANTITATION USING | DIESEL |
| UEL HYDROCARBONS | 390 |
| HYDROCARBON RANGE | C28 - C34 |
| HYDROCARBON QUANTITATION USING | MOTOR OIL |

| SURROGATE PERCENT RECOVERY | | LIMITS |
|---|---|---|
| )-TERPHENYL | 97 | 50-150 |

Analyst [signature] Date 10/10/94
Reviewer [signature] Date 10/13/94



Sample File : A014FX44.D

Analytical Technologies, Inc.

ATI I.D. # 410006-5

# DIESEL RANGE ORGANICS
## DATA SUMMARY

| | | | |
|---|---|---|---|
| CLIENT | : AQE | DATE SAMPLED | : 10/02/94 |
| PROJECT # | : | DATE RECEIVED | : 10/04/94 |
| PROJECT NAME | : RED TOP MINE | DATE EXTRACTED | : 10/04/94 |
| CLIENT I.D. | : 94RTM10-30 | DATE ANALYZED | : 10/05/94 |
| SAMPLE MATRIX | : SOIL | UNITS | : mg/Kg |
| METHOD | : AK DEC DRO & RRO | DILUTION FACTOR | : 1 |
| RESULTS ARE CORRECTED FOR MOISTURE CONTENT | | %MOISTURE | : 35.0 |

| COMPOUNDS | RESULTS |
|---|---|
| FUEL HYDROCARBONS | 28 |
| HYDROCARBON RANGE | C10 - C28 |
| HYDROCARBON QUANTITATION USING | DIESEL |
| FUEL HYDROCARBONS | <31 |
| HYDROCARBON RANGE | C28 - C34 |
| HYDROCARBON QUANTITATION USING | MOTOR OIL |

| SURROGATE PERCENT RECOVERY | | LIMITS |
|---|---|---|
| O-TERPHENYL | 81 | 50-150 |

Analyst [illegible] Date [illegible]
Reviewer [illegible] Date [illegible]



Sample File : A014FX45.D

Analytical Technologies, Inc.

ATI I.D. # 410006-6

# DIESEL RANGE ORGANICS
## DATA SUMMARY

| | | | |
|---|---|---|---|
| CLIENT | : AQE | DATE SAMPLED | : 10/02/94 |
| PROJECT # | : | DATE RECEIVED | : 10/04/94 |
| PROJECT NAME | : RED TOP MINE | DATE EXTRACTED | : 10/04/94 |
| CLIENT I.D. | : 94RTM10-31 | DATE ANALYZED | : 10/05/94 |
| SAMPLE MATRIX | : SOIL | UNITS | : mg/Kg |
| METHOD | : AK DEC DRO & RRO | DILUTION FACTOR | : 1 |
| RESULTS ARE CORRECTED FOR MOISTURE CONTENT | | %MOISTURE | : 45.0 |

| COMPOUNDS | RESULTS |
|---|---|
| FUEL HYDROCARBONS | 730 |
| HYDROCARBON RANGE | C10 - C28 |
| HYDROCARBON QUANTITATION USING | DIESEL |
| FUEL HYDROCARBONS | 140 |
| HYDROCARBON RANGE | C28 - C34 |
| HYDROCARBON QUANTITATION USING | MOTOR OIL |

| SURROGATE PERCENT RECOVERY | | LIMITS |
|---|---|---|
| O-TERPHENYL | 128 | 50-150 |

Analyst [illegible] Date [illegible]
Reviewer [illegible] Date [illegible]



Sample File : A014FX46.D

Advanced Technologies, Inc.

ATI I.D. # 410006-7

# DIESEL RANGE ORGANICS
## DATA SUMMARY

| | | | |
|---|---|---|---|
| CLIENT | : AQE | DATE SAMPLED | : 10/02/94 |
| PROJECT # | : | DATE RECEIVED | : 10/04/94 |
| PROJECT NAME | : RED TOP MINE | DATE EXTRACTED | : 10/04/94 |
| CLIENT I.D. | : 94RTM10-23 | DATE ANALYZED | : 10/14/94 |
| SAMPLE MATRIX | : SOIL | UNITS | : mg/Kg |
| METHOD | : AK DEC DRO & RRO | DILUTION FACTOR | : 200 |
| RESULTS ARE CORRECTED FOR MOISTURE CONTENT | | %MOISTURE | : 47.0 |

| COMPOUNDS | RESULTS |
|---|---|
| FUEL HYDROCARBONS | 110000 |
| HYDROCARBON RANGE | C10 - C28 |
| HYDROCARBON QUANTITATION USING | DIESEL |
| FUEL HYDROCARBONS | 83000 |
| HYDROCARBON RANGE | C28 - C34 |
| HYDROCARBON QUANTITATION USING | MOTOR OIL |

| SURROGATE PERCENT RECOVERY | | LIMITS |
|---|---|---|
| O-TERPHENYL | I | 50-150 |

I = Surrogate out of limits due to sample dilution.

Analyst [illegible] Date [illegible]
Reviewer [illegible] Date 10/17/94



Sample File : A134FX32.D

Analytical Technologies, Inc.

ATI I.D. # 410006-8

# DIESEL RANGE ORGANICS
## DATA SUMMARY

| | | | |
|---|---|---|---|
| CLIENT | : AQE | DATE SAMPLED | : 10/02/94 |
| PROJECT # | : | DATE RECEIVED | : 10/04/94 |
| PROJECT NAME | : RED TOP MINE | DATE EXTRACTED | : 10/04/94 |
| CLIENT I.D. | : 94RTM10-24 | DATE ANALYZED | : 10/13/94 |
| SAMPLE MATRIX | : SOIL | UNITS | : mg/Kg |
| METHOD | : AK DEC DRO & RRO | DILUTION FACTOR | : 10 |
| RESULTS ARE CORRECTED FOR MOISTURE CONTENT | | %MOISTURE | : 53.0 |

| COMPOUNDS | RESULTS |
|---|---|
| FUEL HYDROCARBONS | 3200 |
| HYDROCARBON RANGE | C10 - C28 |
| HYDROCARBON QUANTITATION USING | DIESEL |
| FUEL HYDROCARBONS | 3500 |
| HYDROCARBON RANGE | C28 - C34 |
| HYDROCARBON QUANTITATION USING | MOTOR OIL |

| SURROGATE PERCENT RECOVERY | | LIMITS |
|---|---|---|
| O-TERPHENYL | 147 | 50-150 |

Analyst [illegible] Date [illegible]
Reviewer [illegible] Date 10/17/94



Sample File : A134FX05.D

Analytical Technologies, Inc.

ATI I.D. # 410006-9

# DIESEL RANGE ORGANICS
## DATA SUMMARY

| | | | |
|---|---|---|---|
| LIENT | : AQE | DATE SAMPLED | : 10/02/94 |
| ROJECT # | : | DATE RECEIVED | : 10/04/94 |
| ROJECT NAME | : RED TOP MINE | DATE EXTRACTED | : 10/04/94 |
| LIENT I.D. | : 94RTM10-25 | DATE ANALYZED | : 10/13/94 |
| AMPLE MATRIX | : SOIL | UNITS | : mg/Kg |
| ETHOD | : AK DEC DRO & RRO | DILUTION FACTOR | : 5 |
| ESULTS ARE CORRECTED FOR MOISTURE CONTENT | | %MOISTURE | : 52.0 |

| OMPOUNDS | RESULTS |
|---|---|
| UEL HYDROCARBONS | 2100 |
| YDROCARBON RANGE | C10 - C28 |
| YDROCARBON QUANTITATION USING | DIESEL |
| UEL HYDROCARBONS | 2500 |
| YDROCARBON RANGE | C28 - C34 |
| YDROCARBON QUANTITATION USING | MOTOR OIL |

| SURROGATE PERCENT RECOVERY | | LIMITS |
|---|---|---|
| -TERPHENYL | 79 | 50-150 |

nalyst _____ Date _____

eviewer _____ Date 10/17/94



Sample File : A134FX06.D

Analytical Technologies, Inc.

ATI I.D. # 410006

DIESEL RANGE ORGANICS
QUALITY CONTROL DATA

LIENT : AQE
ROJECT # :
ROJECT NAME : RED TOP MINE
AMPLE MATRIX : SOIL
ETHOD : AK DEC DRO & RRO

SAMPLE I.D. # : BLANK
DATE EXTRACTED : 10/04/94
DATE ANALYZED : 10/05/94
UNITS : mg/Kg

| OMPOUNDS | SAMPLE RESULT | SPIKE ADDED | SPIKED RESULT | % REC. | DUP. SPIKED SAMPLE | DUP. % REC. | RPD |
|---|---|---|---|---|---|---|---|
| IESEL | <10.0 | 100 | 91.4 | 91 | 84.6 | 85 | 8 |

| CONTROL LIMITS | % REC. | RPD |
|---|---|---|
| IESEL | 50 - 150 | 30 |

| SURROGATE RECOVERIES | SPIKE | DUP. SPIKE | LIMITS |
|---|---|---|---|
| -TERPHENYL | 96 | 95 | 50 - 150 |

Analyst [illegible] Date [illegible]
Reviewer [illegible] Date 10/7/94



Sample File : A014FX38
MS File : A014FX39
MSD File : A014FX40

Analytical Technologies, Inc.

ATI I.D. # 410006

DIESEL RANGE ORGANICS
QUALITY CONTROL DATA

LIENT : AQE
ROJECT # :
ROJECT NAME : RED TOP MINE
AMPLE MATRIX : SOIL
ETHOD : AK DEC DRO

SAMPLE I.D. # : 409067-1
DATE EXTRACTED : 10/04/94
DATE ANALYZED : 10/06/94
UNITS : mg/Kg

| OMPOUNDS | SAMPLE RESULT | SPIKE ADDED | SPIKED RESULT | % REC. | DUP. SPIKED SAMPLE | DUP. % REC. | RPD |
|---|---|---|---|---|---|---|---|
| IESEL | 11.9 | 104 | 78.6 | 64 | 87.8 | 73 | 11 |

| CONTROL LIMITS | % REC. | RPD |
|---|---|---|
| IESEL | 50 - 150 | 30 |

| SURROGATE RECOVERIES | SPIKE | DUP. SPIKE | LIMITS |
|---|---|---|---|
| -TERPHENYL | 91 | 96 | 50 - 150 |

Analyst [signature] Date 10-7-94
Reviewer [signature] Date 10/7/94



Sample File : A014FX64
MS File : A014FX66
MSD File : A014FX67

Analytical Technologies, Inc.

# REPORT of INSTRUMENT QUALITY CONTROL

Client: AQE
Project Name: Red Top Mine
Project Number:

Lab Accession: 410006
Date Received: 10/04/94
Matrix: water/soil

Date of Initial Calibration: 9/20/94

Analyst: [illegible]

| Waters | Instrument: | DRO #1 | | DRO #1 | | DRO #1 | |
|---|---|---|---|---|---|---|---|
| | Date | 10/7/94 | | 10/8/94 | | | |
| | Time: | 17:06 | | 0:50 | | | |
| | ppm | | %DIFF | | %DIFF | | %DIFF |
| DRO Cal. Std | 500 | 476 | 4.8 | 496 | 1 | | 100 |
| DRO Surrogate | 100 | 98 | 2 | 94 | 6 | | 100 |

| Soils | Instrument: | DRO #2 | | DRO #2 | | DRO #2 | |
|---|---|---|---|---|---|---|---|
| | Date | 10/4/94 | | 10/4/94 | | 10/5/94 | |
| | Time: | 8:39 | | 17:26 | | 1:06 | |
| | ppm | | %DIFF | | %DIFF | | %DIFF |
| DRO Cal. Std | 500 | 552 | 10.4 | 529 | 6 | 521 | 4 |
| DRO Surrogate | 100 | 108 | 8 | 104 | 4 | 101 | 1 |

| | Instrument: | DRO #2 | | DRO #2 | | DRO #2 | |
|---|---|---|---|---|---|---|---|
| | Date | 10/5/94 | | 10/5/94 | | 10/6/94 | |
| | Time: | 8:47 | | 18:27 | | 2:54 | |
| | ppm | | %DIFF | | %DIFF | | %DIFF |
| DRO Cal. Std | 500 | 560 | 12.0 | 550 | 10 | 549 | 10 |
| DRO Surrogate | 100 | 109 | 9 | 106 | 6 | 108 | 8 |

| | Instrument: | DRO #2 | | DRO #2 | | DRO #2 | |
|---|---|---|---|---|---|---|---|
| | Date | 10/13/94 | | 10/14/94 | | 10/14/94 | |
| | Time: | 16:41 | | 0:15 | | 9:12 | |
| | ppm | | %DIFF | | %DIFF | | %DIFF |
| DRO Cal. Std* | 500 | 507 | 1.4 | 550 | 10.0 | 543 | 8.6 |
| DRO Surrogate | 100 | 103 | 3.0 | 110 | 10.0 | 110 | 10.0 |

# APPENDIX A

ATI-Renton Summary Report
of Analysis

**Analytical Technologies, Inc. AK**

Analytical Technologies, Inc.
560 Naches Avenue, S.W., Suite 101, Renton, WA 98055 (206) 228-8335
Karen L. Mixon, Laboratory Manager

ATI I.D. # 410021

October 26, 1994

Quest Environmental
220 Center Court
Anchorage AK 99518-1621

Attention : Mike Reber

Project Number : -

Project Name : Red Top Mine Retort

Dear Mr. Reber:

On October 5, 1994, Analytical Technologies, Inc. (ATI), received 19 samples for analysis. The samples were analyzed with EPA methodology or equivalent methods as specified in the attached analytical schedule. The results, sample cross reference, and quality control data are enclosed.

Sample 410021-10 (94RTM13-01) is listed on the chain-of-custody as a soil; the sample received by ATI Renton, WA is a water.

Please note that corrections for moisture content are based on data supplied by ATI Anchorage, AK.

Sincerely,

Jeffery L. Pettit
Senior Project Manager

JLP/hal/elf

Enclosure

Analytical Technologies, Inc.

ATI I.D. # 410021

# SAMPLE CROSS REFERENCE SHEET

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT

| ATI # | CLIENT DESCRIPTION | DATE SAMPLED | MATRIX |
|---|---|---|---|
| 410021-1 | 94RTM10-26 | 10/02/94 | SOIL |
| 410021-2 | 94RTM10-27 | 10/02/94 | SOIL |
| 410021-3 | 94RTM10-28 | 10/02/94 | SOIL |
| 410021-4 | 94RTM10-29 | 10/02/94 | SOIL |
| 410021-5 | 94RTM10-30 | 10/02/94 | SOIL |
| 410021-6 | 94RTM10-31 | 10/02/94 | SOIL |
| 410021-7 | 94RTM10-23 | 10/02/94 | SOIL |
| 410021-8 | 94RTM10-24 | 10/02/94 | SOIL |
| 410021-9 | 94RTM10-25 | 10/02/94 | SOIL |
| 410021-10 | 94RTM13-01 | 10/02/94 | WATER |
| 410021-11 | 94RTM11-01 | 10/01/94 | SOLID |
| 410021-12 | 94RTM11-02 | 10/01/94 | SOLID |
| 410021-13 | 94RTM12-01 | 10/01/94 | WIPE |
| 410021-14 | 94RTM12-02 | 10/01/94 | WIPE |
| 410021-15 | 94RTM12-03 | 10/01/94 | WIPE |
| 410021-16 | 94RTM9001 | 09/24/94 | WATER |
| 410021-17 | 94RTM9002 | 09/24/94 | WATER |
| 410021-18 | 94RTM9003 | 10/01/94 | WATER |
| 410021-19 | 94RTM9004 | 10/01/94 | WATER |

## ----- TOTALS -----

| MATRIX | # SAMPLES |
|---|---|
| SOIL | 9 |
| WATER | 5 |
| SOLID | 2 |
| WIPE | 3 |

## ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

AnalyticalTechnologies, Inc.

ATI I.D. # 410021

# ANALYTICAL SCHEDULE

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT

| ANALYSIS | TECHNIQUE | REFERENCE | LAB |
|---|---|---|---|
| PETROLEUM HYDROCARBONS | IR | EPA 418.1 | R |
| MERCURY | AA/COLD VAPOR | EPA 7470 | R |
| MERCURY | AA/COLD VAPOR | EPA 7471 | R |
| MOISTURE | GRAVIMETRIC | CLP SOW ILM01.0 | ANC |

R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PTL = ATI - Portland
ANC = ATI - Anchorage
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Technologies, Inc.

ATI I.D. # 410021

# TOTAL PETROLEUM HYDROCARBONS
## DATA SUMMARY

| | | | |
|---|---|---|---|
| CLIENT | : QUEST ENVIRONMENTAL | DATE EXTRACTED | : 10/07/94 |
| PROJECT # | : - | DATE ANALYZED | : 10/10/94 |
| PROJECT NAME | : RED TOP MINE RETORT | UNITS | : mg/L |
| EPA METHOD | : 418.1 | SAMPLE MATRIX | : WATER |

| ATI I.D. # | CLIENT I.D. | TOTAL PETROLEUM HYDROCARBONS | TOTAL PETROLEUM HYDROCARBONS * |
|---|---|---|---|
| 410021-18 | 94RTM9003 | 84 D4 | 83 D4 |
| METHOD BLANK | - | <1 | <1 |

D4 = Value from a ten fold diluted analysis.
* Reanalyzed after second aliquot of silica gel added.

Analytical Technologies, Inc.

ATI I.D. # 410021

# TOTAL PETROLEUM HYDROCARBONS
## QUALITY CONTROL DATA

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT
EPA METHOD : 418.1
SAMPLE MATRIX : WATER

SAMPLE I.D. # : BLANK
DATE EXTRACTED : 10/07/94
DATE ANALYZED : 10/10/94
UNITS : mg/L

| COMPOUND | SAMPLE RESULT | SAMPLE DUP. RESULT | RPD | SPIKE ADDED | SPIKED RESULT | % REC. | DUP. SPIKED RESULT | DUP. % REC. | RPD |
|---|---|---|---|---|---|---|---|---|---|
| PETROLEUM HYDROCARBONS | <1.00 | N/A | N/A | 10.0 | 8.49 | 85 | 8.26 | 83 | 3 |

$$\% \text{ Recovery} = \frac{(\text{Spiked Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{|(\text{Spike Result} - \text{Dup. Spike Result})|}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

ATI I.D. # 410021

# TOTAL PETROLEUM HYDROCARBONS
## QUALITY CONTROL DATA

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT
EPA METHOD : 418.1
SAMPLE MATRIX : WATER

SAMPLE I.D. # : 410017-9
DATE EXTRACTED : 10/07/94
DATE ANALYZED : 10/10/94
UNITS : mg/L

| COMPOUND | SAMPLE RESULT | SAMPLE DUP. RESULT | RPD | SPIKE ADDED | SPIKED RESULT | % REC. | DUP. SPIKED RESULT | DUP. % REC. | RPD |
|---|---|---|---|---|---|---|---|---|---|
| PETROLEUM HYDROCARBONS | 8.98 | 8.52 | 5 | N/A | N/A | N/A | N/A | N/A | N/A |

$$\% \text{ Recovery} = \frac{(\text{Spiked Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{|(\text{Spike Result} - \text{Dup. Spike Result})|}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

ATI I.D. # 410021

# TOTAL PETROLEUM HYDROCARBONS
## QUALITY CONTROL DATA

| | | | |
|---|---|---|---|
| CLIENT | : QUEST ENVIRONMENTAL | SAMPLE I.D. # | : 410017-10 |
| PROJECT # | : - | DATE EXTRACTED | : 10/07/94 |
| PROJECT NAME | : RED TOP MINE RETORT | DATE ANALYZED | : 10/10/94 |
| EPA METHOD | : 418.1 | UNITS | : mg/L |
| SAMPLE MATRIX | : WATER | | |

| COMPOUND | SAMPLE RESULT | SAMPLE DUP. RESULT | RPD | SPIKE ADDED | SPIKED RESULT | % REC. | DUP. SPIKED RESULT | DUP. % REC. | RPD |
|---|---|---|---|---|---|---|---|---|---|
| PETROLEUM HYDROCARBONS | 75.1 | 72.8 | 3 | N/A | N/A | N/A | N/A | N/A | N/A |

$$\% \text{ Recovery} = \frac{(\text{Spiked Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{|(\text{Spike Result} - \text{Dup. Spike Result})|}{\text{Average Result}} \times 100$$

Advanced Technologies, Inc.

ATI I.D. # 410021

# TOTAL PETROLEUM HYDROCARBONS
## DATA SUMMARY

| | | | |
|---|---|---|---|
| LIENT | : QUEST ENVIRONMENTAL | DATE EXTRACTED | : 10/05/94 |
| ROJECT # | : - | DATE ANALYZED | : 10/05/94 |
| ROJECT NAME | : RED TOP MINE RETORT | UNITS | : mg/Kg |
| PA METHOD | : 418.1 | SAMPLE MATRIX | : SOIL |

ESULTS ARE CORRECTED FOR MOISTURE CONTENT

| TI I.D. # | CLIENT I.D. | TOTAL PETROLEUM HYDROCARBONS | TOTAL PETROLEUM HYDROCARBONS * |
|---|---|---|---|
| 10021-1 | 94RTM10-26 | <21 | - |
| 10021-2 | 94RTM10-27 | 46 | 48 |
| 10021-3 | 94RTM10-28 | <34 | - |
| 10021-4 | 94RTM10-29 | <25 | - |
| 10021-5 | 94RTM10-30 | <31 | - |
| 10021-6 | 94RTM10-31 | 83 | 88 |
| ETHOD BLANK | - | <20 | <20 |

* Reanalyzed after second aliquot of silica gel added.

Analytical Technologies, Inc.

ATI I.D. # 410021

# TOTAL PETROLEUM HYDROCARBONS
## DATA SUMMARY

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT
EPA METHOD : 418.1
RESULTS ARE CORRECTED FOR MOISTURE CONTENT

DATE EXTRACTED : 10/10/94
DATE ANALYZED : 10/13/94
UNITS : mg/Kg
SAMPLE MATRIX : SOIL

| ATI I.D. # | CLIENT I.D. | TOTAL PETROLEUM HYDROCARBONS | | TOTAL PETROLEUM HYDROCARBONS * | |
|---|---|---|---|---|---|
| 410021-7 | 94RTM10-23 | 200000 | D7 | 180000 | D7 |
| 410021-8 | 94RTM10-24 | 2300 | | 2300 | |
| 410021-9 | 94RTM10-25 | 5600 | D4 | 5300 | D4 |
| METHOD BLANK | - | <20 | | <20 | |

D4 = Value from a ten fold diluted analysis.
D7 = Value from a 100 fold diluted analysis.
* Reanalyzed after second aliquot of silica gel added.

Advanced Technologies, Inc.

ATI I.D. # 410021

# TOTAL PETROLEUM HYDROCARBONS
## QUALITY CONTROL DATA

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT
EPA METHOD : 418.1
SAMPLE MATRIX : SOIL

SAMPLE I.D. # : BLANK
DATE EXTRACTED : 10/05/94
DATE ANALYZED : 10/05/94
UNITS : mg/Kg

| COMPOUND | SAMPLE RESULT | SAMPLE DUP. RESULT | RPD | SPIKE ADDED | SPIKED RESULT | % REC. | DUP. SPIKED RESULT | DUP. % REC. | RPD |
|---|---|---|---|---|---|---|---|---|---|
| PETROLEUM HYDROCARBONS (MOTOR OIL) | <20.0 | N/A | N/A | 400 | 493 | 123 | 496 | 124 | 1 |

$$\% \text{ Recovery} = \frac{(\text{Spiked Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{|(\text{Spike Result} - \text{Dup. Spike Result})|}{\text{Average Result}} \times 100$$

Advanced Technologies, Inc.

ATI I.D. # 410021

# TOTAL PETROLEUM HYDROCARBONS
## QUALITY CONTROL DATA

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT
EPA METHOD : 418.1
SAMPLE MATRIX : SOIL

SAMPLE I.D. # : BLANK
DATE EXTRACTED : 10/10/94
DATE ANALYZED : 10/13/94
UNITS : mg/Kg

| COMPOUND | SAMPLE RESULT | SAMPLE DUP. RESULT | RPD | SPIKE ADDED | SPIKED RESULT | % REC. | DUP. SPIKED RESULT | DUP. % REC. | RPD |
|---|---|---|---|---|---|---|---|---|---|
| PETROLEUM HYDROCARBONS (MOTOR OIL) | <20.0 | N/A | N/A | 400 | 479 | 120 | 473 | 118 | 1 |

$$\% \text{ Recovery} = \frac{(\text{Spiked Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{|(\text{Spike Result} - \text{Dup. Spike Result})|}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

ATI I.D. # 410021

# TOTAL PETROLEUM HYDROCARBONS
## QUALITY CONTROL DATA

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT
EPA METHOD : 418.1
SAMPLE MATRIX : SOIL

SAMPLE I.D. # : 410011-12
DATE EXTRACTED : 10/10/94
DATE ANALYZED : 10/13/94
UNITS : mg/Kg

| COMPOUND | SAMPLE RESULT | SAMPLE DUP. RESULT | RPD | SPIKE ADDED | SPIKED RESULT | % REC. | DUP. SPIKED RESULT | DUP. % REC. | RPD |
|---|---|---|---|---|---|---|---|---|---|
| PETROLEUM HYDROCARBONS (MOTOR OIL) | <20.0 | <20.0 | NC | N/A | N/A | N/A | N/A | N/A | N/A |

NC = Not calculable.

$$\% \text{ Recovery} = \frac{(\text{Spiked Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{|(\text{Spike Result} - \text{Dup. Spike Result})|}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

ATI I.D. # 410021

# TOTAL PETROLEUM HYDROCARBONS
## QUALITY CONTROL DATA

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT
EPA METHOD : 418.1
SAMPLE MATRIX : SOIL

SAMPLE I.D. # : 410021-1
DATE EXTRACTED : 10/05/94
DATE ANALYZED : 10/05/94
UNITS : mg/Kg

| COMPOUND | SAMPLE RESULT | SAMPLE DUP. RESULT | RPD | SPIKE ADDED | SPIKED RESULT | % REC. | DUP. SPIKED RESULT | DUP. % REC. | RPD |
|---|---|---|---|---|---|---|---|---|---|
| PETROLEUM HYDROCARBONS (MOTOR OIL) | <20.0 | <20.0 | NC | 400 | 484 | 121 | N/A | N/A | N/A |

NC = Not calculable.

$$\% \text{ Recovery} = \frac{(\text{Spiked Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{|(\text{Spike Result} - \text{Dup. Spike Result})|}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

ATI I.D. # 410021

# TOTAL PETROLEUM HYDROCARBONS
## QUALITY CONTROL DATA

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT
EPA METHOD : 418.1
SAMPLE MATRIX : SOIL

SAMPLE I.D. # : 410011-4
DATE EXTRACTED : 10/10/94
DATE ANALYZED : 10/13/94
UNITS : mg/Kg

| COMPOUND | SAMPLE RESULT | SAMPLE DUP. RESULT | RPD | SPIKE ADDED | SPIKED RESULT | % REC. | DUP. SPIKED RESULT | DUP. % REC. | RPD |
|---|---|---|---|---|---|---|---|---|---|
| PETROLEUM HYDROCARBONS (MOTOR OIL) | <20.0 | <20.0 | NC | 400 | 432 | 108 | N/A | N/A | N/A |

NC = Not calculable.

$$\% \text{ Recovery} = \frac{(\text{Spiked Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{|(\text{Spike Result} - \text{Dup. Spike Result})|}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

ATI I.D. # 410021

# METALS ANALYSIS

CLIENT : QUEST ENVIRONMENTAL MATRIX : WATER
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT

| ELEMENT | DATE PREPARED | DATE ANALYZED |
|---|---|---|
| MERCURY | 10/13/94 | 10/14/94 |

Analytical Technologies, Inc.

