Note: This is a reference cited in *AP 42, Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources.* AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

The file name refers to the reference number, the AP42 chapter and section. The file name "ref02_c01s02.pdf" would mean the reference is from AP42 chapter 1 section 2. The reference may be from a previous version of the section and no longer cited. The primary source should always be checked.

United States Environmental Protection Agency

Office of Air Quality Planning and Standards Research Triangle Park, NC 27711

EPA-454/R-99-002b February 1999

AIR

EPA

Final Report - Volume II of III

Emissions Testing of Combustion Stack and Pushing Operations at Coke Battery No. 5/6 at ABC Coke in Birmingham, Alabama



FINAL REPORT
EMISSIONS TESTING OF COMBUSTION STACK AND COKE PUSHING OPERATIONS AT COKE BATTERY NO. 5/6 AT ABC COKE IN BIRMINGHAM, ALABAMA

Volume II
Appendix D

EPA Contract No. 68-D-98-004
Work Assignment No. 2-02

Prepared for:

John C. Bosch, Jr. (MD-19)
Work Assignment Manager
SCGA, EMC, EMAD, OAQPS
U.S. Environmental Protection Agency
Research Triangle Park, NC 27711

February 1999
p:\s512.000\finrpt.wpd

Submitted by:

PACIFIC ENVIRONMENTAL SERVICES, INC.
5001 S. Miami Blvd., Suite 300
Post Office Box 12077
Research Triangle Park, NC 27709-2077
(919) 941-0333 FAX (919) 941-0234

DISCLAIMER

This document was prepared by Pacific Environmental Services, Inc. (PES) under EPA Contract No. 68D98004, Work Assignment No. 2-02. This document has been reviewed following PES' internal quality assurance procedures and has been approved for distribution. The contents of this document do not necessarily reflect the views and policies of the U.S. EPA. Mention of trade names does not constitute endorsement by the EPA or PES.

TABLE OF CONTENTS

		Page
1.0	INTRODUCTION	1-1
2.0	SUMMARY OF RESULTS	2-1
2.1	EMISSIONS TEST LOG	2-1
2.2	FILTERABLE PARTICULATE MATTER, METHYLENE CHLORIDE EXTRACTABLE MATTER (MCEM), AND METALS	2-1
2.3	POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)	2-27
2.4	NON-PUSHING AND NON-CHARGING COKE OVEN BATTERY OPERATION - UNDERFIRE STACK	2-32
3.0	PROCESS AND CONTROL EQUIPMENT OPERATION	3-1
3.1	INTRODUCTION	3-1
3.2	PROCESS DESCRIPTION	3-1
3.3	PROCESS AND CONTROL DEVICE MONITORING	3-3
4.0	SAMPLING LOCATIONS	4-1
4.1	COKE OVEN BATTERY NO. 5/6	4-1
5.0	SAMPLING AND ANALYTICAL PROCEDURES	5-1
5.1	LOCATION OF MEASUREMENT SITES AND SAMPLE/VELOCITY TRAVERSE POINTS	5-1
5.2	DETERMINATION OF STACK GAS VOLUMETRIC FLOW RATE	5-3
5.3	DETERMINATION OF STACK GAS EMISSION RATE CORRECTION FACTORS, DRY MOLECULAR WEIGHT, AND EXCESS AIR	5-3
5.4	DETERMINATION OF STACK GAS MOISTURE CONTENT	5-3
5.5	DETERMINATION OF PARTICULATE MATTER/METHYLENE CHLORIDE EXTRACTABLE MATTER/METALS	5-4
5.6	POLYCYCLIC AROMATIC HYDROCARBONS	5-6
6.0	QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES AND RESULTS	6-1
6.1	CALIBRATION OF APPARATUS	6-1

TABLE OF CONTENTS (Concluded)

Page

6.2 ON-SITE MEASUREMENTS 6-5
6.3 LABORATORY ANALYSES 6-9

APPENDIX A PROCESS DATA
APPENDIX B RAW FIELD DATA
APPENDIX C ANALYTICAL DATA (Except CARB 429)
APPENDIX D ANALYTICAL DATA (CARB 429)
APPENDIX E CALCULATIONS
APPENDIX F QA/QC DATA
APPENDIX G PARTICIPANTS
APPENDIX H SAMPLING AND ANALYTICAL PROCEDURES

LIST OF TABLES

		Page
Table 2.1	Emissions Test Log, ABC Coke, Birmingham, Alabama	2-2
Table 2.2	Particulate Matter/MCEM/Metals Emissions Sampling and Flue Gas Parameters - Baghouse Inlet, ABC Coke, Birmingham, Alabama	2-4
Table 2.3	Filterable Particulate Matter Concentrations and Emission Rates - Baghouse Inlet, ABC Coke, Birmingham, Alabama	2-6
Table 2.4	Methylene Chloride Extractable Matter Concentrations and Emission Rates - Baghouse Inlet, ABC Coke, Birmingham, Alabama	2-7
Table 2.5	Multiple Metals Concentrations and Emission Rates - Baghouse Inlet, ABC Coke, Birmingham, Alabama	2-8
Table 2.6	Particulate Matter/MCEM/Metals Emission Sampling and Flue Gas Parameters - Baghouse Outlet, ABC Coke, Birmingham, Alabama	2-11
Table 2.7	Filterable Particulate Matter Concentrations and Emission Rates - Baghouse Outlet, ABC Coke, Birmingham, Alabama	2-12
Table 2.8	Methylene Chloride Extractable Matter Concentrations and Emission Rates - Baghouse Outlet, ABC Coke, Birmingham, Alabama	2-13
Table 2.9	Multiple Metals Concentrations and Emission Rates - Baghouse Outlet, ABC Coke, Birmingham, Alabama	2-14
Table 2.10	Baghouse Dust Multiple Metals Concentrations, ABC Coke, Birmingham, Alabama	2-18
Table 2.11	Filterable Particulate Matter and Methylene Chloride Extractable Matter Removal Efficiencies, Coke Oven Battery No. 5/6 Baghouse, ABC Coke, Birmingham, Alabama	2-19
Table 2.12	Particulate Matter/MCEM/Metals Emissions Sampling and Flue Gas Parameters - Underfire Stack, ABC Coke, Birmingham, Alabama	2-20
Table 2.13	Filterable Particulate Matter Concentrations and Emission Rates - Underfire Stack, ABC Coke, Birmingham, Alabama	2-21
Table 2.14	Methylene Chloride Extractable Matter Concentrations and Emission Rates - Underfire Stack, ABC Coke, Birmingham, Alabama	2-23
Table 2.15	Multiple Metals Concentrations and Emission Rates - Underfire Stack ABC Coke, Birmingham, Alabama	2-24
Table 2.16	PAH Emissions Sampling and Flue Gas Parameters - Baghouse Inlet ABC Coke, Birmingham, Alabama	2-28
Table 2.17	PAH Concentrations and Emission Rates, Baghouse Inlet, ABC Coke, Birmingham, Alabama	2-29

LIST OF TABLES (Continued)

		Page
Table 2.18	PAH Emissions Sampling and Flue Gas Parameters - Baghouse Outlet ABC Coke, Birmingham, Alabama	2-33
Table 2.19	PAH Concentrations and Emission Rates, Baghouse Outlet, ABC Coke, Birmingham, Alabama	2-34
Table 2.20	PAH Emissions Sampling and Flue Gas Parameters - Underfire Stack ABC Coke, Birmingham, Alabama	2-37
Table 2.21	PAH Concentrations and Emission Rates Underfire Stack ABC Coke, Birmingham, Alabama	2-38
Table 2.22	Particulate Matter/MCEM/Metals and PAH Emissions Sampling and Flue Gas parameters - Underfire Stack Non-pushing and Non-charging Operation, ABC Coke, Birmingham, Alabama	2-42
Table 2.23	Particulate Matter/MCEM Concentrations and Emission Rates - Underfire Stack Non-pushing and Non-charging Operation, ABC Coke, Birmingham, Alabama	2-43
Table 2.24	Multiple Metals Concentrations and Emission Rates - Underfire Stack Non-pushing and Non-charging Operation, ABC Coke, Birmingham, Alabama	2-44
Table 2.25	PAH Concentrations and Emission Rates - Underfire Stack Non-pushing and Non-charging Operation, ABC Coke, Birmingham, Alabama	2-45
Table 3.1A	Pushing Control Device Parameters: Test Run No. 1, 9/21/98	3-4
Table 3.1B	Pushing Control Device Parameters: Test Run No. 2, 9/22/98	3-5
Table 3.1C	Pushing Control Device Parameters: Test Run No. 3, 9/23/98	3-6
Table 3.2A	Combustion Stack Parameters: Test Run No. 1, 9/24/98	3-8
Table 3.2B	Combustion Stack Parameters: Test Run No. 2, 9/24/98	3-8
Table 3.2C	Combustion Stack Parameters: Test Run No. 3, 9/25/98	3-9
Table 3.2D	Combustion Stack Parameters: Test Run No. 4, 9/25/98	3-9
Table 3.3	Combustion Stack Opacity Readings	3-10
Table 5.1	Summary of Sampling Locations, Test Parameters, Sampling Methods, and Number and Duration of Tests, ABC Coke, Birmingham, Alabama	5-2
Table 6.1	Summary of Temperature Sensor Calibration Data	6-2
Table 6.2	Summary of Pitot Tube Dimensional Data	6-4
Table 6.3	Summary of Dry Gas Meter and Orifice Calibration Data	6-6
Table 6.4	Summary of EPA Method 315 and CARB Method 429 Field Sampling QA/QC Data	6-8
Table 6.5	Summary of EPA Method 315 Analytical QC Data Lab Blank Analysis	6-10
Table 6.6	Summary of EPA Method 315 Analytical QC Data Field Blank Analysis	6-11
Table 6.7	Summaryof EPA Method 29 Analytical QC Data Lab Control Sample (LCS) Recovery and Duplicate Analysis	6-13
Table 6.8	Summary of CARB Method 429 Analytical QC Data Field Blank Results	6-14

LIST OF TABLES (Concluded)

		Page
Table 6.9	Summary of CARB Method 429 Analytical QC Data Lab Control Sample (LCS)	6-15
Table 6.10	Summary of CARB Method 429 Analytical QC Data Surrogate Standard Recoveries	6-17

LIST OF FIGURES

Page

Figure 1.1 Key Personnel and Responsibility for Testing at ABC Coke, Birmingham, Alabama 1-2

Figure 4.1 Baghouse Inlet Sample Location, ABC Coke, Birmingham, Alabama 4-2
Figure 4.2 Method 1 Calculation Sheet, Baghouse Inlet, Method 315, ABC Coke, Birmingham, Alabama 4-3
Figure 4.3 Method 1 Calculation Sheet, Baghouse Inlet, Method CARB 429, ABC Coke, Birmingham, Alabama 4-4
Figure 4.4 Baghouse Outlet, Sampling Location, ABC Coke, Birmingham, Alabama 4-5
Figure 4.5 Method 1 Calculation Sheet, Baghouse Outlet, ABC Coke, Birmingham, Alabama 4-6
Figure 4.6 Combustion (Underfire) Stack Sampling Location, ABC Coke, Birmingham, Alabama 4-8
Figure 4.7 Method 1 Calculation Sheet, Combustion Stack, ABC Coke, Birmingham, Alabama 4-9

Figure 5.1 Sampling Train Schematic for EPA Method 315 5-5
Figure 5.2 Sampling Train Schematic for CARB Method 429 5-7
Figure 5.3 CARB Method 429 Sample Recovery Schematic 5-8
Figure 5.4 CARB Method 429 Analytical Schematic 5-9

APPENDIX D

ANALYTICAL DATA
(CARB 429)

[redacted]

Invoice

Quanterra

Quanterra, Incorporated
880 Riverside Parkway
West Sacramento, CA 95605
Tel (916)373-5600
Fax (916)372-1059

REMIT TO:
Quanterra, Incorporated
P.O. Box 2473
Carol Stream, IL 601322473

Number: 0032027606
Date: 11 NOV 98
Quanterra Project Number: CALLAB-301802
Customer Number: 00104971
Terms: NET 30 DAYS
Customer Contact:

Bill To:
Payable
Pacific Environmental Services, Inc.
560 Herndon Parkway
Suite 200
Herndon, VA 201705240

Ron Kolde
Pacific Environmental Services
4700 Duke Drive
Suite 150
Mason, OH 45040

Line No.	Qty.	Matrix Code	Analysis Description	Unit Price	Extended Price
			ANALYTICAL SERVICES		
1	14	AIRTRAIN	PAH in air matricies by HRGC/HRMS	1000.00	14000.0
			Analytical Services Subtotal	14000.00	
			ADDITIONAL SERVICES		
2	14		Data Validation Package ($25.00/Sample)	25.00	350.0
3	20		XAD Trap-Prep and QC	75.00	1500.0
			Additional Services Subtotal	1850.00	

D Schofield
11-12-98
$512.000

EXACT COPY OF THE ORIGINAL

Customer PO Number: 104-99-0078 and 103-99-350
Contact Number/Telephone:
Purchase Project Number:
Sales Person: Todd Vilen

Sub Total 15850.0
Tax
Total 15850.0

Robert Weidenfeld

QUA-4027 (0597)

Federal Tax I.D. # 84-1

PACIFIC ENVIRONMENTAL SERVICES, INC.

PURCHASE ORDER NO. 103-98~~99~~ - 350

DATE: 9/14/98

VENDOR: Quanterra Laboratories
880 Riverside Parkway
West Sacramento, California
95605

CONTACT: Robert Weidenfeld

PHONE: 916-374-4411

INVOICE TO: Pacific Environmental Services, Inc.
560 Herndon Parkway, Suite 200
Herndon, Virginia 22070
(703) 471-8383

SHIP TO: Pacific Environmental Services, Inc.
~~1700 Duke Drive, Suite 150~~
~~Mason, Ohio 45040~~
~~(513) 398-2556~~

PACIFIC ENVIRONMENTAL SERVICES
CENTER RD

CHARGE TO	ACCOUNT NO	BUYER	TERMS	SHIP VIA	SPECIAL INSTRUCTIONS
5505.000		R Kolich		Fed Ex	

Item #	Description	Req. Date	Qty.	Unit Cost	Total Cost
	XAD resin trap preparation/spiking for CARB 429 Sampling	9/14/98	20	$75	$1500
				Total	$1500.00

RECEIVED

NOTES:
1. Please reference P.O. Number on all invoices.
2. Invoices submitted more than 45 days after services/goods are delivered will not be honored.
3. Terms are 45 days after receipt of invoice.

Requisitioned By

GOODS/SERVICES PURCHASE REQUISITION NO. 103-98-350

Requested by: Ron Kolde Date: 9/14/98

Office No. 103 Charge to: 5505.000

Preferred Vendor: Quanterra Laboratories

Address: 880 Riverside Parkway

West Sacramento, California 95605

Phone: 916-374-4411 Contact: Patrick Rainey / Robert Weichfeld

Fax: _____ Account No.: _____

Special Instructions: _____

(Please list alternate vendors on reverse)

Description (Detailed as possible)	Quantity	Cost/Unit	Cost
XAD Resin trap preparation for CARB Method 429 Sampling	20	$75 each	$1500

☐ COMPLETE JUSTIFICATION MEMO ON REVERSE TOTAL COST: $1500

Total Cost $500 or Less	When required by Purchase Authority Matrix
Approved: [signature]	Approved: _____ T.A. Li Puma, President
Date: 10-1-98	Date: _____

GOODS/SERVICES PURCHASE REQUISITION NO. 103-98-350

Requested by: Ron Kolde Date: 9/14/98

Office No. 103 Charge to: 5505.000

Preferred Vendor: Quanterra Laboratories

Address: 880 Riverside Parkway

West Sacramento, California 95605

Phone: 916-374-4411 Contact: Patrick Rainey / Robert Whitehall

Fax: _____ Account No.: _____

Special Instructions: _____

(Please list alternate vendors on reverse)

Description (Detailed as possible)	Quantity	Cost/Unit	Cost
XAD Resin trap preparation for CARB Method 429 Sampling.	20	$75 ea	$1500

☐ COMPLETE JUSTIFICATION MEMO ON REVERSE

TOTAL COST: $1500

Total Cost $500 or Less

Approved: D. Schaffer 9-25

Date: 10-1-98 10-7-98

When required by Purchase Authority Matrix

Approved: _____

T.A. Li Puma, President

Date: 10/12/98

Quanterra Incorporated
880 Riverside Parkway
West Sacramento, California 95605

916 373-5600 Telephone
916 372-1059 Fax

November 6, 1998
QUANTERRA INCORPORATED PROJECT NUMBER: **301802**
PO/CONTRACT: **CLC-950302**

Ron Kolde
Pacific Environmental Services
4700 Duke Drive
Suite 150
Mason, OH 45040

Dear Mr. Kolde:

This report contains the analytical results for the fourteen samples which were received under chain of custody by Quanterra Incorporated on 29 September 1998.

The case narrative is an integral part of this report.

If you have any questions, please feel free to call.

Sincerely,

Robert Weidenfeld
Project Manager
Advanced Technology

RW/tw

Quanterra

TABLE OF CONTENTS

QUANTERRA INCORPORATED PROJECT NUMBER 301802

Case Narrative

Quanterra's Quality Assurance Program

Sample Description Information

Chain of Custody Documentation

Polynuclear Aromatic Hydrocarbons - Method HRGC/HRMS
Includes Sample(s): 1 through 14
Method Blank Sheets
Sample Data Sheets
Laboratory Control Sample

Quanterra

CASE NARRATIVE

QUANTERRA INCORPORATED PROJECT NUMBER 301802

Sample trains were prepared and analyzed by a modified CARB 429 procedure. All fractions of each train were combined for a single extract which was analyzed by HRGC/HRMS.

Results above the reporting limits for Naphthalene, 2-Methylnaphthalene, and Phenanthrene were detected in the laboratory method blank associated with your samples. These analyte levels are common artifacts of XAD-2 resin and should be reviewed for significance. Positive concentrations detected for these analytes in your samples are qualified with a "B" footnote on the data sheets.

All reported results for your samples are from analysis of extracts diluted 10X, except where qualified with a "D" footnote. D flagged results are from analysis of extracts diluted 100X due to high analyte levels and/or matrix interferences.

Some internal standard recoveries are lower than the method recommended goal of 50%. Generally, data quality is not considered affected if internal standard signal-to-noise is greater than 10:1, which is achieved for all internal standards in all samples except as noted below. For samples "A-U-429-1", "A-U-429-2", "A-U-429-3", and "A-U-429-4", there are very low recoveries for Acenaphthylene-d8, Perylene-d12, and Benzo(a)pyrene-d12 due to severe chemical interferences. These internal standard recoveries and the corresponding native concentration have been determined as best as possible and should be considered estimated. The affected analytes are qualified with an "F" footnote on the appropriate data sheets.

The Laboratory Control Sample (LCS) associated with your samples was reinjected for Flourene on 03 NOV 98 due to poor response for this analyte in the original analysis.

QUANTERRA INCORPORATED QUALITY CONTROL PROGRAM

Quanterra has implemented an extensive Quality Control (QC) program to ensure the production of scientifically sound, legally defensible data of known documentable quality. This QC program is based upon requirements in "Test Methods for Evaluating Solid Waste", USEPA SW-846, Third Edition. It applies whenever SW-846 analytical methods are used. It also applies in whole or in part whenever project requirements fail to specify some aspect of QC practices described here. It does not apply when other well defined QC programs (e.g. CLP or CLP-like) are specified. This is Quanterra's base QC program for environmental analysis.

Definitions:

Quality Control Batch. The quality control (QC) batch is a set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.

Surrogate. A surrogate (or internal standard) is an organic compound similar in chemical behavior to the target analyte, but not normally found in environmental samples. Surrogates (or IS) are added to all samples in a batch to monitor the effects of both the matrix and the analytical process on accuracy.

Method Blank. A method blank (MB) is a control sample prepared using the same reagents used for the samples. As part of the QC batch, it accompanies the samples through all steps of the sample extraction and cleanup procedure. The method blank is used to monitor the level of contamination introduced to a batch of samples as a result of processing in the laboratory.

Laboratory Control Sample. A laboratory control sample (LCS) is prepared using a well characterized matrix (e.g., reagent water or Ottawa sand) that is spiked with known amounts of representative analytes. Alternate matrices (e.g., glass beads) may be used for soil analyses when Ottawa sand is not appropriate. As part of a QC batch, it accompanies the samples through all steps of the sample extraction and cleanup process. The LCS is used to monitor the accuracy of the analytical process independent of possible interference effects due to sample matrix.

Duplicate Control Sample. A duplicate laboratory control sample (DCS) consists of a pair of LCSs analyzed within the same QC batch to monitor precision and accuracy independent of sample matrix effects.

Quanterra

SAMPLE DESCRIPTION INFORMATION
for
Pacific Environmental Services

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
301802-0001-MB	Method Blank	AIRTRAIN			29 SEP 98
301802-0001-SA	A-I-429-1	AIRTRAIN	21 SEP 98		29 SEP 98
301802-0002-SA	A-I-429-2	AIRTRAIN	22 SEP 98		29 SEP 98
301802-0003-SA	A-I-429-3	AIRTRAIN	23 SEP 98		29 SEP 98
301802-0004-SA	A-O-429-1	AIRTRAIN	21 SEP 98		29 SEP 98
301802-0005-SA	A-O-429-2	AIRTRAIN	22 SEP 98		29 SEP 98
301802-0006-SA	A-O-429-3	AIRTRAIN	23 SEP 98		29 SEP 98
301802-0007-SA	A-U-429-1	AIRTRAIN	24 SEP 98		29 SEP 98
301802-0008-SA	A-U-429-2	AIRTRAIN	24 SEP 98		29 SEP 98
301802-0009-SA	A-U-429-3	AIRTRAIN	25 SEP 98		29 SEP 98
301802-0010-SA	A-U-429-4	AIRTRAIN	25 SEP 98		29 SEP 98
301802-0011-SA	A-I-429-FB	AIRTRAIN	24 SEP 98		29 SEP 98
301802-0012-SA	A-O-429-FB	AIRTRAIN	24 SEP 98		29 SEP 98
301802-0013-SA	A-U-429-FB	AIRTRAIN	25 SEP 98		29 SEP 98
301802-0014-SA	A-429-LB	AIRTRAIN	21 SEP 98		29 SEP 98

PACIFIC ENVIRONMENTAL SERVICES, INC.

7209 East Kemper Rd.
~~4700 Duke Drive, Suite 150~~
Cincinnati, Ohio
45249-1030
~~Mason, OH 45040~~
ph: 513-489-6611
~~(513) 398-2556~~
Fax: 513-489-6619
~~FAX: (513) 398-3342~~

Chain of Custody Record

Project Number: 5505.000	Project Name: ABC Coke Tarrant, Ala.	Analysis Requested				Comments
Samplers: T. Abernathy, G. Long, S. Blaine, P. Seigel, A. Richcreek, D. Holsbuhr	Purchase Order No.:	CARB Method 429 for Poly Aromatic Hydrocarbons (PAHs)				

PES Field Sample ID	Date	Time	Sample Description	Number of Containers					
A-I-429-1	9/21/98		Baghouse Inlet Run 1	7	X				Report results to Dan Schaffer PES, Inc
A-I-M429-2	9/22/98		Baghouse Inlet Run 2	7	X				
A-I-M429-3	9/23/98		Baghouse Inlet Run 3	7	X				
A-I-M429-FB	9/24/98		Baghouse Inlet Field Blank	7	X				
A-O-M429-1	9/21/98		Baghouse Outlet Run 1	7	X				
A-O-M429-2	9/22/98		Baghouse Outlet Run 2	7	X				
A-O-M429-3	9/23/98		Baghouse Outlet Run 3	7	X				
A-O-M429-FB	9/24/98		Baghouse Outlet Field Blank	7	X				
A-U-M429-1	9/24/98		Underfire Stack Run 1	7	X				
A-U-M429-2	9/24/98		Underfire Stack Run 2	8	X				
A-U-M429-3	9/25/98		Underfire Stack Run 3	7	X				
A-U-M429-4	9/25/98		Underfire Stack Run 4	7	X				
A-U-M429-FB	9/25/98		Underfire Stack Field Blank	7	X				
A-M429-LB	9/21/98		Method 429 Reagent Blanks	6	X				

(*) Obtained the XAD from those returned prior.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Ronald J. Kelly	9/25/98	Steve Tuell			
Relinquished by: (Signature)	Date/Time	Received for lab by: (Signature)	REMARKS		
	9/29/98 20				

Page: ___ of ___

U.S. EPA - ABC Coke - Birmingham, Alabama - S505.000
Master Sample Log

Sample Run No.	Date/Time	Sample Description	Liquid Level Marked/ Sealed	Being Stored Below 4°C
A-I-429-1	9-21-98 / 1128	Filter - Teflon		✓
		Front ½ Acetone, Hexane Methylene Rinse	✓	✓
		Back ½ Filter, Condens. Acetone, Hexane Methylene	✓	✓
		XAD Trap	✓	Yes
		Knockout - Acetone, Hex, $MeCl_2$	✓	✓
		Impinger Contents	✓	✓
		Impinger Rinse Ace, Hex, $MeCl_2$	✓	✓
A-I-429-2	9-22-98 / 1018	Filter - Teflon	✓	✓
		Front ½ Acetone, Hex, $MeCl_2$	✓	✓
		Back ½ Filter Contents, Ace, Hex, $MeCl_2$	✓	✓
		XAD Trap	✓	Yes
		Knockout Ace, Hex $MeCl_2$	✓	✓
		Impinger Contents	✓	✓
		Impinger Rinse Ace Hex $MeCl_2$	✓	✓
~~A-I-429-3~~ AR				
A-I-429-3	9-23-98 / 1019	Filter - Teflon	✓	✓
		Front ½ Ace, Hex, $MeCl_2$	✓	✓
		Back ½ Filter Contents, Ace, Hex, $MeCl_2$	✓	✓
		XAD Trap	✓	Yes
		Knockout Ace Hex $MeCl_2$	✓	✓
		Impinger Rinse Ace Hex $MeCl_2$	✓	✓

U.S. EPA - ABC Coke - Birmingham, Alabama - S505.000
Master Sample Log

Sample Run No.	Date/Time	Sample Description	Liquid Level Marked/ Sealed	Being Stored Below 4°C
A-I-429-3 cont	9-23-98	Impinger Rinse Ace Hex MeCl$_2$	✓	✓
A-I-315-1	9/21-98/1125	Filter 080798-20 ~~080898-07~~ (RE)	✓	
		Front Yz Acetone	✓	
		Front Yz MeCl$_2$	✓	
		Impinger Contents & H$_2$O Rinse	✓	
		Back Yz Acetone Rinse	✓	
		Back Yz MeCl$_2$ Rinse	✓	
A-I-315-2	9/22/98/1015	Filter 080898-07	✓	
		Front Yz Acetone	✓	
		Front Yz MeCl$_2$	✓	
		Impinger Conts + H$_2$O Rinse	✓	
		Back Yz Acetone Rinse	✓	
		Back Yz MeCl$_2$ Rinse	✓	
A-I-315-3	9/23-98/1015	Filter 080898-16	✓	
		Front Yz Acetone	✓	
		Front Yz MeCl$_2$	✓	
		Impinger Cont's + H$_2$O Rinse	✓	
		Back Yz Acetone Rinse	✓	
		Back Yz MeCl$_2$ Rinse	✓	

U.S. EPA - ABC Coke - Birmingham, Alabama - S505.000
Master Sample Log

Sample Run No.	Date/Time	Sample Description	Liquid Level Marked/ Sealed	Being Stored Below 4°C
A-I-5506-1	9-21-98/1147	Tube A		Yes
		Tube B		Yes
		Tube C		Yes
A-I-5506-2	9-22-98/1022	Tube A		Yes
		Tube B		Yes
		Tube C		Yes
A-I-5506-3	9-23-98/1022	Tube A		Yes
		Tube B		Yes
		Tube C		Yes
A-O-429-1	9-21-98/1128	Filter: Teflon	✓	✓
		Front ½ Acc Hex MeCl₂ Rinse	✓	✓
		Back ½ Filter Cont Acc Hex MeCl₂	✓	✓
		XAD Trap	✓	Yes
		Knockout: Acc, Hex, MeCl₂ Rinse	✓	✓
		Impinger Contents	✓	✓
		Impinger Rinse Acc Hex MeCl₂	✓	✓

U.S. EPA - ABC Coke - Birmingham, Alabama - S505.000
Master Sample Log

Sample Run No.	Date/Time	Sample Description	Liquid Level Marked/ Sealed	Being Stored Below 4°C
A-O-429-2	9-22-98/1018	Filter Teflon.	≠	✓
		Front ½ Ace Hex $MeCl_2$ Rinse	✓	✓
		Back ½ Filter Cont Ace Hex $MeCl_2$	✓	✓
		XAD Trap	✓	Yes
		Knockout Ace Hex $MeCl_2$ Rinse	✓	✓
		Impinger Contents	✓	✓
		Impinger Rinse Ace Hex $MeCl_2$	✓	✓
A-O-429-3	9-23-98/1019	Filter Teflon		✓
		Front ½ Ace Hex $MeCl_2$ Rinse	✓	✓
		Back ½ Filter Cont Ace Hex $MeCl_2$	✓	✓
		XAD Trap	✓	Yes
		Knockout Ace Hex $MeCl_2$ Rinse	✓	✓
		Impinger Contents	✓	✓
		Impinger Rinse Ace Hex $MeCl_2$	✓	✓
A-O-315-1	9-21-98/1128	Filter 080198-08		
		Front ½ Acetone	✓	
		Front ½ $MeCl_2$	✓	
		Impinger Contents + H_2O Rinse	✓	
		Back ½ Acetone Rinse	✓	
		Back ½ $MeCl_2$ Rinse	✓	

U.S. EPA - ABC Coke - Birmingham, Alabama - S505.000
Master Sample Log

Sample Run No.	Date/Time	Sample Description	Liquid Level Marked/ Sealed	Being Stored Below 4°C
A0-315-2	9-22-98/1015	Filter 080898-20		
		Front ½ Acetone	✓	
		Front ½ $MeCl_2$	✓	
		Impinger Contents + H_2O Rinse	✓	
		Back ½ Acetone Rinse	✓	
		Back ½ $MeCl_2$ Rinse	✓	
A-0-315-3	9-23-98/1019	Filter 080898-24		
		Front ½ Acetone	✓	
		Front ½ $MeCl_2$	✓	
		Impinger Contents + H_2O Rinse	✓	
		Back ½ Acetone Rinse	✓	
		Back ½ $MeCl_2$ Rinse	✓	
A-0-5506-1	9-21-98/1138	Tube A		Yes
		Tube B		Yes
		Tube C		Yes
A-0-5506-2	9-22-98/1039	Tube A		Yes
		Tube B		Yes
		Tube C		Yes

U.S. EPA - ABC Coke - Birmingham, Alabama - S505.000
Master Sample Log

Sample Run No.	Date/Time	Sample Description	Liquid Level Marked/ Sealed	Being Stored Below 4°C
A-0-5506-3	9-23-98/1022	Tube A		Yes
		Tube A&B		Yes
		Tube C		Yes
A-U-429-1	9-24-98/1025	Filter - Teflon	✓	✓
		Front ½ Ace, Hex MeCl2 Rinse	✓	✓
		Back ½ Filter Contents Ace Hex MeCl2	✓	✓
		XAD Trap	✓	✓
		Knockout-Ace Hex MeCl2 Rinse	✓	✓
		Impinger Contents	✓	✓
		Impinger Rinses Ace Hex MeCl2	✓	✓
A-U-429-2	9-24-98/1453	Filter - Teflon	✓	✓
		Filter - Teflon	✓ ~~✓~~ (AE)	✓
		Back ½ Filter Contents Ace Hex MeCl2	✓	✓
		XAD Trap	✓	✓
		Knockout-Ace, Hex, MeCl2 Rinse	✓	✓
		Impinger Contents	✓	✓
		Impingers Rinses Ace Hex MeCl2	✓	✓

U.S. EPA - ABC Coke - Birmingham, Alabama - S505.000
Master Sample Log

Sample Run No.	Date/Time	Sample Description	Liquid Level Marked/ Sealed	Being Stored Below 4°C
A-U-M429-3	9/25/98	Filter - Teflon	✓	✓
		Front ½ Ace, Hex, $MeCl_2$	✓	✓
		Back ½ Filter, Cond. Ace, Hex, $MeCl_2$	✓	✓
		XAD trap	✓	✓
		Knockout Ace, Hex, $MeCl_2$	✓	✓
		Impinger Contents	✓	✓
		Imp. Rinse Ace, Hex, $MeCl_2$	✓	✓
A-U-M429-4	9/25/98	Filter - Teflon	✓	✓
		Front ½ Ace, Hex, $MeCl_2$	✓	✓
		Back ½ Filter/Cond. Ace, Hex, $MeCl_2$	✓	✓
		XAD trap	✓	✓
		Knockout Ace, Hex, $MeCl_2$	✓	✓
		Imp. Contents	✓	✓
		Imp. Rinse Ace, Hex, $MeCl_2$	✓	✓
A-U-M315-3	9/25/98	Filter 080898 - i7	✓	✓
		Front ½ Acetone	✓	✓
		Front ½ $MeCl_2$	✓	✓
		Imp. Contents/DI Rinse	✓	✓
		Back ½ Acetone	✓	✓
		Back ½ $MeCl_2$	✓	✓

U.S. EPA - ABC Coke - Birmingham, Alabama - S505.000
Master Sample Log

Sample Run No.	Date/Time	Sample Description	Liquid Level Marked/ Sealed	Being Stored Below 4°C
A-V-M315-4	9/25/98	Filter 080898-13	✓	✓
		Front ½ Acetone	✓	✓
		Front ½ $MeCl_2$	✓	✓
		Imp. Cont./DI Rinse	✓	✓
		Back ½ Acetone	✓	✓
		Back ½ $MeCl_2$	✓	✓
A-V-5506-1	9/25/98	Tube A	✓ PK	✓
		Tube B		✓
		Tube C		✓

Page _____ of _____

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: Method Blank
Lab ID: 301802-0001-MB
Matrix: AIRTRAIN Sampled: NA Received: NA
Authorized: NA Prepared: 03 OCT 98 Analyzed: 05 NOV 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	340	ng/sample	--	
2-Methylnaphthalene	25	ng/sample	--	
Acenaphthylene	ND	ng/sample	10	
Acenaphthene	ND	ng/sample	10	
Fluorene	ND	ng/sample	10	
Phenanthrene	24	ng/sample	--	
Anthracene	ND	ng/sample	10	
Fluoranthene	ND	ng/sample	10	
Pyrene	ND	ng/sample	10	
Benzo(a)anthracene	ND	ng/sample	10	
Chrysene	ND	ng/sample	10	
Benzo(b)fluoranthene	ND	ng/sample	10	
Benzo(k)fluoranthene	ND	ng/sample	10	
Benzo(e)pyrene	ND	ng/sample	10	
Benzo(a)pyrene	ND	ng/sample	10	
Perylene	ND	ng/sample	10	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	10	
Dibenz(a,h)anthracene	ND	ng/sample	10	
Benzo(g,h,i)perylene	ND	ng/sample	10	

NA = Not Applicable
ND = Not Detected

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: Method Blank
Lab ID: 301802-0001-MB
Matrix: AIRTRAIN Sampled: NA Received: NA
Authorized: NA Prepared: 03 OCT 98 Analyzed: 05 NOV 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	42	m
Acenaphthylene-d8	66	
Acenaphthene-d10	64	
Fluorene-d10	60	
Phenanthrene-d10	80	
Fluoranthene-d10	50	
Pyrene-d10	54	
Benzo(a)anthracene-d12	65	
Perylene-d12	85	
Indeno(123-cd)pyrene-d12	93	
Chrysene-d12	87	
Benzo(b)fluoranthene-d12	75	
Benzo(k)fluoranthene-d12	84	
Benzo(a)pyrene-d12	93	
Dibenz(a,h)anthracene-d14	94	
Benzo(g,h,i)perylene-d12	86	

Field Surrogates	% Recovery
13C-Fluorene	87

m = Internal Standard recovery is outside method recovery goal.
NA = Not Applicable

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-I-429-1
Lab ID: 301802-0001-SA
Matrix: AIRTRAIN Sampled: 21 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 02 NOV 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	360000	ng/sample	--	BD
2-Methylnaphthalene	76000	ng/sample	--	D
Acenaphthylene	88000	ng/sample	--	D
Acenaphthene	15000	ng/sample	--	D
Fluorene	3400	ng/sample	--	D
Phenanthrene	160000	ng/sample	--	BD
Anthracene	16000	ng/sample	--	D
Fluoranthene	50000	ng/sample	--	BD
Pyrene	33000	ng/sample	--	D
Benzo(a)anthracene	15000	ng/sample	--	D
Chrysene	26000	ng/sample	--	D
Benzo(b)fluoranthene	17000	ng/sample	--	
Benzo(k)fluoranthene	9200	ng/sample	--	
Benzo(e)pyrene	6500	ng/sample	--	
Benzo(a)pyrene	6300	ng/sample	--	
Perylene	1100	ng/sample	--	
Indeno(1,2,3-cd)pyrene	11000	ng/sample	--	
Dibenz(a,h)anthracene	2500	ng/sample	--	
Benzo(g,h,i)perylene	11000	ng/sample	--	

B = Compound is also detected in the blank.
D = Compound quantitated using a secondary dilution.

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-I-429-1
Lab ID: 301802-0001-SA
Matrix: AIRTRAIN Sampled: 21 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 02 NOV 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	58	D
Acenaphthylene-d8	50	D
Acenaphthene-d10	45	Dm
Fluorene-d10	53	D
Phenanthrene-d10	81	D
Fluoranthene-d10	48	Dm
Pyrene-d10	51	D
Benzo(a)anthracene-d12	61	D
Perylene-d12	58	
Indeno(123-cd)pyrene-d12	91	
Chrysene-d12	72	D
Benzo(b)fluoranthene-d12	87	
Benzo(k)fluoranthene-d12	86	
Benzo(a)pyrene-d12	78	
Dibenz(a,h)anthracene-d14	83	
Benzo(g,h,i)perylene-d12	64	

Field Surrogates	% Recovery	
13C-Fluorene	82	D

D = Compound quantitated using a secondary dilution.
m = Internal Standard recovery is outside method recovery goal.

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-I-429-2
Lab ID: 301802-0002-SA
Matrix: AIRTRAIN Sampled: 22 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 30 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	120000	ng/sample	--	BD
2-Methylnaphthalene	24000	ng/sample	--	B
Acenaphthylene	36000	ng/sample	--	D
Acenaphthene	4300	ng/sample	--	D
Fluorene	16000	ng/sample	--	
Phenanthrene	53000	ng/sample	--	BD
Anthracene	4300	ng/sample	--	
Fluoranthene	18000	ng/sample	--	D
Pyrene	13000	ng/sample	--	
Benzo(a)anthracene	7000	ng/sample	--	
Chrysene	12000	ng/sample	--	
Benzo(b)fluoranthene	5200	ng/sample	--	
Benzo(k)fluoranthene	3700	ng/sample	--	
Benzo(e)pyrene	2600	ng/sample	--	
Benzo(a)pyrene	1900	ng/sample	--	
Perylene	330	ng/sample	--	
Indeno(1,2,3-cd)pyrene	4300	ng/sample	--	
Dibenz(a,h)anthracene	1100	ng/sample	--	
Benzo(g,h,i)perylene	3800	ng/sample	--	

B = Compound is also detected in the blank.
D = Compound quantitated using a secondary dilution.

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-I-429-2
Lab ID: 301802-0002-SA
Matrix: AIRTRAIN Sampled: 22 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 30 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	75	D
Acenaphthylene-d8	58	D
Acenaphthene-d10	64	D
Fluorene-d10	43	m
Phenanthrene-d10	98	D
Fluoranthene-d10	62	D
Pyrene-d10	73	
Benzo(a)anthracene-d12	64	
Perylene-d12	53	
Indeno(123-cd)pyrene-d12	95	
Chrysene-d12	66	
Benzo(b)fluoranthene-d12	103	
Benzo(k)fluoranthene-d12	70	
Benzo(a)pyrene-d12	75	
Dibenz(a,h)anthracene-d14	91	
Benzo(g,h,i)perylene-d12	80	

Field Surrogates	% Recovery
13C-Fluorene	103

D = Compound quantitated using a secondary dilution.
m = Internal Standard recovery is outside method recovery goal.

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-I-429-3
Lab ID: 301802-0003-SA
Matrix: AIRTRAIN Sampled: 23 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 30 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	160000	ng/sample	--	BD
2-Methylnaphthalene	41000	ng/sample	--	BD
Acenaphthylene	33000	ng/sample	--	D
Acenaphthene	6300	ng/sample	--	D
Fluorene	18000	ng/sample	--	
Phenanthrene	66000	ng/sample	--	BD
Anthracene	9100	ng/sample	--	
Fluoranthene	25000	ng/sample	--	D
Pyrene	18000	ng/sample	--	
Benzo(a)anthracene	11000	ng/sample	--	
Chrysene	18000	ng/sample	--	
Benzo(b)fluoranthene	6100	ng/sample	--	
Benzo(k)fluoranthene	3600	ng/sample	--	
Benzo(e)pyrene	3300	ng/sample	--	
Benzo(a)pyrene	1800	ng/sample	--	
Perylene	280	ng/sample	--	
Indeno(1,2,3-cd)pyrene	3900	ng/sample	--	
Dibenz(a,h)anthracene	980	ng/sample	--	
Benzo(g,h,i)perylene	4000	ng/sample	--	

B = Compound is also detected in the blank.
D = Compound quantitated using a secondary dilution.

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-I-429-3
Lab ID: 301802-0003-SA
Matrix: AIRTRAIN Sampled: 23 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 30 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	77	D
Acenaphthylene-d8	58	D
Acenaphthene-d10	70	D
Fluorene-d10	50	
Phenanthrene-d10	99	D
Fluoranthene-d10	49	Dm
Pyrene-d10	80	
Benzo(a)anthracene-d12	75	
Perylene-d12	54	
Indeno(123-cd)pyrene-d12	90	
Chrysene-d12	68	
Benzo(b)fluoranthene-d12	99	
Benzo(k)fluoranthene-d12	73	
Benzo(a)pyrene-d12	68	
Dibenz(a,h)anthracene-d14	87	
Benzo(g,h,i)perylene-d12	68	

Field Surrogates	% Recovery
13C-Fluorene	94

D = Compound quantitated using a secondary dilution.
m = Internal Standard recovery is outside method recovery goal.

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-O-429-1
Lab ID: 301802-0004-SA
Matrix: AIRTRAIN Sampled: 21 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 30 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	290000	ng/sample	--	BD
2-Methylnaphthalene	55000	ng/sample	--	B
Acenaphthylene	50000	ng/sample	--	
Acenaphthene	7000	ng/sample	--	
Fluorene	21000	ng/sample	--	
Phenanthrene	66000	ng/sample	--	BD
Anthracene	20000	ng/sample	--	
Fluoranthene	32000	ng/sample	--	
Pyrene	16000	ng/sample	--	
Benzo(a)anthracene	290	ng/sample	--	
Chrysene	740	ng/sample	--	
Benzo(b)fluoranthene	200	ng/sample	--	
Benzo(k)fluoranthene	200	ng/sample	--	
Benzo(e)pyrene	130	ng/sample	--	
Benzo(a)pyrene	ND	ng/sample	100	
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
D = Compound quantitated using a secondary dilution.
ND = Not Detected

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-O-429-1
Lab ID: 301802-0004-SA
Matrix: AIRTRAIN Sampled: 21 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 30 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	92	D
Acenaphthylene-d8	90	
Acenaphthene-d10	74	
Fluorene-d10	69	
Phenanthrene-d10	99	D
Fluoranthene-d10	69	
Pyrene-d10	70	
Benzo(a)anthracene-d12	81	
Perylene-d12	60	
Indeno(123-cd)pyrene-d12	81	
Chrysene-d12	79	
Benzo(b)fluoranthene-d12	88	
Benzo(k)fluoranthene-d12	87	
Benzo(a)pyrene-d12	77	
Dibenz(a,h)anthracene-d14	77	
Benzo(g,h,i)perylene-d12	69	

Field Surrogates	% Recovery
13C-Fluorene	124

D = Compound quantitated using a secondary dilution.

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-0-429-2
Lab ID: 301802-0005-SA
Matrix: AIRTRAIN Sampled: 22 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 30 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	95000	ng/sample	--	B
2-Methylnaphthalene	24000	ng/sample	--	B
Acenaphthylene	22000	ng/sample	--	
Acenaphthene	2500	ng/sample	--	
Fluorene	7500	ng/sample	--	
Phenanthrene	45000	ng/sample	--	B
Anthracene	3300	ng/sample	--	
Fluoranthene	14000	ng/sample	--	
Pyrene	8100	ng/sample	--	
Benzo(a)anthracene	240	ng/sample	--	
Chrysene	640	ng/sample	--	
Benzo(b)fluoranthene	180	ng/sample	--	
Benzo(k)fluoranthene	160	ng/sample	--	
Benzo(e)pyrene	ND	ng/sample	100	
Benzo(a)pyrene	ND	ng/sample	100	
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
ND = Not Detected

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-0-429-2
Lab ID: 301802-0005-SA
Matrix: AIRTRAIN Sampled: 22 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 30 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	46	m
Acenaphthylene-d8	75	
Acenaphthene-d10	72	
Fluorene-d10	75	
Phenanthrene-d10	88	
Fluoranthene-d10	58	
Pyrene-d10	56	
Benzo(a)anthracene-d12	75	
Perylene-d12	58	
Indeno(123-cd)pyrene-d12	73	
Chrysene-d12	80	
Benzo(b)fluoranthene-d12	94	
Benzo(k)fluoranthene-d12	88	
Benzo(a)pyrene-d12	76	
Dibenz(a,h)anthracene-d14	64	
Benzo(g,h,i)perylene-d12	76	

Field Surrogates	% Recovery
13C-Fluorene	112

m = Internal Standard recovery is outside method recovery goal.

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-O-429-3
Lab ID: 301802-0006-SA
Matrix: AIRTRAIN Sampled: 23 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 30 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	110000	ng/sample	--	BD
2-Methylnaphthalene	36000	ng/sample	--	B
Acenaphthylene	17000	ng/sample	--	
Acenaphthene	3500	ng/sample	--	
Fluorene	8800	ng/sample	--	
Phenanthrene	27000	ng/sample	--	BD
Anthracene	5100	ng/sample	--	
Fluoranthene	12000	ng/sample	--	
Pyrene	6400	ng/sample	--	
Benzo(a)anthracene	240	ng/sample	--	
Chrysene	690	ng/sample	--	
Benzo(b)fluoranthene	210	ng/sample	--	
Benzo(k)fluoranthene	140	ng/sample	--	
Benzo(e)pyrene	110	ng/sample	--	
Benzo(a)pyrene	ND	ng/sample	100	
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
D = Compound quantitated using a secondary dilution.
ND = Not Detected

Reported By: Clark Pickell Approved By: Eric Redman

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-0-429-3
Lab ID: 301802-0006-SA
Matrix: AIRTRAIN Sampled: 23 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 30 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	65	D
Acenaphthylene-d8	85	
Acenaphthene-d10	82	
Fluorene-d10	75	
Phenanthrene-d10	107	D
Fluoranthene-d10	69	
Pyrene-d10	63	
Benzo(a)anthracene-d12	80	
Perylene-d12	58	
Indeno(123-cd)pyrene-d12	80	
Chrysene-d12	85	
Benzo(b)fluoranthene-d12	88	
Benzo(k)fluoranthene-d12	87	
Benzo(a)pyrene-d12	73	
Dibenz(a,h)anthracene-d14	81	
Benzo(g,h,i)perylene-d12	66	

Field Surrogates	% Recovery
13C-Fluorene	117

D = Compound quantitated using a secondary dilution.

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-U-429-1
Lab ID: 301802-0007-SA
Matrix: AIRTRAIN Sampled: 24 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	100000	ng/sample	--	B
2-Methylnaphthalene	2900	ng/sample	--	B
Acenaphthylene	16000	ng/sample	--	F
Acenaphthene	280	ng/sample	--	
Fluorene	930	ng/sample	--	
Phenanthrene	11000	ng/sample	--	B
Anthracene	310	ng/sample	--	
Fluoranthene	5400	ng/sample	--	
Pyrene	2700	ng/sample	--	
Benzo(a)anthracene	160	ng/sample	--	
Chrysene	380	ng/sample	--	
Benzo(b)fluoranthene	270	ng/sample	--	
Benzo(k)fluoranthene	ND	ng/sample	100	
Benzo(e)pyrene	290	ng/sample	--	F
Benzo(a)pyrene	230	ng/sample	--	F
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
F = Reported value estimated due to an interference.
ND = Not Detected

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-U-429-1
Lab ID: 301802-0007-SA
Matrix: AIRTRAIN Sampled: 24 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	46	m
Acenaphthylene-d8	5.0	m
Acenaphthene-d10	50	
Fluorene-d10	81	
Phenanthrene-d10	94	
Fluoranthene-d10	70	
Pyrene-d10	57	
Benzo(a)anthracene-d12	52	
Perylene-d12	14	m
Indeno(123-cd)pyrene-d12	70	
Chrysene-d12	80	
Benzo(b)fluoranthene-d12	79	
Benzo(k)fluoranthene-d12	80	
Benzo(a)pyrene-d12	18	m
Dibenz(a,h)anthracene-d14	77	
Benzo(g,h,i)perylene-d12	58	

Field Surrogates	% Recovery
13C-Fluorene	119

m = Internal Standard recovery is outside method recovery goal.

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-U-429-2
Lab ID: 301802-0008-SA
Matrix: AIRTRAIN Sampled: 24 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	130000	ng/sample	--	B
2-Methylnaphthalene	2300	ng/sample	--	B
Acenaphthylene	68000	ng/sample	--	F
Acenaphthene	240	ng/sample	--	
Fluorene	690	ng/sample	--	
Phenanthrene	20000	ng/sample	--	
Anthracene	460	ng/sample	--	
Fluoranthene	12000	ng/sample	--	
Pyrene	21000	ng/sample	--	
Benzo(a)anthracene	100	ng/sample	--	
Chrysene	460	ng/sample	--	
Benzo(b)fluoranthene	420	ng/sample	--	
Benzo(k)fluoranthene	130	ng/sample	--	
Benzo(e)pyrene	1400	ng/sample	--	F
Benzo(a)pyrene	210	ng/sample	--	F
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
F = Reported value estimated due to an interference.
ND = Not Detected

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-U-429-2
Lab ID: 301802-0008-SA
Matrix: AIRTRAIN Sampled: 24 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	42	
Acenaphthylene-d8	4.0	m
Acenaphthene-d10	49	
Fluorene-d10	78	
Phenanthrene-d10	95	
Fluoranthene-d10	65	
Pyrene-d10	55	
Benzo(a)anthracene-d12	61	
Perylene-d12	12	m
Indeno(123-cd)pyrene-d12	52	
Chrysene-d12	76	
Benzo(b)fluoranthene-d12	74	
Benzo(k)fluoranthene-d12	66	
Benzo(a)pyrene-d12	17	m
Dibenz(a,h)anthracene-d14	56	
Benzo(g,h,i)perylene-d12	40	m

Field Surrogates	% Recovery
13C-Fluorene	99

m = Internal Standard recovery is outside method recovery goal.

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-U-429-3
Lab ID: 301802-0009-SA
Matrix: AIRTRAIN Sampled: 25 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	76000	ng/sample	--	B
2-Methylnaphthalene	1600	ng/sample	--	B
Acenaphthylene	13000	ng/sample	--	F
Acenaphthene	120	ng/sample	--	
Fluorene	360	ng/sample	--	
Phenanthrene	9900	ng/sample	--	B
Anthracene	220	ng/sample	--	
Fluoranthene	4800	ng/sample	--	
Pyrene	3300	ng/sample	--	
Benzo(a)anthracene	ND	ng/sample	100	
Chrysene	290	ng/sample	--	
Benzo(b)fluoranthene	210	ng/sample	--	
Benzo(k)fluoranthene	ND	ng/sample	100	
Benzo(e)pyrene	350	ng/sample	--	
Benzo(a)pyrene	ND	ng/sample	100	
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
F = Reported value estimated due to an interference.
ND = Not Detected

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-U-429-3
Lab ID: 301802-0009-SA
Matrix: AIRTRAIN Sampled: 25 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	52	
Acenaphthylene-d8	9.0	m
Acenaphthene-d10	59	
Fluorene-d10	73	
Phenanthrene-d10	88	
Fluoranthene-d10	77	
Pyrene-d10	64	
Benzo(a)anthracene-d12	75	
Perylene-d12	20	m
Indeno(123-cd)pyrene-d12	77	
Chrysene-d12	95	
Benzo(b)fluoranthene-d12	93	
Benzo(k)fluoranthene-d12	90	
Benzo(a)pyrene-d12	22	m
Dibenz(a,h)anthracene-d14	79	
Benzo(g,h,i)perylene-d12	57	

Field Surrogates	% Recovery
13C-Fluorene	104

m = Internal Standard recovery is outside method recovery goal.