ATI I.D. # 410021

# METALS ANALYSIS
## DATA SUMMARY

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT

MATRIX : WATER
UNITS : mg/L

| ATI I.D. # | CLIENT I.D. | MERCURY |
|---|---|---|
| 410021-10 | 94RTM13-01 | 0.00027 |
| 410021-16 | 94RTM9001 | 0.075 |
| 410021-17 | 94RTM9002 | 0.048 |
| 410021-19 | 94RTM9004 | 0.16 |
| METHOD BLANK | - | <0.00020 |

AnalyticalTechnologies,Inc.

ATI I.D. # 410021

# METALS ANALYSIS
## QUALITY CONTROL DATA

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT

MATRIX : WATER
UNITS : mg/L

| ELEMENT | ATI I.D. | SAMPLE RESULT | DUP. RESULT | RPD | SPIKED RESULT | SPIKE ADDED | % REC. |
|---|---|---|---|---|---|---|---|
| MERCURY | BLANK | <0.000200 | N/A | N/A | 0.00106 | 0.00100 | 106 |
| MERCURY | 410049-2 | <0.000200 | <0.000200 | NC | 0.00106 | 0.00100 | 106 |

NC = Not calculable.

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{|(\text{Sample Result} - \text{Duplicate Result})|}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

ATI I.D. # 410021

# METALS ANALYSIS

CLIENT : QUEST ENVIRONMENTAL MATRIX : SOIL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT

| ELEMENT | DATE PREPARED | DATE ANALYZED |
|---|---|---|
| MERCURY | 10/17/94 | 10/18/94 |

Analytical Technologies, inc.

ATI I.D. # 410021

METALS ANALYSIS
DATA SUMMARY

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT
RESULTS ARE NOT CORRECTED FOR MOISTURE CONTENT

MATRIX : SOIL
UNITS : mg/Kg

| ATI I.D. # | CLIENT I.D. | MERCURY |
|---|---|---|
| 410021-11 | 94RTM11-01 | 0.82 |
| 410021-12 | 94RTM11-02 | 0.86 |
| METHOD BLANK | - | <0.10 |

Analytical Technologies, Inc.

ATI I.D. # 410021

METALS ANALYSIS
QUALITY CONTROL DATA

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT

MATRIX : SOIL
UNITS : mg/Kg

| ELEMENT | ATI I.D. | SAMPLE RESULT | DUP. RESULT | RPD | SPIKED RESULT | SPIKE ADDED | % REC. |
|---|---|---|---|---|---|---|---|
| MERCURY | BLANK | <0.100 | N/A | N/A | 0.480 | 0.500 | 96 |
| MERCURY | 410094-3 | <0.116 | <0.117 | NC | 0.698 | 0.591 | 118 |

NC = Not calculable.

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{|(\text{Sample Result} - \text{Duplicate Result})|}{\text{Average Result}} \times 100$$

AnalyticalTechnologies,Inc.

ATI I.D. # 410021

METALS ANALYSIS

CLIENT : QUEST ENVIRONMENTAL MATRIX : WIPE
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT

| ELEMENT | DATE PREPARED | DATE ANALYZED |
|---|---|---|
| MERCURY | 10/19/94 | 10/20/94 |

Analytical Technologies, Inc.

ATI I.D. # 410021

METALS ANALYSIS
DATA SUMMARY

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT

MATRIX : WIPE
UNITS : mg/Kg

| ATI I.D. # | CLIENT I.D. | MERCURY |
|---|---|---|
| 410021-13 | 94RTM12-01 | 86 |
| 410021-14 | 94RTM12-02 | 14 |
| 410021-15 | 94RTM12-03 | 13 |
| METHOD BLANK | - | <0.10 |

AnalyticalTechnologies,Inc.

ATI I.D. # 410021

METALS ANALYSIS
QUALITY CONTROL DATA

CLIENT : QUEST ENVIRONMENTAL MATRIX : WIPE
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT UNITS : mg/Kg

| ELEMENT | ATI I.D. | SAMPLE RESULT | DUP. RESULT | RPD | SPIKED RESULT | SPIKE ADDED | % REC. |
|---|---|---|---|---|---|---|---|
| MERCURY | BLANK | <0.100 | N/A | N/A | 0.465 | 0.500 | 93 |
| MERCURY | 410151-1 | <0.195 | <0.199 | NC | 1.15 | 0.985 | 117 |

NC = Not calculable.

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{|(\text{Sample Result} - \text{Duplicate Result})|}{\text{Average Result}} \times 100$$

AnalyticalTechnologies,Inc.

ATI I.D. # 410021

GENERAL CHEMISTRY ANALYSIS
QUALITY CONTROL DATA

CLIENT : QUEST ENVIRONMENTAL MATRIX : SOIL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT UNITS : %

| PARAMETER | ATI I.D. | SAMPLE RESULT | DUP RESULT | RPD | SPIKED RESULT | SPIKE ADDED | % REC |
|---|---|---|---|---|---|---|---|
| MOISTURE | 410006-9 | 52 | 46 | 12 | N/A | N/A | N/A |

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{|(\text{Sample Result} - \text{Duplicate Result})|}{\text{Average Result}} \times 100$$

ATTACH 10006

# CHAIN OF CUSTODY RECORD

PROJ. No.

PROJECT NAME: AQE - REDTOP MINE

SAMPLER (SIG.): Gabriele Mehrer

| | DATE 1994 | TIME | PRES. | SAMPLE No. | NUMBER OF CONTAINERS | HOD 8100 - DRO | TRPH 418.1 | | | | | LOCATION / PURPOSE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7-AK | Oct. 2 | 1100 | REF TPOC | 94RTM10-23 | 2 | 1 | 1 | | | | | STOCKPILE |
| 8 = | ↓ | 1100 | ↓ | 94RTM10-24 | 2 | 1 | 1 | | | | | STOCKPILE |
| 9 = | ↓ | 1100 | ↓ | 94RTM10-25 | 2 | 1 | 1 | | | | | STOCKPILE |

SHIP TO (LABORATORY AND ADDRESS): ATI

BILL TO: AQE

HAZARDS ASSOCIATED WITH SAMPLES: POL

| RELIQUISHED BY: (SIG., DATE, TIME) | RECEIVED BY: (SIG., DATE, TIME) |
|---|---|
| Gabriele Mehrer Oct. 3, 1994 0945 → | [signature] 10/4/94 |
| [signature] 10/4/94 10:00 AM → | KIMBERLY 10/4/94 10:00 AM ATI-AK |
| | |
| | |

TAT AND DATA LEVEL: 7 DAYS LEVEL 3

DELIVER REPORTS TO: DAVE HENRY

QUEST ENVIRONMENTAL
220 CENTER COURT
ANCHORAGE, AK 99518
(907) 563-0050, 563-0085 FAX

SHEET 3 OF 3

Rec'd 1.5°C / Good Condit

# APPENDIX B

## Alaska Raw Data

# Raw Data for 8100

## Sample Data

# ANALYTICAL TECHNOLOGIES, INC ALASKA

## EXTRACTION BENCHSHEET

TEST: DRO
MATRIX: WATER

SURROGATE: 252.5 ppm OTP in MeCH
ID: 2-W-9-1 #14
AMOUNT: 1ml
MATRIX SPIKE: 2500µl/ml DRO in MeOH
ID: 2-W-12-2
AMOUNT: 1ml

EXTRACTION TECH: FJ / MT
SPIKE WITNESS: MT
START DATE: ~~MT~~ 10-4-94
FINISH DATE: 10-4-94

SOLVENT LOT 1#: 413310
2#: UA

CALCULATIONS DONE(cf): NA

| | ACCESSION # | CLIENT ID | INITIAL WT/VOL (g/mL) | FINAL VOLUME mL | CONC FACTOR(cf) (final/initial) | COMMENTS |
|---|---|---|---|---|---|---|
| 1 | WRB | | 1000 | 5.0 | NA | |
| 2 | WBS | | 1000 | | | |
| 3 | WBSD | | 100 | | | |
| 4 | 820078-1 | 46WL04WGN | 1000ml | | | |
| 5 | 820079-1 | 48WL03WGN | 940ml | | | |
| 6 | 820080-1 | 52WL04WGN | 970ml | | | |
| 7 | 820081-1 | 56WL05WGN | ~~MT 970ml~~ 1000ml | | | |
| 8 | -2 | MT 56WL04WGFD | 1000ml | | | |
| 9 | -3 | 56WL04WGN | 1000ml | | | |
| 10 | -4 | 56WL03WGN | 1000ml | | | |
| 11 | 410003-9 | RB-06 | 1000ml | | | clean (no emulsion) |
| 12 | 410006-18 | RINSATE | 1000ml | | | *** |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | | | | | | |
| 17 | | | | | | |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | | | | | | |
| 21 | | | | | | |
| 22 | | | | | | |
| 23 | | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |

NOTES TRAY " ~~MT~~ TJ 10-4 " ORINDCO"

~~***~~ 120 ml of MeCl2 add in layer all emulsion. Emulsion broke down by adding MeCl2.

REVIEWED BY:

RELINQUISHED TO:
DATE:

# Raw Data for 8100

## Sample Quality Control Data

# Quantitation Report

Data File : H:\DATA\DIESEL1\10074D1.SEC\A074FC09.D
Acq On : 07 Oct 94 09:19 PM
Sample : WRB 10-4
Misc :
Quant Time: Oct 10 10:14 1994

Vial: 59
Operator: [GC]A.MS
Inst : DIESEL#1
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\92094CL.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Thu Sep 29 16:51:19 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) S O-TERPHENYL | 21.53 | 2711294 | 29.13 PPM (m) |
| | Recovery | = | 58.26% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 18.80 | 567033 | 8.67 PPM |

HA 10/14/94

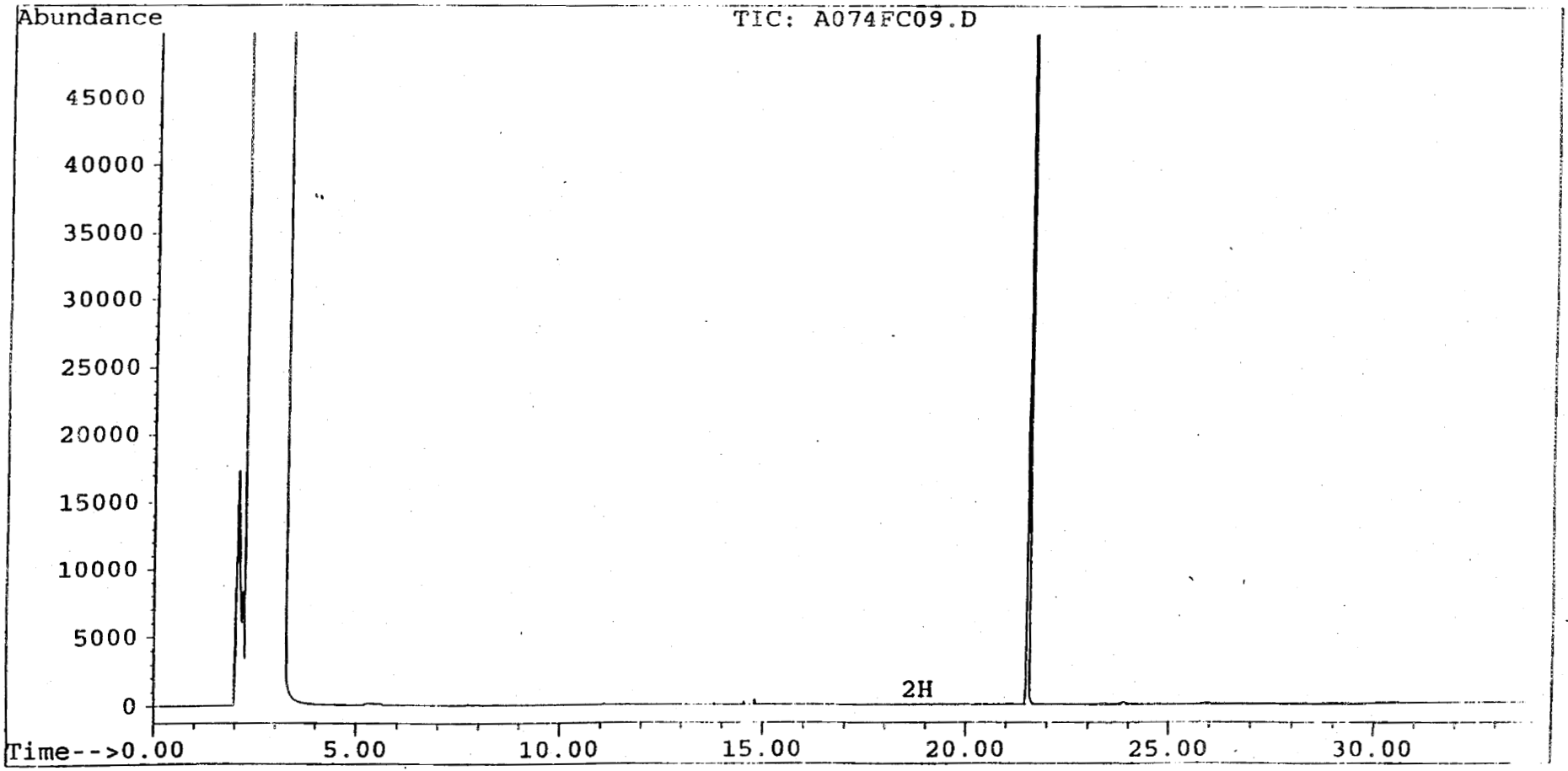
(f)=RT Delta > 1/2 Window (m)=manual int.

Data File : H:\DATA\DIESEL1\10074D1.SEC\A074FC09.D
Acq On : 07 Oct 94 09:19 PM
Sample : WRB 10-4
Misc :
Quant Time: Oct 10 10:14 1994

Vial: 59
Operator: [GC]A.MS
Inst : DIESEL#1
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\92094CL.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Thu Sep 29 16:51:19 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Quantification Report

Data File : H:\DATA\DIESEL1\10074D1.SEC\A074FC10.D
Acq On : 07 Oct 94 10:01 PM
Sample : WBS 10-4
Misc :
Quant Time: Oct 9 10:52 1994

Vial: 60
Operator: [GC]A.MS
Inst : DIESEL#1
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\92094CL.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Thu Sep 29 16:51:19 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) S O-TERPHENYL | 21.54 | 3670033 | 39.43 PPM |
| | | Recovery = | 78.86% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 18.80 | 21635253 | 330.99 PPM |

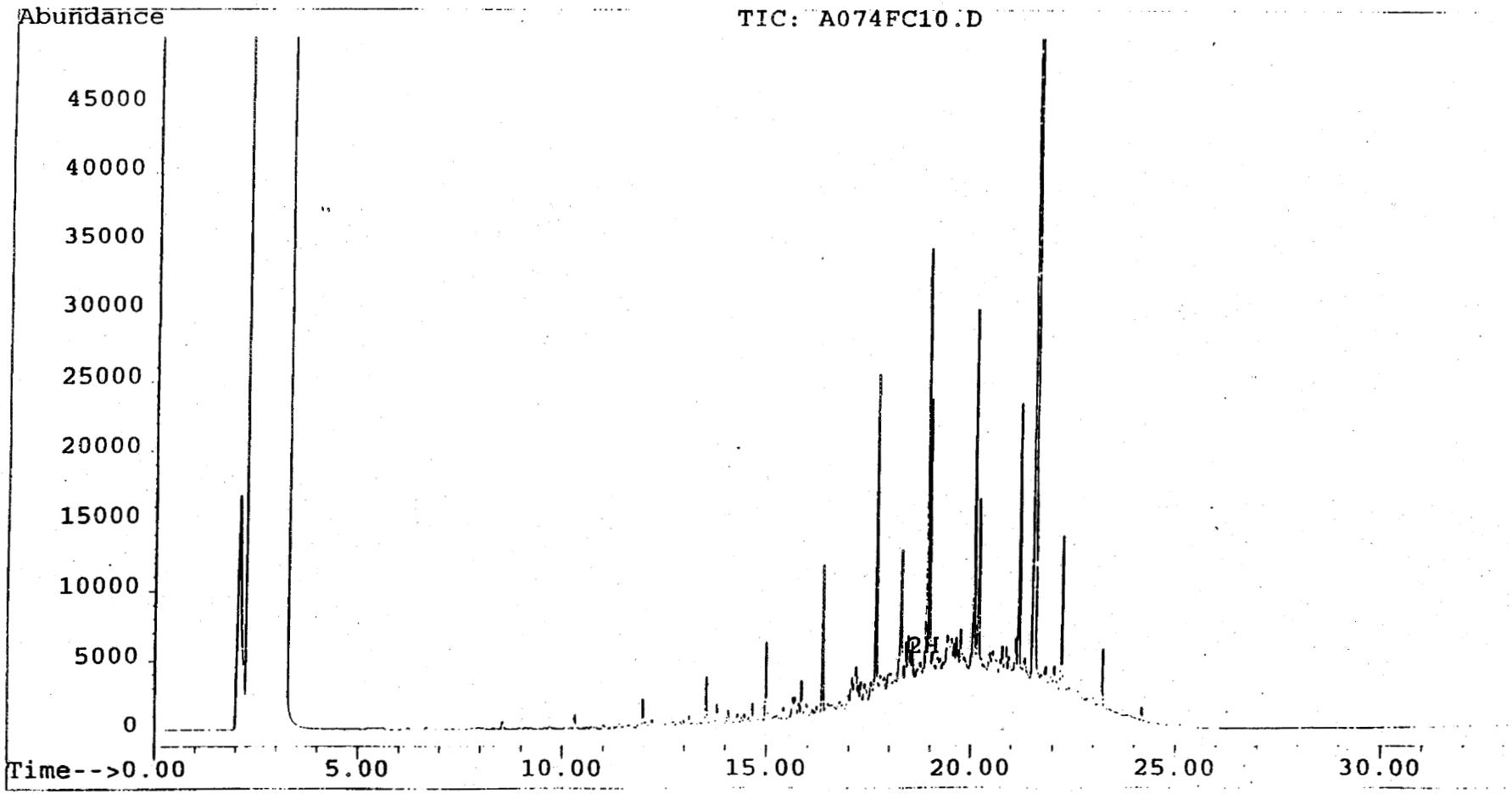
(f)=RT Delta > 1/2 Window (m)=manual int.

Data File : H:\DATA\DIESEL1\10074D1.SEC\A074FC10.D
Acq On : 07 Oct 94 10:01 PM
Sample : WBS 10-4
Misc :
Quant Time: Oct 9 10:52 1994

Vial: 60
Operator: [GC]A.MS
Inst : DIESEL#1
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\92094CL.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Thu Sep 29 16:51:19 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



# Quantitation Report

Data File : H:\DATA\DIESEL1\10074D1.SEC\A074FC11.D
Acq On : 07 Oct 94 10:43 PM
Sample : WBSD 10-4
Misc :
Quant Time: Oct 9 10:53 1994

Vial: 61
Operator: [GC]A.MS
Inst : DIESEL#1
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\92094CL.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Thu Sep 29 16:51:19 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

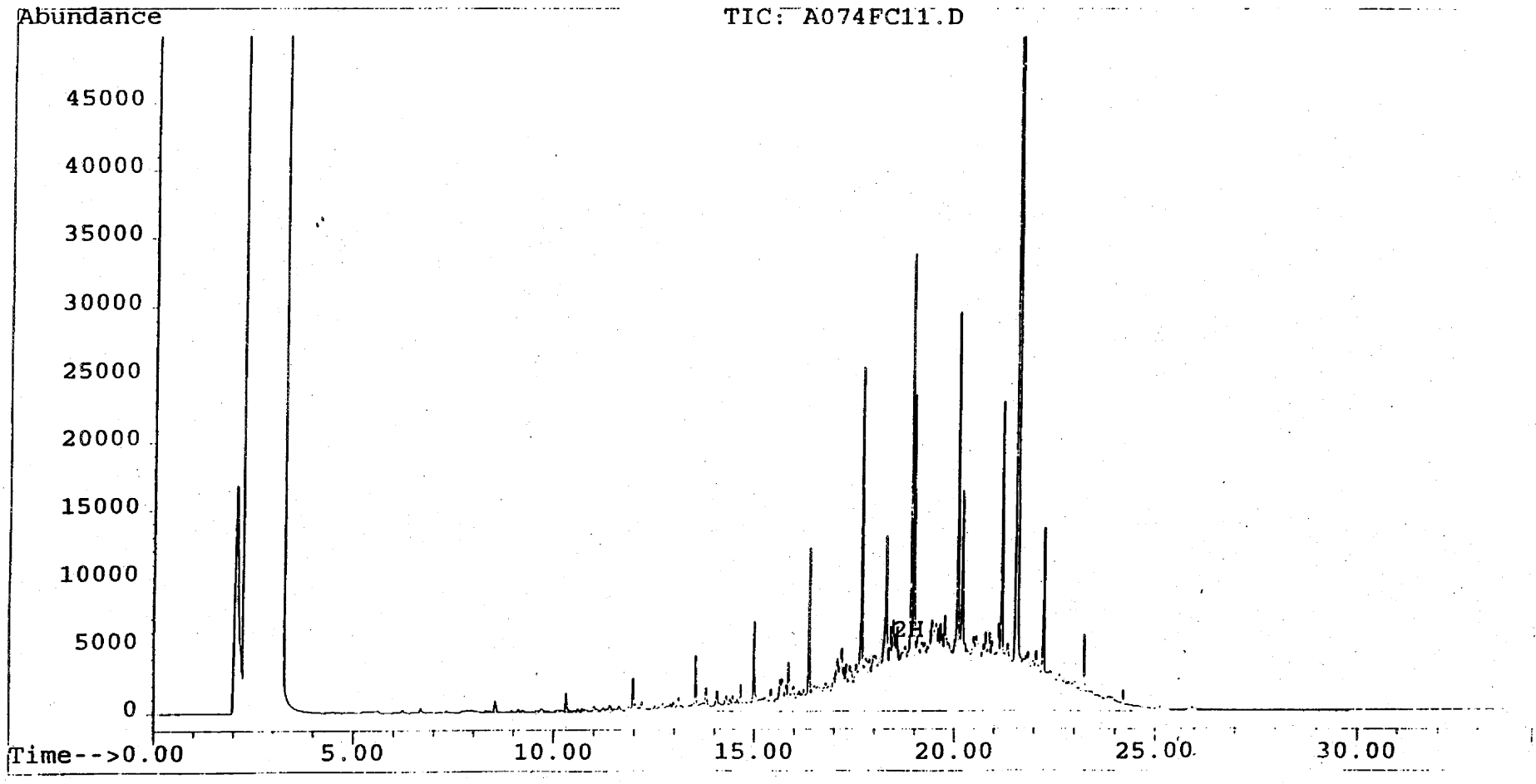
| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) S O-TERPHENYL | 21.54 | 3574038 | 38.39 PPM |
| | | Recovery = | 76.78% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 18.80 | 21732709 | 332.48 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File : H:\DATA\DIESEL1\10074D1.SEC\A074FC11.D  Vial: 61
Acq On : 07 Oct 94 10:43 PM  Operator: [GC]A.MS
Sample : WBSD 10-4  Inst : DIESEL#1
Misc :  Multiplr: 1.00
Quant Time: Oct 9 10:53 1994

Method : C:\HPCHEM\5\METHODS\92094CL.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Thu Sep 29 16:51:19 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



# Raw Data for 8100

## Instrument Quality Control Data

Data File : H:\DATA\DIESEL1\10074D1.SEC\A074FC01.D  Vial: 51
Acq On : 07 Oct 94 03:46 PM  Operator: [GC]A.MS
Sample : MECL2  Inst : DIESEL#1
Misc :  Multiplr: 1.00
Quant Time: Oct 9 10:47 1994

Method : C:\HPCHEM\5\METHODS\92094CL.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Thu Sep 29 16:51:19 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

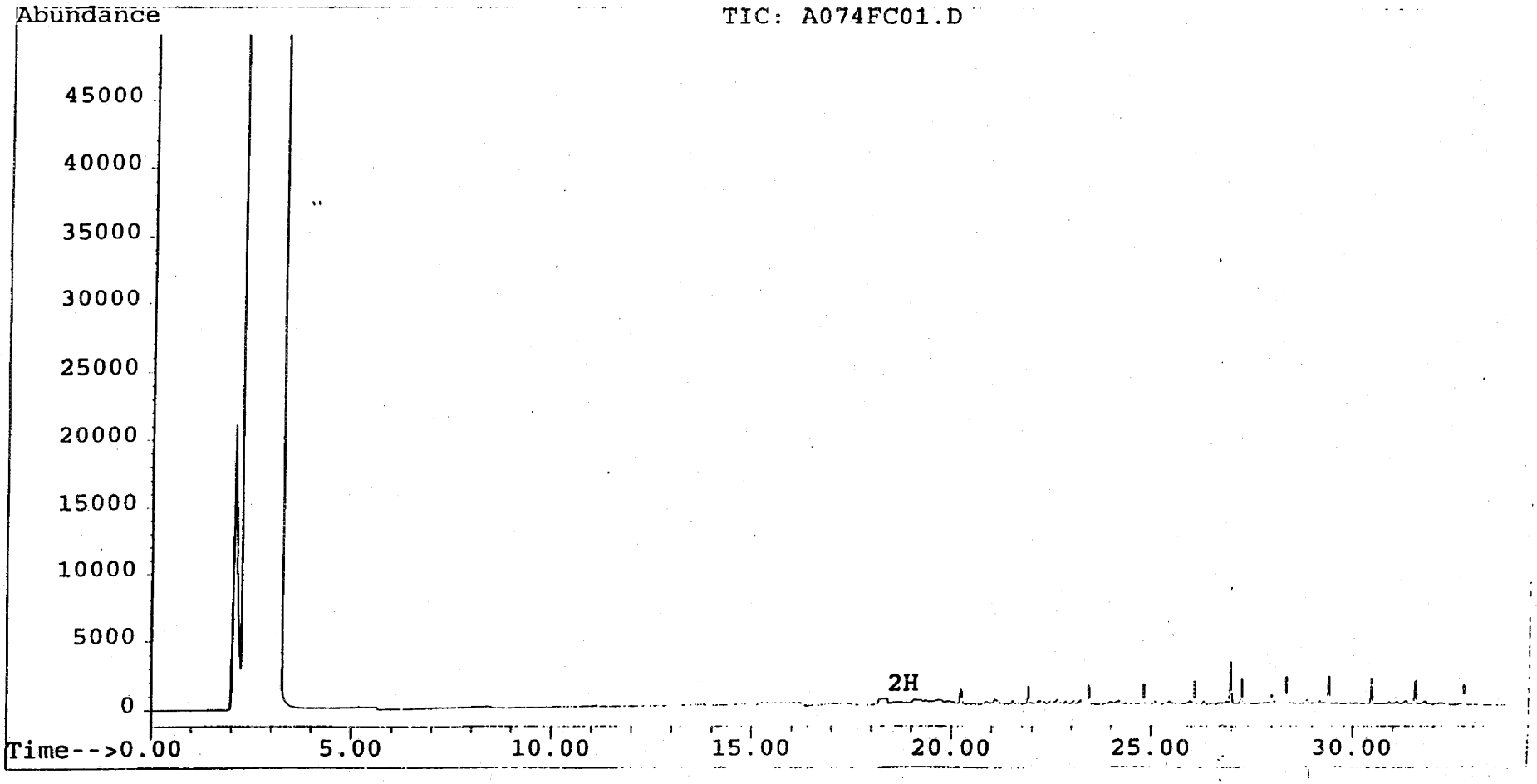
| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) S O-TERPHENYL | 0.00 | 0 | N.D. PPM |
| | Recovery | = | 0.00% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 18.80 | 3610705 | 55.24 PPM |

(f)=RT Delta > 1/2 Window  (m)=manual int.

Data File : H:\DATA\DIESEL1\10074D1.SEC\A074FC01.D  Vial: 51
Acq On : 07 Oct 94 03:46 PM  Operator: [GC]A.MS
Sample : MECL2  Inst : DIESEL#1
Misc :  Multiplr: 1.00
Quant Time: Oct 9 10:47 1994

Method : C:\HPCHEM\5\METHODS\92094CL.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Thu Sep 29 16:51:19 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

Data File : H:\DATA\DIESEL1\10074D1.SEC\A074FC02.D
Acq On : 07 Oct 94 04:23 PM
Sample : RT MARKER
Misc :
Quant Time: Oct 9 10:48 1994

Vial: 52
Operator: [GC]A.MS
Inst : DIESEL#1
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\92094CL.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Thu Sep 29 16:51:19 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) S O-TERPHENYL | 0.00 | 0 | N.D. PPM |
| | Recovery | = | 0.00% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 18.80 | 33282470 | 509.17 PPM |

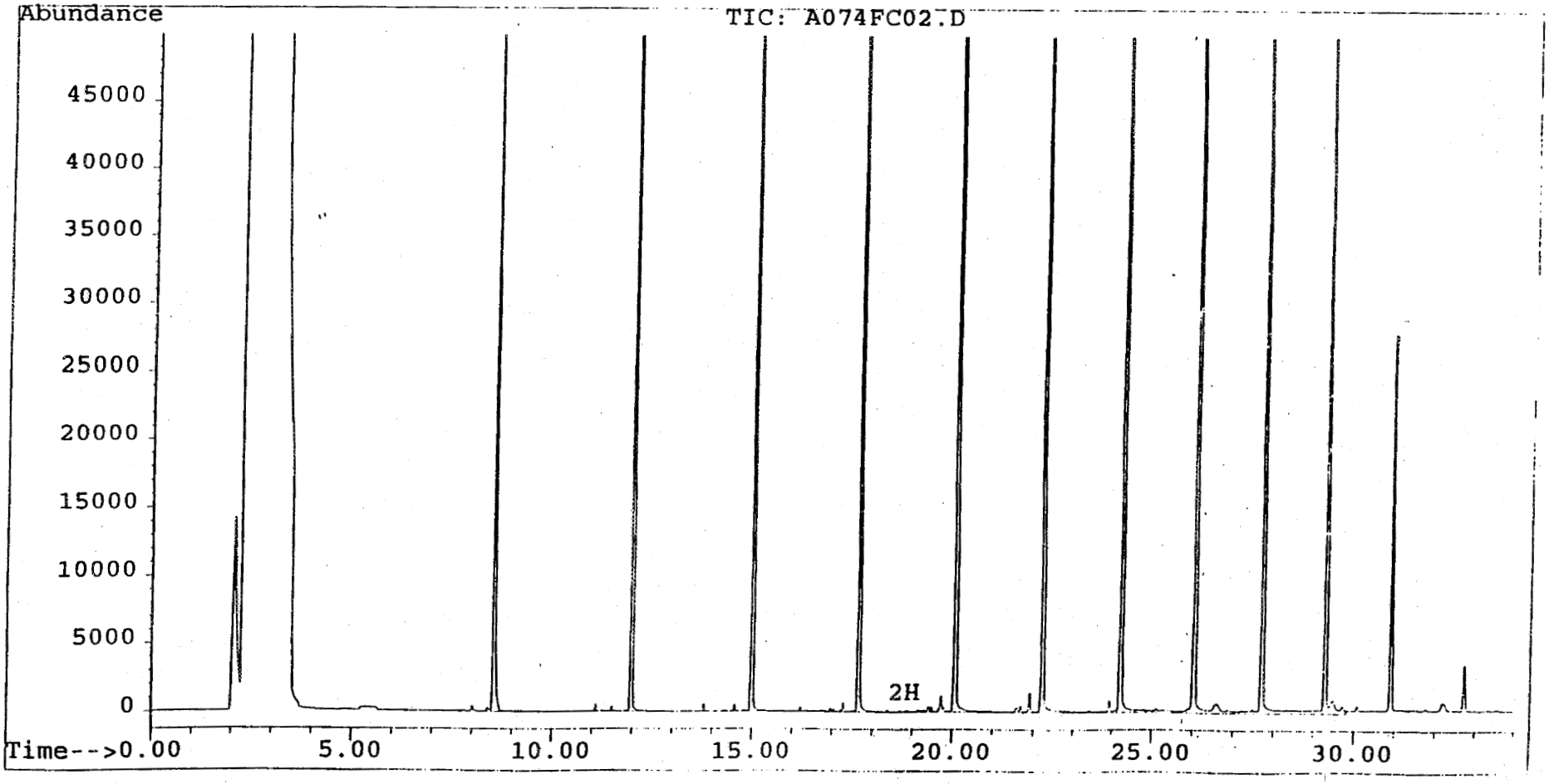
(f)=RT Delta > 1/2 Window (m)=manual int.

Data File : H:\DATA\DIESEL1\10074D1.SEC\A074FC02.D
Acq On : 07 Oct 94 04:23 PM
Sample : RT MARKER
Misc :
Quant Time: Oct 9 10:48 1994

Vial: 52
Operator: [GC]A.MS
Inst : DIESEL#1
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\92094CL.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Thu Sep 29 16:51:19 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

Data File : H:\DATA\DIESEL1\10074D1.SEC\A074FC03.D
Acq On : 07 Oct 94 05:06 PM
Sample : D 500 2-W-11-2
Misc :
Quant Time: Oct 10 9:12 1994

Vial: 53
Operator: [GC]A.MS
Inst : DIESEL#1
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\92094CL.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Thu Sep 29 16:51:19 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) S O-TERPHENYL | 21.57 | 9145453 | 98.25 PPM |
| | | Recovery = | 196.50% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 18.80 | 31083281 | 475.53 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : H:\DATA\DIESEL1\10074D1.SEC\A074FC03.D
Acq On : 07 Oct 94 05:06 PM
Sample : D 500 2-W-11-2
Misc :
Quant Time: Oct 10 9:12 1994

Vial: 53
Operator: [GC]A.MS
Inst : DIESEL#1
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\92094CL.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Thu Sep 29 16:51:19 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

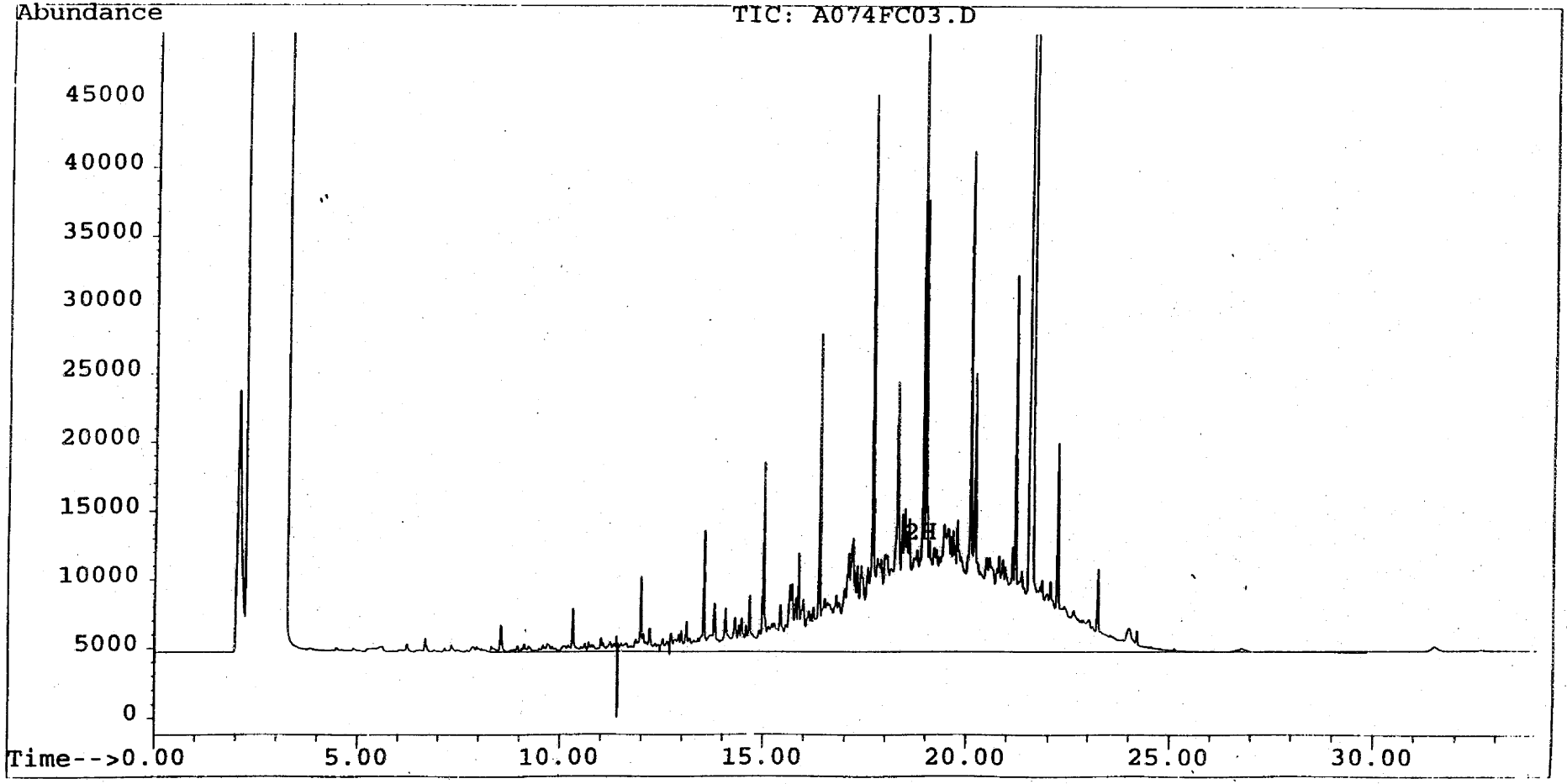
| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) S O-TERPHENYL | 21.57 | 9145453 | 98.25 PPM |
| | | Recovery = | 196.50% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 18.80 | 31083281 | 475.53 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File : H:\DATA\DIESEL1\10074D1.SEC\A074FC03.D  Vial: 53
Acq On : 07 Oct 94 05:06 PM  Operator: [GC]A.MS
Sample : D 500 2-W-11-2  Inst : DIESEL#1
Misc :  Multiplr: 1.00
Quant Time: Oct 10 9:12 1994

Method : C:\HPCHEM\5\METHODS\92094CL.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Thu Sep 29 16:51:19 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



# Quantitation Report

Data File : H:\DATA\DIESEL1\10074D1.SEC\A074FC14.D
Acq On : 08 Oct 94 00:50 AM
Sample : D 500 2-W-11-2
Misc :
Quant Time: Oct 9 10:54 1994

Vial: 64
Operator: [GC]A.MS
Inst : DIESEL#1
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\92094CL.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Thu Sep 29 16:51:19 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) S O-TERPHENYL | 21.58 | 8761785 | 94.12 PPM |
| | | Recovery = | 188.24% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 18.80 | 32423109 | 496.03 PPM |

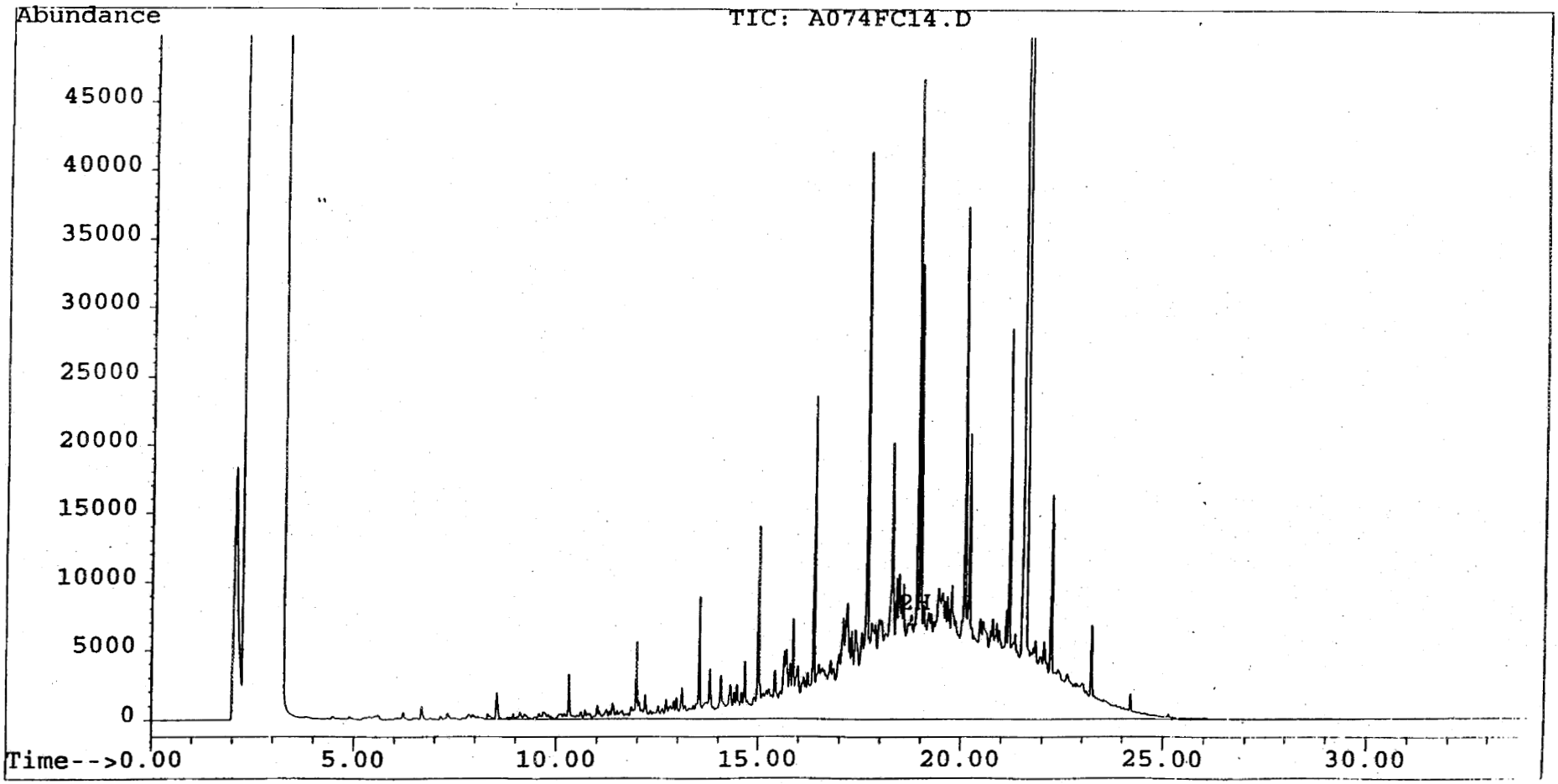
(f)=RT Delta > 1/2 Window (m)=manual int.

Data File : H:\DATA\DIESEL1\10074D1.SEC\A074FC14.D
Acq On : 08 Oct 94 00:50 AM
Sample : D 500 2-W-11-2
Misc :
Quant Time: Oct 9 10:54 1994

Vial: 64
Operator: [GC]A.MS
Inst : DIESEL#1
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\92094CL.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Thu Sep 29 16:51:19 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



# Raw Data for 8100

## Sample Data

# ANALYTICAL TECHNOLOGIES, INC ALASKA

## EXTRACTION BENCHSHEET

TEST: DRO
MATRIX: SOIL

EXTRACTION TECH: FJ
SPIKE WITNESS: LM
START DATE: 10-4-94
FINISH DATE: 10-4-94

SURROGATE:
ID: 252 ppm OTP in MeOH 2-W-9-1 #14
AMOUNT: 1.0 ml

MATRIX SPIKE:
ID: 2500 ng/ml DF2 in MeOH 2-W-12-2 "2"
AMOUNT: 1.0 ml

SOLVENT LOT 1 #: ~~H14258~~ FJ 10-4-94 H14257
2#: —

CALCULATIONS DONE(cf): NA

| ACCESSION # | CLIENT ID | INITIAL WT/VOL (g/mL) | FINAL VOLUME mL | CONC FACTOR(cf) (final/initial) | COMMENTS |
|---|---|---|---|---|---|
| SAB III | | 25.051 | 5.0 ml | NA | |
| SBS III | | 25.050 | | | |
| SBSD III | | 25.259 | | | |
| ~~94RTM 16~~ LM 10/4 | | | | | |
| 410006 - 01 | 94RTM 10-26 | 25.120 | | | |
| -02 | 94RTM 10-27 | 25.170 | | | |
| -03 | 94RTM 10-28 | 25.217 | | | |
| -04 | 94RTM 10-29 | 25.303 | 10.0 ml | | |
| -05 | 94RTM 10-30 | 25.242 | 5.0 ml | | |
| -06 | 94RTM 10-31 | 25.192 | | | |
| -07 | 94RTM 10-~~31~~ LM 10/4 23 | 25.107 | 100.0 ml | | smells like tar, looks like tar |
| -08 | 94RTM 10-24 | 25.170 | 50.0 ml | | lots of grass in sample. |
| -09 | 94RTM 10-25 | 25.192 | 10.0 ml | | |
| 409067 - 01 | 13-SB02-1213.5 | 25.000 | 5.0 ml | | rocky |
| -02 | 13 SB01 - 078.5 | 25.285 | | | |
| 409067-01 DUP | 13-SB02-1213.5 | 25.037 | | | |
| MS | | 25.057 | | | |
| MSD | | 25.124 | | | |

also pet like

10-4 FJ

ES TRAY "LATE"

REVIEWED BY:

RELINQUISHED TO:
DATE:

# Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX41.D
Acq On : 05 Oct 94 12:25 PM
Sample : 41000601
Misc :
Quant Time: Oct 5 16:40 1994

Vial: 41
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\9_7_29XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Wed Oct 05 16:34:27 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.32 | 2018862 | 36.82 PPM |
| | | Recovery = | 73.64% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 670136 | 15.75 PPM |
| 3) H RESIDUAL RANGE ORGANICS | 0.00 | 0 | N.D. PPM |

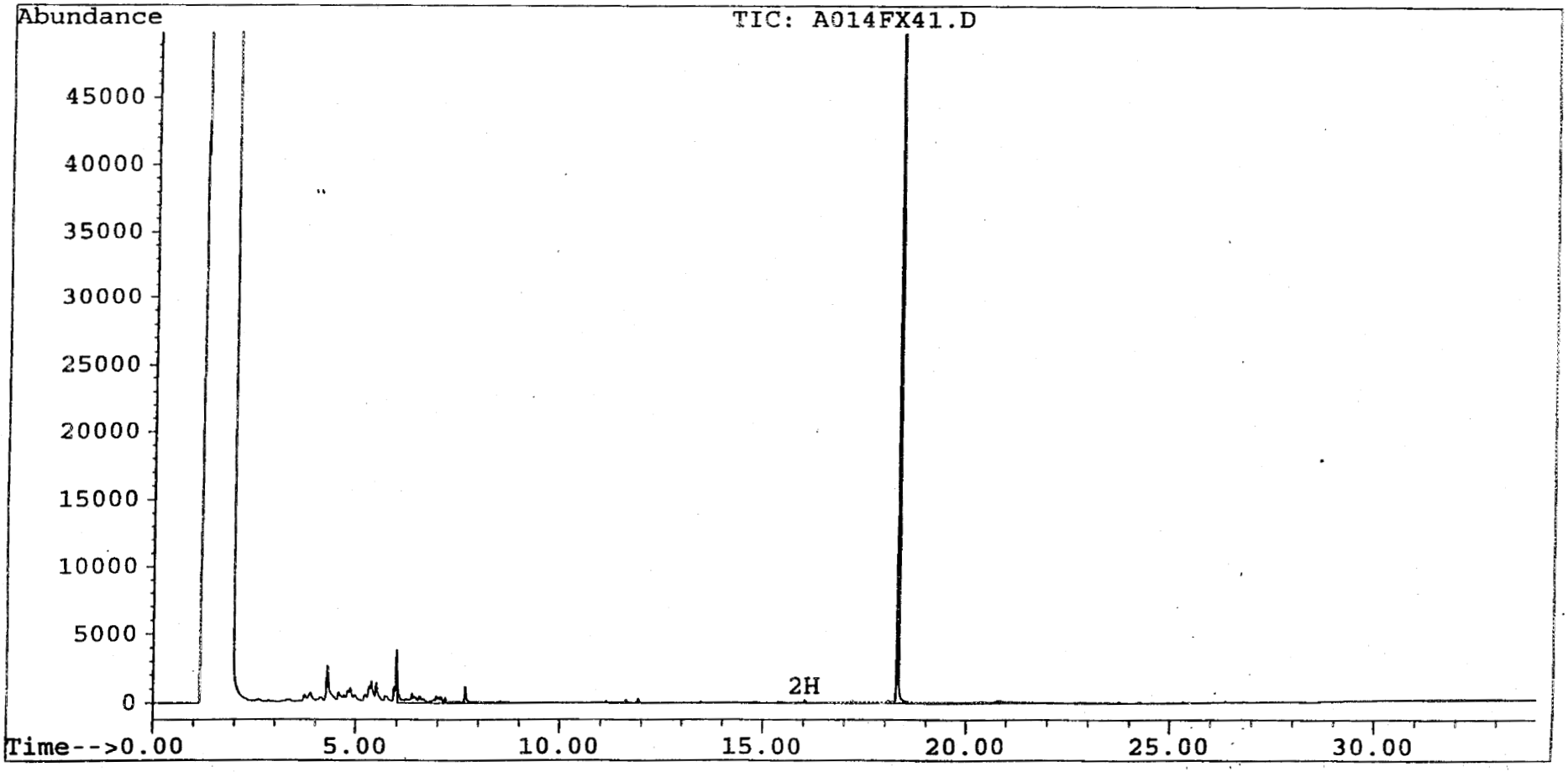
(f)=RT Delta > 1/2 Window (m)=manual int.