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-U-429-4
Lab ID: 301802-0010-SA
Matrix: AIRTRAIN Sampled: 25 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	99000	ng/sample	--	B
2-Methylnaphthalene	4400	ng/sample	--	B
Acenaphthylene	NC	ng/sample	--	
Acenaphthene	240	ng/sample	--	
Fluorene	1300	ng/sample	--	
Phenanthrene	18000	ng/sample	--	B
Anthracene	280	ng/sample	--	
Fluoranthene	7100	ng/sample	--	
Pyrene	4600	ng/sample	--	
Benzo(a)anthracene	150	ng/sample	--	
Chrysene	520	ng/sample	--	
Benzo(b)fluoranthene	260	ng/sample	--	
Benzo(k)fluoranthene	110	ng/sample	--	
Benzo(e)pyrene	300	ng/sample	--	F
Benzo(a)pyrene	160	ng/sample	--	F
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
F = Reported value estimated due to an interference.
NC = Not Calculated, calculation not applicable.
ND = Not Detected

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-U-429-4
Lab ID: 301802-0010-SA
Matrix: AIRTRAIN Sampled: 25 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	43	m
Acenaphthylene-d8	NC	
Acenaphthene-d10	45	
Fluorene-d10	79	
Phenanthrene-d10	87	
Fluoranthene-d10	80	
Pyrene-d10	53	
Benzo(a)anthracene-d12	53	
Perylene-d12	8.0	m
Indeno(123-cd)pyrene-d12	55	
Chrysene-d12	79	
Benzo(b)fluoranthene-d12	94	
Benzo(k)fluoranthene-d12	75	
Benzo(a)pyrene-d12	16	m
Dibenz(a,h)anthracene-d14	61	
Benzo(g,h,i)perylene-d12	41	m

Field Surrogates	% Recovery
13C-Fluorene	122

m = Internal Standard recovery is outside method recovery goal.
NC = Not Calculated, calculation not applicable.

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-I-429-FB
Lab ID: 301802-0011-SA
Matrix: AIRTRAIN Sampled: 24 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	1600	ng/sample	--	B
2-Methylnaphthalene	200	ng/sample	--	B
Acenaphthylene	ND	ng/sample	100	
Acenaphthene	ND	ng/sample	100	
Fluorene	ND	ng/sample	100	
Phenanthrene	210	ng/sample	--	B
Anthracene	ND	ng/sample	100	
Fluoranthene	ND	ng/sample	100	
Pyrene	ND	ng/sample	100	
Benzo(a)anthracene	ND	ng/sample	100	
Chrysene	ND	ng/sample	100	
Benzo(b)fluoranthene	ND	ng/sample	100	
Benzo(k)fluoranthene	ND	ng/sample	100	
Benzo(e)pyrene	ND	ng/sample	100	
Benzo(a)pyrene	ND	ng/sample	100	
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
ND = Not Detected

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-I-429-FB
Lab ID: 301802-0011-SA
Matrix: AIRTRAIN Sampled: 24 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	45	m
Acenaphthylene-d8	54	
Acenaphthene-d10	62	
Fluorene-d10	57	
Phenanthrene-d10	61	
Fluoranthene-d10	68	
Pyrene-d10	70	
Benzo(a)anthracene-d12	64	
Perylene-d12	65	
Indeno(123-cd)pyrene-d12	81	
Chrysene-d12	89	
Benzo(b)fluoranthene-d12	72	
Benzo(k)fluoranthene-d12	87	
Benzo(a)pyrene-d12	68	
Dibenz(a,h)anthracene-d14	75	
Benzo(g,h,i)perylene-d12	70	

Field Surrogates	% Recovery
13C-Fluorene	103

m = Internal Standard recovery is outside method recovery goal.

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-O-429-FB
Lab ID: 301802-0012-SA
Matrix: AIRTRAIN Sampled: 24 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	1000	ng/sample	--	B
2-Methylnaphthalene	ND	ng/sample	100	
Acenaphthylene	ND	ng/sample	100	
Acenaphthene	ND	ng/sample	100	
Fluorene	ND	ng/sample	100	
Phenanthrene	270	ng/sample	--	B
Anthracene	ND	ng/sample	100	
Fluoranthene	190	ng/sample	--	
Pyrene	150	ng/sample	--	
Benzo(a)anthracene	ND	ng/sample	100	
Chrysene	ND	ng/sample	100	
Benzo(b)fluoranthene	ND	ng/sample	100	
Benzo(k)fluoranthene	ND	ng/sample	100	
Benzo(e)pyrene	ND	ng/sample	100	
Benzo(a)pyrene	ND	ng/sample	100	
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
ND = Not Detected

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-0-429-FB
Lab ID: 301802-0012-SA
Matrix: AIRTRAIN
Authorized: 29 SEP 98
Sampled: 24 SEP 98
Prepared: 03 OCT 98
Received: 29 SEP 98
Analyzed: 31 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	46	m
Acenaphthylene-d8	54	
Acenaphthene-d10	68	
Fluorene-d10	51	
Phenanthrene-d10	65	
Fluoranthene-d10	75	
Pyrene-d10	71	
Benzo(a)anthracene-d12	60	
Perylene-d12	57	
Indeno(123-cd)pyrene-d12	73	
Chrysene-d12	94	
Benzo(b)fluoranthene-d12	80	
Benzo(k)fluoranthene-d12	77	
Benzo(a)pyrene-d12	61	
Dibenz(a,h)anthracene-d14	66	
Benzo(g,h,i)perylene-d12	66	

Field Surrogates	% Recovery
13C-Fluorene	107

m = Internal Standard recovery is outside method recovery goal.

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Approved By: Eric Redman

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-U-429-FB
Lab ID: 301802-0013-SA
Matrix: AIRTRAIN
Authorized: 29 SEP 98
Dilution Factor: 1.0

Sampled: 25 SEP 98
Prepared: 03 OCT 98

Received: 29 SEP 98
Analyzed: 31 OCT 98

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	980	ng/sample	--	B
2-Methylnaphthalene	ND	ng/sample	100	
Acenaphthylene	ND	ng/sample	100	
Acenaphthene	ND	ng/sample	100	
Fluorene	ND	ng/sample	100	
Phenanthrene	120	ng/sample	--	B
Anthracene	ND	ng/sample	100	
Fluoranthene	ND	ng/sample	100	
Pyrene	ND	ng/sample	100	
Benzo(a)anthracene	ND	ng/sample	100	
Chrysene	ND	ng/sample	100	
Benzo(b)fluoranthene	ND	ng/sample	100	
Benzo(k)fluoranthene	ND	ng/sample	100	
Benzo(e)pyrene	ND	ng/sample	100	
Benzo(a)pyrene	ND	ng/sample	100	
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
ND = Not Detected

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-U-429-FB
Lab ID: 301802-0013-SA
Matrix: AIRTRAIN Sampled: 25 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	48	m
Acenaphthylene-d8	63	
Acenaphthene-d10	66	
Fluorene-d10	64	
Phenanthrene-d10	67	
Fluoranthene-d10	83	
Pyrene-d10	80	
Benzo(a)anthracene-d12	61	
Perylene-d12	57	
Indeno(123-cd)pyrene-d12	73	
Chrysene-d12	106	
Benzo(b)fluoranthene-d12	81	
Benzo(k)fluoranthene-d12	89	
Benzo(a)pyrene-d12	65	
Dibenz(a,h)anthracene-d14	77	
Benzo(g,h,i)perylene-d12	73	

Field Surrogates	% Recovery
13C-Fluorene	98

m = Internal Standard recovery is outside method recovery goal.

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-429-LB
Lab ID: 301802-0014-SA
Matrix: AIRTRAIN Sampled: 21 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	840	ng/sample	--	B
2-Methylnaphthalene	ND	ng/sample	100	
Acenaphthylene	ND	ng/sample	100	
Acenaphthene	ND	ng/sample	100	
Fluorene	ND	ng/sample	100	
Phenanthrene	ND	ng/sample	100	
Anthracene	ND	ng/sample	100	
Fluoranthene	ND	ng/sample	100	
Pyrene	ND	ng/sample	100	
Benzo(a)anthracene	ND	ng/sample	100	
Chrysene	ND	ng/sample	100	
Benzo(b)fluoranthene	ND	ng/sample	100	
Benzo(k)fluoranthene	ND	ng/sample	100	
Benzo(e)pyrene	ND	ng/sample	100	
Benzo(a)pyrene	ND	ng/sample	100	
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
ND = Not Detected

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POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-429-LB
Lab ID: 301802-0014-SA
Matrix: AIRTRAIN Sampled: 21 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery
Naphthalene-d8	52
Acenaphthylene-d8	51
Acenaphthene-d10	57
Fluorene-d10	69
Phenanthrene-d10	77
Fluoranthene-d10	84
Pyrene-d10	82
Benzo(a)anthracene-d12	56
Perylene-d12	61
Indeno(123-cd)pyrene-d12	64
Chrysene-d12	106
Benzo(b)fluoranthene-d12	76
Benzo(k)fluoranthene-d12	87
Benzo(a)pyrene-d12	65
Dibenz(a,h)anthracene-d14	60
Benzo(g,h,i)perylene-d12	64

Field Surrogates	% Recovery
13C-Fluorene	101

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

Quanterra

LABORATORY CONTROL SAMPLE REPORT
Advanced Technology Group - High Resolution
Project: 301802

Category: PAH-HR-AIR PAH by HRGC/HRMS
Test: PAH-HR-AIR
Matrix: AIR
QC Lot: 03 OCT 98-A QC Run: 02 NOV 98-A
Concentration Units: ng/sample

Analyte	Concentration Spiked	Measured	Accuracy(%) LCS	Limits	
Naphthalene	100	90	90	50-150	B
2-Methylnaphthalene	100	100	103	50-150	B
Acenaphthylene	100	100	102	50-150	
Acenaphthene	100	92	92	50-150	
Fluorene	100	77	77	50-150	a
Phenanthrene	100	81	81	50-150	B
Anthracene	100	78	78	50-150	
Fluoranthene	100	80	80	50-150	
Pyrene	100	64	64	50-150	
Benzo(a)anthracene	100	87	87	50-150	
Chrysene	100	77	77	50-150	
Benzo(b)fluoranthene	100	76	76	50-150	
Benzo(k)fluoranthene	100	66	66	50-150	
Benzo(e)pyrene	100	73	73	50-150	
Benzo(a)pyrene	100	68	68	50-150	
Perylene	100	79	79	50-150	
Indeno(1,2,3-cd)pyrene	100	90	90	50-150	
Dibenz(a,h)anthracene	100	76	76	50-150	
Benzo(g,h,i)perylene	100	88	88	50-150	
Naphthalene-d8	50	27	53	50-150	
Acenaphthylene-d8	50	31	63	50-150	
Acenaphthene-d10	50	31	61	50-150	
Fluorene-d10	50	28	55	50-150	
Phenanthrene-d10	50	38	75	50-150	
Fluoranthene-d10	50	24	48	50-150	#
Pyrene-d10	50	26	52	50-150	
Benzo(a)anthracene-d12	50	31	62	50-150	
Chrysene-d12	50	43	85	50-150	
Benzo(b)fluoranthene-d12	50	36	71	50-150	
Benzo(k)fluoranthene-d12	50	44	88	50-150	
Benzo(a)pyrene-d12	50	45	91	50-150	
Perylene-d12	50	32	65	50-150	
Indeno(123-cd)pyrene-d12	50	59	117	50-150	
Dibenz(a,h)anthracene-d14	50	56	112	50-150	
Benzo(g,h,i)perylene-d12	50	54	109	50-150	

\# = Outside of control limits.
a = See narrative.
B = Compound is also detected in the blank.

Calculations are performed before rounding to avoid round-off errors in calculated results.

Method Blank

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: Method Blank
Lab ID: 301802-0001-MB
Matrix: AIRTRAIN
Authorized: NA
Dilution Factor: 1.0

Sampled: NA
Prepared: 03 OCT 98

Received: NA
Analyzed: 05 NOV 98

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	340	ng/sample	--	
2-Methylnaphthalene	25	ng/sample	--	
Acenaphthylene	ND	ng/sample	10	
Acenaphthene	ND	ng/sample	10	
Fluorene	ND	ng/sample	10	
Phenanthrene	24	ng/sample	--	
Anthracene	ND	ng/sample	10	
Fluoranthene	ND	ng/sample	10	
Pyrene	ND	ng/sample	10	
Benzo(a)anthracene	ND	ng/sample	10	
Chrysene	ND	ng/sample	10	
Benzo(b)fluoranthene	ND	ng/sample	10	
Benzo(k)fluoranthene	ND	ng/sample	10	
Benzo(e)pyrene	ND	ng/sample	10	
Benzo(a)pyrene	ND	ng/sample	10	
Perylene	ND	ng/sample	10	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	10	
Dibenz(a,h)anthracene	ND	ng/sample	10	
Benzo(g,h,i)perylene	ND	ng/sample	10	

NA = Not Applicable
ND = Not Detected

Reported By: Clark Pickell

Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: Method Blank
Lab ID: 301802-0001-MB
Matrix: AIRTRAIN
Authorized: NA
Dilution Factor: 1.0

Sampled: NA
Prepared: 03 OCT 98

Received: NA
Analyzed: 05 NOV 98

Internal Standards	% Recovery	
Naphthalene-d8	42	m
Acenaphthylene-d8	66	
Acenaphthene-d10	64	
Fluorene-d10	60	
Phenanthrene-d10	80	
Fluoranthene-d10	50	
Pyrene-d10	54	
Benzo(a)anthracene-d12	65	
Perylene-d12	85	
Indeno(123-cd)pyrene-d12	93	
Chrysene-d12	87	
Benzo(b)fluoranthene-d12	75	
Benzo(k)fluoranthene-d12	84	
Benzo(a)pyrene-d12	93	
Dibenz(a,h)anthracene-d14	94	
Benzo(g,h,i)perylene-d12	86	

Field Surrogates	% Recovery
13C-Fluorene	87

m = Internal Standard recovery is outside method recovery goal.
NA = Not Applicable

Reported By: Clark Pickell

Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

04-NOV-1998 12:40:42 PM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4
GC Column : DB-5
Data file : 02NO98V4
Weight : 0.5

Results : 02NO98V4031.RES : PAHAIR.TRG
Date analyzed : 02-NOV-98
301802-1MB :METHOD BLANK Ex Cal : PAHAIR102998V4.R

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	ng/ TRAIN	Rec/ MDL
d10-2-Methylnaphthalene	112227400	1.00	Y	12: 28	Y	1.00	50.00	
d8-Naphthalene	105343000	1.00	Y	10: 12	Y	2.24	20.95	42 m
Naphthalene	444010000	1.00	Y	10: 16	Y	1.23	344.04	
2-Methylnaphthalene	14520000	1.00	Y	12: 34	Y	0.56	24.59	
d8-Acenaphthylene	89410200	1.00	Y	15: 28	Y	1.21	32.82	66
Acenaphthylene	738674	1.00	Y	15: 31	Y	0.94	<RL=10.00	
d10-Acenaphthene	53754000	1.00	Y	16: 2	Y	0.74	32.16	64
Acenaphthene	6026800	1.00	Y	16: 8	Y	1.25	<RL=10.00	
d10-Anthracene	66464600	1.00	Y	20: 55	Y	1.00	50.00	
d10-Fluorene	56334800	1.00	Y	17: 41	Y	1.42	29.83	60
Fluorene	1991522	1.00	Y	17: 47	Y	1.16	<RL=10.00	
d10-Phenanthrene	149506400	1.00	Y	20: 46	Y	2.81	40.06	80
Phenanthrene	32600000	1.00	Y	20: 50	Y	0.89	24.38	
Anthracene	* No Peak	0.00	N	20: 59	N	0.80	<RL=10.00	
d14-Terphenyl	191478400	1.00	Y	26: 0	Y	1.00	50.00	
d10-Fluoranthene	135260800	1.00	Y	24: 36	Y	1.41	25.04	50
Fluoranthene	11031920	1.00	Y	24: 40	Y	1.11	<RL=10.00	
d10-Pyrene	155985600	1.00	Y	25: 18	Y	1.52	26.83	54
Pyrene	5781280	1.00	Y	25: 21	Y	1.21	<RL=10.00	
d12-Benzo(a)anthracene	112804800	1.00	Y	29: 9	Y	0.90	32.73	65
Benzo(a)anthracene	609918	1.00	Y	29: 13	Y	1.20	<RL=10.00	
d12-Chrysene	212384000	1.00	Y	29: 15	Y	1.28	43.36	87
Chrysene	1683386	1.00	Y	29: 20	Y	1.08	<RL=10.00	
d12-Benzo(e)pyrene	237306000	1.00	Y	33: 21	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	80350200	1.00	Y	32: 29	Y	0.45	37.30	75
Benzo(b)fluoranthene	948200	1.00	Y	32: 35	Y	1.17	<RL=10.00	
d12-Benzo(k)fluoranthene	189536400	1.00	Y	32: 34	Y	0.95	42.12	84
Benzo(k)fluoranthene	948200	1.00	Y	32: 35	Y	1.16	<RL=10.00	
d12-Benzo(a)pyrene	149194200	1.00	Y	33: 32	Y	0.68	46.45	93
Benzo(e)pyrene	481952	1.00	Y	33: 27	Y	1.64	<RL=10.00	
Benzo(a)pyrene	78083	1.00	Y	33: 38	Y	1.07	<RL=10.00	
d12-Perylene	127833600	1.00	Y	33: 50	Y	0.63	42.74	85
Perylene	* No Peak	0.00	N	33: 54	N	1.71	<RL=10.00	
d12-Indeno(123-cd)pyrene	98292400	1.00	Y	38: 1	Y	0.44	46.59	93
Indeno(123-cd)pyrene	59792	1.00	Y	38: 9	Y	0.62	<RL=10.00	
d14-Dibenz(ah)anthracene	55083800	1.00	Y	38: 6	Y	0.25	47.21	94
Dibenz(ah)anthracene	* No Peak	0.00	N	38: 14	N	1.40	<RL=10.00	
d12-Benzo(ghi)perylene	118699600	1.00	Y	39: 12	Y	0.58	43.14	86
Benzo(ghi)perylene	143538	1.00	Y	39: 21	Y	1.02	<RL=10.00	
d10-Fluorene	56334800	1.00	Y	17: 41	Y	1.00	50.00	
13C-Fluorene	39298000	1.00	Y	17: 47	Y	0.80	43.60	87

48

11-4 98
CP

	0.5
98V4.RRF	
Rec/ MDL	
	56113700 56113700
42	52671500 52671500
	222005000 222005000
	7260000 7260000
66	44705100 44705100
10.00	369337 369337
64	26877000 26877000
10.00	3013400 3013400
	33232300 33232300
60	28167400 28167400
10.00	995761 995761
80	74753200 74753200
	16300000 16300000
10.00	0 0
	95739200 95739200
50	67630400 67630400
10.00	5515960 5515960
54	77992800 77992800
10.00	2890640 2890640
65	56402400 56402400
10.00	304959 304959
87	106192000 106192000
10.00	841693 841693
	118653000 118653000
75	40175100 40175100
10.00	474100 474100
84	94768200 94768200
10.00	474100 474100
93	74597100 74597100
10.00	240976 240976
10.00	39041 39041
85	63916800 63916800
10.00	0 0
93	49146200 49146200
10.00	29896 29896
94	27541900 27541900
10.00	0 0
86	59349800 59349800
10.00	71769 71769

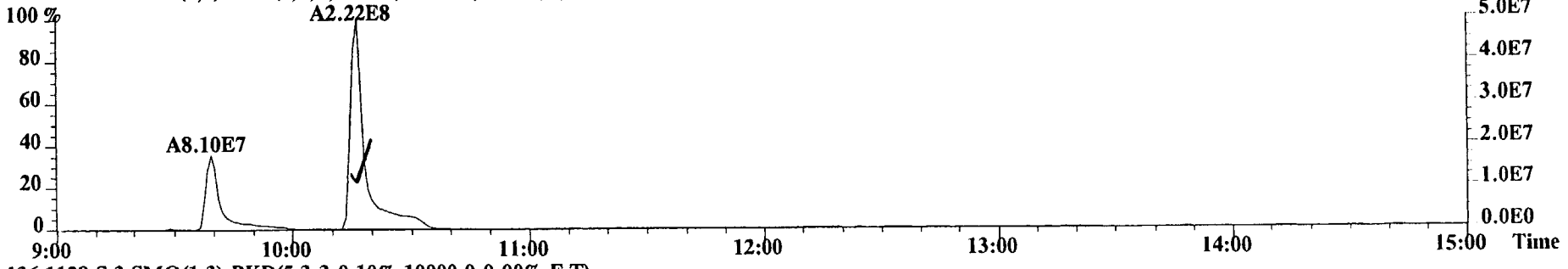
03-NOV-1998 08:08:26 AM 429AIR Unknown RESULTS

Mass Spec : VG-4 Results : 02NO98V4031.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 02-NOV-98
Data file : 02NO98V4 301802-1MB :METHOD BLANK Ex Cal : PAHAIR102998V4.R
Weight : 0.5

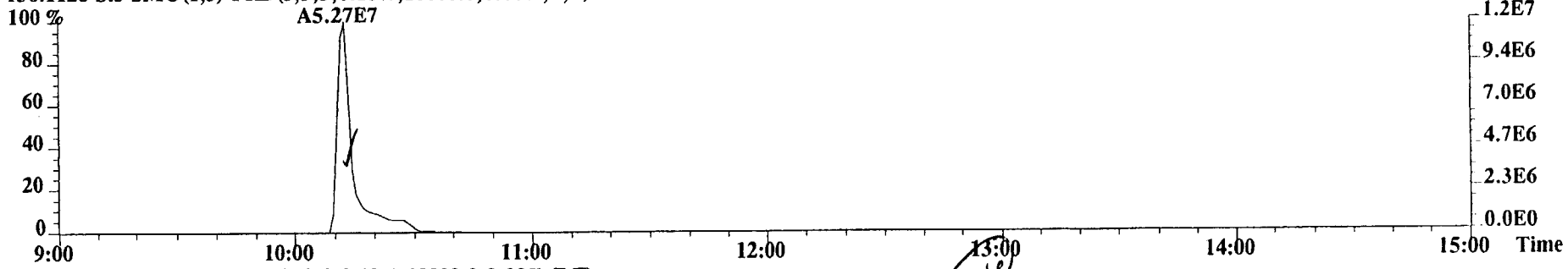
Name	Total Response	Isotope Ratio	R. T. mm:ss	RRF	ng/ TRAIN	Rec/ MDL
d10-2-Methylnaphthalene	112227400	1.00 Y	12: 28 Y	1.00	50.00	
d8-Naphthalene	105343000	1.00 Y	10: 12 Y	2.24	20.95	42
Naphthalene	444010000	1.00 Y	10: 16 Y	1.23	344.04	0.000
2-Methylnaphthalene	15679360	1.00 Y	12: 34 Y	0.56	26.55	0.000
d8-Acenaphthylene	89410200	1.00 Y	15: 28 Y	1.21	32.82	66
Acenaphthylene	738674	1.00 Y	15: 31 Y	0.94	0.88	0.000
d10-Acenaphthene	53754000	1.00 Y	16: 2 Y	0.74	32.16	64
Acenaphthene	6026800	1.00 Y	16: 8 Y	1.25	9.00	0.000
d10-Anthracene	66464600	1.00 Y	20: 55 Y	1.00	50.00	
d10-Fluorene	56334800	1.00 Y	17: 41 Y	1.42	29.83	60
Fluorene	1991522	1.00 Y	17: 47 Y	1.16	3.05	0.000
d10-Phenanthrene	149506400	1.00 Y	20: 46 Y	2.81	40.06	80
Phenanthrene	34755000	1.00 Y	20: 50 Y	0.89	25.99	0.000
Anthracene	* No Peak	0.00 N	20: 59 N	0.80	0.00	0.000
d14-Terphenyl	191478400	1.00 Y	26: 0 Y	1.00	50.00	
d10-Fluoranthene	135260800	1.00 Y	24: 36 Y	1.41	25.04	50
Fluoranthene	11031920	1.00 Y	24: 40 Y	1.11	7.34	0.000
d10-Pyrene	155985600	1.00 Y	25: 18 Y	1.52	26.83	54
Pyrene	5781280	1.00 Y	25: 21 Y	1.21	3.08	0.000
d12-Benzo(a)anthracene	112804800	1.00 Y	29: 9 Y	0.90	32.73	65
Benzo(a)anthracene	609918	1.00 Y	29: 13 Y	1.20	0.45	0.000
d12-Chrysene	212384000	1.00 Y	29: 15 Y	1.28	43.36	87
Chrysene	1683386	1.00 Y	29: 20 Y	1.08	0.73	0.000
d12-Benzo(e)pyrene	237306000	1.00 Y	33: 21 Y	1.00	50.00	
d12-Benzo(b)fluoranthene	80350200	1.00 Y	32: 29 Y	0.45	37.30	75
Benzo(b)fluoranthene	948200	1.00 Y	32: 35 Y	1.17	1.01	0.000
d12-Benzo(k)fluoranthene	189536400	1.00 Y	32: 34 Y	0.95	42.12	84
Benzo(k)fluoranthene	948200	1.00 Y	32: 35 Y	1.16	0.43	0.000
d12-Benzo(a)pyrene	149194200	1.00 Y	33: 32 Y	0.68	46.45	93
Benzo(e)pyrene	481952	1.00 Y	33: 27 Y	1.64	0.20	0.000
Benzo(a)pyrene	78083	1.00 Y	33: 38 Y	1.07	0.05	0.000
d12-Perylene	127833600	1.00 Y	33: 50 Y	0.63	42.74	85
Perylene	* No Peak	0.00 N	33: 54 N	1.71	0.00	0.000
d12-Indeno(123-cd)pyrene	98292400	1.00 Y	38: 1 Y	0.44	46.59	93
Indeno(123-cd)pyrene	59792	1.00 Y	38: 9 Y	0.62	0.10	0.000
d14-Dibenz(ah)anthracene	55083800	1.00 Y	38: 6 Y	0.25	47.21	94
Dibenz(ah)anthracene	* No Peak	0.00 N	38: 14 N	1.40	0.00	0.000
d12-Benzo(ghi)perylene	118699600	1.00 Y	39: 12 Y	0.58	43.14	86
Benzo(ghi)perylene	143538	1.00 Y	39: 21 Y	1.02	0.12	0.000
d10-Fluorene	56334800	1.00 Y	17: 41 Y	1.42	8.35	17
13C-Fluorene	39298000	1.00 Y	17: 47 Y	1.00	69.76	0.000

File:02NO98V4 #1-509 Acq: 2-NOV-1998 14:51:29 GC EI+ Voltage SIR 70SE
Sample#3 Text:301802-1MB :METHOD BLANK Exp:PAHAIR