Data File : H:\DATA\DIESEL2\100394D1\A014FX41.D
Acq On : 05 Oct 94 12:25 PM
Sample : 41000601
Misc :
Quant Time: Oct 5 16:40 1994

Vial: 41
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\9_7_29XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Wed Oct 05 16:34:27 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX43.D
Acq On : 05 Oct 94 01:48 PM
Sample : 41000603
Misc :
Quant Time: Oct 5 16:44 1994

Vial: 43
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\9_7_29XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Wed Oct 05 16:34:27 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.31 | 2145361 | 39.12 PPM |
| | Recovery | = | 78.24% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 838093 | 19.70 PPM |
| 3) H RESIDUAL RANGE ORGANICS | 0.00 | 0 | N.D. PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

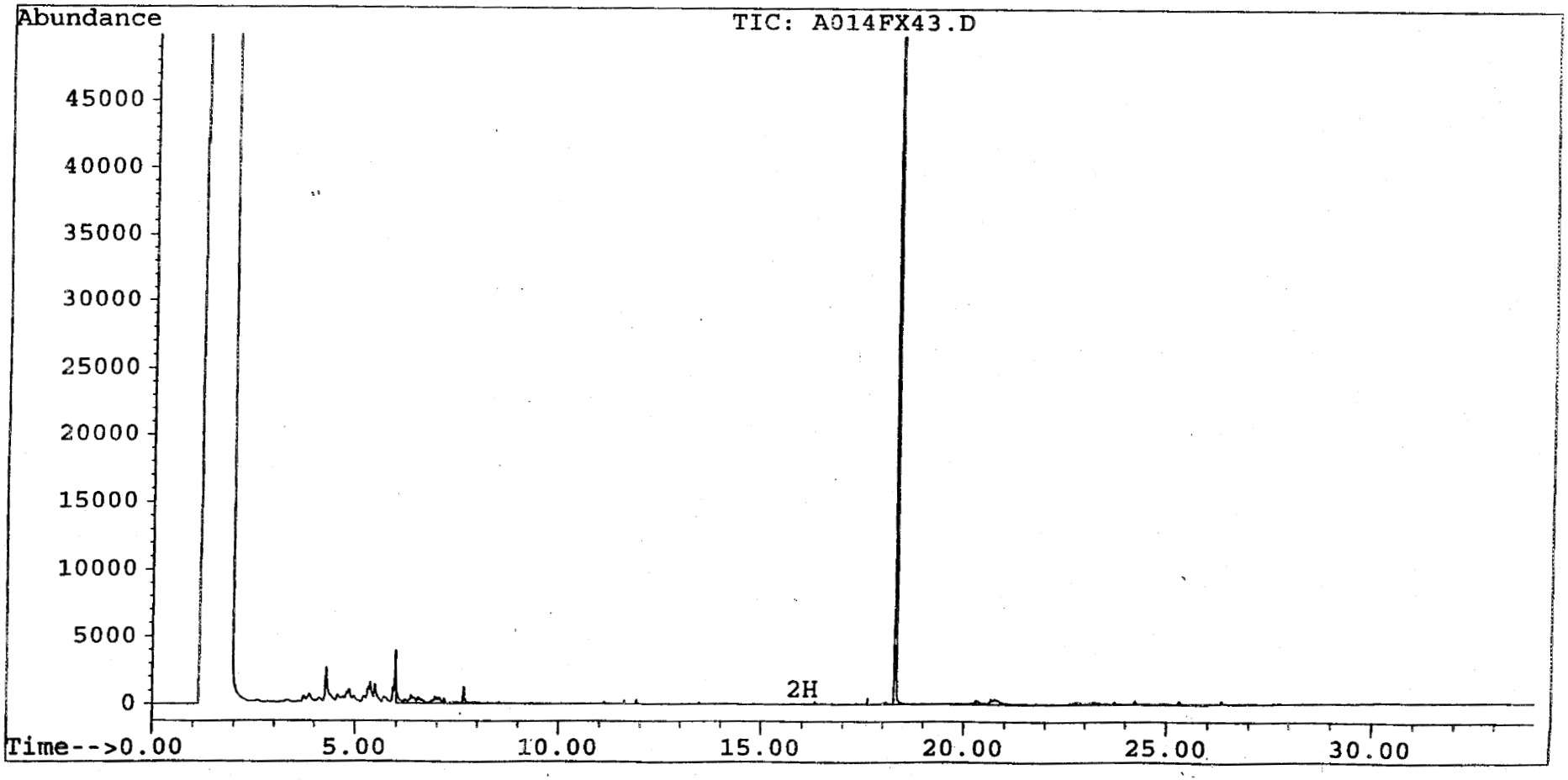
Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX43.D
Acq On : 05 Oct 94 01:48 PM
Sample : 41000603
Misc :
Quant Time: Oct 5 16:44 1994

Vial: 43
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\9_7_29XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Wed Oct 05 16:34:27 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX44.D
Acq On : 05 Oct 94 02:30 PM
Sample : 41000604
Misc :
Quant Time: Oct 5 16:22 1994

Vial: 44
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\9_7_29XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Wed Oct 05 16:34:27 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.29 | 1325096 | 24.16 PPM |
| | | Recovery = | 48.32% X2 |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 14141045 | 332.33 PPM |
| 3) H RESIDUAL RANGE ORGANICS | 29.00 | 1999354 | 774.79 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

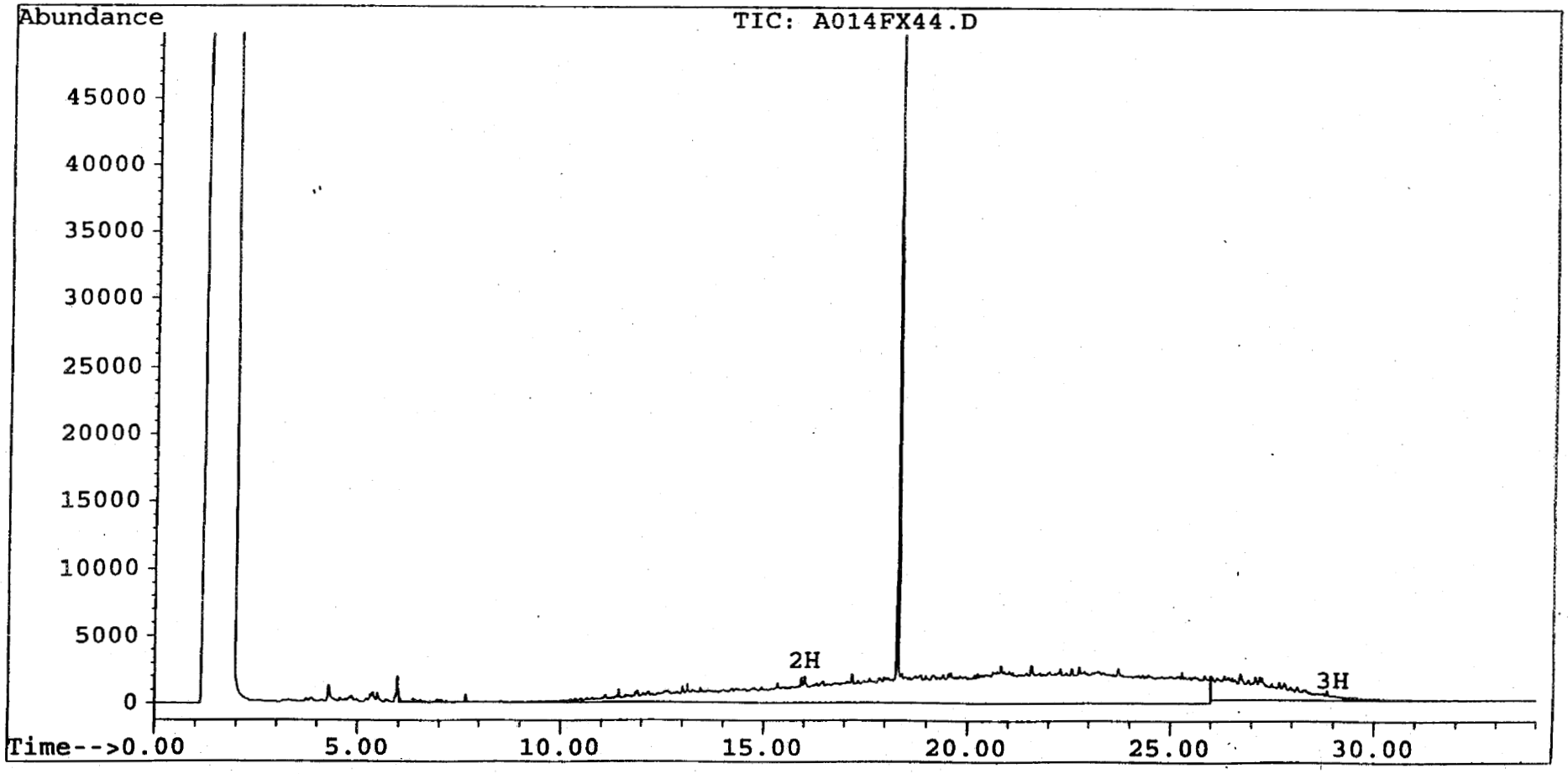
Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX44.D
Acq On : 05 Oct 94 02:30 PM
Sample : 41000604
Misc :
Quant Time: Oct 5 16:22 1994

Vial: 44
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\9_7_29XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Wed Oct 05 16:34:27 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX45.D
Acq On : 05 Oct 94 04:27 PM
Sample : 41000605
Misc :
Quant Time: Oct 5 18:05 1994

Vial: 45
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\9_7_29XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Wed Oct 05 16:34:27 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.30 | 2225123 | 40.58 PPM |
| | | Recovery = | 81.16% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 3816197 | 89.68 PPM |
| 3) H RESIDUAL RANGE ORGANICS | 0.00 | 0 | N.D. PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

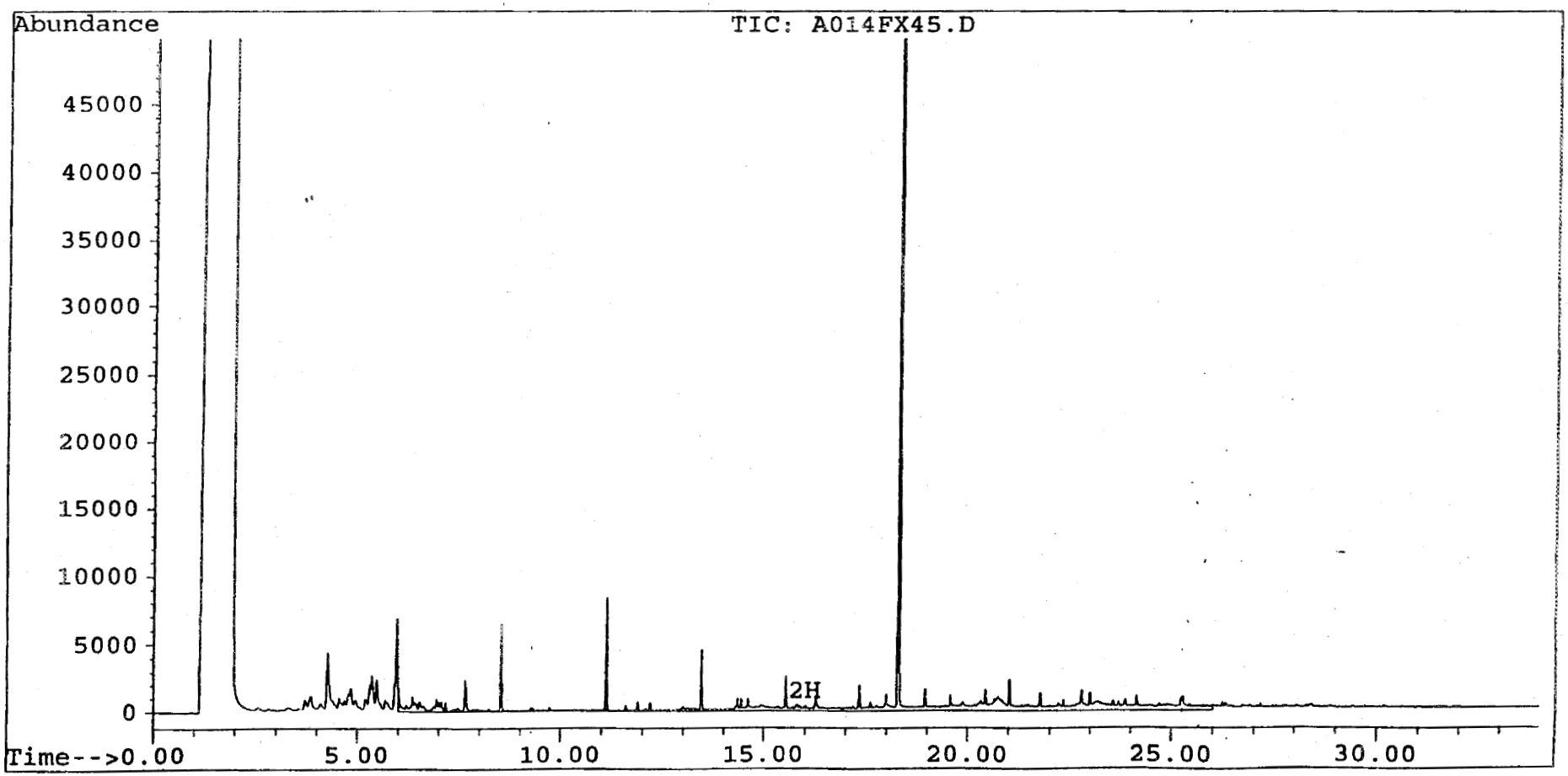
Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX45.D
Acq On : 05 Oct 94 04:27 PM
Sample : 41000605
Misc :
Quant Time: Oct 5 18:05 1994

Vial: 45
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\9_7_29XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Wed Oct 05 16:34:27 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX46.D
Acq On : 05 Oct 94 05:03 PM
Sample : 41000606
Misc :
Quant Time: Oct 5 18:00 1994

Vial: 46
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\9_7_29XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Wed Oct 05 16:34:27 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.30 | 3509015 | 63.99 PPM |
| | | Recovery = | 127.98% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 85472911 | 2008.70 PPM |
| 3) H RESIDUAL RANGE ORGANICS | 30.00 | 516281 | 378.78 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

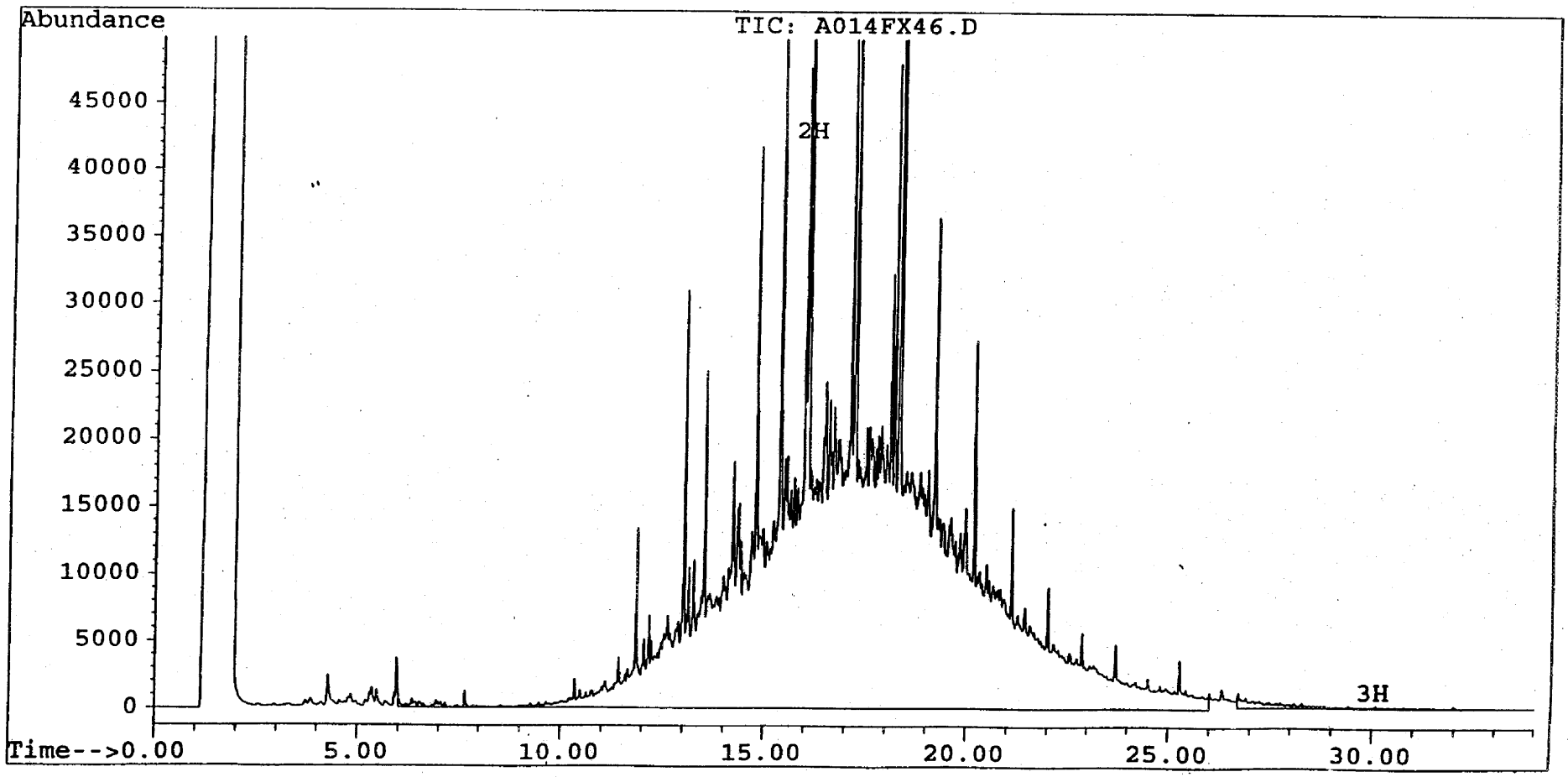
Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX46.D
Acq On : 05 Oct 94 05:03 PM
Sample : 41000606
Misc :
Quant Time: Oct 5 18:00 1994

Vial: 46
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\9_7_29XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Wed Oct 05 16:34:27 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



# Quantitation Report

Data File : H:\DATA\DIESEL2\A1394\A134FX32.D
Acq On : 14 Oct 94 12:37 PM
Sample : 41000607 1:10
Misc :
Quant Time: Oct 14 15:23 1994

Vial: 32
Operator: [GC]\
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\A084EXTE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Mon Oct 10 13:17:56 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.07 | 201164 | 3.66 PPM |
| | Recovery | = | 7.32% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 59284881 | 1393.26 PPM |
| 3) H RESIDUAL RANGE ORGANICS | 29.00 | 13614041 | 1100.22 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

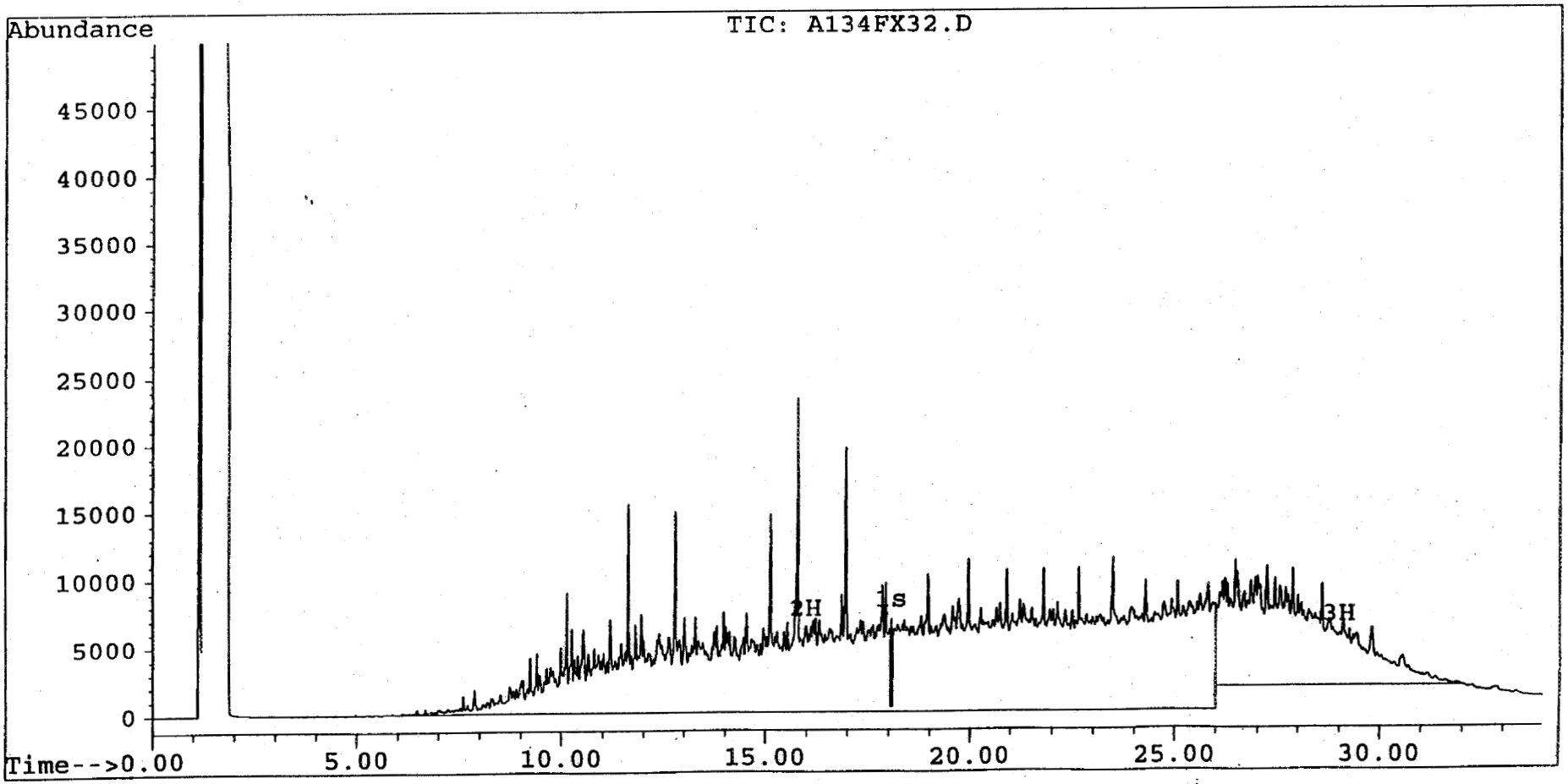
Quantitation Report

Data File : H:\DATA\DIESEL2\A1394\A134FX32.D
Acq On : 14 Oct 94 12:37 PM
Sample : 41000607 1:10
Misc :
Quant Time: Oct 14 15:23 1994

Vial: 32
Operator: [GC]\
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\A084EXTE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Mon Oct 10 13:17:56 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



# Quantitation Report

Data File : H:\DATA\DIESEL2\A1394\A134FX05.D
Acq On : 13 Oct 94 06:04 PM
Sample : 41000608
Misc :
Quant Time: Oct 17 9:18 1994

Vial: 5
Operator: [GC]\
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\A084EXTE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Mon Oct 10 13:17:56 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.03 | 404748 | 7.36 PPM m |
| Recovery = | | | 14.72% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 32162874 | 755.86 PPM |
| 3) H RESIDUAL RANGE ORGANICS | 29.00 | 10129277 | 824.36 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

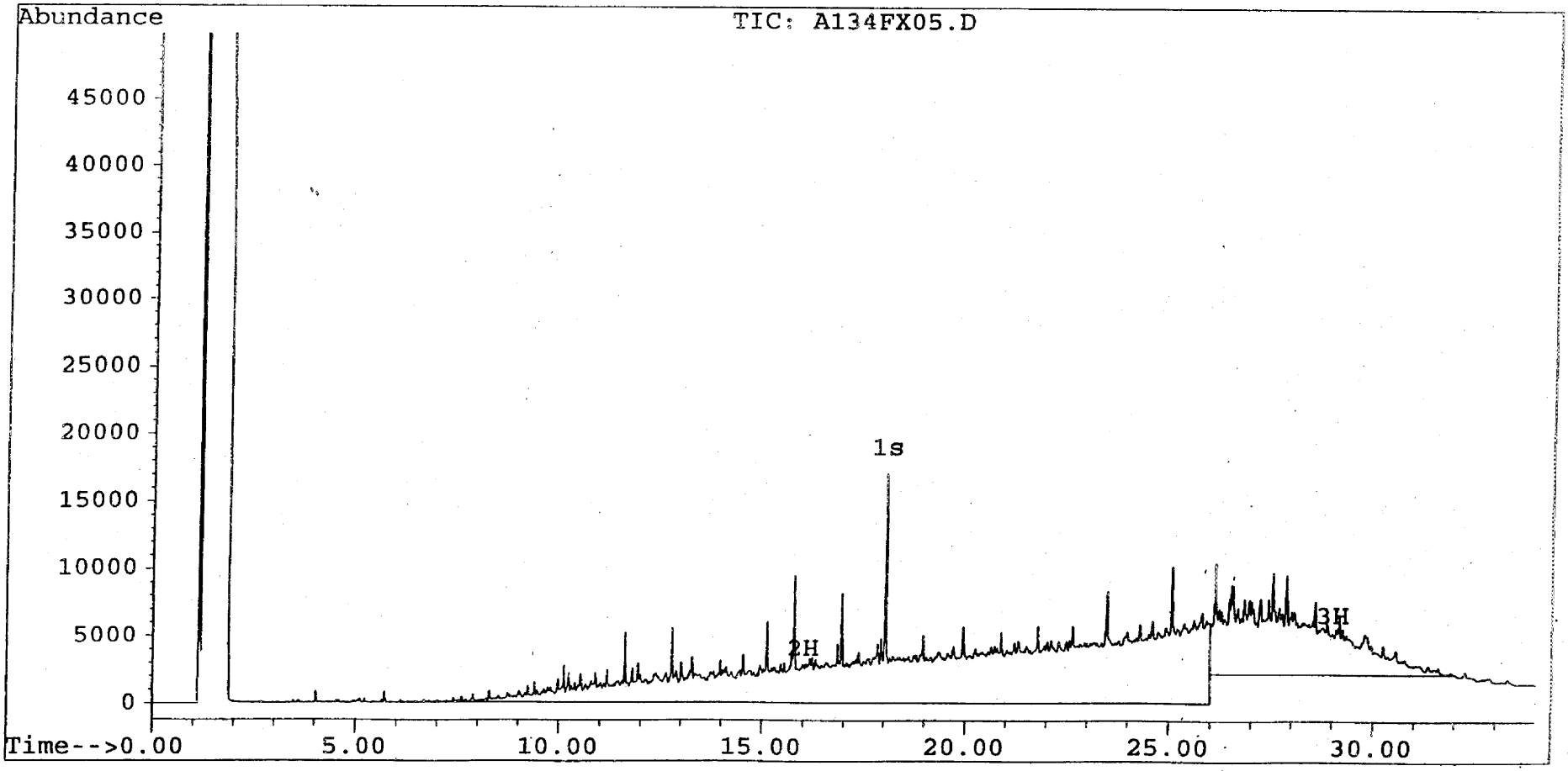
Quantitation Report

Data File : H:\DATA\DIESEL2\A1394\A134FX05.D
Acq On : 13 Oct 94 06:04 PM
Sample : 41000608
Misc :
Quant Time: Oct 17 9:18 1994

Vial: 5
Operator: [GC]\
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\A084EXTE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Mon Oct 10 13:17:56 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



# Quantitation Report

Data File : H:\DATA\DIESEL2\A1394\A134FX06.D
Acq On : 13 Oct 94 06:46 PM
Sample : 41000609 1:5
Misc :
Quant Time: Oct 17 9:19 1994

Vial: 6
Operator: [GC]\
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\A084EXTE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Mon Oct 10 13:17:56 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.03 | 433058 | 7.88 PPM m |
| Recovery = | | | 15.76% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 42414641 | 996.79 PPM |
| 3) H RESIDUAL RANGE ORGANICS | 29.00 | 14599398 | 1178.22 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

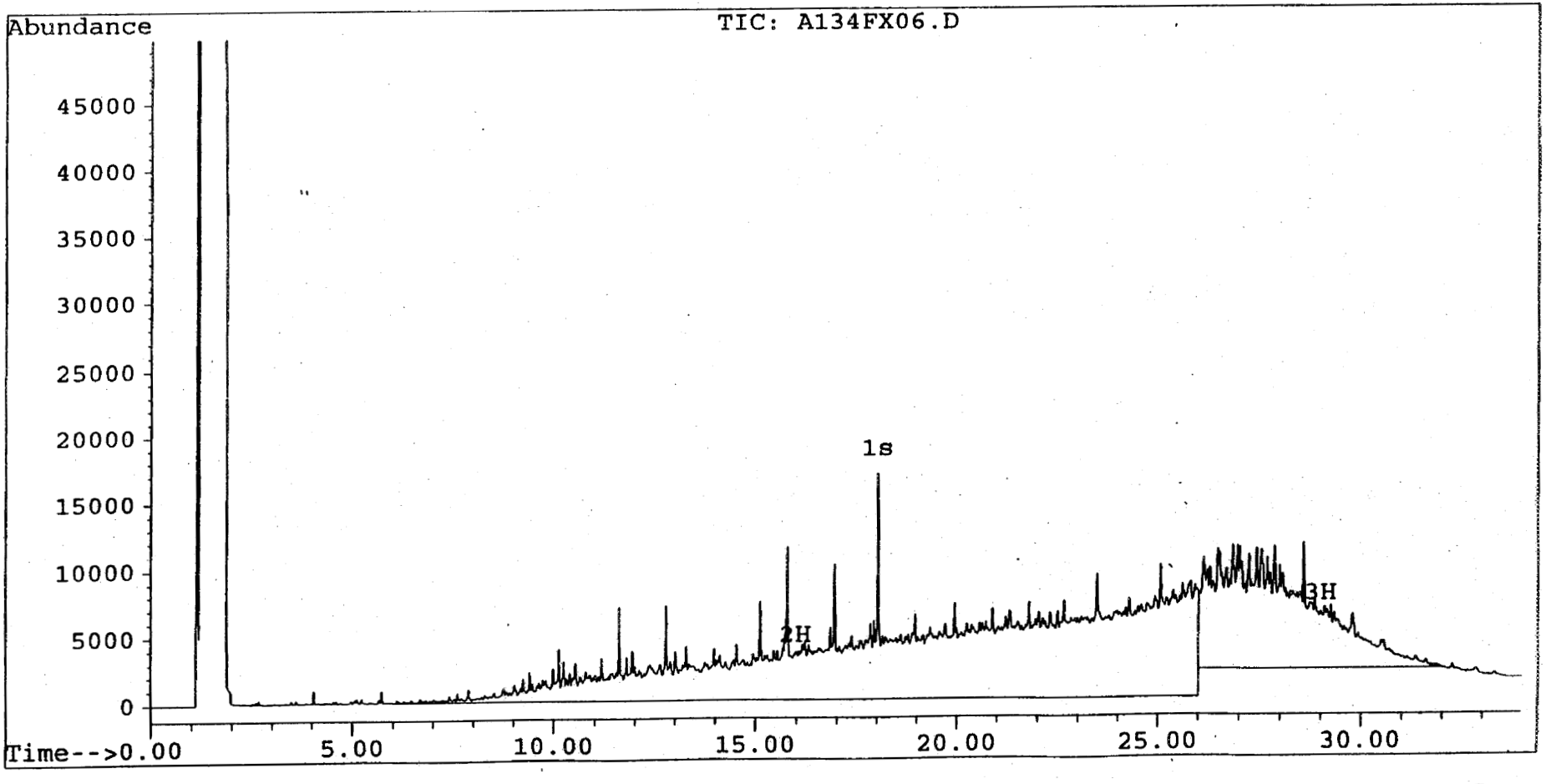
Quantitation Report

Data File : H:\DATA\DIESEL2\A1394\A134FX06.D
Acq On : 13 Oct 94 06:46 PM
Sample : 41000609 1:5
Misc :
Quant Time: Oct 17 9:19 1994

Vial: 6
Operator: [GC]\
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\A084EXTE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Mon Oct 10 13:17:56 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



# Raw Data for 8100

## Sample Quality Control Data

# Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX38.D
Acq On : 05 Oct 94 10:10 AM
Sample : SRB3 10/4
Misc :
Quant Time: Oct 6 12:24 1994

Vial: 38
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.31 | 2164048 | 39.46 PPM |
| | | Recovery = | 78.92% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 711138 | 16.71 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

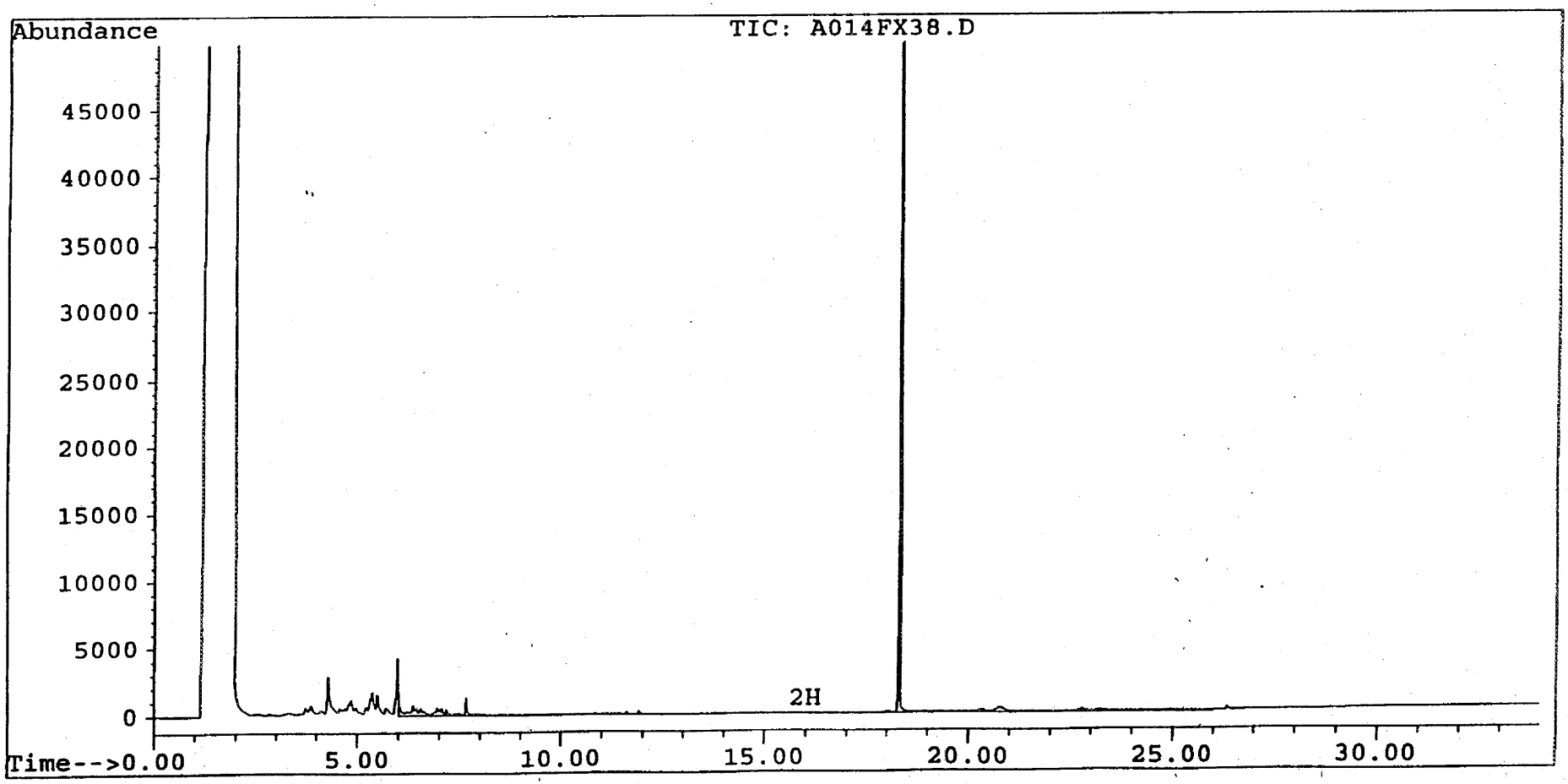
Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX38.D
Acq On : 05 Oct 94 10:10 AM
Sample : SRB3 10/4
Misc :
Quant Time: Oct 6 12:24 1994

Vial: 38
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX39.D
Acq On : 05 Oct 94 10:52 AM
Sample : SBS3 10/4
Misc :
Quant Time: Oct 6 12:25 1994

Vial: 39
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.32 | 2645006 | 48.24 PPM |
| | | Recovery = | 96.48% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 19447606 | 457.04 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

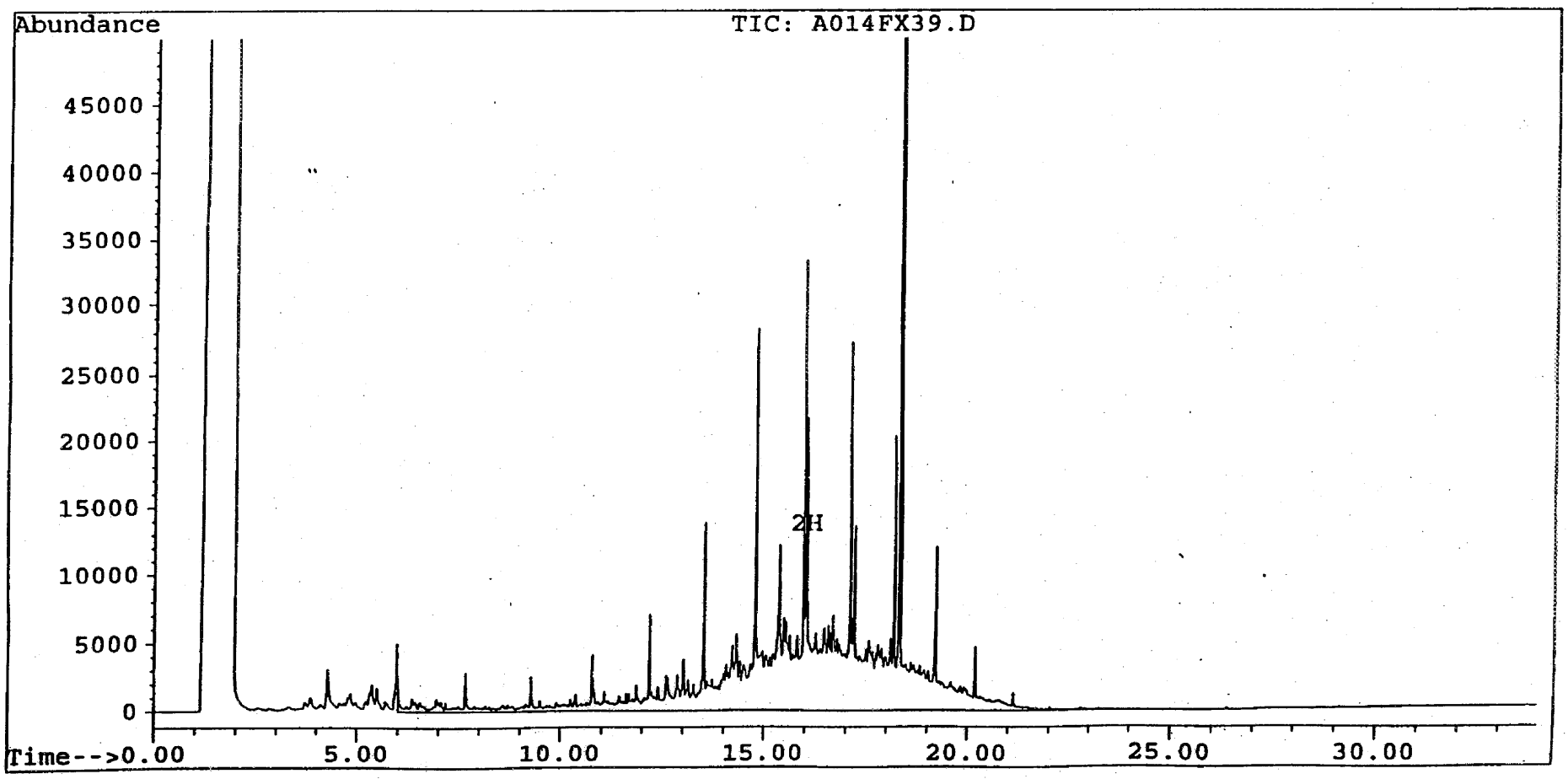
Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX39.D
Acq On : 05 Oct 94 10:52 AM
Sample : SBS3 10/4
Misc :
Quant Time: Oct 6 12:25 1994

Vial: 39
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



# Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX40.D
Acq On : 05 Oct 94 11:49 AM
Sample : SBSD 10/4
Misc :
Quant Time: Oct 6 12:25 1994

Vial: 40
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.32 | 2605846 | 47.52 PPM |
| | | Recovery = | 95.04% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 18002239 | 423.07 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

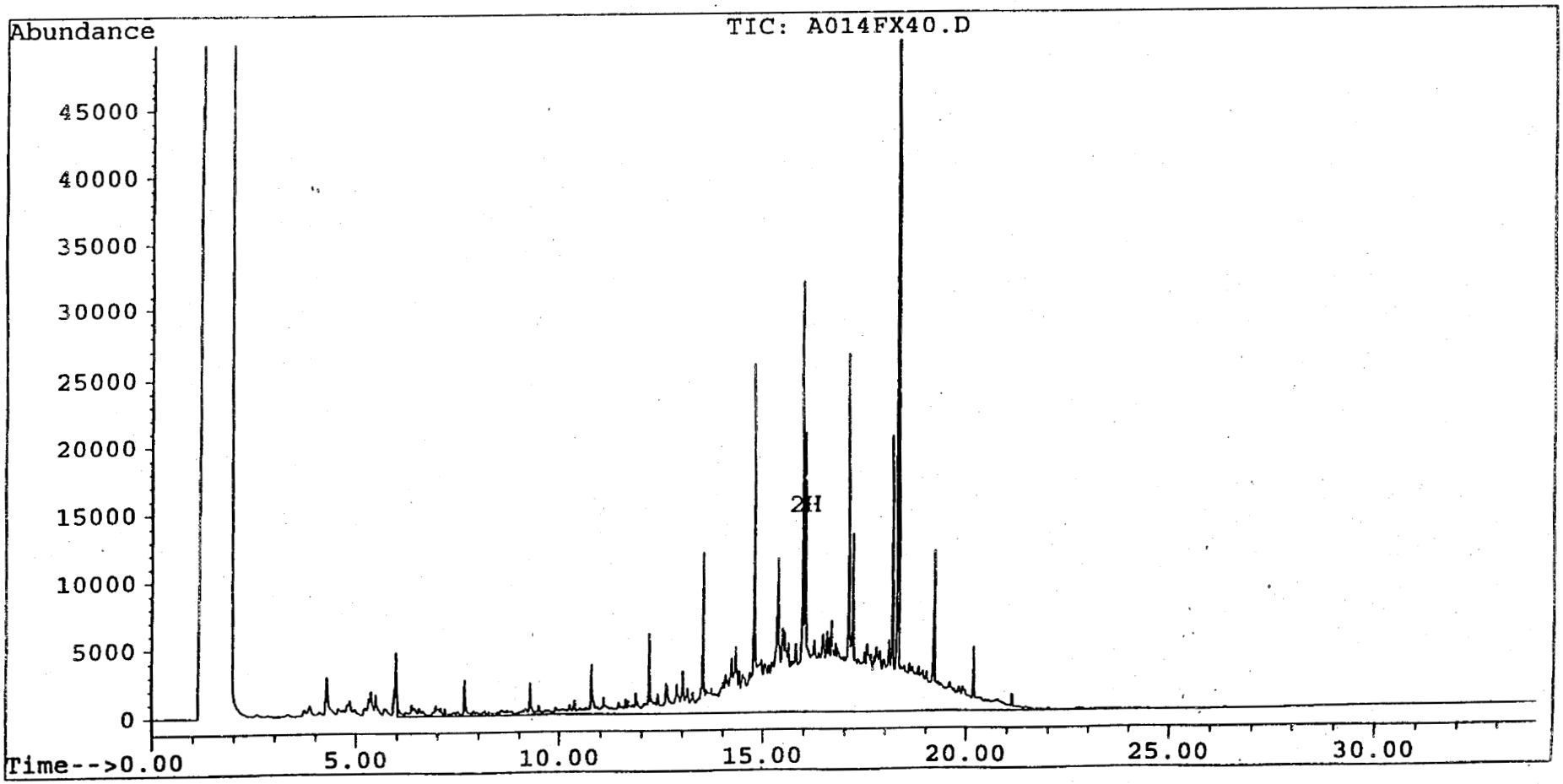
Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX40.D
Acq On : 05 Oct 94 11:49 AM
Sample : SBSD 10/4
Misc :
Quant Time: Oct 6 12:25 1994

Vial: 40
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Data File : H:\DATA\DIESEL2\100394D1\A014FX64.D
Acq On : 06 Oct 94 05:42 AM
Sample : 40906701
Misc :
Quant Time: Oct 7 8:20 1994

Vial: 64
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.28 | 2258629 | 41.19 PPM = |
| | Recovery | = | 82.38% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 2435917 | 57.25 PPM |

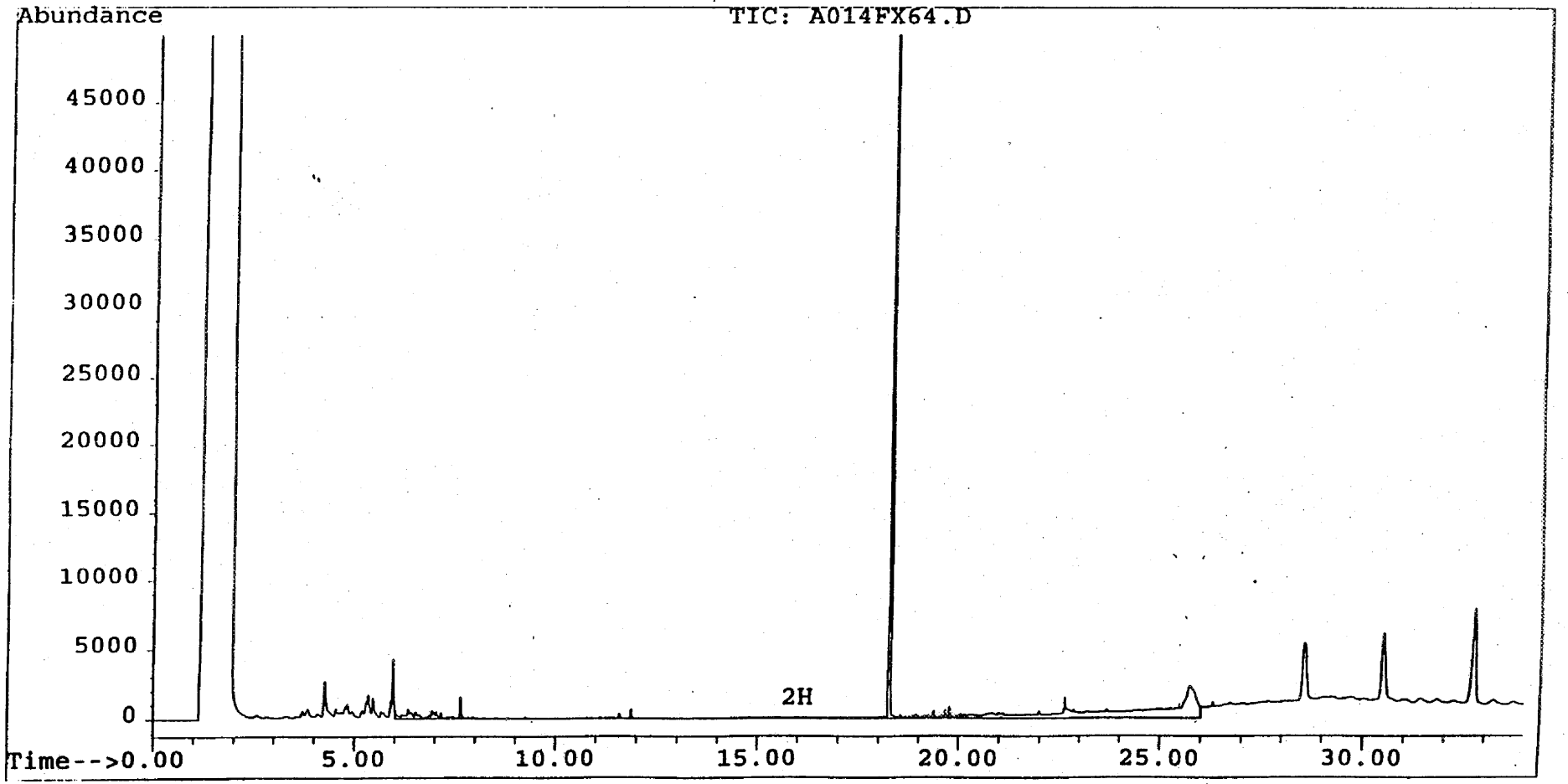
(f)=RT Delta > 1/2 Window
(m)=manual int.

Data File : H:\DATA\DIESEL2\100394D1\A014FX64.D
Acq On : 06 Oct 94 05:42 AM
Sample : 40906701
Misc :
Quant Time: Oct 7 8:20 1994

Vial: 64
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Data File : H:\DATA\DIESEL2\100394D1\A014FX65.D
Acq On : 06 Oct 94 06:25 AM
Sample : 40906701 DUP
Misc :
Quant Time: Oct 7 8:20 1994

Vial: 65
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.28 | 2259682 | 41.21 PPM |
| | Recovery | = | 82.42% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 1397236 | 32.84 PPM |

(f)=RT Delta > 1/2 Window
(m)=manual int.

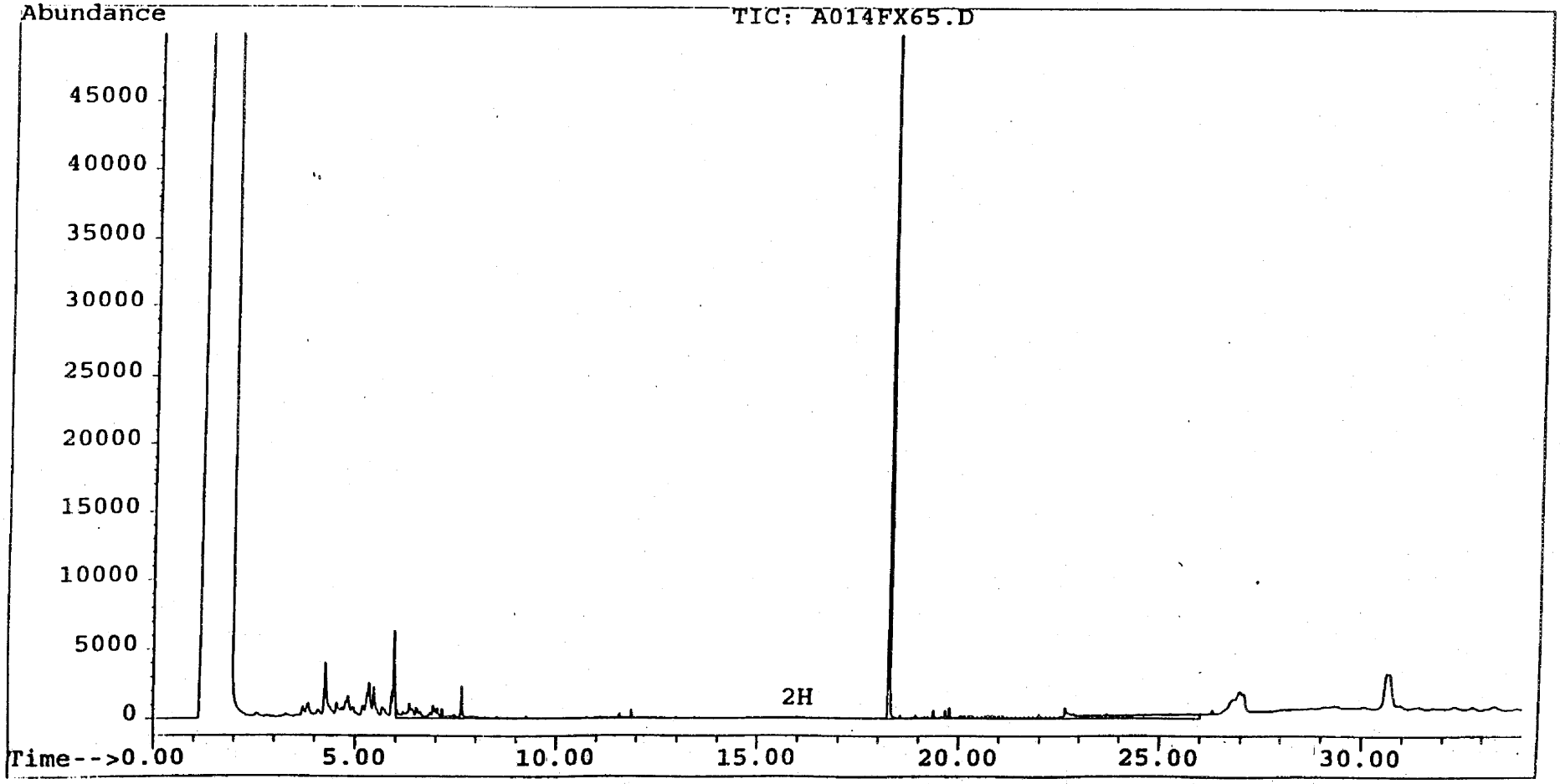
Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX65.D
Acq On : 06 Oct 94 06:25 AM
Sample : 40906701 DUP
Misc :
Quant Time: Oct 7 8:20 1994

Vial: 65
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX66.D
Acq On : 06 Oct 94 07:07 AM
Sample : 40906701 MS
Misc :
Quant Time: Oct 7 8:21 1994

Vial: 66
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.29 | 2481796 | 45.26 PPM |
| | | Recovery = | 90.52% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 16057917 | 377.38 PPM |

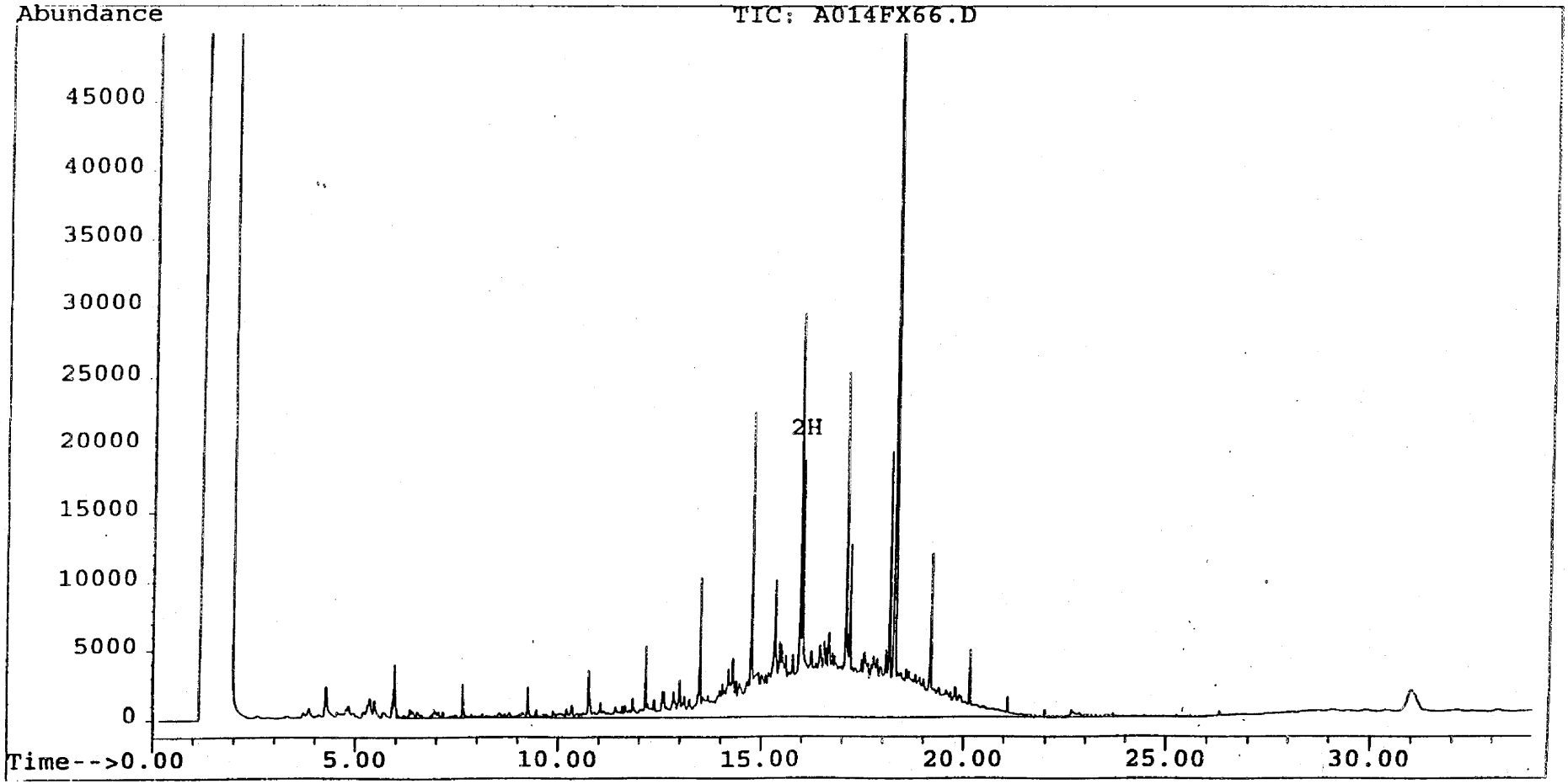
(f)=RT Delta > 1/2 Window (m)=manual int.