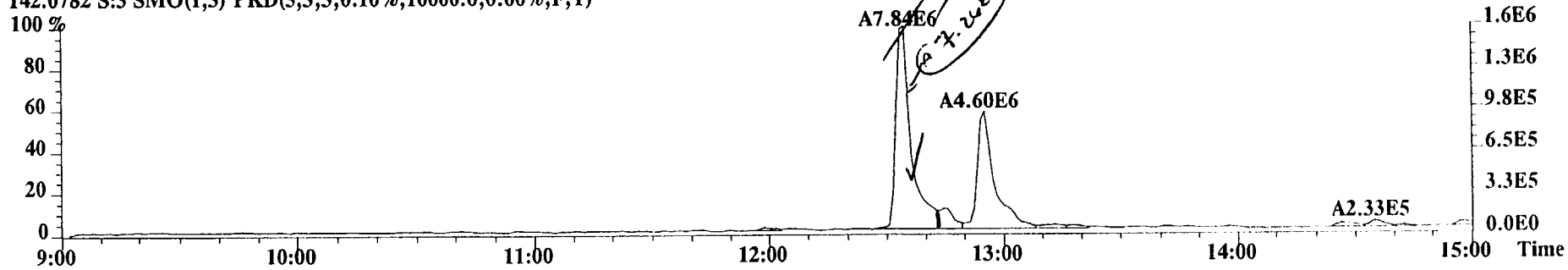
128.0626 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



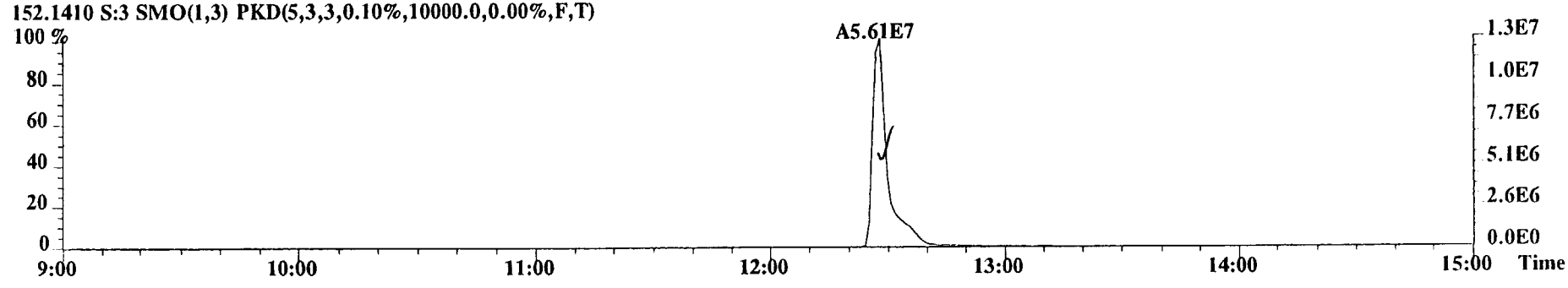
136.1128 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



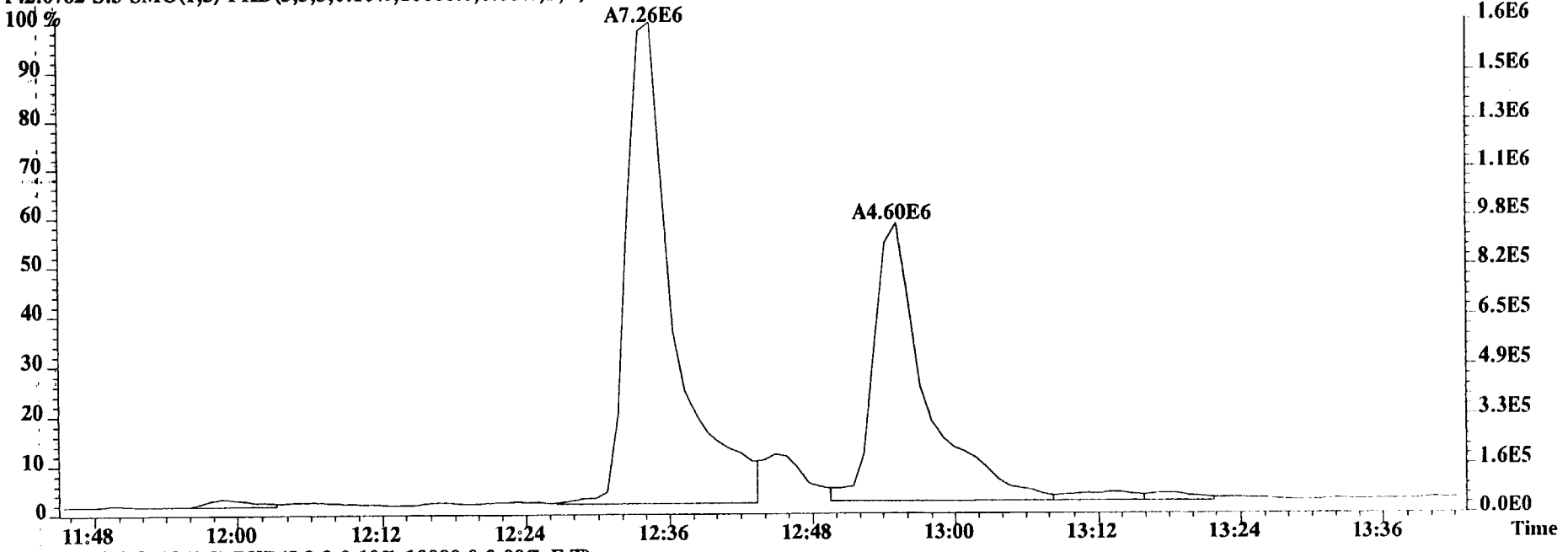
142.0782 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



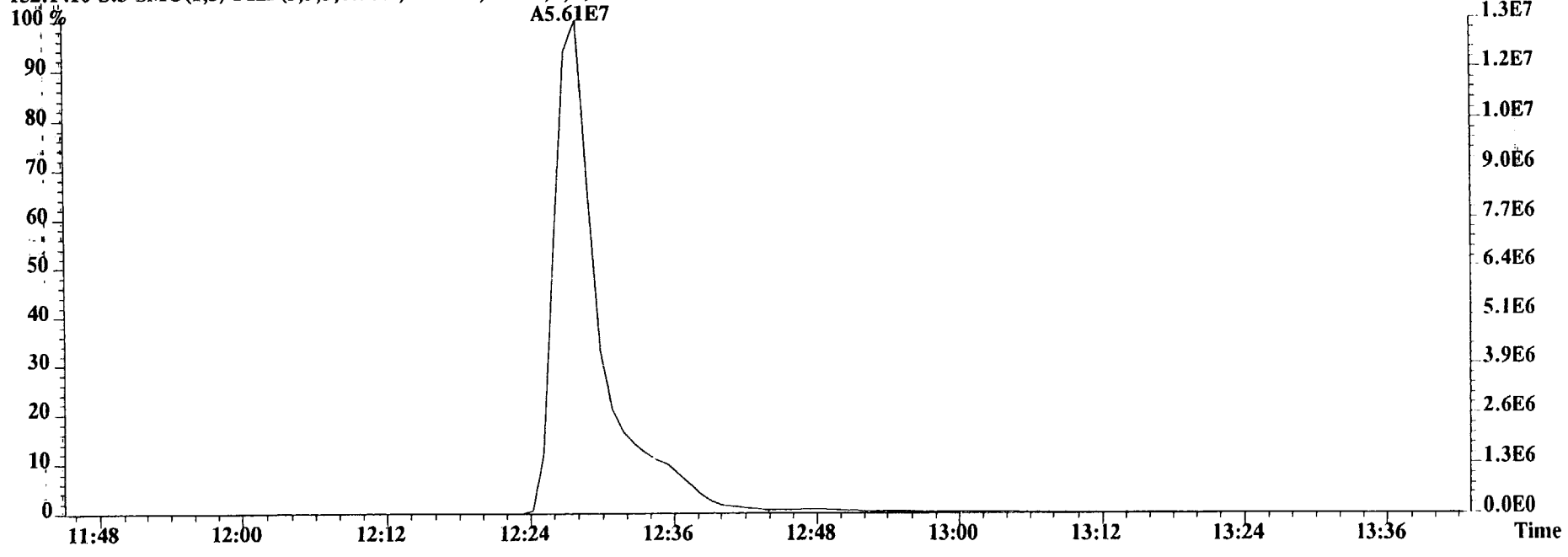
152.1410 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

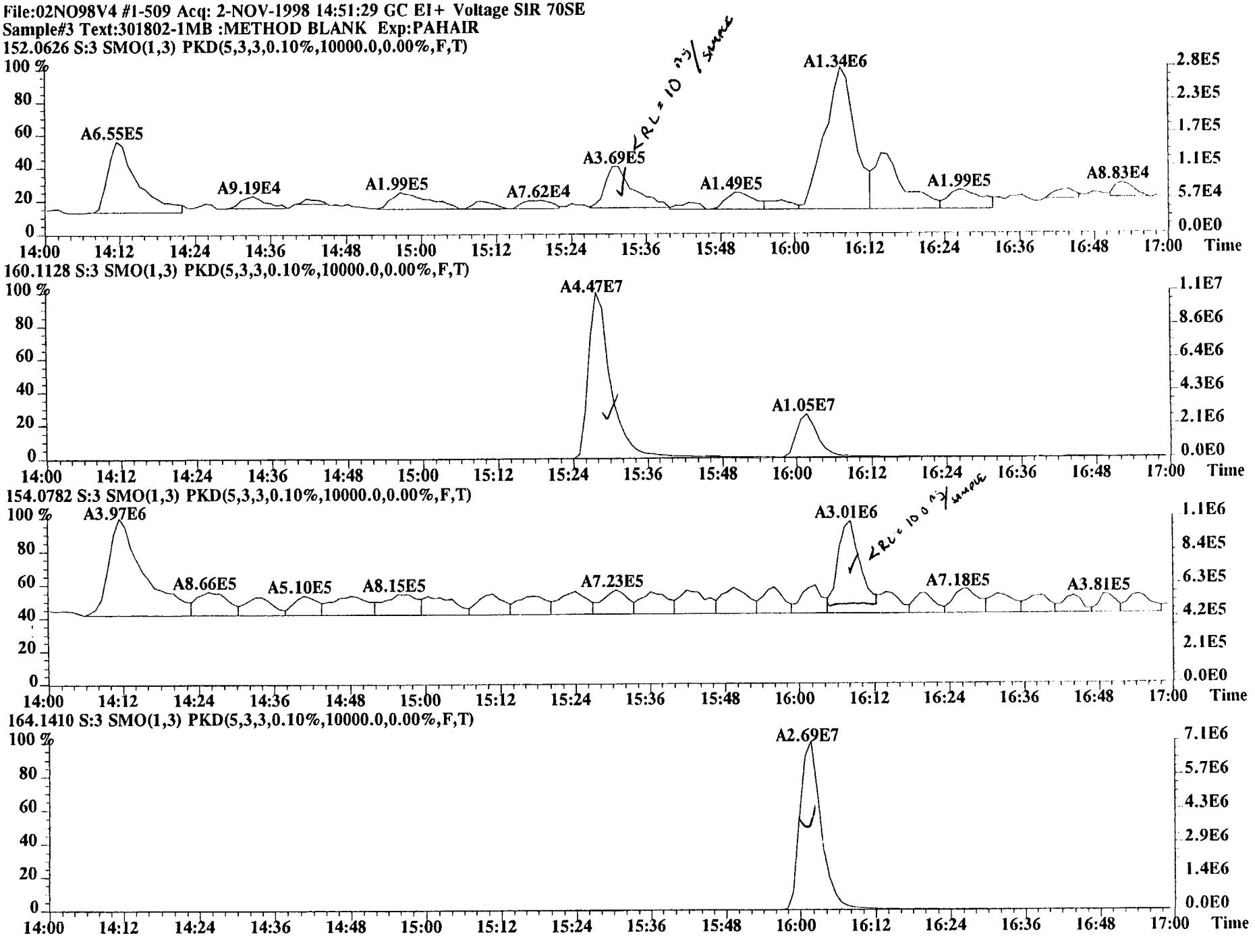


File:02NO98V4 #1-509 Acq: 2-NOV-1998 14:51:29 GC EI+ Voltage SIR 70SE
Sample#3 Text:301802-1MB :METHOD BLANK Exp:PAHAIR
142.0782 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

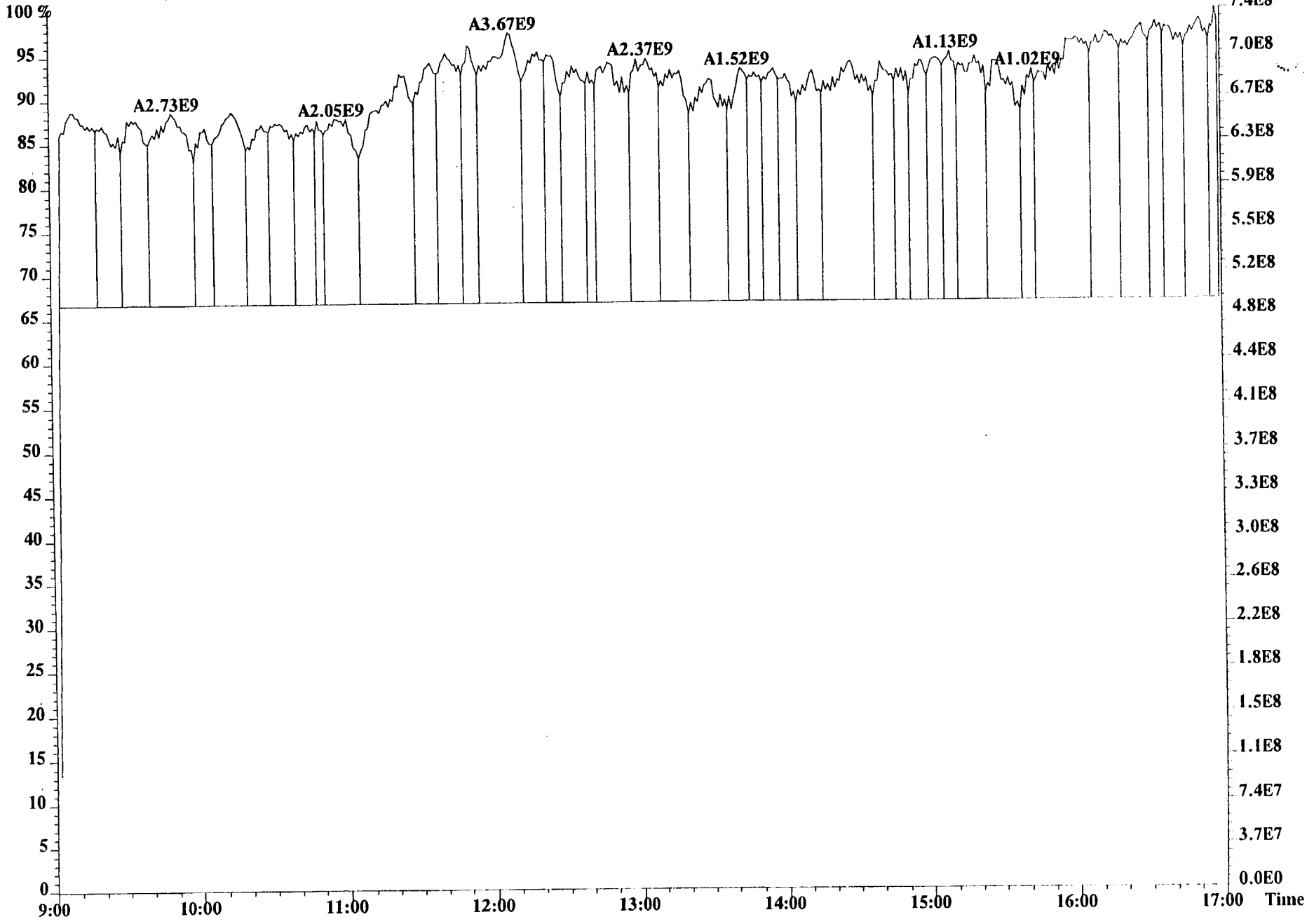


152.1410 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

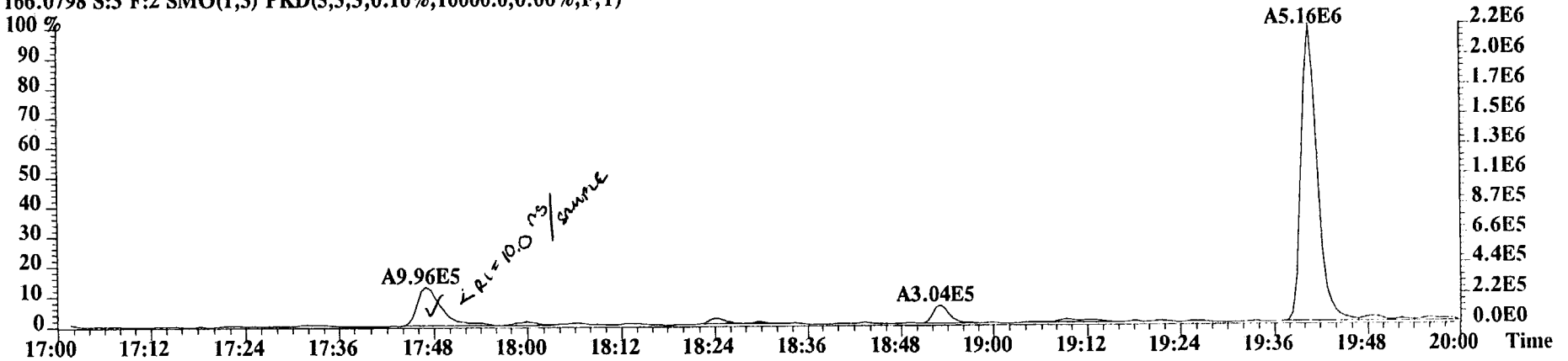



File:02NO98V4 #1-509 Acq: 2-NOV-1998 14:51:29 GC EI+ Voltage SIR 70SE
Sample#3 Text:301802-1MB :METHOD BLANK Exp:PAHAIR
152.0626 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A6.55E5
A9.19E4
A1.99E5
A7.62E4
A3.69E5
A1.49E5
A1.34E6
A1.99E5
A8.83E4
160.1128 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.47E7
A1.05E7
154.0782 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.97E6
A8.66E5
A5.10E5
A8.15E5
A7.23E5
A3.01E6
A7.18E5
A3.81E5
164.1410 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.69E7
100 %
80
60
40
20
0
14:00
14:12
14:24
14:36
14:48
15:00
15:12
15:24
15:36
15:48
16:00
16:12
16:24
16:36
16:48
17:00
Time

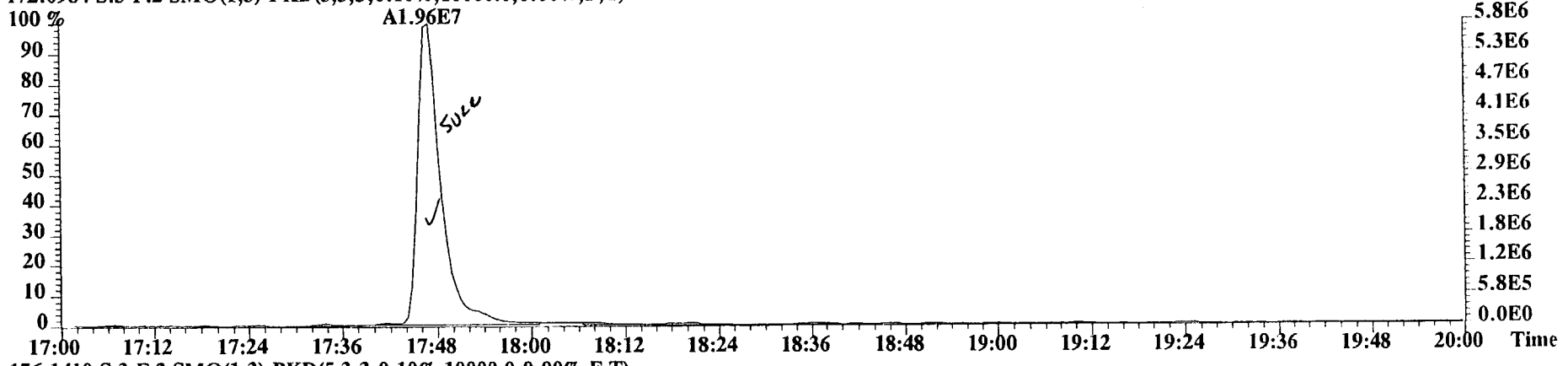
File:02NO98V4 #1-509 Acq: 2-NOV-1998 14:51:29 GC EI+ Voltage SIR 70SE
Sample#3 Text:301802-1MB :METHOD BLANK Exp:PAHAIR
130.9920 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



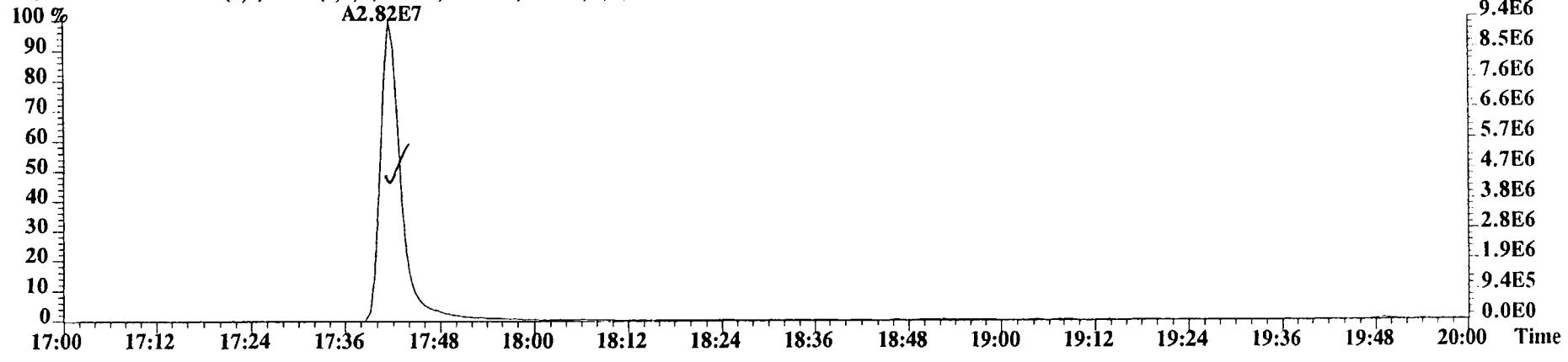
File:02NO98V4 #1-641 Acq: 2-NOV-1998 14:51:29 GC EI+ Voltage SIR 70SE
Sample#3 Text:301802-1MB :METHOD BLANK Exp:PAHAIR
166.0798 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

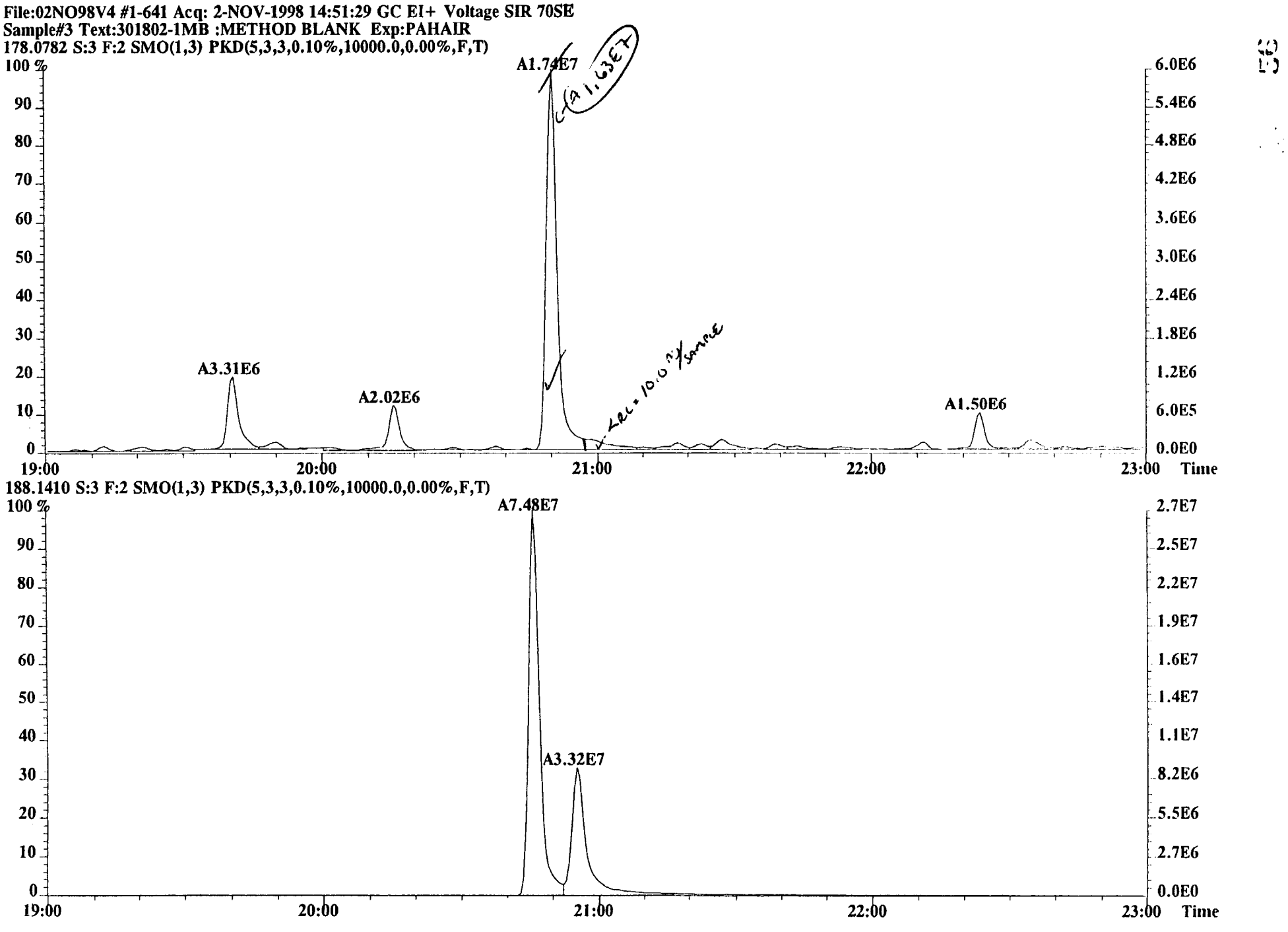


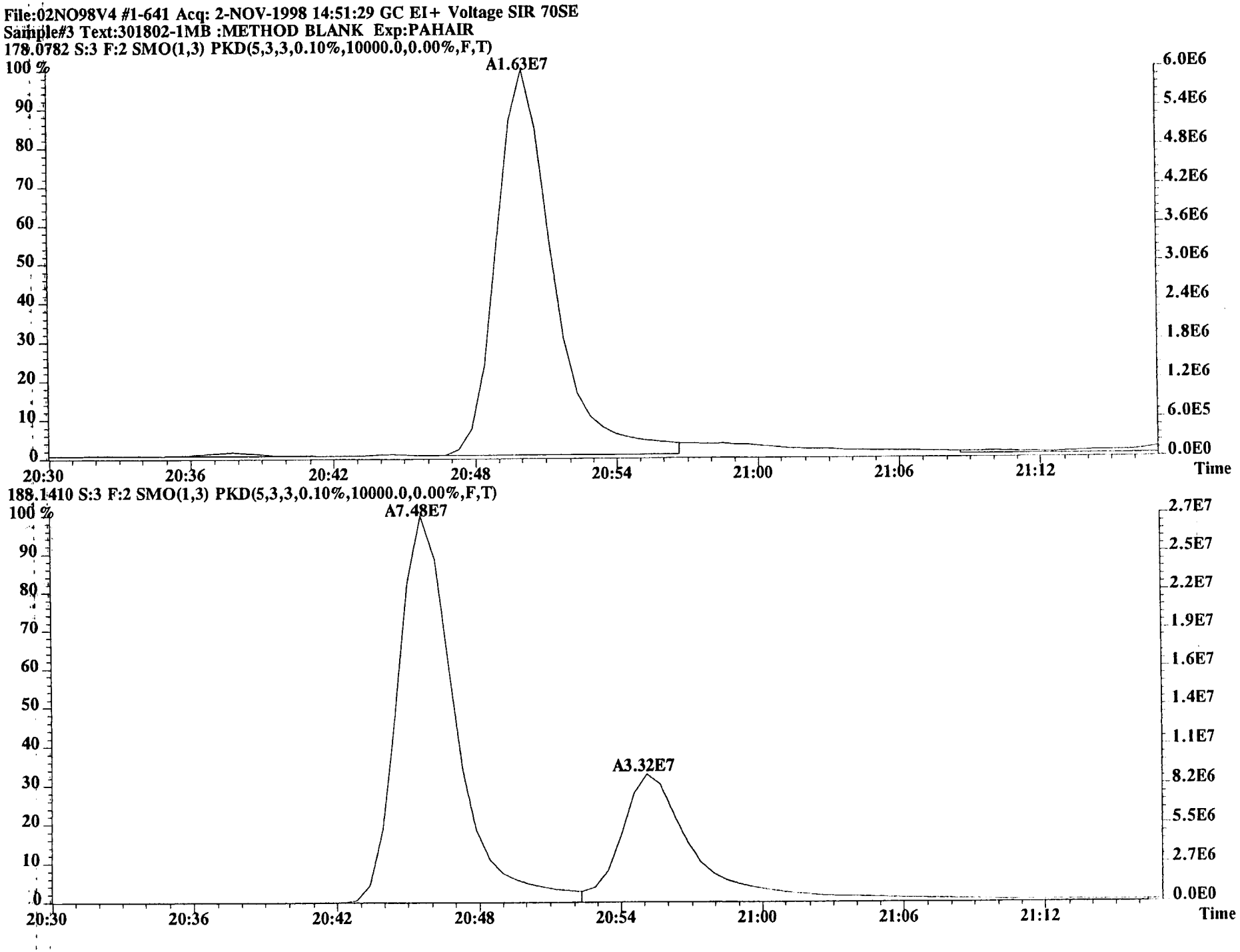
172.0984 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