Data File : H:\DATA\DIESEL2\100394D1\A014FX66.D
Acq On : 06 Oct 94 07:07 AM
Sample : 40906701 MS
Misc :
Quant Time: Oct 7 8:21 1994

Vial: 66
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX67.D
Acq On : 06 Oct 94 07:49 AM
Sample : 40906701 MSD
Misc :
Quant Time: Oct 7 8:21 1994

Vial: 67
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.31 | 2644760 | 48.23 PPM |
| | | Recovery = | 96.46% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 17934475 | 421.48 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

# Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX03.D
Acq On : 04 Oct 94 08:39 AM
Sample : d 500
Misc :
Quant Time: Oct 6 12:06 1994

Vial: 3
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.33 | 5933910 | 108.21 PPM |
| | | Recovery = | 216.42% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 23507112 | 552.44 PPM |

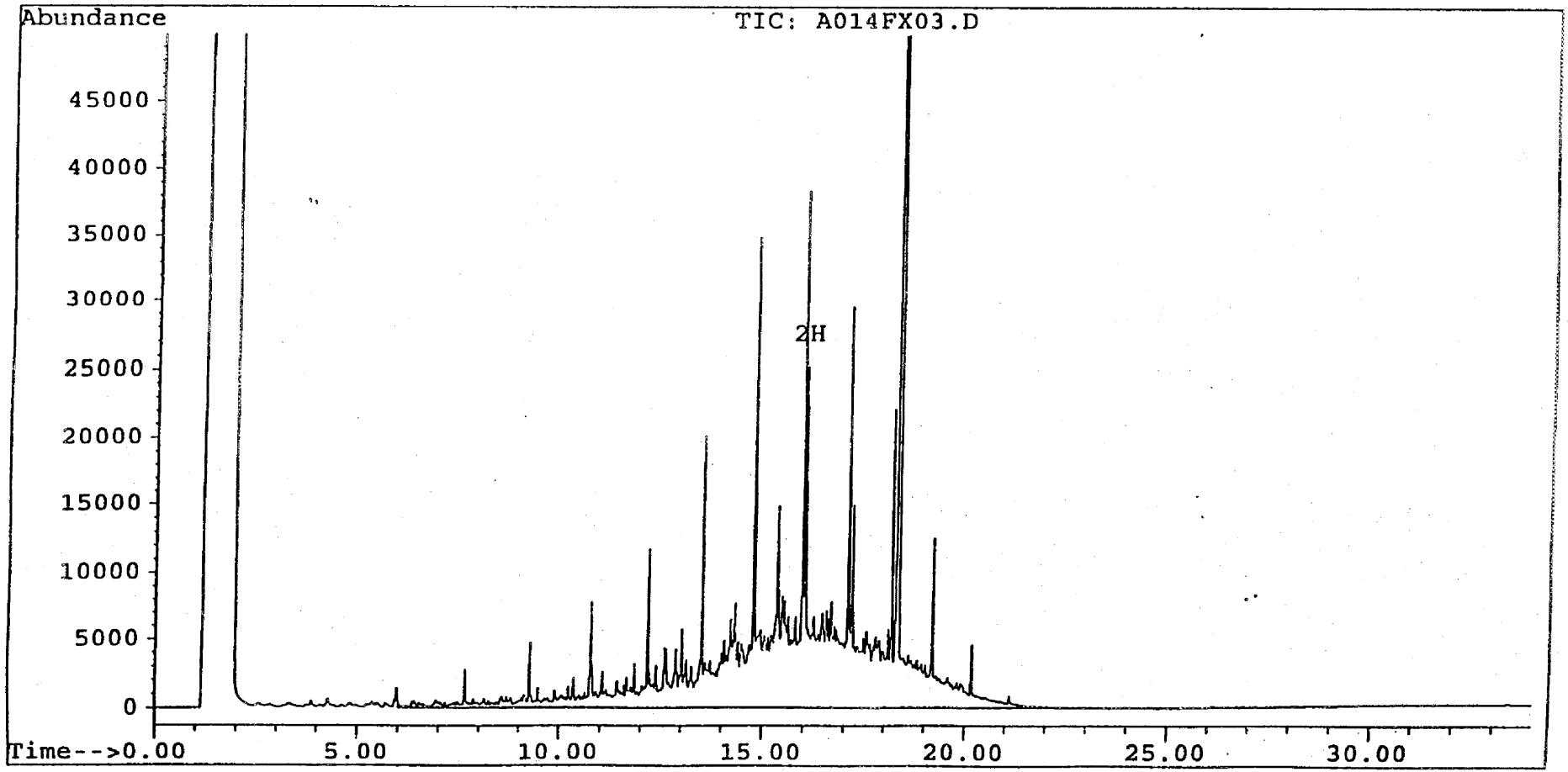
(f)=RT Delta > 1/2 Window (m)=manual int.

Data File : H:\DATA\DIESEL2\100394D1\A014FX03.D
Acq On : 04 Oct 94 08:39 AM
Sample : d 500
Misc :
Quant Time: Oct 6 12:06 1994

Vial: 3
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



# Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX14.D
Acq On : 04 Oct 94 05:26 PM
Sample : D 500
Misc :
Quant Time: Oct 6 12:12 1994

Vial: 14
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.32 | 5697916 | 103.91 PPM |
| | | Recovery = | 207.82% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 22513675 | 529.10 PPM |

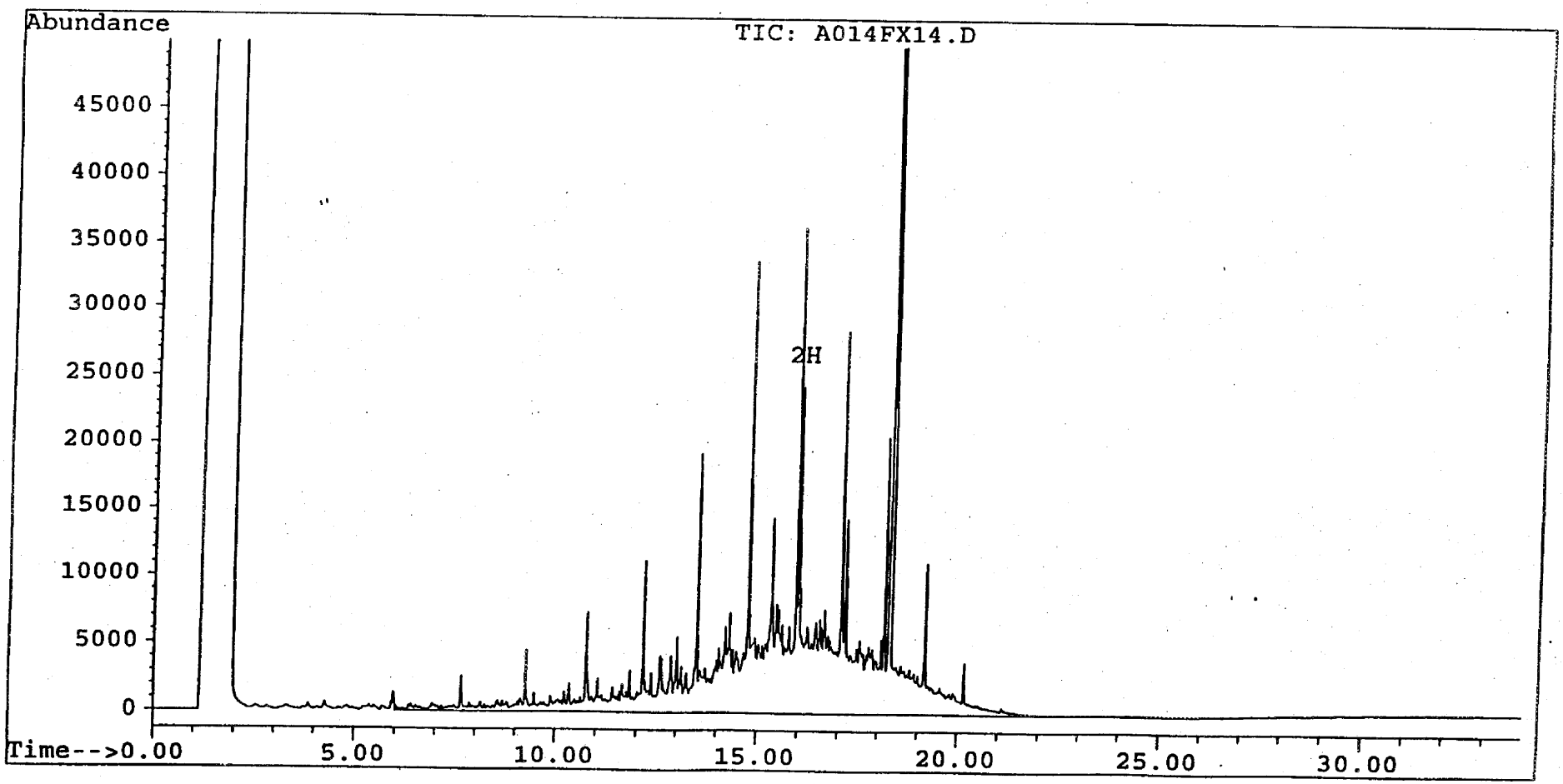
(f)=RT Delta > 1/2 Window (m)=manual int.

Data File : H:\DATA\DIESEL2\100394D1\A014FX14.D
Acq On : 04 Oct 94 05:26 PM
Sample : D 500
Misc :
Quant Time: Oct 6 12:12 1994

Vial: 14
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX25.D
Acq On : 05 Oct 94 01:06 AM
Sample : D 500
Misc :
Quant Time: Oct 6 12:18 1994

Vial: 25
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.31 | 5510878 | 100.50 PPM |
| | | Recovery = | 201.00% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 22176931 | 521.18 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

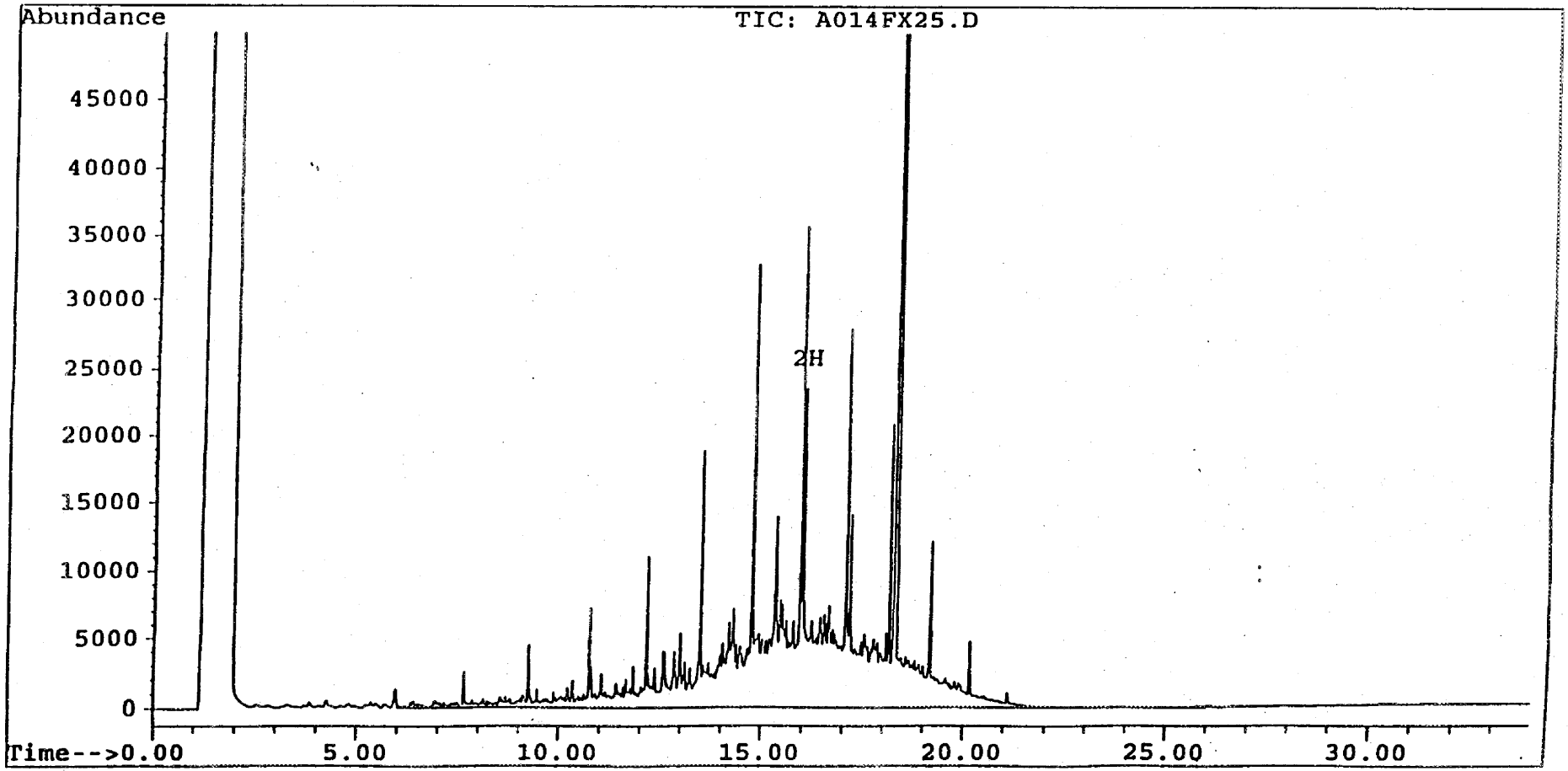
Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX25.D
Acq On : 05 Oct 94 01:06 AM
Sample : D 500
Misc :
Quant Time: Oct 6 12:18 1994

Vial: 25
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



# Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX36.D
Acq On : 05 Oct 94 08:47 AM
Sample : D 500
Misc :
Quant Time: Oct 6 12:23 1994

Vial: 36
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.34 | 5956080 | 108.62 PPM |
| | | Recovery = | 217.24% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 23809160 | 559.54 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

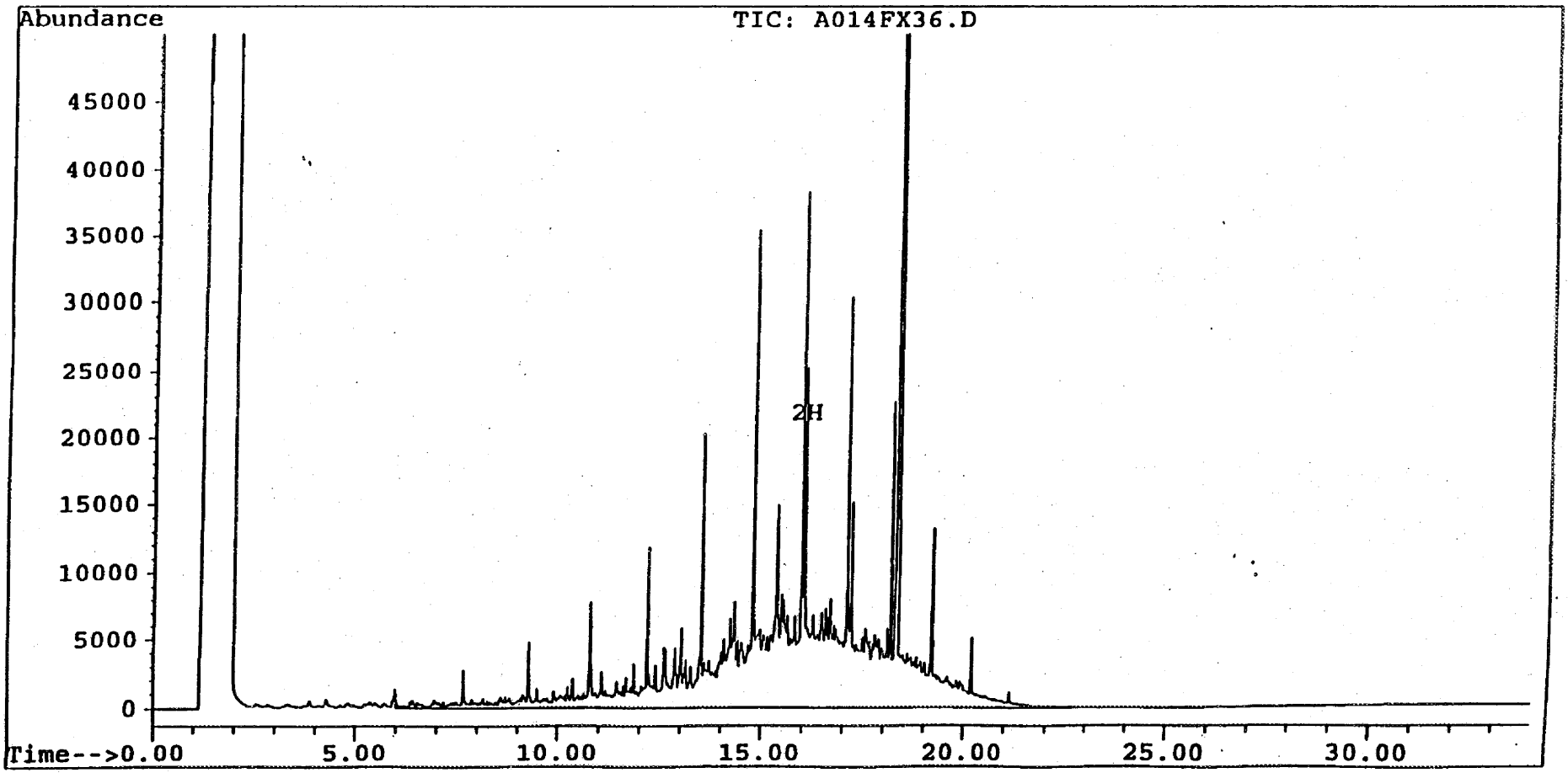
# Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX36.D
Acq On : 05 Oct 94 08:47 AM
Sample : D 500
Misc :
Quant Time: Oct 6 12:23 1994

Vial: 36
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX47.D
Acq On : 05 Oct 94 05:45 PM
Sample : MECL
Misc :
Quant Time: Oct 7 8:10 1994

Vial: 47
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 0.00 | 0 | N.D. PPM |
| | Recovery | = | 0.00% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 226248 | 5.32 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

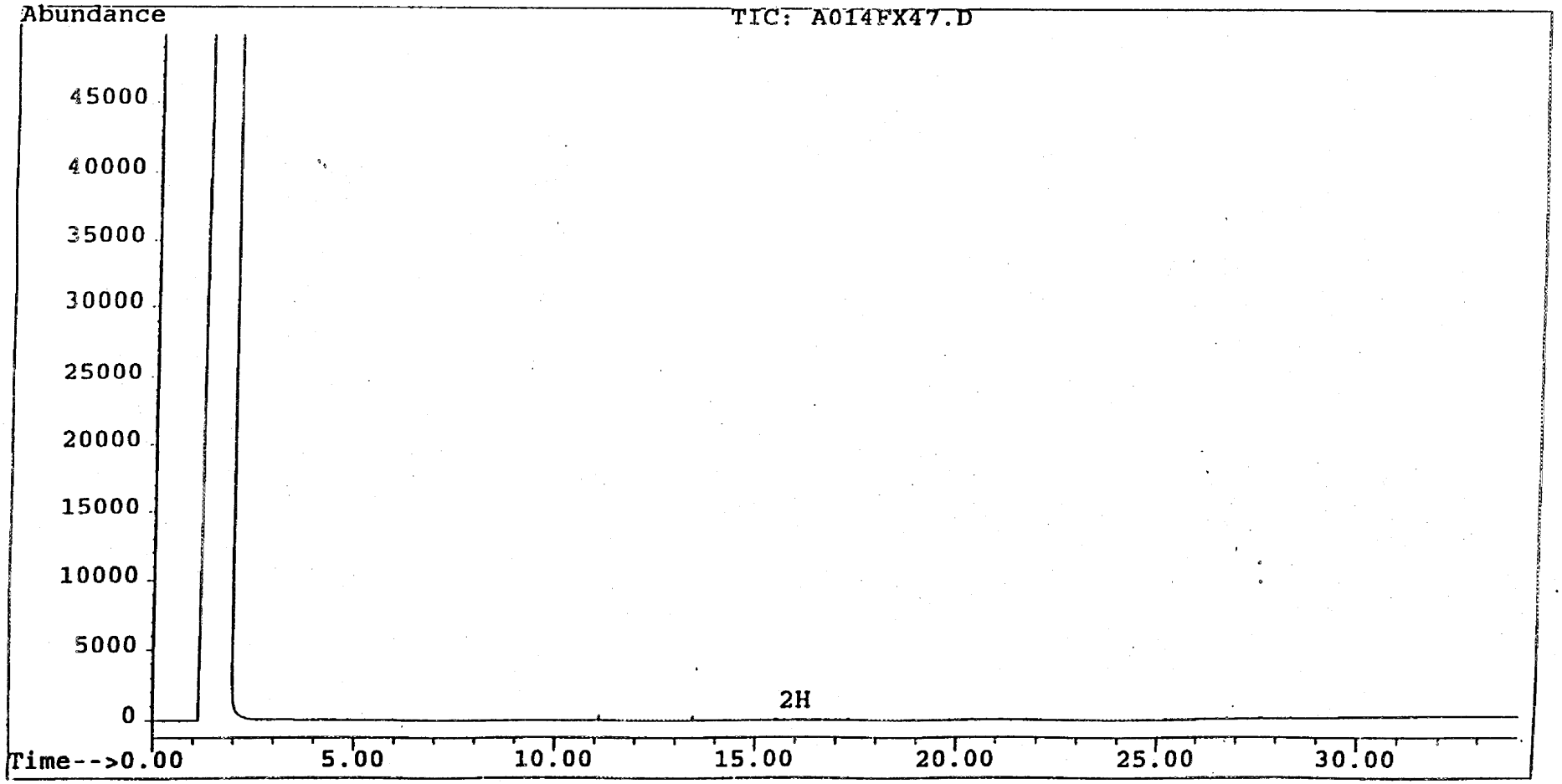
Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX47.D
Acq On : 05 Oct 94 05:45 PM
Sample : MECL
Misc :
Quant Time: Oct 7 8:10 1994

Vial: 47
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX48.D
Acq On : 05 Oct 94 06:27 PM
Sample : D 500
Misc :
Quant Time: Oct 7 8:10 1994

Vial: 48
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.31 | 5830376 | 106.32 PPM |
| | | Recovery = | 212.64% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 23412235 | 550.21 PPM |

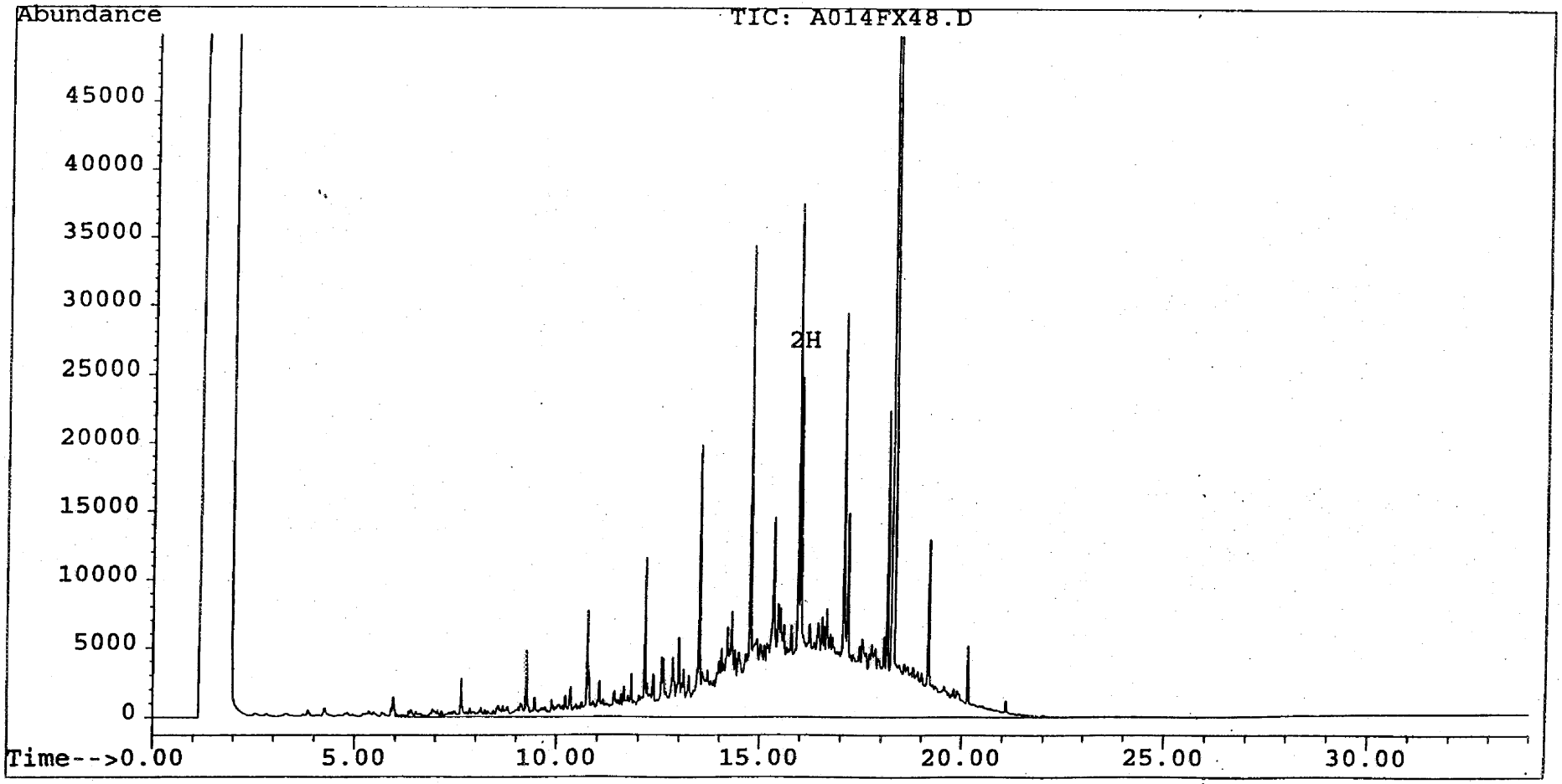
(f)=RT Delta > 1/2 Window (m)=manual int.