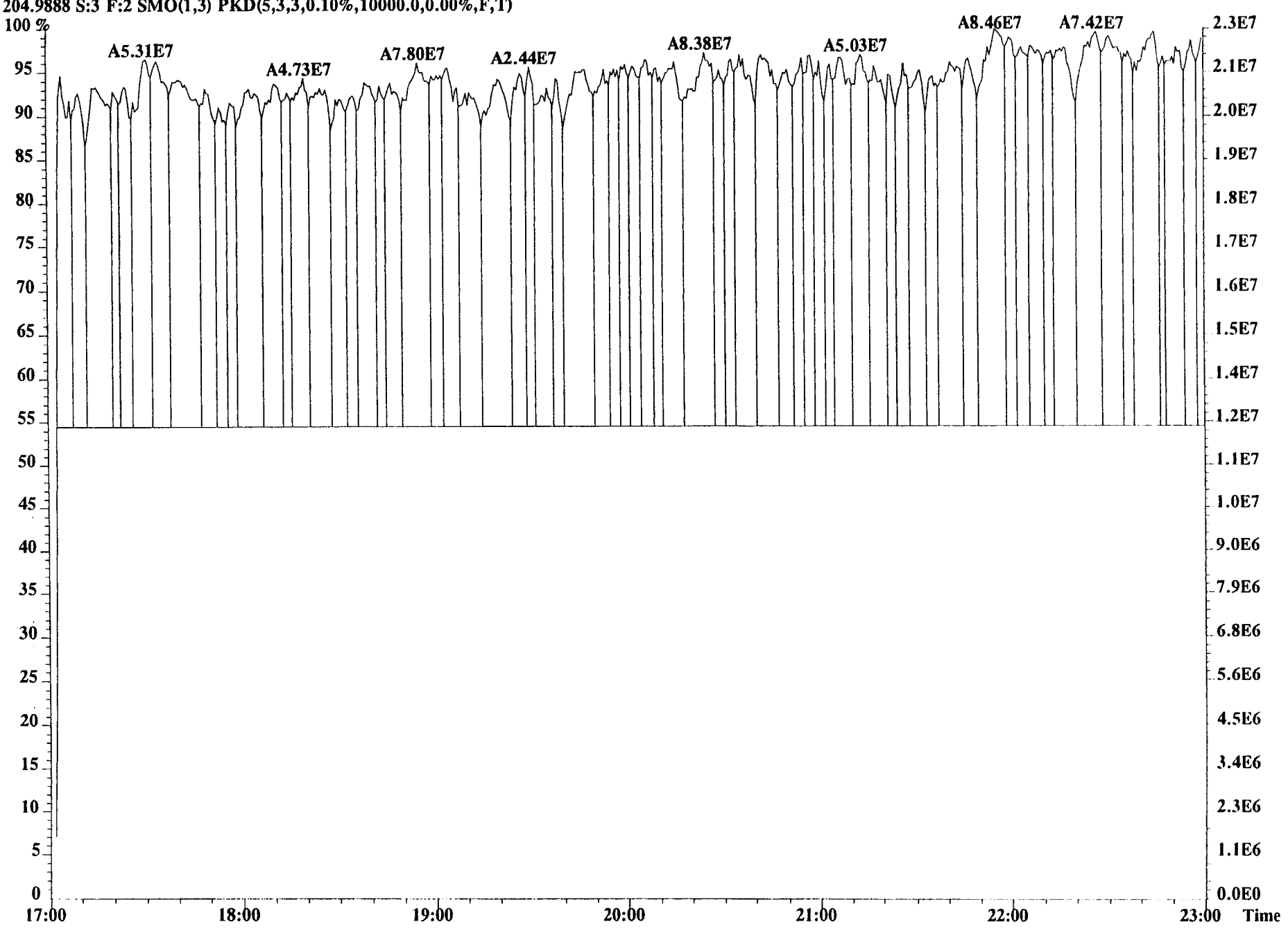
176.1410 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



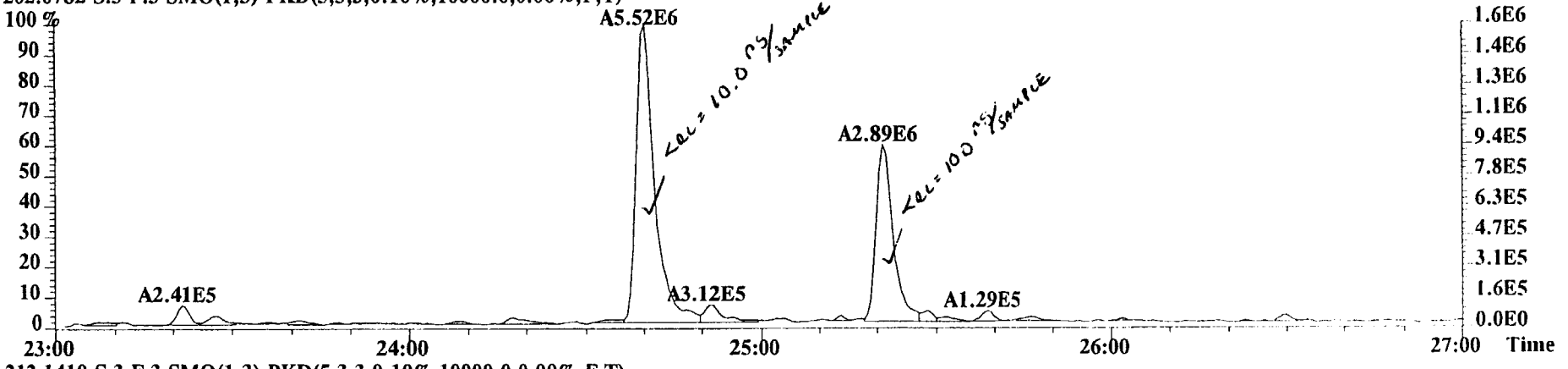

File:02NO98V4 #1-641 Acq: 2-NOV-1998 14:51:29 GC EI+ Voltage SIR 70SE
Sample#3 Text:301802-1MB :METHOD BLANK Exp:PAHAIR
178.0782 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.74E7
A3.31E6
A2.02E6
A1.50E6
6.0E6
5.4E6
4.8E6
4.2E6
3.6E6
3.0E6
2.4E6
1.8E6
1.2E6
6.0E5
0.0E0
19:00
20:00
21:00
22:00
23:00
Time
188.1410 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A7.48E7
A3.32E7
2.7E7
2.5E7
2.2E7
1.9E7
1.6E7
1.4E7
1.1E7
8.2E6
5.5E6
2.7E6
0.0E0
19:00
20:00
21:00
22:00
23:00
Time


File:02NO98V4 #1-641 Acq: 2-NOV-1998 14:51:29 GC EI+ Voltage SIR 70SE
Sample#3 Text:301802-1MB :METHOD BLANK Exp:PAHAIR
178.0782 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.63E7
6.0E6
5.4E6
4.8E6
4.2E6
3.6E6
3.0E6
2.4E6
1.8E6
1.2E6
6.0E5
0.0E0
Time
20:30
20:36
20:42
20:48
20:54
21:00
21:06
21:12
188.1410 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A7.48E7
A3.32E7
2.7E7
2.5E7
2.2E7
1.9E7
1.6E7
1.4E7
1.1E7
8.2E6
5.5E6
2.7E6
0.0E0
Time
20:30
20:36
20:42
20:48
20:54
21:00
21:06
21:12

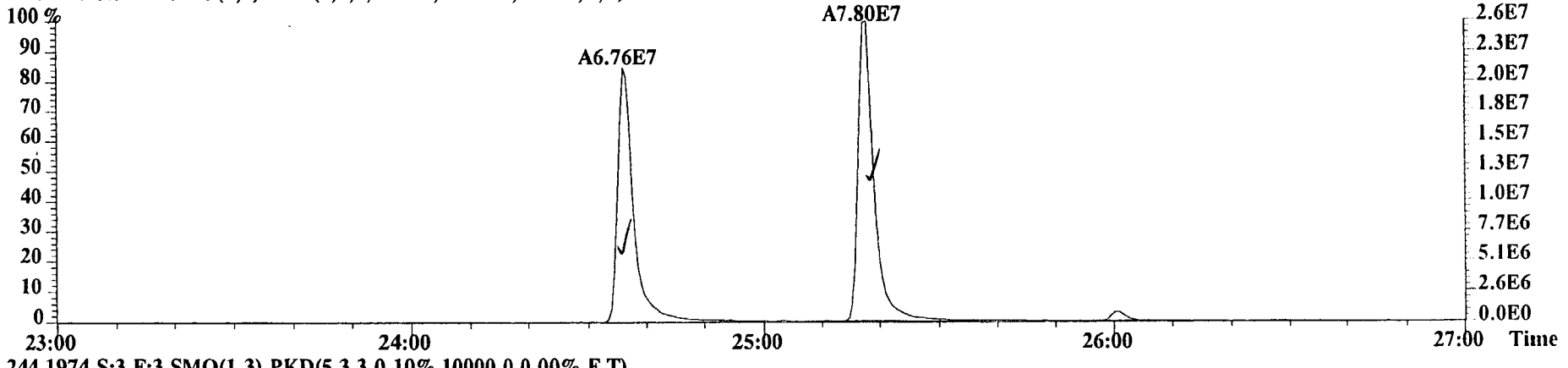
File:02NO98V4 #1-641 Acq: 2-NOV-1998 14:51:29 GC EI+ Voltage SIR 70SE
Sample#3 Text:301802-1MB :METHOD BLANK Exp:PAHAIR
204.9888 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



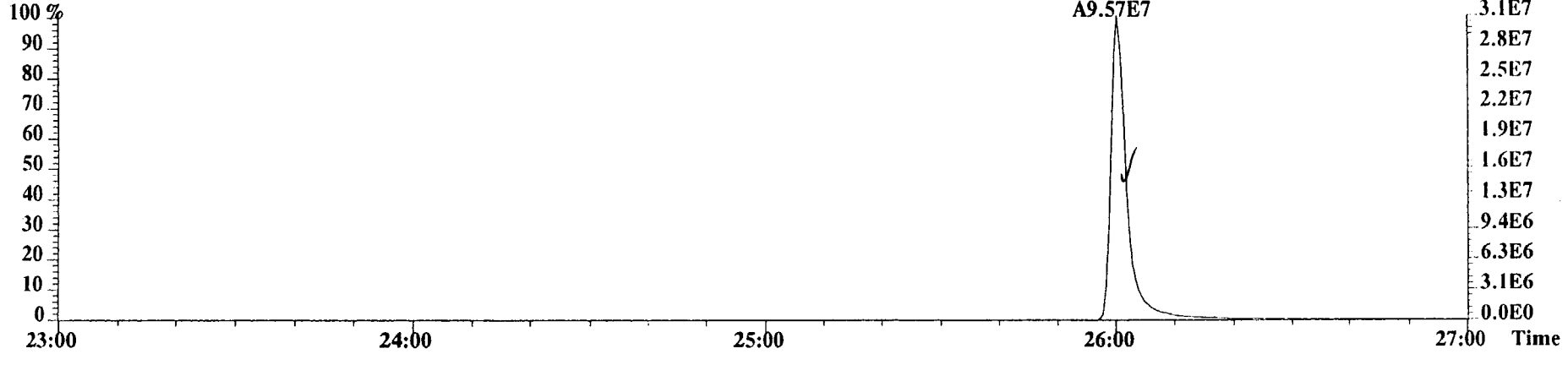
File:02NO98V4 #1-939 Acq: 2-NOV-1998 14:51:29 GC EI+ Voltage SIR 70SE
Sample#3 Text:301802-1MB :METHOD BLANK Exp:PAHAIR
202.0782 S:3 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

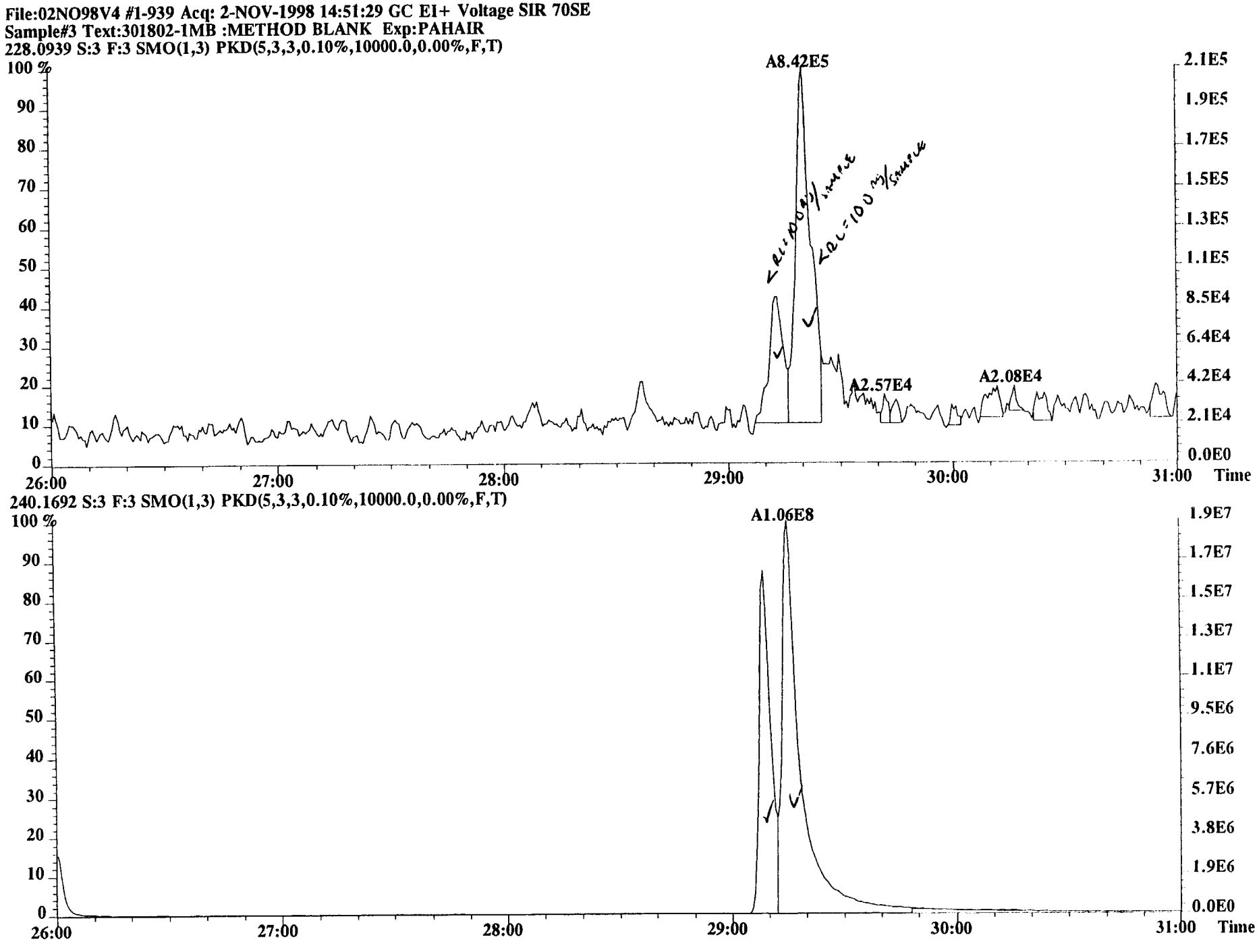


212.1410 S:3 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

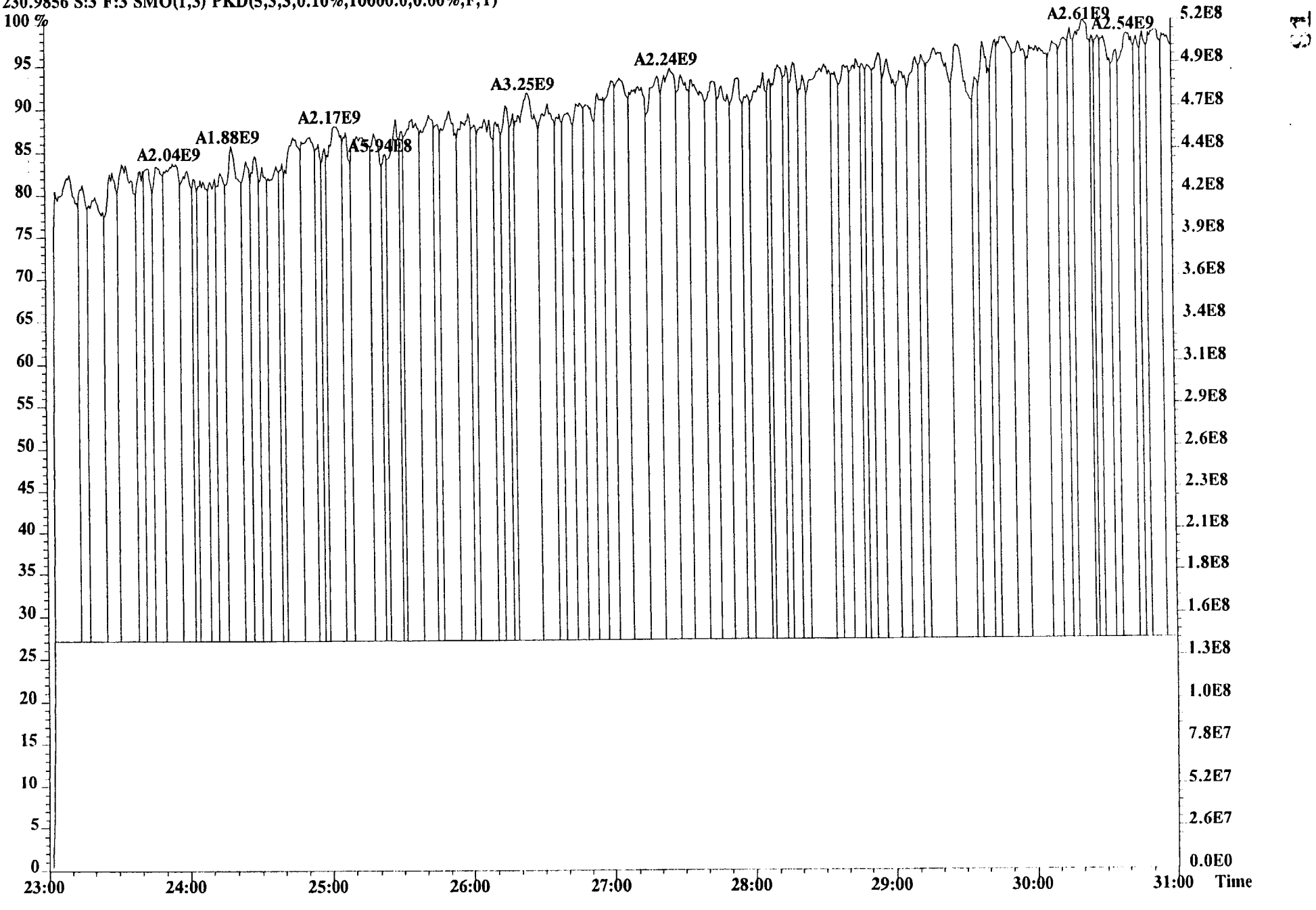


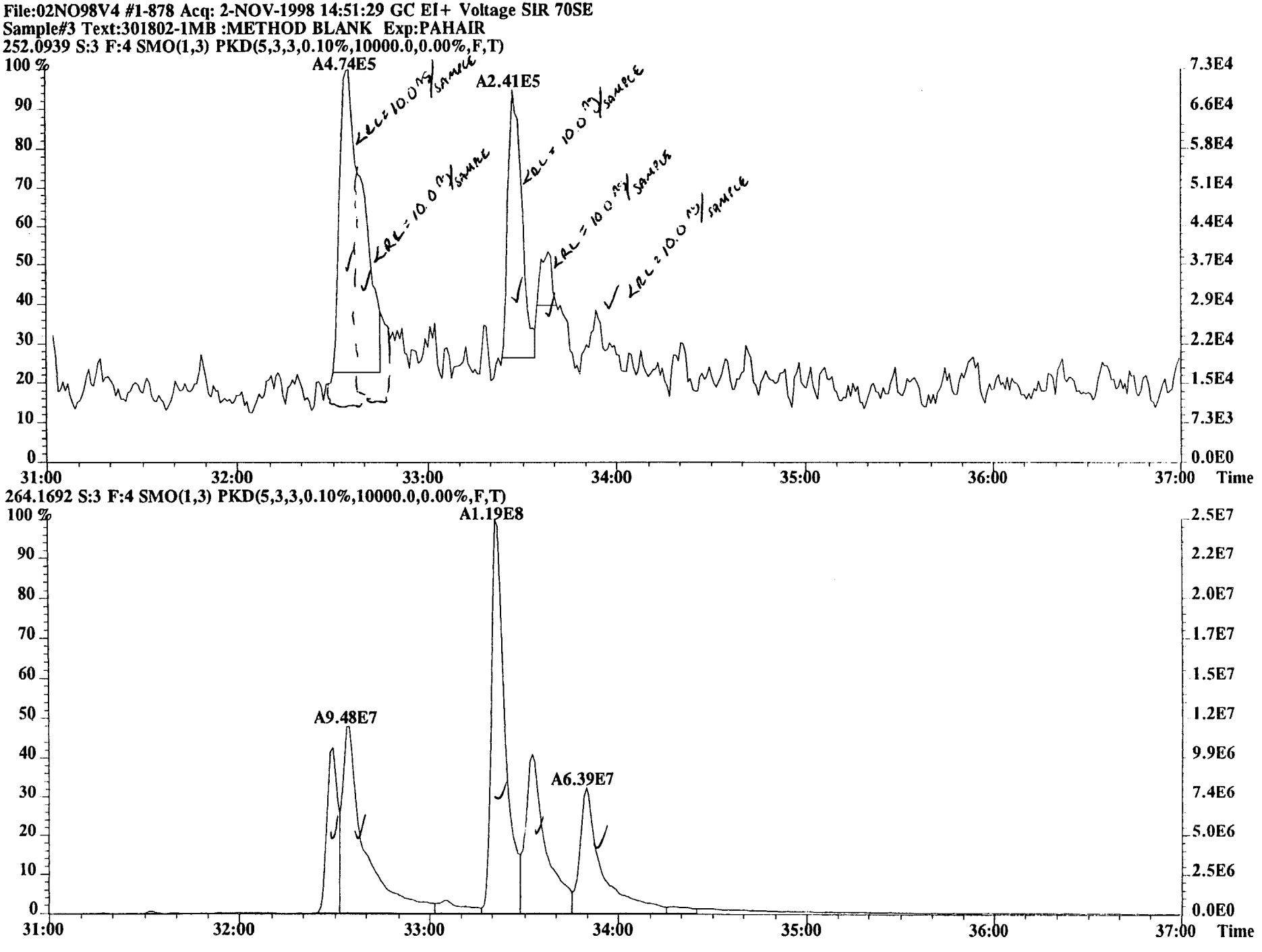
244.1974 S:3 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

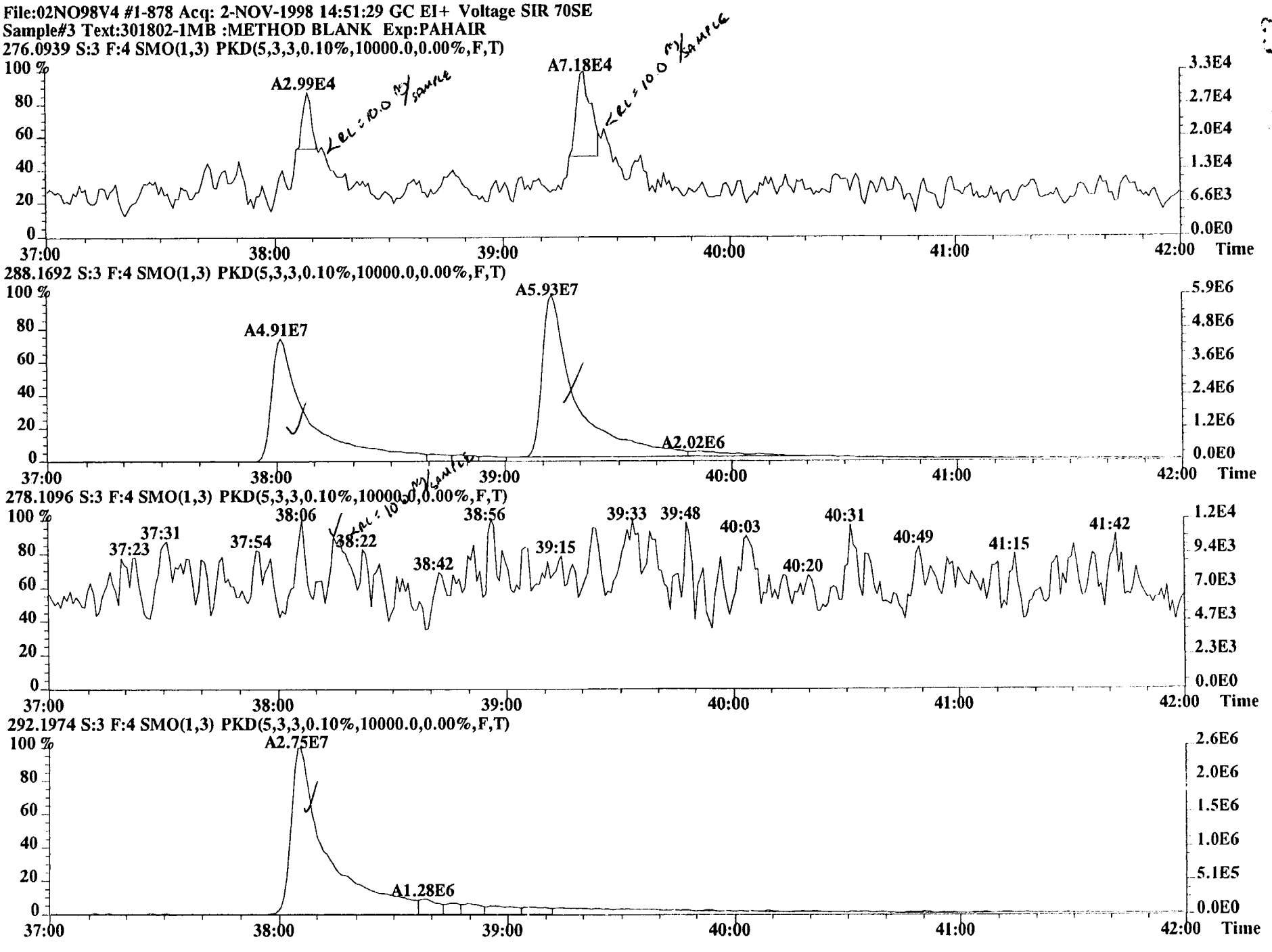



File:02NO98V4 #1-939 Acq: 2-NOV-1998 14:51:29 GC EI+ Voltage SIR 70SE
Sample#3 Text:301802-1MB :METHOD BLANK Exp:PAHAIR
228.0939 S:3 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.42E5
A2.57E4
A2.08E4
Time
240.1692 S:3 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.06E8
Time

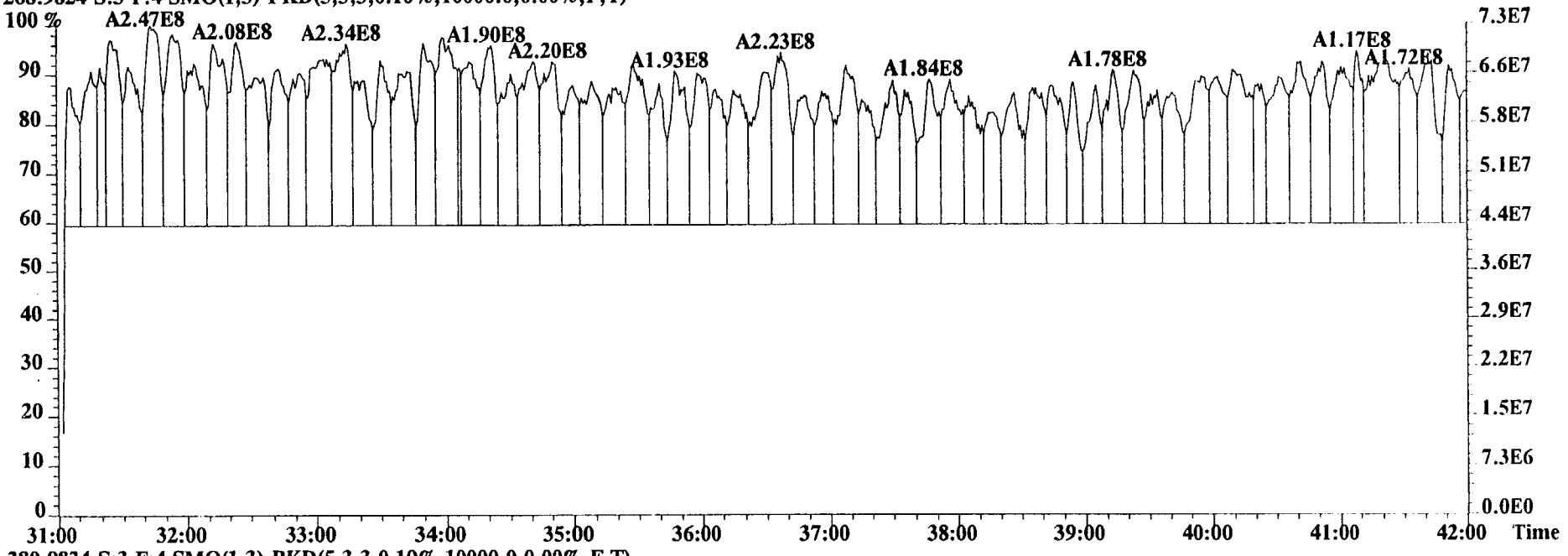
File:02NO98V4 #1-939 Acq: 2-NOV-1998 14:51:29 GC EI+ Voltage SIR 70SE
Sample#3 Text:301802-1MB :METHOD BLANK Exp:PAHAIR
230.9856 S:3 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



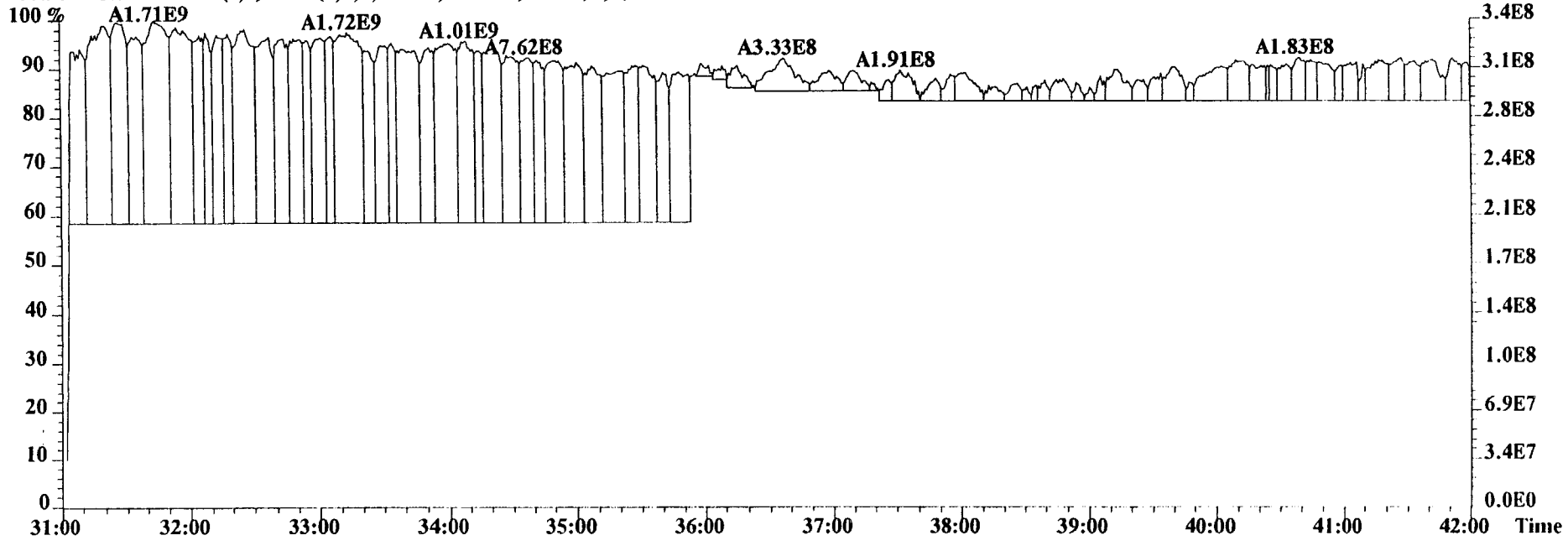

File:02NO98V4 #1-878 Acq: 2-NOV-1998 14:51:29 GC EI+ Voltage SIR 70SE
Sample#3 Text:301802-1MB :METHOD BLANK Exp:PAHAIR
252.0939 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.74E5
A2.41E5
LRL = 10.0 ng/sample
LRL = 10.0 ng/sample
LRL = 10.0 ng/sample
LRL = 10.0 ng/sample
LRL = 10.0 ng/sample
100 %
90
80
70
60
50
40
30
20
10
0
7.3E4
6.6E4
5.8E4
5.1E4
4.4E4
3.7E4
2.9E4
2.2E4
1.5E4
7.3E3
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
Time
264.1692 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.19E8
A9.48E7
A6.39E7
100 %
90
80
70
60
50
40
30
20
10
0
2.5E7
2.2E7
2.0E7
1.7E7
1.5E7
1.2E7
9.9E6
7.4E6
5.0E6
2.5E6
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
Time


File:02NO98V4 #1-878 Acq: 2-NOV-1998 14:51:29 GC EI+ Voltage SIR 70SE
Sample#3 Text:301802-1MB :METHOD BLANK Exp:PAHAIR
276.0939 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.99E4
A7.18E4
288.1692 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.91E7
A5.93E7
A2.02E6
278.1096 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
292.1974 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.75E7
A1.28E6
Time

File:02NO98V4 #1-878 Acq: 2-NOV-1998 14:51:29 GC EI+ Voltage SIR 70SE
Sample#3 Text:301802-1MB :METHOD BLANK Exp:PAHAIR
268.9824 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



280.9824 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



Sample Data

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-I-429-1
Lab ID: 301802-0001-SA
Matrix: AIRTRAIN Sampled: 21 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 02 NOV 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	360000	ng/sample	--	BD
2-Methylnaphthalene	76000	ng/sample	--	D
Acenaphthylene	88000	ng/sample	--	D
Acenaphthene	15000	ng/sample	--	D
Fluorene	3400	ng/sample	--	D
Phenanthrene	160000	ng/sample	--	BD
Anthracene	16000	ng/sample	--	D
Fluoranthene	50000	ng/sample	--	BD
Pyrene	33000	ng/sample	--	D
Benzo(a)anthracene	15000	ng/sample	--	D
Chrysene	26000	ng/sample	--	D
Benzo(b)fluoranthene	17000	ng/sample	--	
Benzo(k)fluoranthene	9200	ng/sample	--	
Benzo(e)pyrene	6500	ng/sample	--	
Benzo(a)pyrene	6300	ng/sample	--	
Perylene	1100	ng/sample	--	
Indeno(1,2,3-cd)pyrene	11000	ng/sample	--	
Dibenz(a,h)anthracene	2500	ng/sample	--	
Benzo(g,h,i)perylene	11000	ng/sample	--	

B = Compound is also detected in the blank.
D = Compound quantitated using a secondary dilution.

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-I-429-1
Lab ID: 301802-0001-SA
Matrix: AIRTRAIN Sampled: 21 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 02 NOV 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	58	D
Acenaphthylene-d8	50	D
Acenaphthene-d10	45	Dm
Fluorene-d10	53	D
Phenanthrene-d10	81	D
Fluoranthene-d10	48	Dm
Pyrene-d10	51	D
Benzo(a)anthracene-d12	61	D
Perylene-d12	58	
Indeno(123-cd)pyrene-d12	91	
Chrysene-d12	72	D
Benzo(b)fluoranthene-d12	87	
Benzo(k)fluoranthene-d12	86	
Benzo(a)pyrene-d12	78	
Dibenz(a,h)anthracene-d14	83	
Benzo(g,h,i)perylene-d12	64	

Field Surrogates	% Recovery	
13C-Fluorene	82	D

D = Compound quantitated using a secondary dilution.
m = Internal Standard recovery is outside method recovery goal.

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

04-NOV-1998 01:07:24 PM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4 | Results : 02NO98V4091.RES | : PAHAIR.TRG
GC Column : DB-5 | Date analyzed : 02-NOV-98
Data file : 02NO98V4 301802-1 :100X DIL: AIR Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	ng/ TRAIN	Rec/ MDL	
d10-2-Methylnaphthalene	592000	1.00	Y	12: 28	Y	1.00	50.00		
d8-Naphthalene	772000	1.00	Y	10: 13	Y	2.24	29.10	58	
Naphthalene	3448480000	1.00	Y	10: 15	Y	1.23	3.6e+05	B	E
2-Methylnaphthalene	328228000	1.00	Y	12: 34	Y	0.56	7.6e+04	B	E
d8-Acenaphthylene	357346	1.00	Y	15: 27	Y	1.21	24.87	50	
Acenaphthylene	295804000	1.00	Y	15: 30	Y	0.94	8.8e+04		E
d10-Acenaphthene	199957	1.00	Y	16: 1	Y	0.74	22.68	45	m
Acenaphthene	37493600	1.00	Y	16: 8	Y	1.25	1.5e+04		
d10-Anthracene	397598	1.00	Y	20: 55	Y	1.00	50.00		
d10-Fluorene	299420	1.00	Y	17: 41	Y	1.42	26.50	53	
Fluorene	11855640	1.00	Y	17: 47	Y	1.16	3411.87		
d10-Phenanthrene	905068	1.00	Y	20: 45	Y	2.81	40.54	81	
Phenanthrene	1267780000	1.00	Y	20: 49	Y	0.89	1.6e+05	B	E
Anthracene	118200000	1.00	Y	20: 59	Y	0.80	1.6e+04		
d14-Terphenyl	1215336	1.00	Y	26: 1	Y	1.00	50.00		
d10-Fluoranthene	824000	1.00	Y	24: 35	Y	1.41	24.03	48	m
Fluoranthene	458920000	1.00	Y	24: 39	Y	1.11	5.0e+04	E	E
d10-Pyrene	939830	1.00	Y	25: 16	Y	1.52	25.47	51	
Pyrene	368212000	1.00	Y	25: 20	Y	1.21	3.3e+04		
d12-Benzo(a)anthracene	669672	1.00	Y	29: 8	Y	0.90	30.61	61	
Benzo(a)anthracene	123418000	1.00	Y	29: 12	Y	1.20	1.5e+04		
d12-Chrysene	1116460	1.00	Y	29: 14	Y	1.28	35.91	72	
Chrysene	317112000	1.00	Y	29: 19	Y	1.08	2.6e+04		

see 10X
~~100X~~

d10-Fluorene	299420	1.00	Y	17: 41	Y	1.00	50.00	
13C-Fluorene	197600	1.00	Y	17: 46	Y	0.80	41.25	82

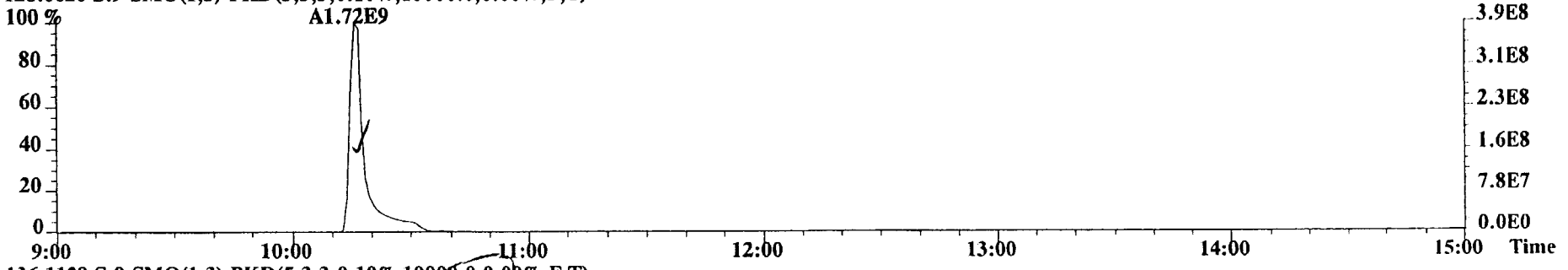
11-4-98

		0.5	
98V4.RRF			
Rec/ MDL			
		296000	296000
	58	386000	386000
B	E	1724240000	1724240000
B	E	164114000	164114000
	50	178673	178673
	E	147902000	147902000
	45	99979	99979
		18746800	18746800
		198799	198799
	53	149710	149710
		5927820	5927820
	81	452534	452534
B	E	633890000	633890000
		59100000	59100000
		607668	607668
	48	412000	412000
B	E	229460000	229460000
	51	469915	469915
		184106000	184106000
	61	334836	334836
		61709000	61709000
	72	558230	558230
		158556000	158556000

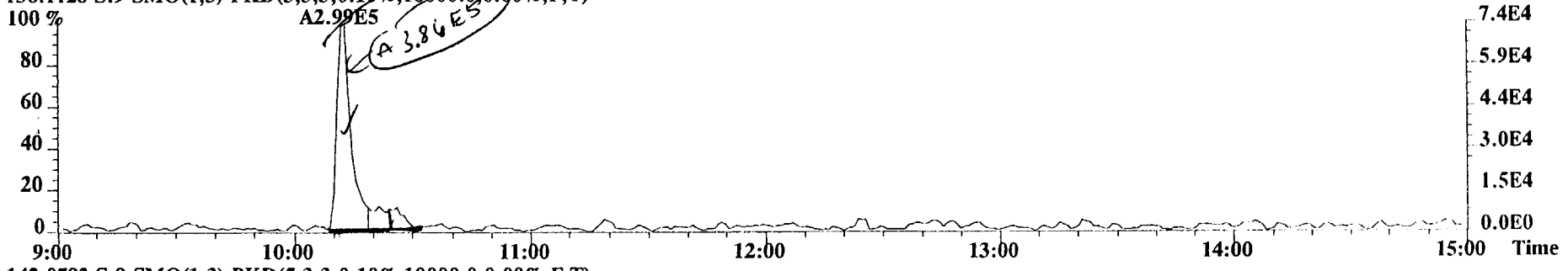
Mass Spec : VG-4 Results : 02NO98V4091.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 02-NOV-98
Data file : 02NO98V4 301802-1 :100X DIL. :AIR Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio	R. T. mm:ss	RRF	ng/ TRAIN	Rec/ MDL
d10-2-Methylnaphthalene	485074	1.00 Y	12: 28 Y	1.00	50.00	
d8-Naphthalene	598348	1.00 Y	10: 13 Y	2.24	27.53	55
Naphthalene	3448480000	1.00 Y	10: 15 Y	1.23	4.7e+05	0.000
2-Methylnaphthalene	328228000	1.00 Y	12: 34 Y	0.56	9.8e+04	0.000
d8-Acenaphthylene	357346	1.00 Y	15: 27 Y	1.21	30.35	61
Acenaphthylene	295804000	1.00 Y	15: 30 Y	0.94	8.8e+04	0.000
d10-Acenaphthene	199957	1.00 Y	16: 1 Y	0.74	27.68	55
Acenaphthene	37493600	1.00 Y	16: 8 Y	1.25	1.5e+04	0.000
d10-Anthracene	397598	1.00 Y	20: 55 Y	1.00	50.00	
d10-Fluorene	299420	1.00 Y	17: 41 Y	1.42	26.50	53
Fluorene	11855640	1.00 Y	17: 47 Y	1.16	3411.87	0.000
d10-Phenanthrene	905068	1.00 Y	20: 45 Y	2.81	40.54	81
Phenanthrene	1267780000	1.00 Y	20: 49 Y	0.89	1.6e+05	0.000
Anthracene	* No Peak	0.00 N	20: 59 N	0.80	0.00	0.000
d14-Terphenyl	1215336	1.00 Y	26: 1 Y	1.00	50.00	
d10-Fluoranthene	743050	1.00 Y	24: 35 Y	1.41	21.67	43
Fluoranthene	458920000	1.00 Y	24: 39 Y	1.11	5.6e+04	0.000
d10-Pyrene	939830	1.00 Y	25: 16 Y	1.52	25.47	51
Pyrene	368212000	1.00 Y	25: 20 Y	1.21	3.3e+04	0.000
d12-Benzo(a)anthracene	669672	1.00 Y	29: 8 Y	0.90	30.61	61
Benzo(a)anthracene	123418000	1.00 Y	29: 12 Y	1.20	1.5e+04	0.000
d12-Chrysene	1116460	1.00 Y	29: 14 Y	1.28	35.91	72
Chrysene	317112000	1.00 Y	29: 19 Y	1.08	2.6e+04	0.000
d12-Benzo(e)pyrene	1340970	1.00 Y	33: 21 Y	1.00	50.00	
d12-Benzo(b)fluoranthene	537714	1.00 Y	32: 28 Y	0.45	44.18	88
Benzo(b)fluoranthene	142542000	1.00 Y	32: 34 Y	1.17	2.3e+04	0.000
d12-Benzo(k)fluoranthene	1040730	1.00 Y	32: 34 Y	0.95	40.93	82
Benzo(k)fluoranthene	142542000	1.00 Y	32: 34 Y	1.16	1.2e+04	0.000
d12-Benzo(a)pyrene	509580	1.00 Y	33: 32 Y	0.68	28.08	56
Benzo(e)pyrene	50739200	1.00 Y	33: 26 Y	1.64	6068.31	0.000
Benzo(a)pyrene	34229000	1.00 Y	33: 38 Y	1.07	6266.07	0.000
d12-Perylene	467150	1.00 Y	33: 50 Y	0.63	27.64	55
Perylene	* No Peak	0.00 N	33: 54 N	1.71	0.00	0.000
d12-Indeno(123-cd)pyrene	[illegible]	1.00 Y	38: 1 Y	0.44	26.10	52
Indeno(123-cd)pyrene	57223000	1.00 Y	38: 7 Y	0.62	3.0e+04	0.000
d14-Dibenz(ah)anthracene	142852	1.00 Y	38: 6 Y	0.25	21.67	43
Dibenz(ah)anthracene	8027680	1.00 Y	38: 15 Y	1.40	4003.87	0.000
d12-Benzo(ghi)perylene	468222	1.00 Y	39: 12 Y	0.58	30.12	60
Benzo(ghi)perylene	62917800	1.00 Y	39: 20 Y	1.02	1.3e+04	0.000
d10-Fluorene	299420	1.00 Y	17: 41 Y	1.42	7.86	16
13C-Fluorene	149561	1.00 Y	17: 46 Y	1.00	49.95	0.000

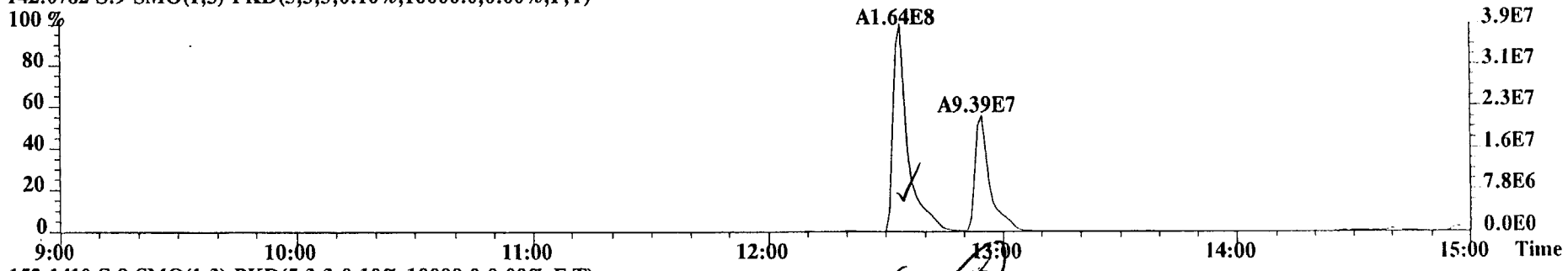
File:02NO98V4 #1-510 Acq: 2-NOV-1998 19:45:31 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-1 :100X DIL. :AIR Exp:PAHAIR
128.0626 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



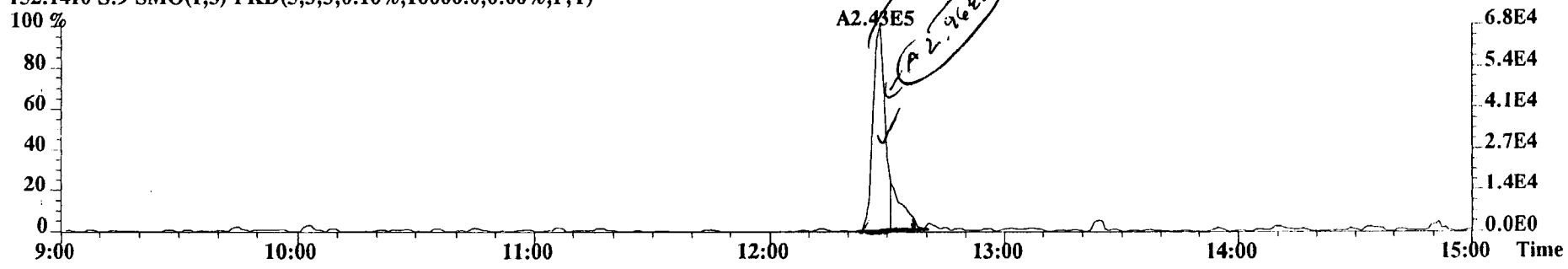
136.1128 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