Data File : H:\DATA\DIESEL2\100394D1\A014FX48.D
Acq On : 05 Oct 94 06:27 PM
Sample : D 500
Misc :
Quant Time: Oct 7 8:10 1994

Vial: 48
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX59.D
Acq On : 06 Oct 94 02:12 AM
Sample : MECL
Misc :
Quant Time: Oct 7 8:17 1994

Vial: 59
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 0.00 | 0 | N.D. PPM |
| | Recovery | = | 0.00% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 587604 | 13.81 PPM |

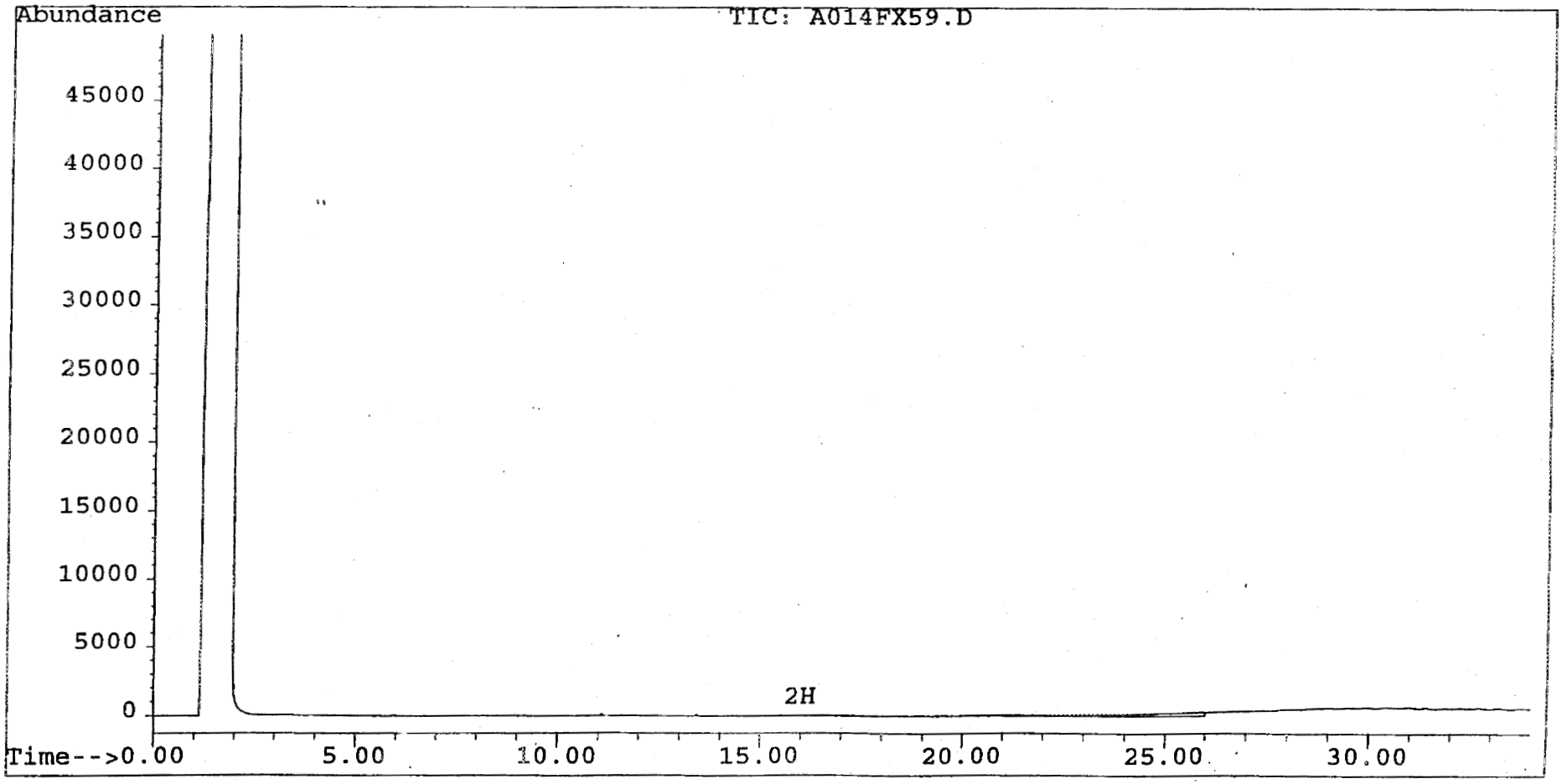
(f)=RT Delta > 1/2 Window (m)=manual int.

Data File : H:\DATA\DIESEL2\100394D1\A014FX59.D
Acq On : 06 Oct 94 02:12 AM
Sample : MECL
Misc :
Quant Time: Oct 7 8:17 1994

Vial: 59
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Data File : H:\DATA\DIESEL2\100394D1\A014FX60.D
Acq On : 06 Oct 94 02:54 AM
Sample : ~~RT MARKER~~ D 500 ug
Misc :
Quant Time: Oct 7 8:17 1994 10/1/94

Vial: 60
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.31 | 5906221 | 107.71 PPM |
| | Recovery | = | 215.42% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 23345081 | 548.63 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

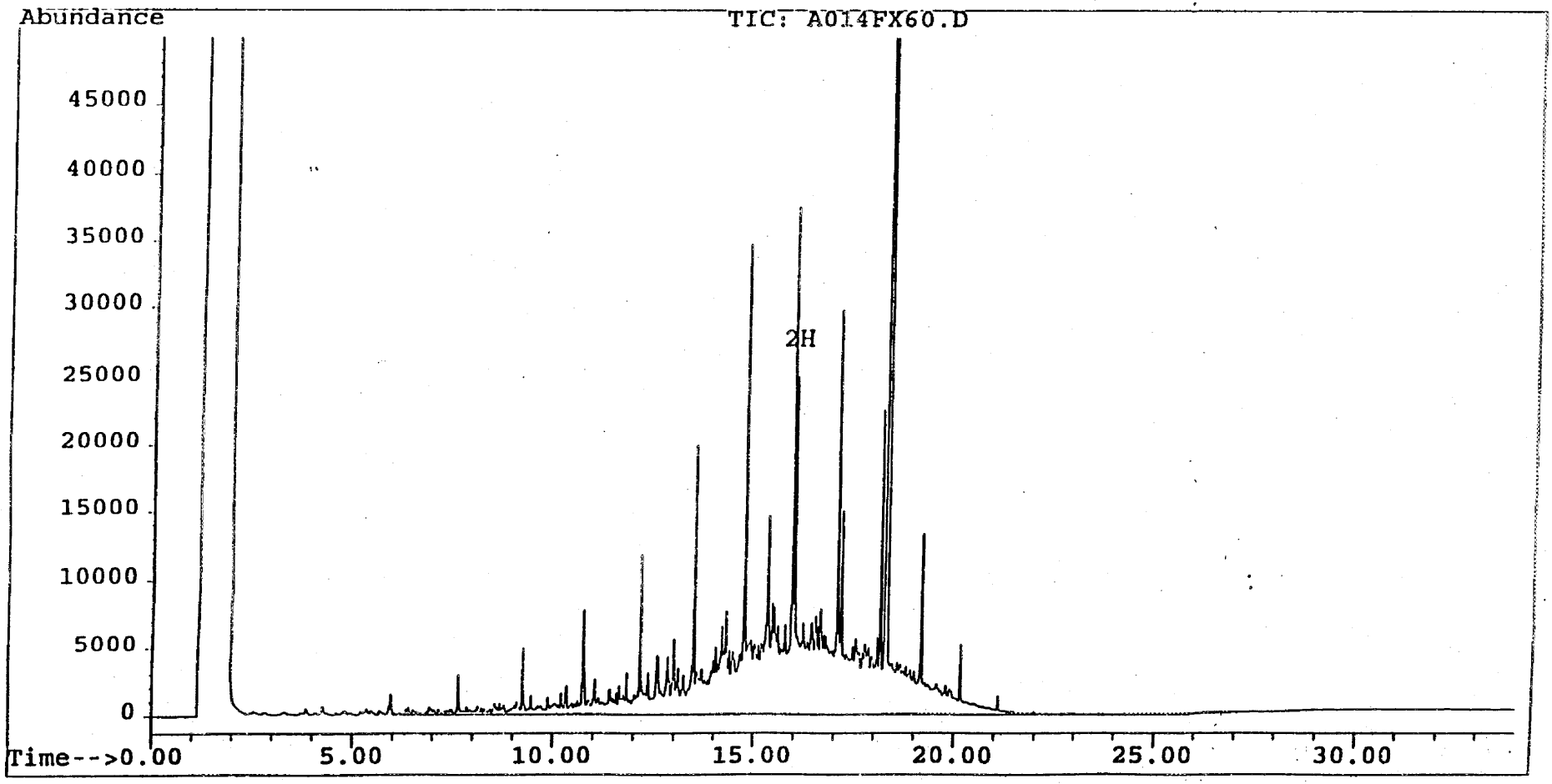
Quantitation Report

Data File : H:\DATA\DIESEL2\100394D1\A014FX60.D
Acq On : 06 Oct 94 02:54 AM
Sample : RT MARKER
Misc :
Quant Time: Oct 7 8:17 1994

Vial: 60
Operator: [GC]S
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\90794XE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Sun Oct 02 08:49:32 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Data File : H:\DATA\DIESEL2\A1394\A134FX01.D
Acq On : 13 Oct 94 03:24 PM
Sample : MECL2
Misc :
Quant Time: Oct 14 8:09 1994

Vial: 1
Operator: [GC]\
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\A084EXTE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Mon Oct 10 13:17:56 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 0.00 | 0 | N.D. PPM |
| | Recovery | = | 0.00% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 1175290 | 27.62 PPM |
| 3) H RESIDUAL RANGE ORGANICS | 29.00 | 499514 | 62.05 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

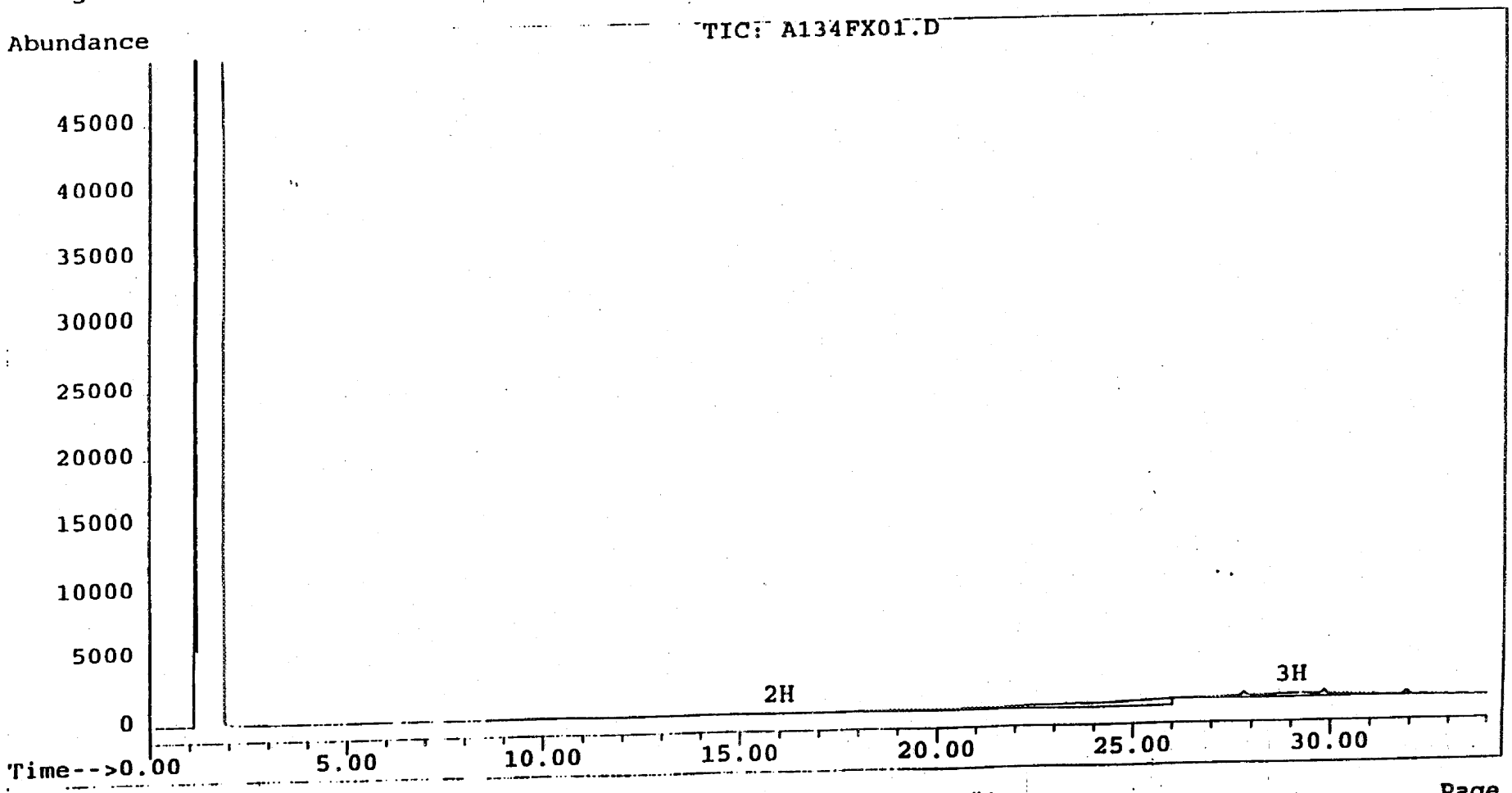
Quantitation Report

Data File : H:\DATA\DIESEL2\A1394\A134FX01.D
Acq On : 13 Oct 94 03:24 PM
Sample : MECL2
Misc :
Quant Time: Oct 14 8:09 1994

Vial: 1
Operator: [GC]\
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\A084EXTE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Mon Oct 10 13:17:56 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Data File : H:\DATA\DIESEL2\A1394\A134FX02.D
Acq On : 13 Oct 94 04:00 PM
Sample : RT MARKER
Misc :
Quant Time: Oct 14 8:09 1994

Vial: 2
Operator: [GC]\
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\A084EXTE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Mon Oct 10 13:17:56 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 0.00 | 0 | N.D. PPM |
| | Recovery | = | 0.00% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 46215380 | 1086.11 PPM |
| 3) H RESIDUAL RANGE ORGANICS | 29.00 | 13752450 | 1111.17 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

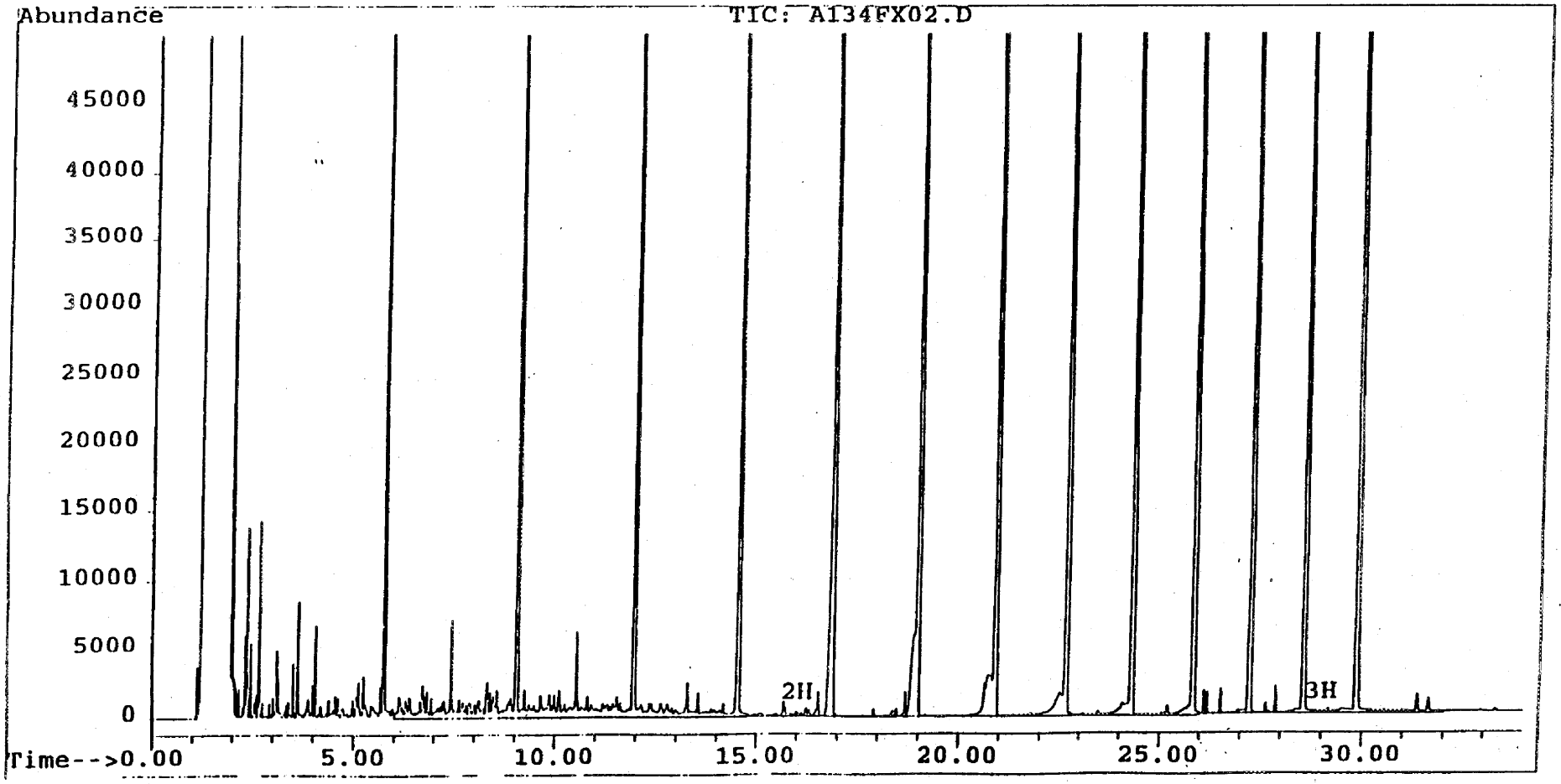
Quantitation Report

Data File : H:\DATA\DIESEL2\A1394\A134FX02.D
Acq On : 13 Oct 94 04:00 PM
Sample : RT MARKER
Misc :
Quant Time: Oct 14 8:09 1994

Vial: 2
Operator: [GC]\
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\A084EXTE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Mon Oct 10 13:17:56 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Data File : H:\DATA\DIESEL2\A1394\A134FX03.D
Acq On : 13 Oct 94 04:41 PM
Sample : D 500
Misc :
Quant Time: Oct 14 8:10 1994

Vial: 3
Operator: [GC]\
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\A084EXTE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Mon Oct 10 13:17:56 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.09 | 5683574 | 103.37 PPM |
| | | Recovery = | 206.74% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 21578145 | 507.11 PPM |
| 3) H RESIDUAL RANGE ORGANICS | 29.00 | 427926 | 56.39 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

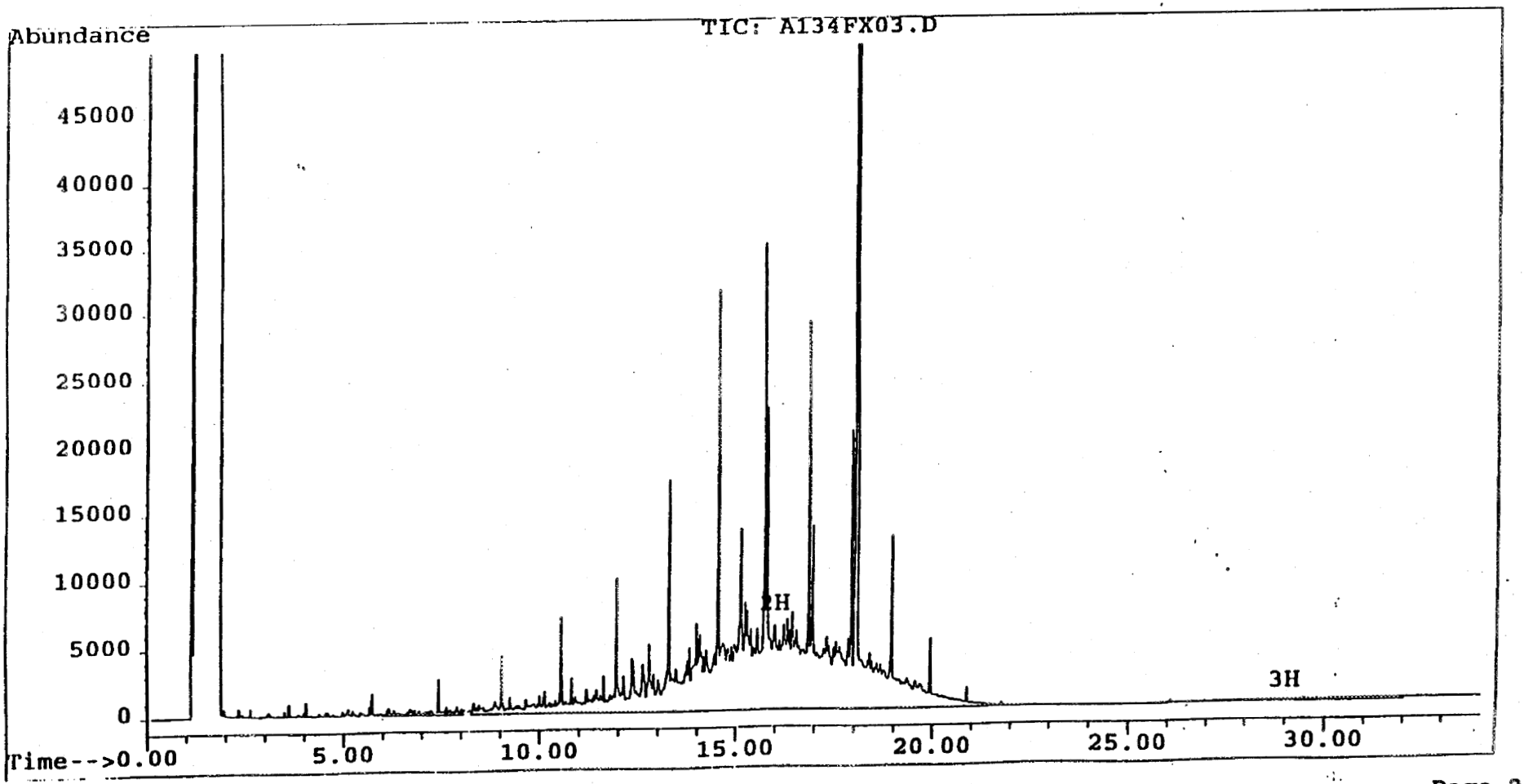
Quantitation Report

Data File : H:\DATA\DIESEL2\A1394\A134FX03.D
Acq On : 13 Oct 94 04:41 PM
Sample : D 500
Misc :
Quant Time: Oct 14 8:10 1994

Vial: 3
Operator: [GC]\
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\A084EXTE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Mon Oct 10 13:17:56 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



Data File : H:\DATA\DIESEL2\A1394\A134FX14.D
Acq On : 14 Oct 94 00:15 AM
Sample : D 500
Misc :
Quant Time: Oct 14 8:17 1994

Vial: 14
Operator: [GC]\
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\A084EXTE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Mon Oct 10 13:17:56 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.09 | 6073042 | 110.46 PPM |
| | | Recovery = | 220.92% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 23384128 | 549.55 PPM |
| 3) H RESIDUAL RANGE ORGANICS | 29.00 | 450959 | 58.21 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

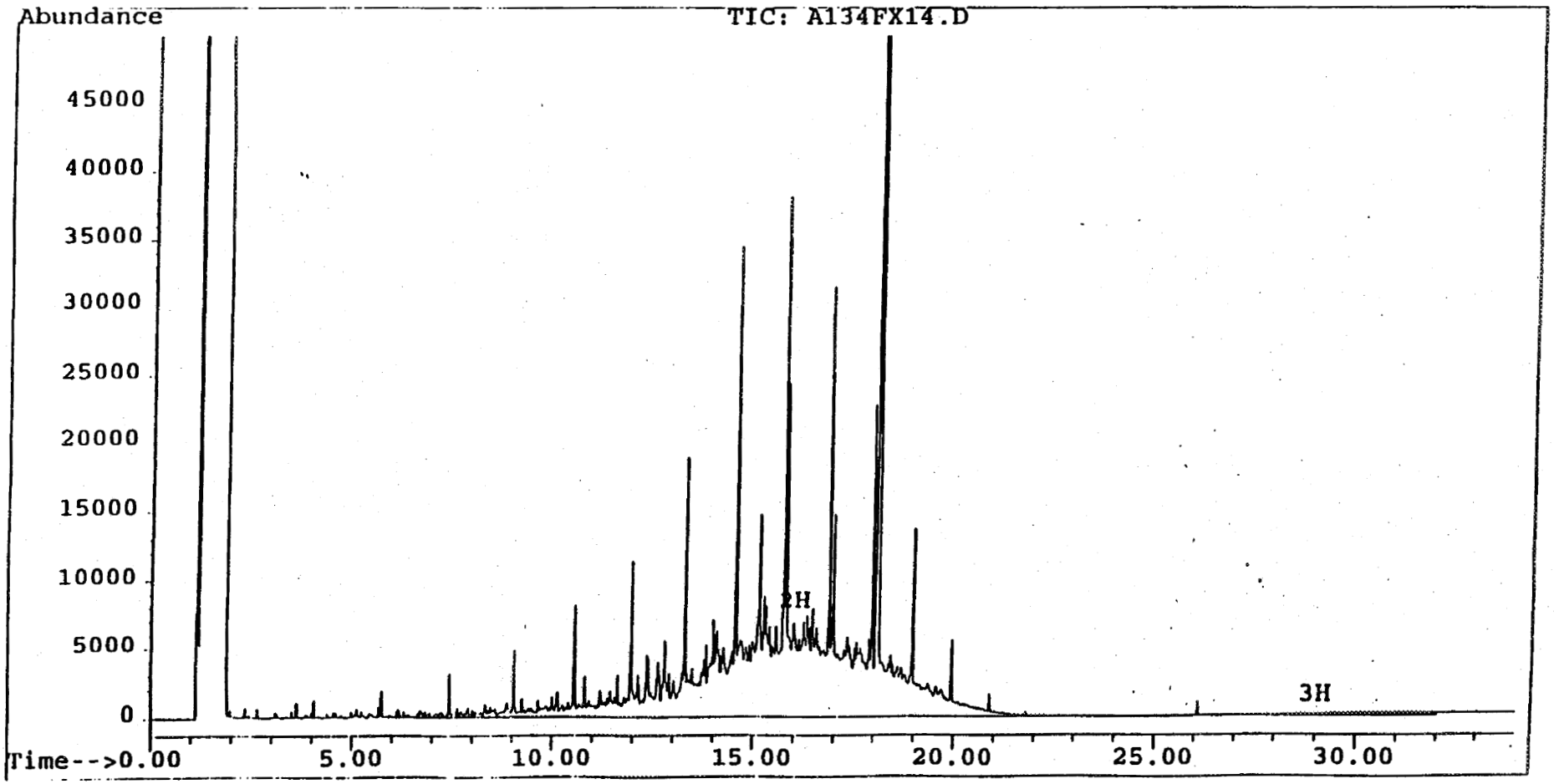
Quantitation Report

Data File : H:\DATA\DIESEL2\A1394\A134FX14.D
Acq On : 14 Oct 94 00:15 AM
Sample : D 500
Misc :
Quant Time: Oct 14 8:17 1994

Vial: 14
Operator: [GC]\
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\A084EXTE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Mon Oct 10 13:17:56 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



# Quantitation Report

Data File : H:\DATA\DIESEL2\A1394\A134FX27.D
Acq On : 14 Oct 94 09:12 AM
Sample : D 500
Misc :
Quant Time: Oct 14 15:20 1994

Vial: 27
Operator: [GC]\▒
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\A084EXTE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Mon Oct 10 13:17:56 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| System Monitoring Compounds | | | |
| 1) s O-TERPHENYL | 18.09 | 6028396 | 109.65 PPM |
| | | Recovery = | 219.30% |
| Target Compounds | | | |
| 2) H DIESEL RANGE ORGANIC | 16.00 | 23101480 | 542.91 PPM |
| 3) H RESIDUAL RANGE ORGANICS | 29.00 | 896245 | 93.46 PPM |

(f)=RT Delta > 1/2 Window (m)=manual int.

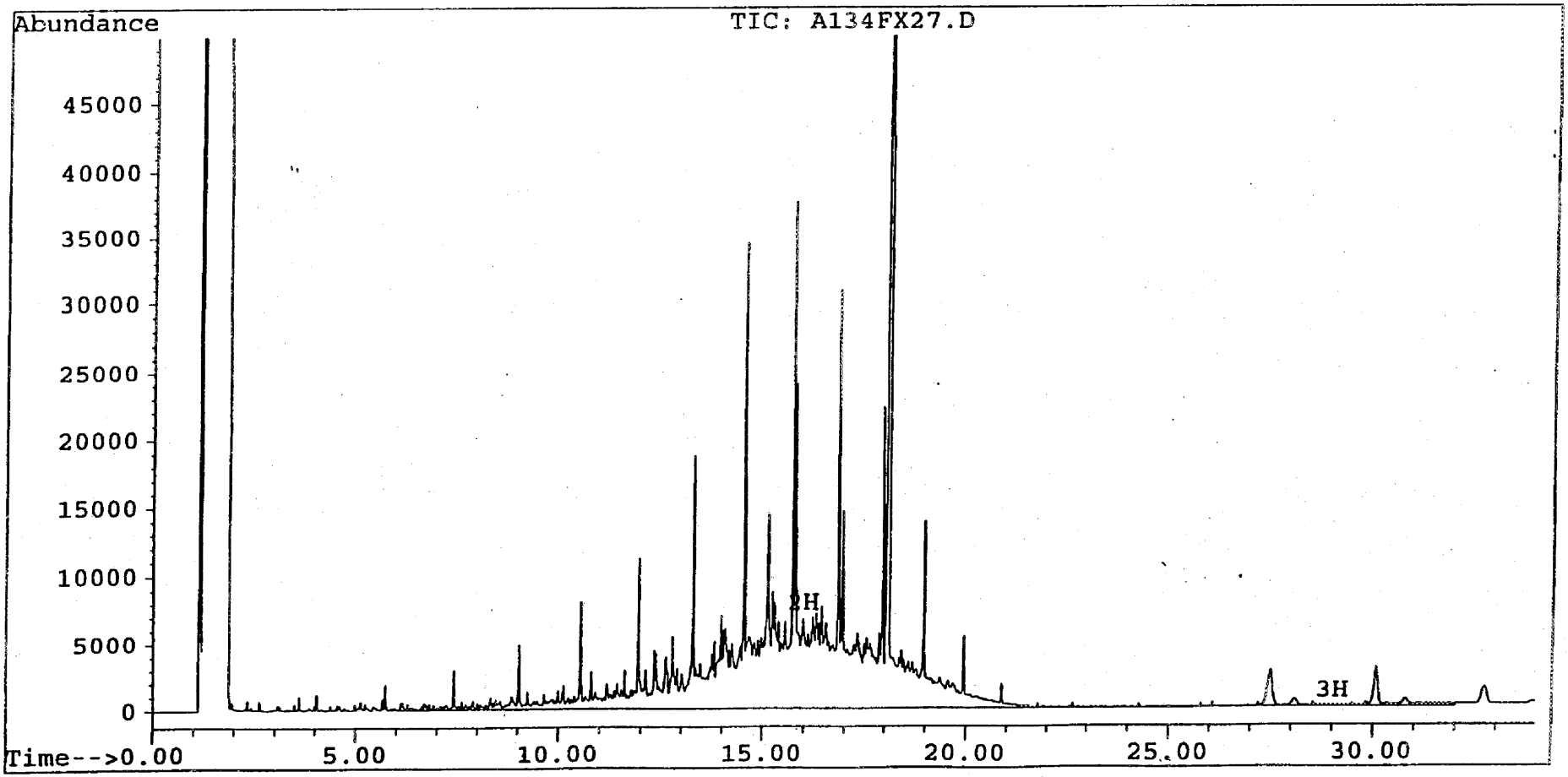
Quantitation Report

Data File : H:\DATA\DIESEL2\A1394\A134FX27.D
Acq On : 14 Oct 94 09:12 AM
Sample : D 500
Misc :
Quant Time: Oct 14 15:20 1994

Vial: 27
Operator: [GC]\
Inst : DIESEL#2
Multiplr: 1.00

Method : C:\HPCHEM\5\METHODS\A084EXTE.M
Title : DIESEL RANGE/RESIDUAL RANGE METHOD
Last Update : Mon Oct 10 13:17:56 1994
Response via : Multiple Level Calibration

Volume Inj. :
Signal Phase :
Signal Info :



AnalyticalTechnologies,Inc.
560 Naches Avenue, S.W., Suite 101, Renton, WA 98055 (206) 228-8335
Karen L. Mixon, Laboratory Manager

ATI I.D. # 409215

October 10, 1994

Quest Environmental
220 Center Court
Anchorage AK 99518-1621

Attention : Mike Reber

Project Number :

Project Name : Red Top Mine Retort

Dear Mr. Reber:

On September 27, 1994, Analytical Technologies, Inc. (ATI), received 15 samples for analysis. The samples were analyzed with EPA methodology or equivalent methods as specified in the attached analytical schedule. The results, sample cross reference, and quality control data are enclosed.

Sincerely,

Jeffery L. Pettit
Senior Project Manager

JLP/hal/elf

Enclosure

AnalyticalTechnologies,Inc.

ATI I.D. # 409215

# SAMPLE CROSS REFERENCE SHEET

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT

| ATI # | CLIENT DESCRIPTION | DATE SAMPLED | MATRIX |
|---|---|---|---|
| 409215-1 | WR-A01 | 09/16/94 | AIR TUBE |
| 409215-2 | WR-A02 | 09/16/94 | AIR TUBE |
| 409215-3 | WR-P01 | 09/16/94 | AIR TUBE |
| 409215-4 | WR-B01 | N/A | AIR TUBE |
| 409215-5 | WR-B02 | N/A | AIR TUBE |
| 409215-6 | WR-B03 | N/A | AIR TUBE |
| 409215-7 | WR-A03 | 09/17/94 | AIR TUBE |
| 409215-8 | WR-A04 | 09/17/94 | AIR TUBE |
| 409215-9 | WR-P02 | 09/17/94 | AIR TUBE |
| 409215-10 | WR-A05 | 09/18/94 | AIR TUBE |
| 409215-11 | WR-A06 | 09/18/94 | AIR TUBE |
| 409215-12 | WR-P03 | 09/18/94 | AIR TUBE |
| 409215-13 | WR-A07 | 09/18/94 | AIR TUBE |
| 409215-14 | WR-A08 | 09/19/94 | AIR TUBE |
| 409215-15 | WR-A09 | 09/19/94 | AIR TUBE |

----- TOTALS -----

| MATRIX | # SAMPLES |
|---|---|
| AIR TUBE | 15 |

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

AnalyticalTechnologies,Inc.

ATI I.D. # 409215

# ANALYTICAL SCHEDULE

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT

| ANALYSIS | TECHNIQUE | REFERENCE | LAB |
|---|---|---|---|
| MERCURY | AA/COLD VAPOR | NIOSH 6009 | R |

R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PTL = ATI - Portland
ANC = ATI - Anchorage
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

AnalyticalTechnologies,Inc.

ATI I.D. # 409215

# METALS ANALYSIS

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT

MATRIX : AIR TUBE

| ELEMENT | DATE PREPARED | DATE ANALYZED |
|---|---|---|
| MERCURY | 10/04/94 | 10/05/94 |

Analytical Technologies, Inc.

ATI I.D. # 409215

# METALS ANALYSIS
## DATA SUMMARY

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT

MATRIX : AIR TUBE
UNITS : $mg/m^3$

| ATI I.D. # | CLIENT I.D. | MERCURY |
|---|---|---|
| 409215-1 | WR-A01 | <0.00043 |
| 409215-2 | WR-A02 | <0.00046 |
| 409215-3 | WR-P01 | <0.00088 |
| 409215-7 | WR-A03 | <0.00046 |
| 409215-8 | WR-A04 | <0.00048 |
| 409215-9 | WR-P02 | 0.022 |
| 409215-10 | WR-A05 | <0.00067 |
| 409215-11 | WR-A06 | <0.00059 |
| 409215-12 | WR-P03 | 0.00088 |
| 409215-13 | WR-A07 | <0.00056 |
| 409215-14 | WR-A08 | <0.00045 |
| 409215-15 | WR-A09 | <0.00043 |
| METHOD BLANK | (-4,-5,-6) | ND |

ATI-TIL #40-W 50

# CHAIN OF CUSTODY RECORD

PROJ. No.

PROJECT NAME AQE. Red Top mine ReTort

SAMPLER (SIG.) H.B. Godwin

| | DATE 94 | TIME | PRES. | SAMPLE No. | NUMBER OF CONTAINERS | Mercury VAPOR | | | | | | LOCATION / PURPOSE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | 409245 |
| 1 | 9/16 | | | WR-A01 | 1 | ✓ | | | | | | Area up/w |
| 2 | " | | | WR-A02 | 1 | ✓ | | | | | | Area D/w |
| 3 | " | | | WR-P01 | 1 | ✓ | | | | | | Personal Lori Golden |
| 4 | " | | | WR-B01 | 1 | ✓ | | | | | | Blank |
| 5 | " | | | WR-B02 | 1 | ✓ | | | | | | Blank |
| 6 | " | | | WR-B03 | 1 | ✓ | | | | | | Blank |
| 7 | 9/17 | | | WR-A03 | 1 | ✓ | | | | | | Area upwind |
| 8 | " | | | WR-A04 | 1 | ✓ | | | | | | Area Down wind |
| 9 | " | | | WR-P02 | 1 | ✓ | | | | | | Personal Michael Tuckness |
| | | | | | | | | | | | | |

SHIP TO (LABORATORY AND ADDRESS)

PM- Mike Reber Quest Env.

HAZARDS ASSOCIATED WITH SAMPLES:

| RELIQUISHED BY: (SIG., DATE, TIME) | RECEIVED BY: (SIG., DATE, TIME) |
|---|---|
| H.B. GODWIN → | Michael [illegible] 9/22/94 |
| → | Susan Snyder 9/22/94 |
| X → | [illegible] 9/27/94 830 |
| → | |

TAT AND DATA LEVEL:

DELIVER REPORTS TO: Quest Emerveron

QUEST ENVIRONMENTAL
220 CENTER COURT
ANCHORAGE, AK 99518
(907) 563-0050, 563-0085 FAX

SHEET 1 OF 1

# CHAIN OF CUSTODY RECORD

PROJ. No.

PROJECT NAME: AQE RED TOP MINE

SAMPLER (SIG.): Harry Hodwin

409215

| | DATE 94 | TIME | PRES. | SAMPLE No. | NUMBER OF CONTAINERS | Mercury Vapors | | | | | | LOCATION / PURPOSE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 9/18 | / | | WR-A05 | 1 | ✓ | | | | | | Fork lift Driver cab |
| 11 | " | / | | WR-A06 | 1 | ✓ | | | | | | upwind 20' |
| 12 | " | / | | WR-P03 | 1 | ✓ | | | | | | Personal |
| 13 | " | / | | WR-A07 | 1 | ✓ | | | | | | Downwind 30' |
| 14 | 9/19 | / | | WR-A08 | 1 | ✓ | | | | | | Upwind 30' |
| 15 | " | / | | WR-A09 | 1 | ✓ | | | | | | Downwind 30' |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SHIP TO (LABORATORY AND ADDRESS)

HAZARDS ASSOCIATED WITH SAMPLES: Mercury

TAT AND DATA LEVEL:

DELIVER REPORTS TO: Quest Environmental

| RELIQUISHED BY: (SIG., DATE, TIME) | RECEIVED BY: (SIG., DATE, TIME) |
|---|---|
| Harry B. Hodwin → | Michael [illegible] 9/22/94 |
| RELIQUISHED BY: (SIG., DATE, TIME) | RECEIVED BY: (SIG., DATE, TIME) |
| → | Susan Shuler 9/22/94 |
| RELIQUISHED BY: (SIG., DATE, TIME) | RECEIVED BY: (SIG., DATE, TIME) |
| → | 9/27/94 830h |
| RELIQUISHED BY: (SIG., DATE, TIME) | RECEIVED BY: (SIG., DATE, TIME) |
| → | |

QUEST ENVIRONMENTAL
220 CENTER COURT
ANCHORAGE, AK 99518
(907) 563-0050, 563-0085 FAX

SHEET ____ OF ____

AnalyticalTechnologies,Inc.
560 Naches Avenue, S.W., Suite 101, Renton, WA 98055 (206) 228-8335
Karen L. Mixon, Laboratory Manager

ATI I.D. # 410009

October 24, 1994

Quest Environmental
220 Center Court
Anchorage AK 99518-1621

Attention : Mike Reber

Project Number : -

Project Name : Red Top Mine Retort

Dear Mr. Reber:

On October 4, 1994, Analytical Technologies, Inc. (ATI), received 26 samples for analysis. The samples were analyzed with EPA methodology or equivalent methods as specified in the attached analytical schedule. The results, sample cross reference, and quality control data are enclosed.

Sincerely,

Jeffery L. Pettit
Senior Project Manager

JLP/hal/mrj

Enclosure

AnalyticalTechnologies,Inc.

ATI I.D. # 410009

# SAMPLE CROSS REFERENCE SHEET

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT

| ATI # | CLIENT DESCRIPTION | DATE SAMPLED | MATRIX |
|---|---|---|---|
| 410009-1 | WR-PO9 | 09/26/94 | AIR TUBE |
| 410009-2 | WR-A15 | 09/26/94 | AIR TUBE |
| 410009-3 | WR-PO8 | 09/26/94 | AIR TUBE |
| 410009-4 | WR-A14 | 09/26/94 | AIR TUBE |
| 410009-5 | WR-A16 | 09/26/94 | AIR TUBE |
| 410009-6 | WR-A17 | 09/26/94 | AIR TUBE |
| 410009-7 | WR-A18 | 09/27/94 | AIR TUBE |
| 410009-8 | WR-A19 | 09/27/94 | AIR TUBE |
| 410009-9 | WR-P10 | 09/27/94 | AIR TUBE |
| 410009-10 | WR-A10 | 09/24/94 | AIR TUBE |
| 410009-11 | WR-A11 | 09/24/94 | AIR TUBE |
| 410009-12 | WR-E01 | 09/24/94 | AIR TUBE |
| 410009-13 | WR-P04 | 09/24/94 | AIR TUBE |
| 410009-14 | WR-P05 | 09/24/94 | AIR TUBE |
| 410009-15 | WR-A12 | 09/25/94 | AIR TUBE |
| 410009-16 | WR-A13 | 09/25/94 | AIR TUBE |
| 410009-17 | WR-P06 | 09/25/94 | AIR TUBE |
| 410009-18 | WR-P11 | 09/28/94 | AIR TUBE |
| 410009-19 | WR-A20 | 09/28/94 | AIR TUBE |
| 410009-20 | WR-A21 | 09/28/94 | AIR TUBE |
| 410009-21 | WR-P12 | 09/29/94 | AIR TUBE |
| 410009-22 | WR-P13 | 09/29/94 | AIR TUBE |
| 410009-23 | WR-A22 | 09/29/94 | AIR TUBE |
| 410009-24 | WR-A23 | 09/29/94 | AIR TUBE |
| 410009-25 | BLANK 1 | N/A | AIR TUBE |
| 410009-26 | BLANK 2 | N/A | AIR TUBE |

----- TOTALS -----

| MATRIX | # SAMPLES |
|---|---|
| AIR TUBE | 26 |

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ATI I.D. # 410009

# ANALYTICAL SCHEDULE

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT

| ANALYSIS | TECHNIQUE | REFERENCE | LAB |
|---|---|---|---|
| MERCURY | AA/COLD VAPOR | NIOSH 6009 | R |

R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PTL = ATI - Portland
ANC = ATI - Anchorage
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

AnalyticalTechnologies,Inc.

ATI I.D. # 410009

# METALS ANALYSIS

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT

MATRIX : AIR TUBE

| ELEMENT | DATE PREPARED | DATE ANALYZED |
|---|---|---|
| MERCURY | 10/17/94 | 10/18/94 |

Analytical Technologies, Inc.

ATI I.D. # 410009

# METALS ANALYSIS
## DATA SUMMARY

CLIENT : QUEST ENVIRONMENTAL
PROJECT # : -
PROJECT NAME : RED TOP MINE RETORT

MATRIX : AIR TUBE
UNITS : $mg/m^3$

| ATI I.D. # | CLIENT I.D. | MERCURY |
|---|---|---|
| 410009-1 | WR-PO9 | <0.00075 |
| 410009-2 | WR-A15 | 0.0019 |
| 410009-3 | WR-PO8 | 0.076 |
| 410009-4 | WR-A14 | <0.00079 |
| 410009-5 | WR-A16 | 0.0035 |
| 410009-6 | WR-A17 | <0.0022 |
| 410009-7 | WR-A18 | 0.00093 |
| 410009-8 | WR-A19 | <0.00053 |
| 410009-9 | WR-P10 | 0.0037 |
| 410009-10 | WR-A10 | <0.00055 |
| 410009-11 | WR-A11 | <0.00061 |
| 410009-12 | WR-E01 | <0.010 |
| 410009-13 | WR-P04 | 0.0016 |
| 410009-14 | WR-P05 | 0.0039 |
| 410009-15 | WR-A12 | <0.00037 |
| 410009-16 | WR-A13 | <0.00040 |
| 410009-17 | WR-P06 | 0.00047 |
| 410009-18 | WR-P11 | 0.0021 |
| 410009-19 | WR-A20 | <0.00066 |
| 410009-20 | WR-A21 | <0.00075 |
| 410009-21 | WR-P12 | 0.0019 |
| 410009-22 | WR-P13 | <0.00068 |
| 410009-23 | WR-A22 | <0.00065 |
| 410009-24 | WR-A23 | <0.00060 |
| 410009-25 | BLANK 1 | ND |
| 410009-26 | BLANK 2 | ND |
| METHOD BLANK | - | ND |

ND = Not detected.

# CHAIN OF CUSTODY RECORD

PROJ. No.

PROJECT NAME BLM Red Top Mine

SAMPLER (SIG.) Harry Godwin

| | DATE | TIME | PRES. | SAMPLE No. | NUMBER OF CONTAINERS | Mercury | 410009 | | | | | LOCATION / PURPOSE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9/26 | / | / | WR-P09 | Ea | ✓ | | | | | | Personal Marty |
| 2 | " | / | / | WR-A15 | " | ✓ | | | | | | Downwind 30' |
| 3 | " | / | / | WR-P08 | " | ✓ | | | | | | Personal Dave |
| 4 | " | / | / | WR-A14 | " | ✓ | | | | | | Upwind 30' |
| 5 | " | / | / | WR-A16 | " | ✓ | | | | | | Downwind 30' |
| 6 | " | / | / | WR-A17 | " | ✓ | | | | | | Upwind 30' |
| 7 | 9/27 | / | / | WR-A18 | " | ✓ | | | | | | Upwind 30' |
| 8 | " | / | / | WR-A19 | " | ✓ | | | | | | Downwind 30' |
| 9 | " | / | / | WR-P10 | " | ✓ | | | | | | Personal John Brad |
| | | | | | | | | | | | | |

SHIP TO (LABORATORY AND ADDRESS)
LAUCK LAB
940 S. Harney St
Seattle, WA. 98108
(206) 767-5060

HAZARDS ASSOCIATED WITH SAMPLES:

| RELIQUISHED BY: (SIG., DATE, TIME) | RECEIVED BY: (SIG., DATE, TIME) |
|---|---|
| H. B. Godwin 10/3/94 1000 → | 10/4/94 1000a |
| → | |
| → | |
| → | |

TAT AND DATA LEVEL:

DELIVER REPORTS TO:

QUEST ENVIRONMENTAL
220 CENTER COURT
ANCHORAGE, AK 99518
(907) 563-0050, 563-0085 FAX

SHEET 2 OF 3

# CHAIN OF CUSTODY RECORD

PROJ. No.:

PROJECT NAME: Red Top Mine AQE

SAMPLER (SIG.): Harry Hodum

| | DATE 94 | TIME | PRES. | SAMPLE No. | NUMBER OF CONTAINERS | MERCURY | 410009 | | | | | LOCATION / PURPOSE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 9/24 | / | / | WR-A10 | 1 | ✓ | | | | | | upwind 30' |
| 11 | " | / | / | WR-A11 | 1 | ✓ | | | | | | Down wind 30' |
| 12 | " | / | / | WR-E01 | 1 | ✓ | | | | | | Excursion Dave |
| 13 | " | / | / | WR-P04 | 1 | ✓ | | | | | | Personal GLENN |
| 14 | " | / | / | WR-P05 | 1 | ✓ | | | | | | Personal Lori |
| 15 | 9/25 | / | ✓ | WR-A12 | 1 | ✓ | | | | | | upwind 30' |
| 16 | " | ✓ | ✓ | WR-A13 | 1 | ✓ | | | | | | Down Wind 30' |
| 17 | " | / | ✓ | WR-P06 | 1 | ✓ | | | | | | Personal GLENN |
| 25 | | | | BLANKS | 3 | | | | | | | BLANKS unopened |
| 26 | | | | | | | | | | | | |

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LAUCK LAB
940 S. Harney ST
Seattle WA. 98108
(206) 767-5060

HAZARDS ASSOCIATED WITH SAMPLES:

| RELIQUISHED BY: (SIG., DATE, TIME) | RECEIVED BY: (SIG., DATE, TIME) |
|---|---|
| Harry Hodum 10/3/94 1000 → | 10/4/94 1000a |
| RELIQUISHED BY: (SIG., DATE, TIME) → | RECEIVED BY: (SIG., DATE, TIME) |
| RELIQUISHED BY: (SIG., DATE, TIME) → | RECEIVED BY: (SIG., DATE, TIME) |
| RELIQUISHED BY: (SIG., DATE, TIME) → | RECEIVED BY: (SIG., DATE, TIME) |

TAT AND DATA LEVEL:

DELIVER REPORTS TO:

QUEST ENVIRONMENTAL
220 CENTER COURT
ANCHORAGE, AK 99518
(907) 563-0050, 563-0085 FAX

SHEET 1 OF 3

# CHAIN OF CUSTODY RECORD

PROJ. No.

PROJECT NAME: AQE Red Top MINE

SAMPLER (SIG.): H. B. Godwin

| | DATE | TIME | PRES. | SAMPLE No. | NUMBER OF CONTAINERS | Mercury | | | | | | LOCATION / PURPOSE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 410009 | | | | | | |
| 18 | 9/28 | / | / | WR-P11 | 1 | ✓ | | | | | | Personal Dave |
| 19 | " | / | / | WR-A20 | 1 | ✓ | | | | | | Upwind 30' |
| 20 | " | / | / | WR-A21 | 1 | ✓ | | | | | | Downwind 30' |
| 21 | 9/29 | / | / | WR-P12 | 1 | ✓ | | | | | | Personal Lori |
| 22 | " | / | / | WR-P13 | 1 | ✓ | | | | | | Personal Marty |
| 23 | " | / | / | WR-A22 | 1 | ✓ | | | | | | Upwind 30' |
| 24 | " | / | / | WR-A23 | 1 | ✓ | | | | | | Downwind 30' |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SHIP TO (LABORATORY AND ADDRESS)
LAUCK LAB
940 S. Harney ST
Seattle, WA. 98108
(206) 767-5060

HAZARDS ASSOCIATED WITH SAMPLES:

| RELINQUISHED BY: (SIG., DATE, TIME) | RECEIVED BY: (SIG., DATE, TIME) |
|---|---|
| H. B. Godwin 10/3/94 1000 → | 10/4/94 1000 |
| RELINQUISHED BY: (SIG., DATE, TIME) → | RECEIVED BY: (SIG., DATE, TIME) |
| RELINQUISHED BY: (SIG., DATE, TIME) → | RECEIVED BY: (SIG., DATE, TIME) |
| RELINQUISHED BY: (SIG., DATE, TIME) → | RECEIVED BY: (SIG., DATE, TIME) |

TAT AND DATA LEVEL:

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220 CENTER COURT
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SHEET 3 OF 3