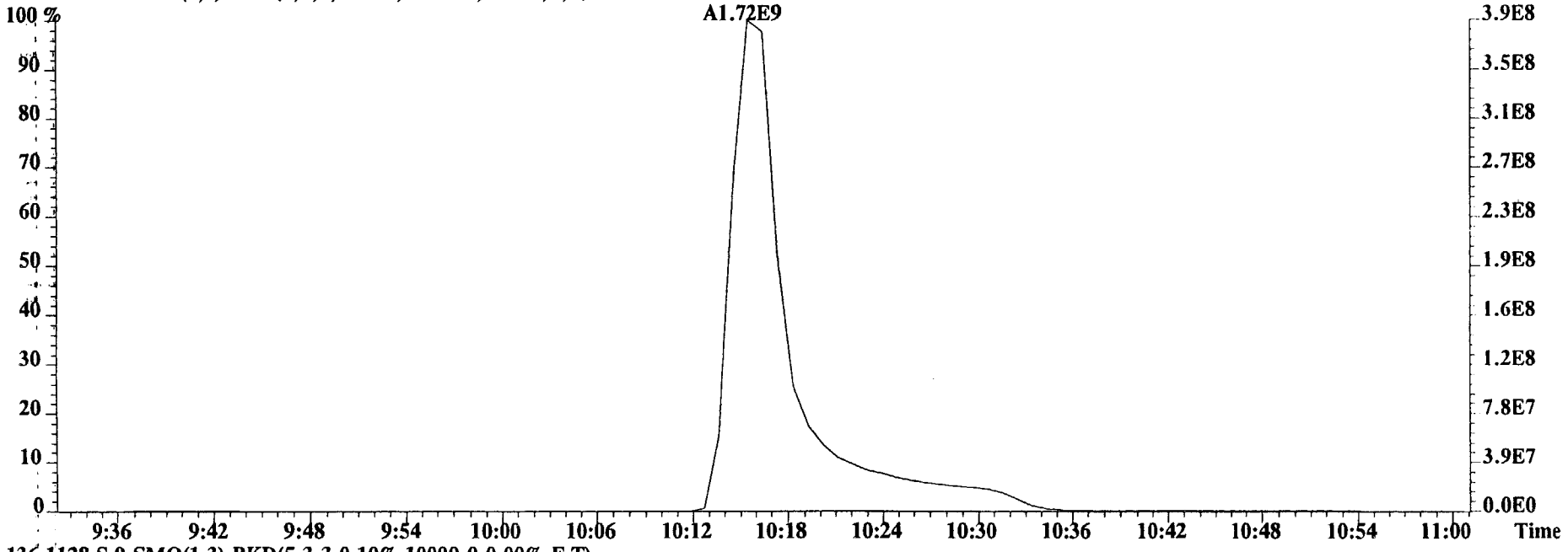
142.0782 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



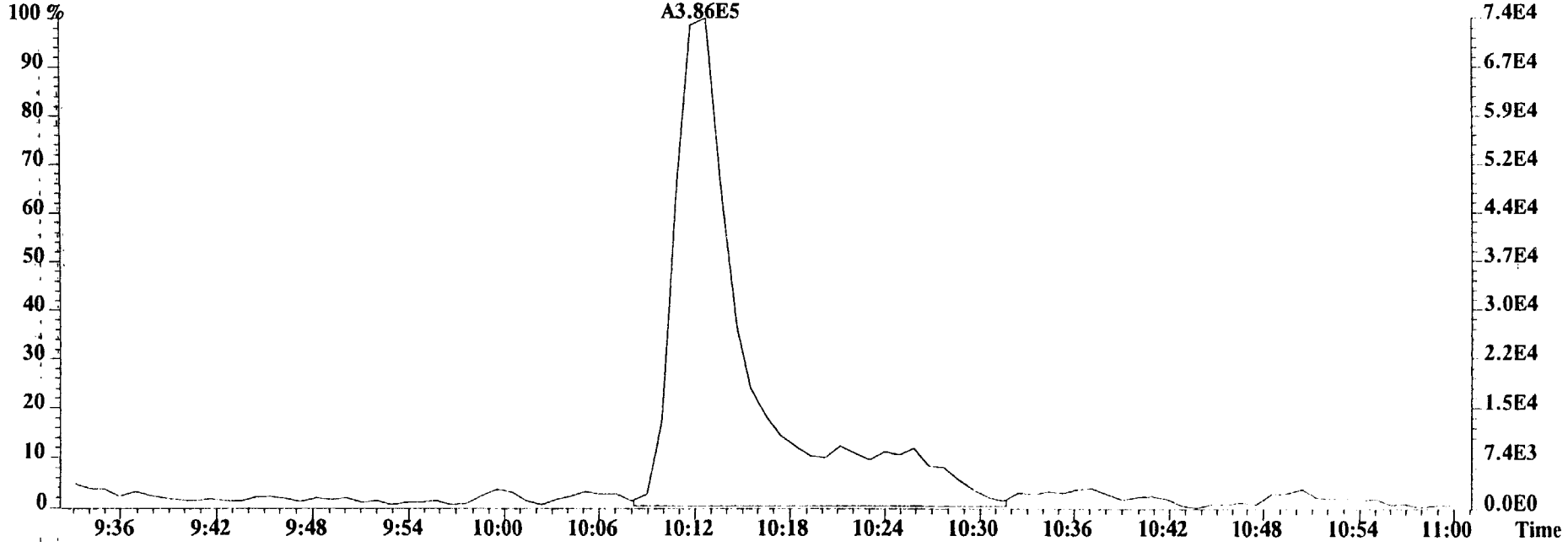
152.1410 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



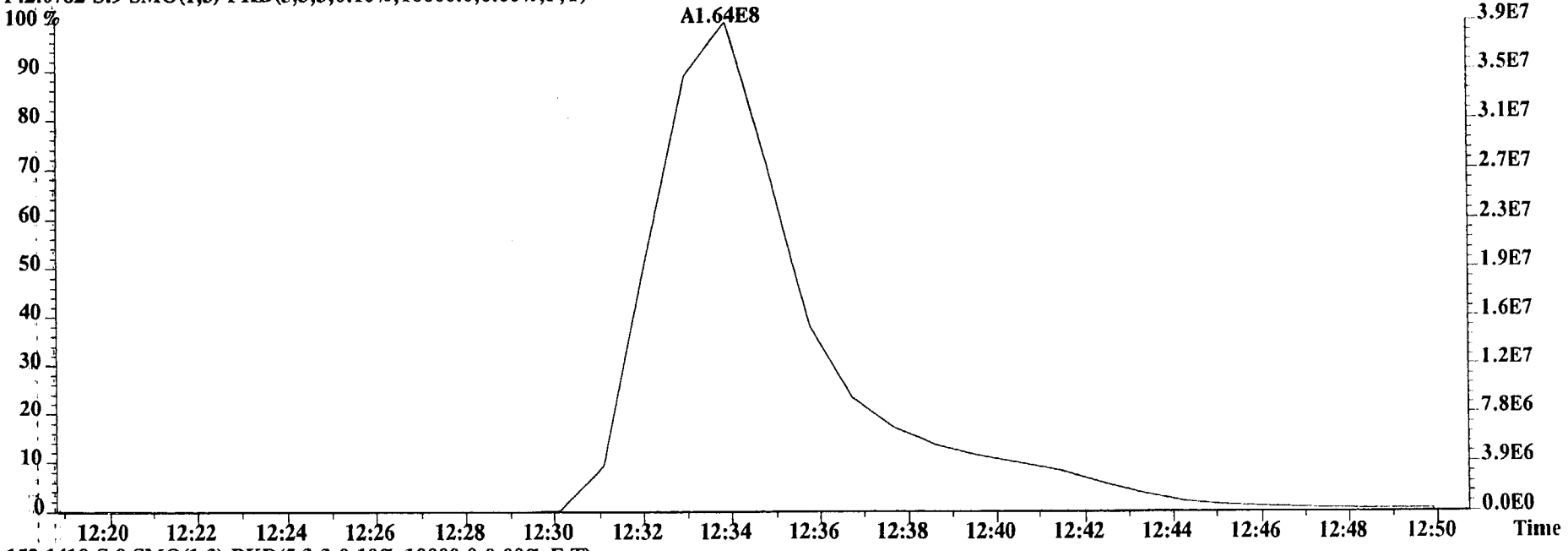
File:02NO98V4 #1-510 Acq: 2-NOV-1998 19:45:31 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-1 :100X DIL. :AIR Exp:PAHAIR
128.0626 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



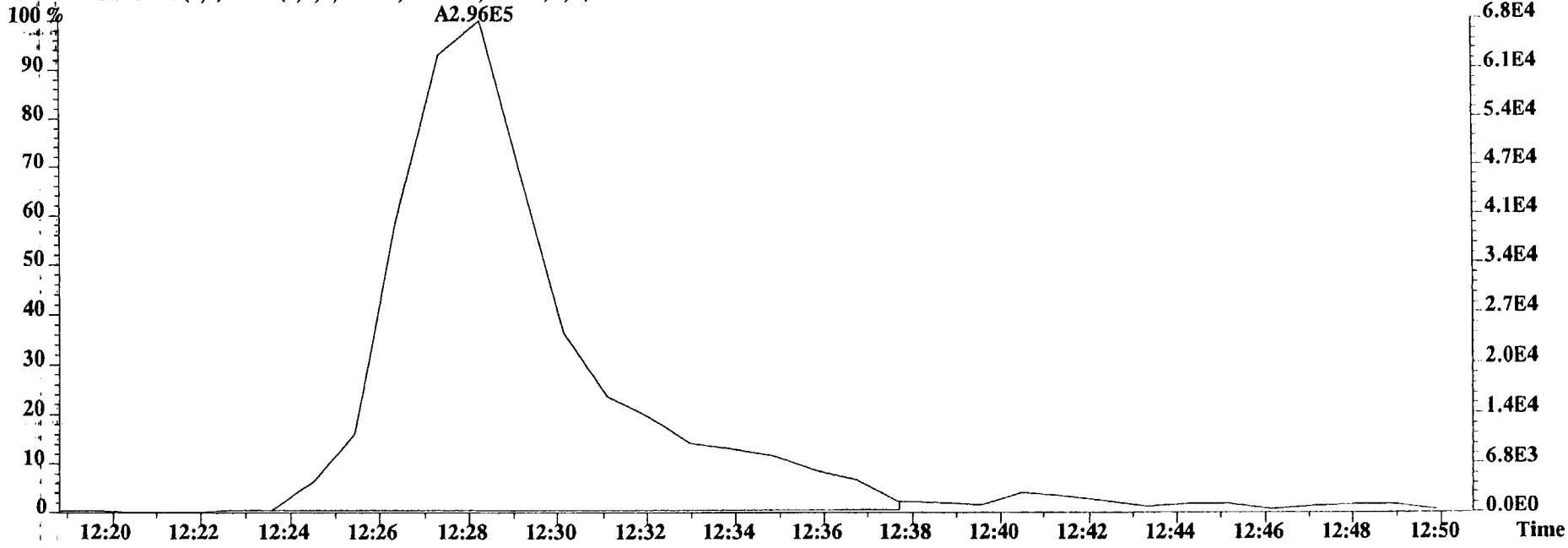
136.1128 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



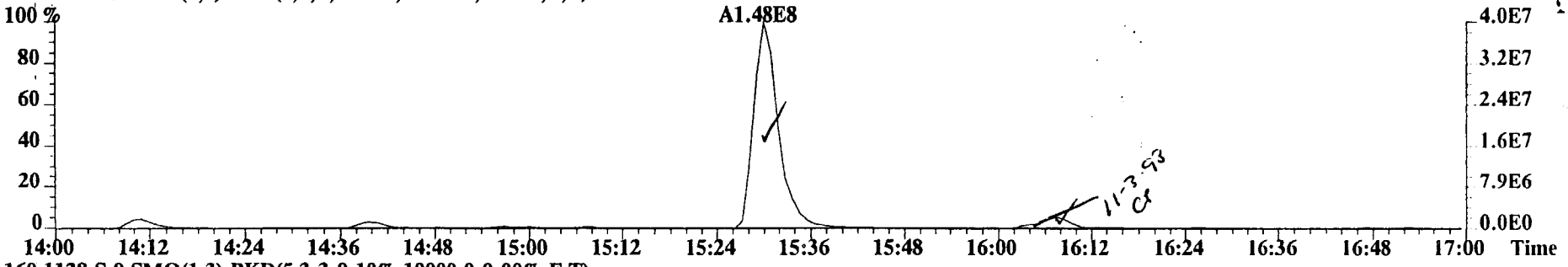
File:02NO98V4 #1-510 Acq: 2-NOV-1998 19:45:31 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-1 :100X DIL. :AIR Exp:PAHAIR
142.0782 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



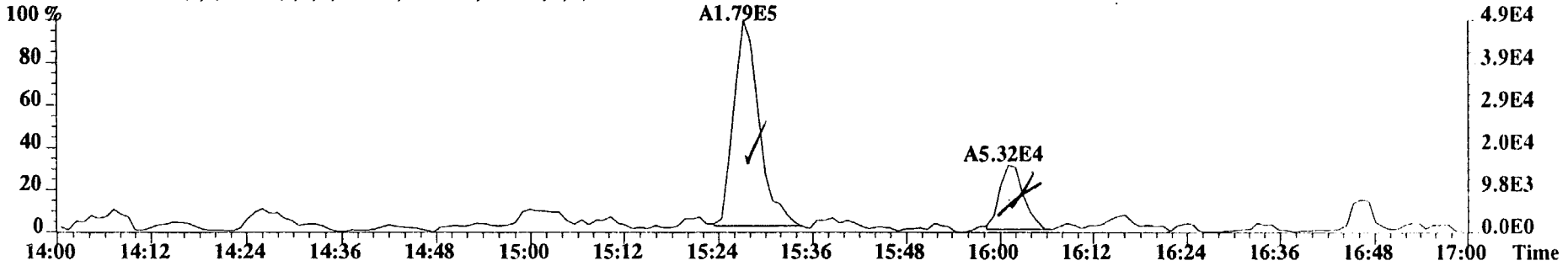
152.1410 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



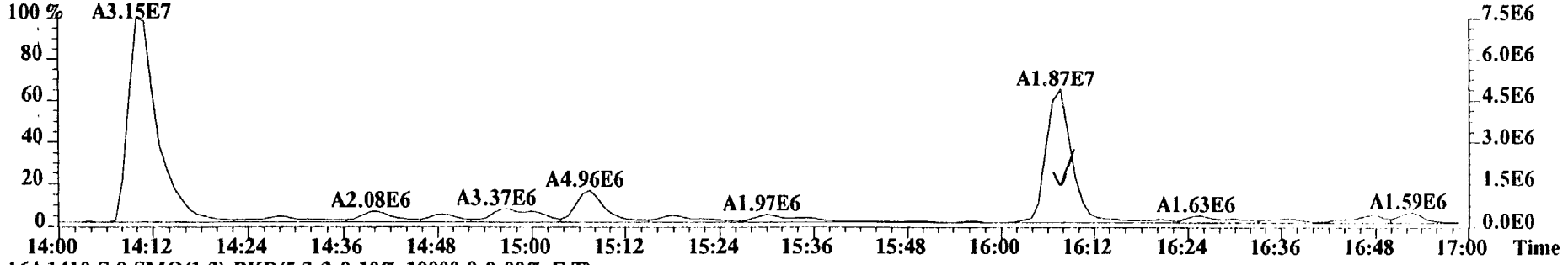
File:02NO98V4 #1-510 Acq: 2-NOV-1998 19:45:31 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-1 :100X DIL. :AIR Exp:PAHAIR
152.0626 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



160.1128 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



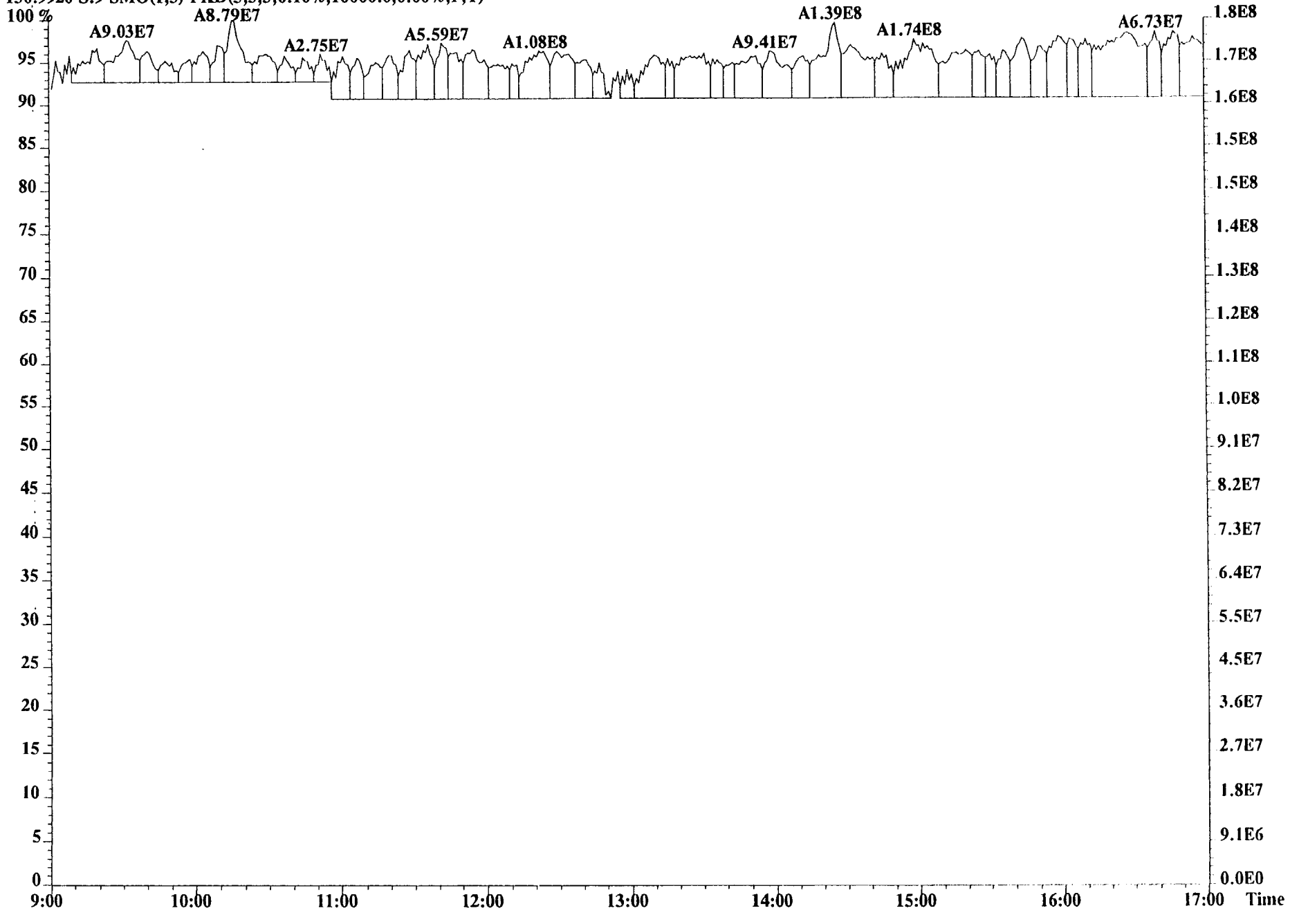
154.0782 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

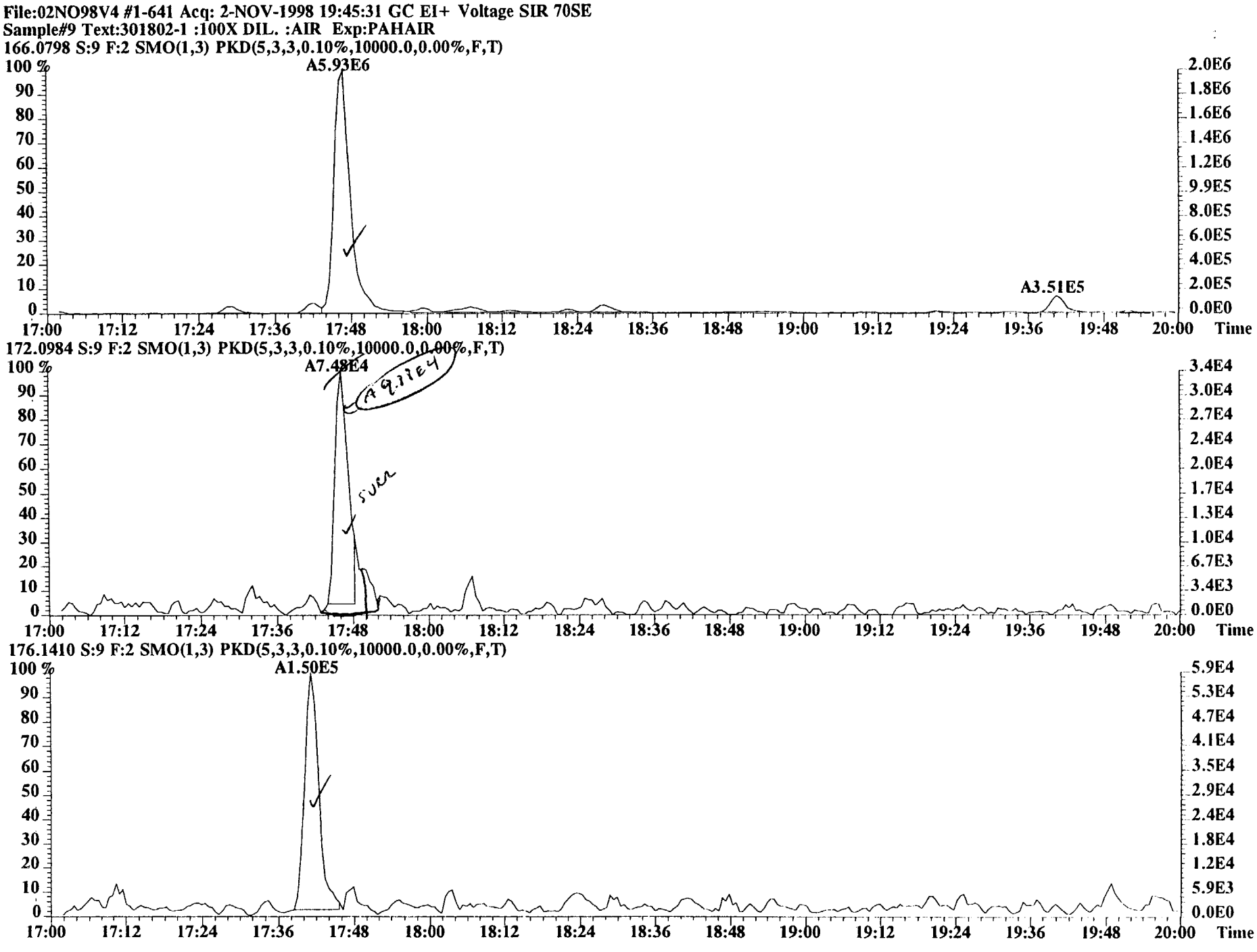


164.1410 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

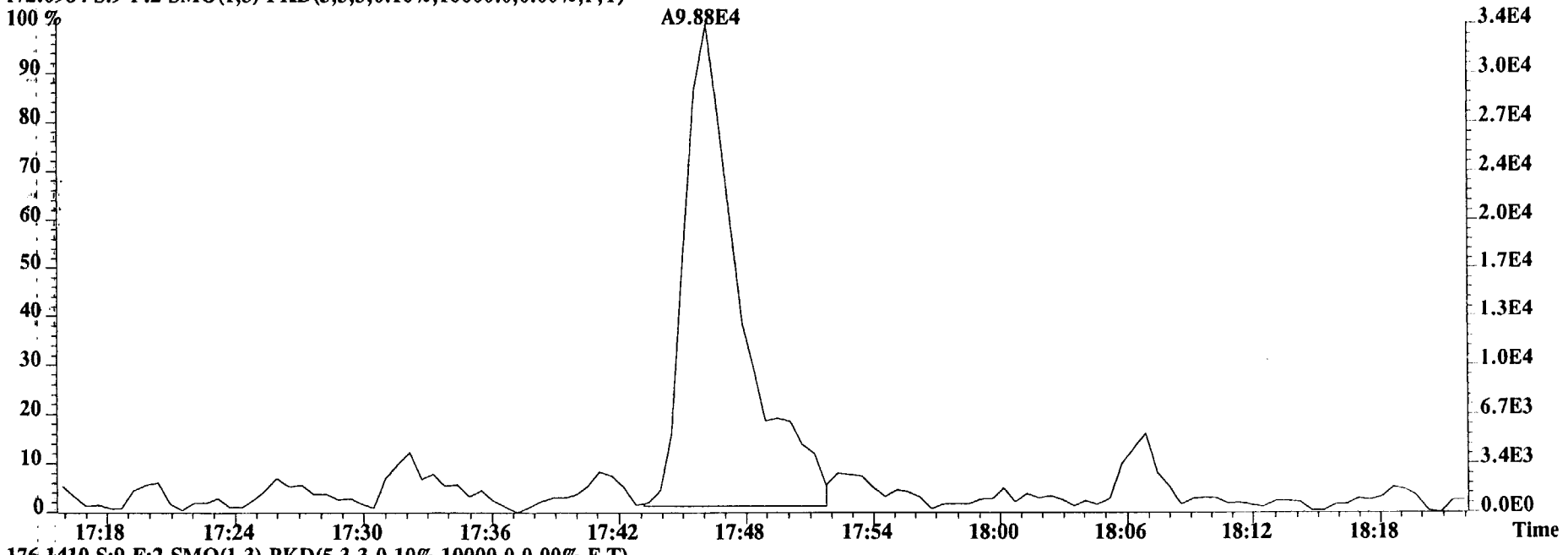


File:02NO98V4 #1-510 Acq: 2-NOV-1998 19:45:31 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-1 :100X DIL. :AIR Exp:PAHAIR
130.9920 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

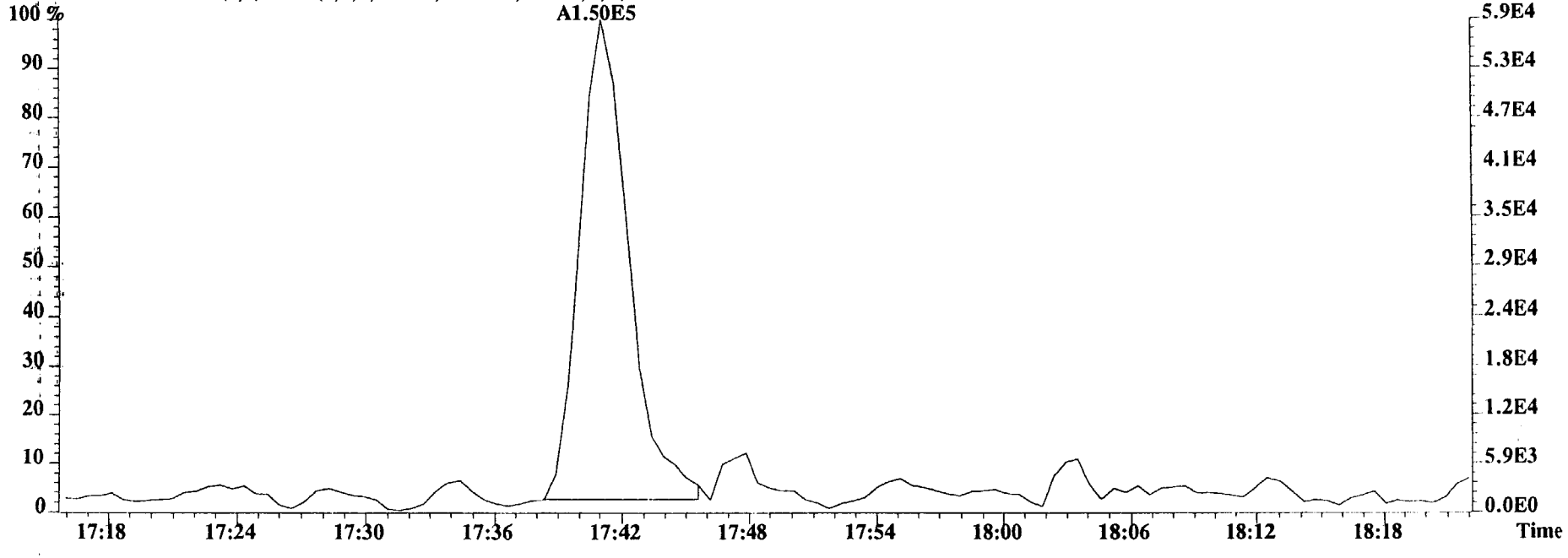



File:02NO98V4 #1-641 Acq: 2-NOV-1998 19:45:31 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-1 :100X DIL. :AIR Exp:PAHAIR
166.0798 S:9 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A5.93E6
A3.51E5
172.0984 S:9 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.48E4
176.1410 S:9 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.50E5
Time

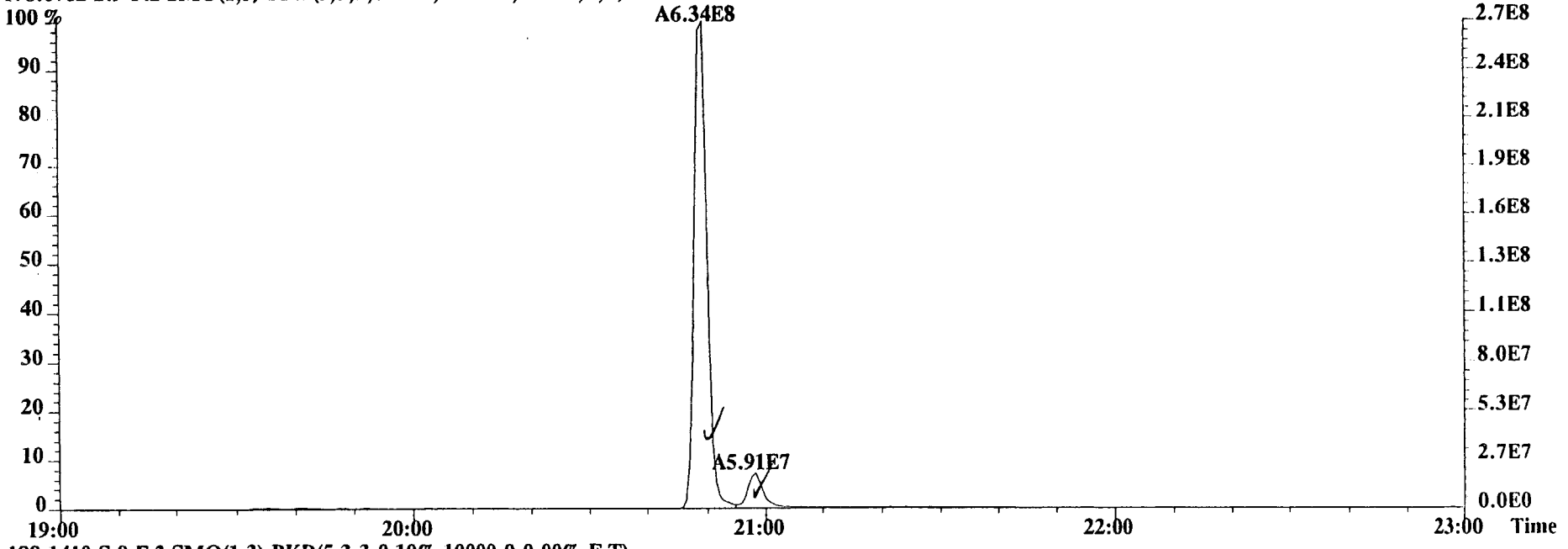
File:02NO98V4 #1-641 Acq: 2-NOV-1998 19:45:31 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-1 :100X DIL. :AIR Exp:PAHAIR
172.0984 S:9 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



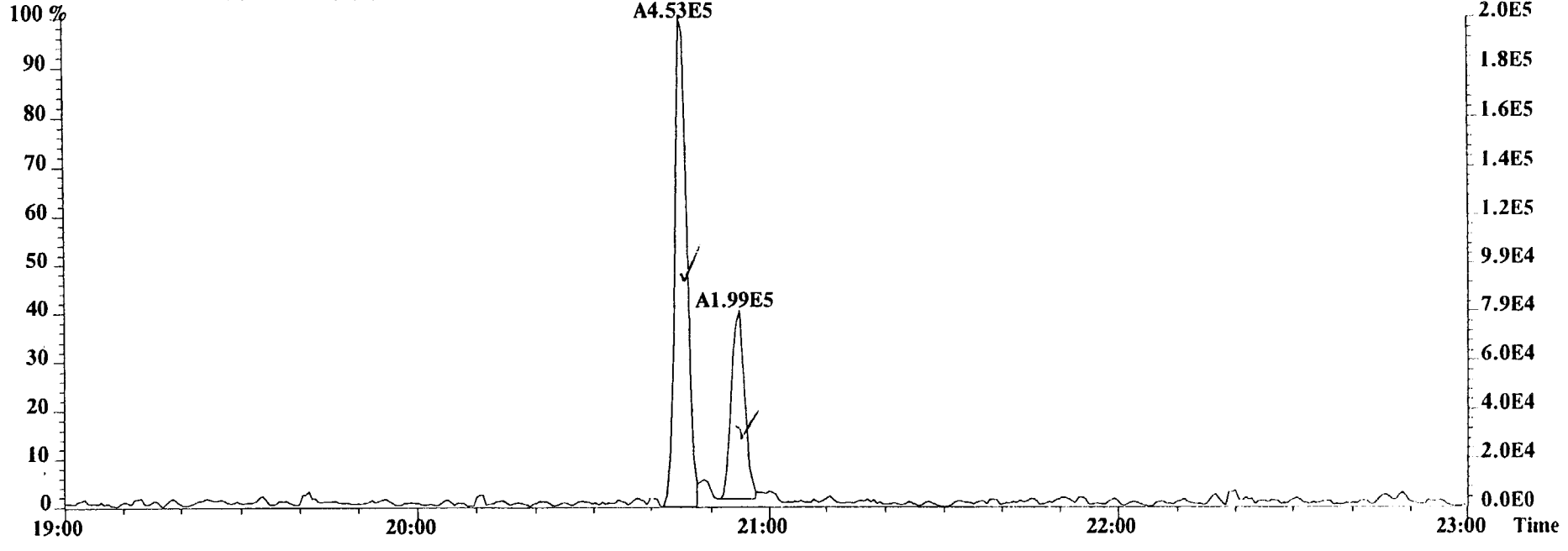
176.1410 S:9 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

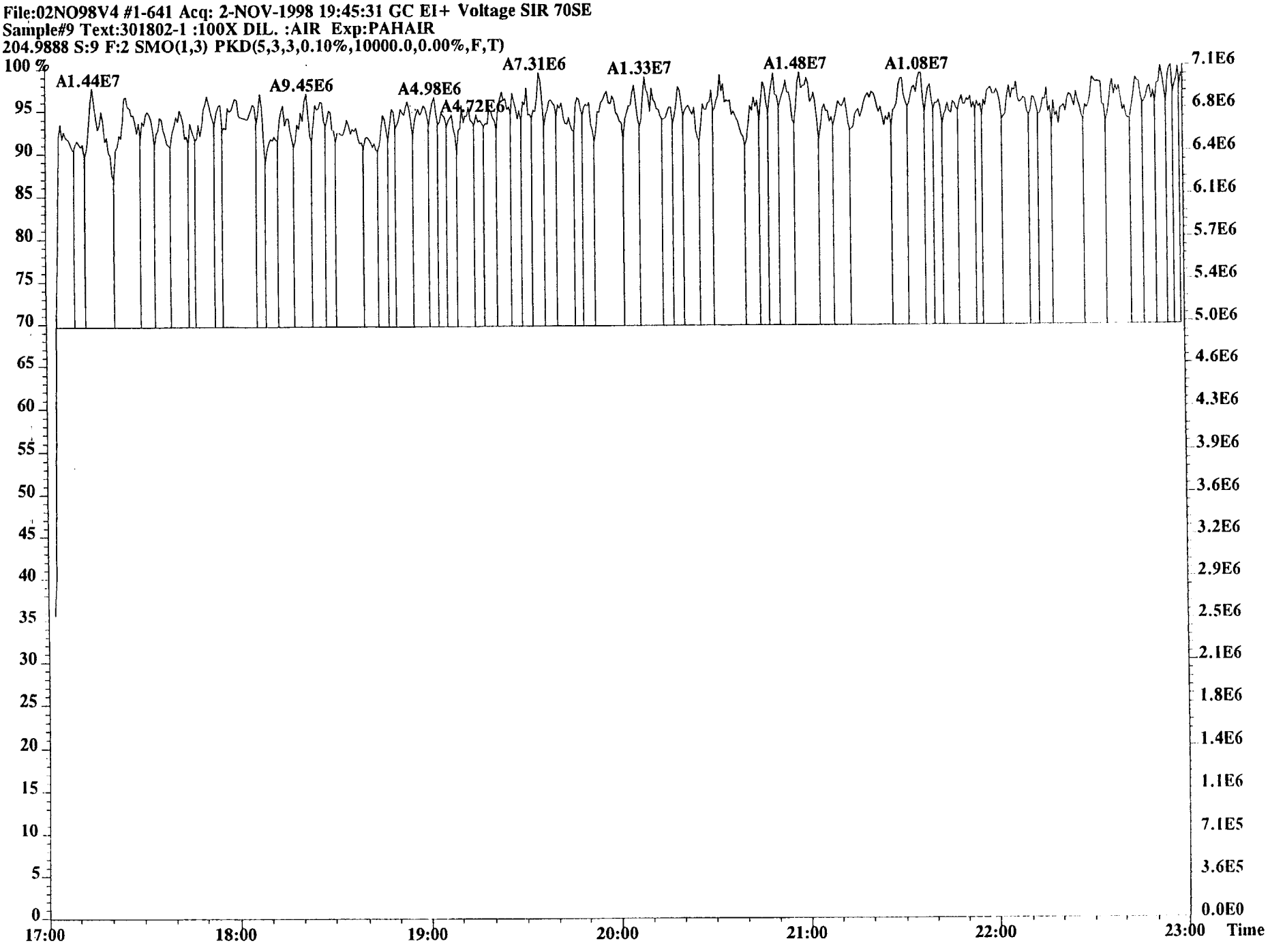


File:02NO98V4 #1-641 Acq: 2-NOV-1998 19:45:31 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-1 :100X DIL. :AIR Exp:PAHAIR
178.0782 S:9 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

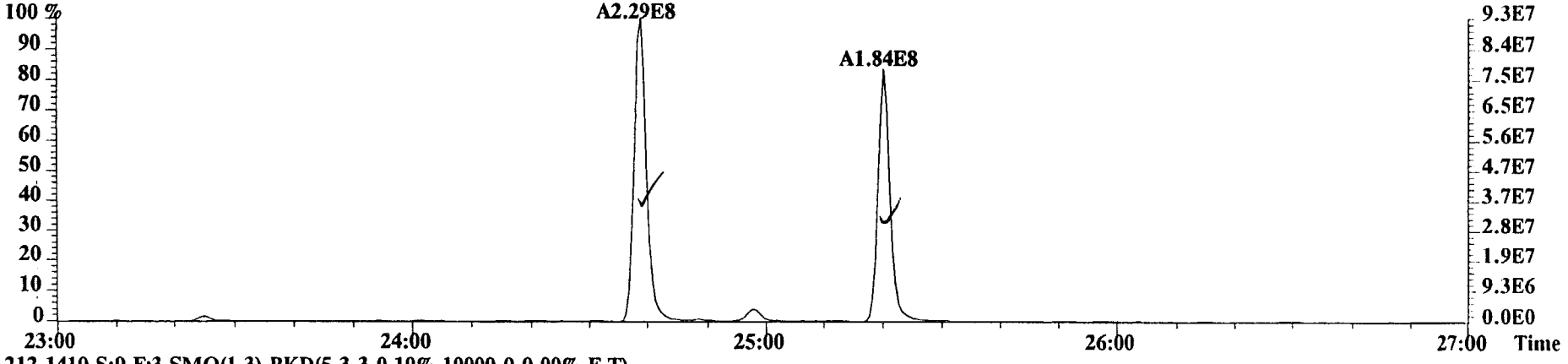


188.1410 S:9 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

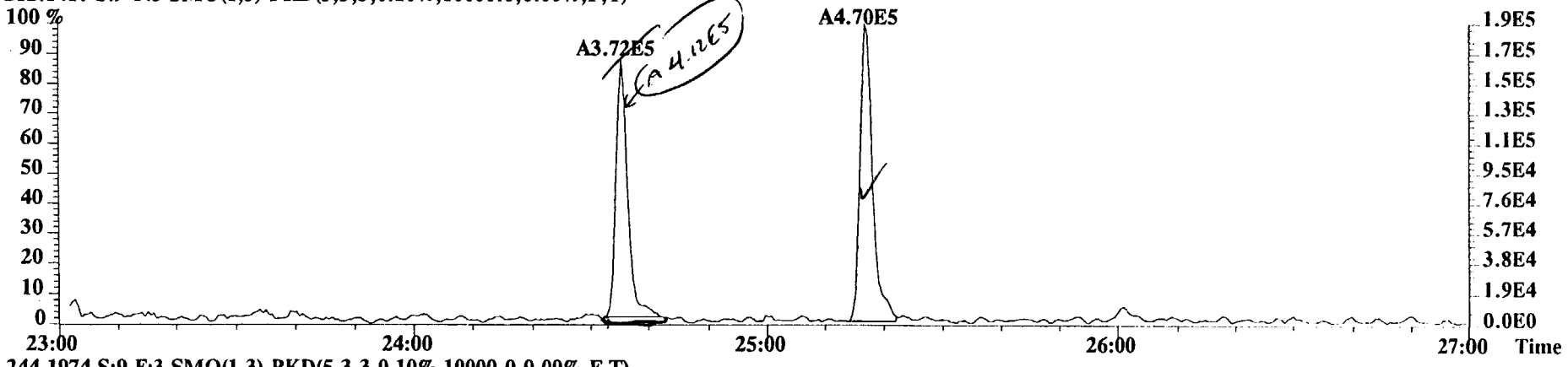



File:02NO98V4 #1-641 Acq: 2-NOV-1998 19:45:31 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-1 :100X DIL. :AIR Exp:PAHAIR
204.9888 S:9 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.44E7
A9.45E6
A4.98E6
A4.72E6
A7.31E6
A1.33E7
A1.48E7
A1.08E7
7.1E6
6.8E6
6.4E6
6.1E6
5.7E6
5.4E6
5.0E6
4.6E6
4.3E6
3.9E6
3.6E6
3.2E6
2.9E6
2.5E6
2.1E6
1.8E6
1.4E6
1.1E6
7.1E5
3.6E5
0.0E0
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

File:02NO98V4 #1-939 Acq: 2-NOV-1998 19:45:31 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-1 :100X DIL. :AIR Exp:PAHAIR
202.0782 S:9 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



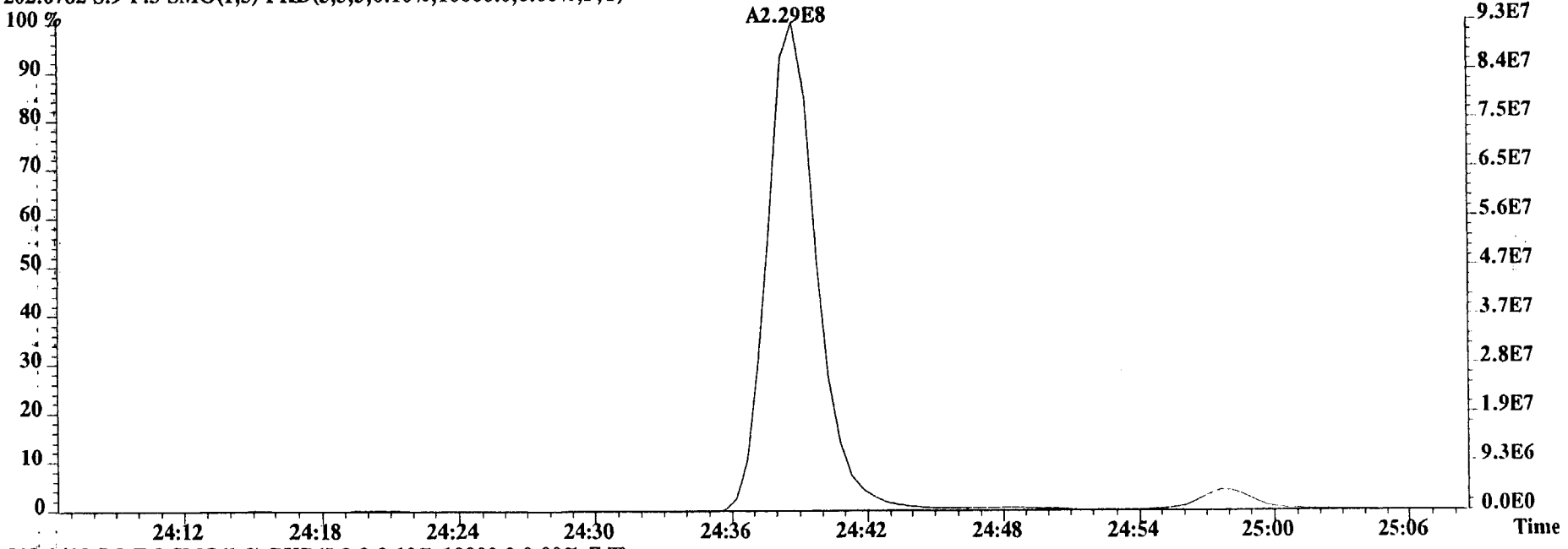
212.1410 S:9 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



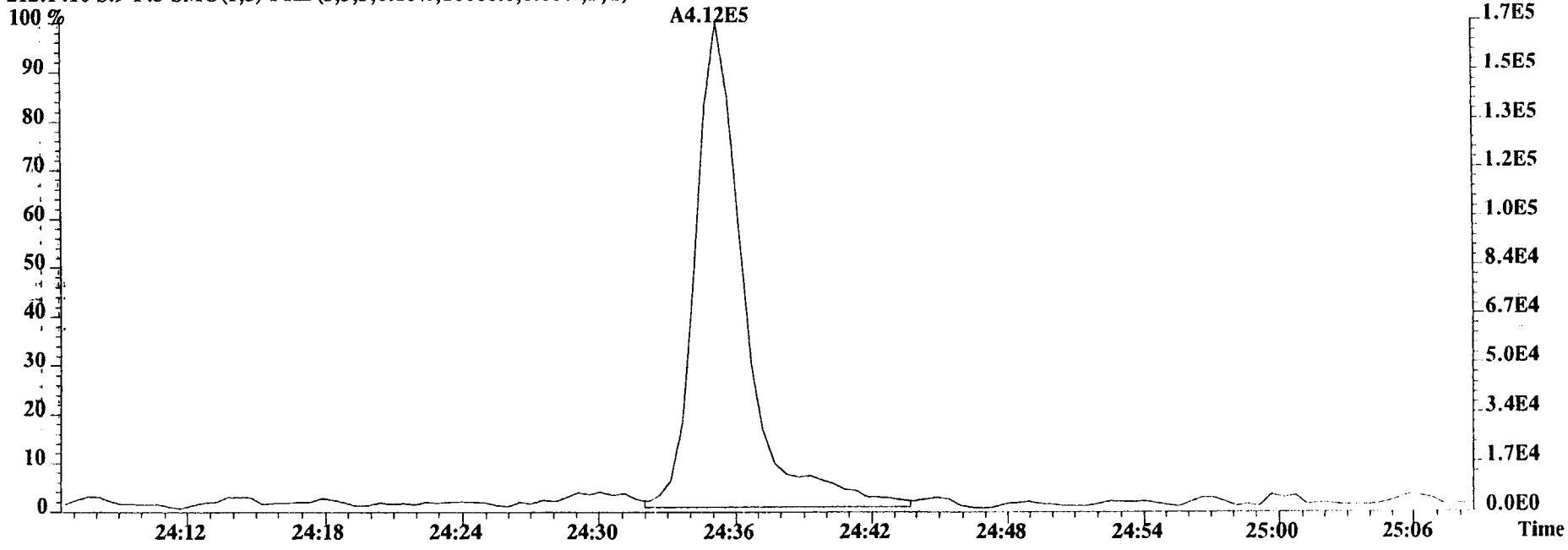
244.1974 S:9 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



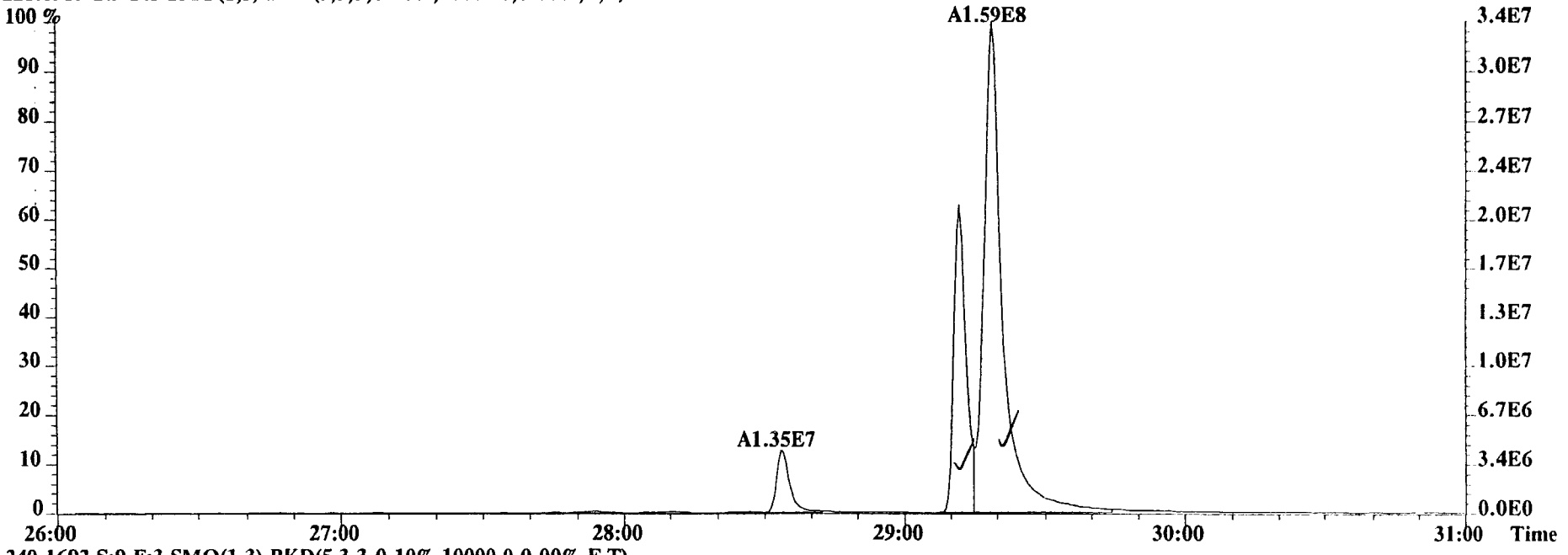
File:02NO98V4 #1-939 Acq: 2-NOV-1998 19:45:31 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-1 :100X DIL. :AIR Exp:PAHAIR
202.0782 S:9 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



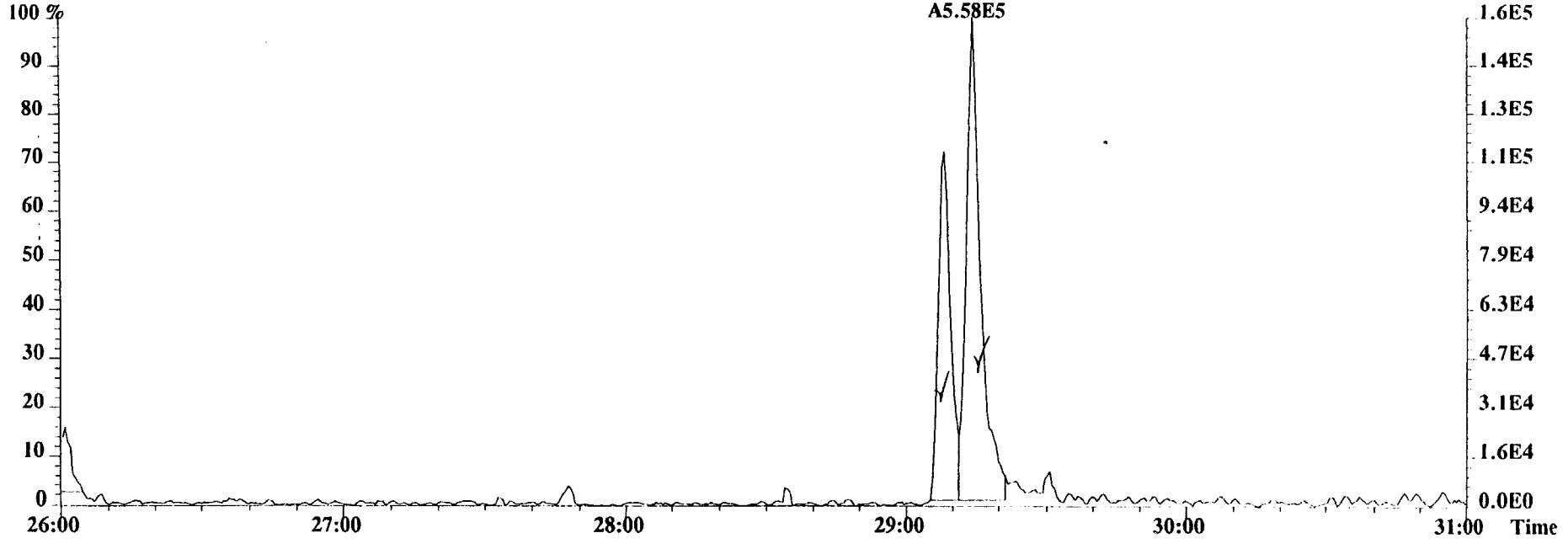
212.1410 S:9 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

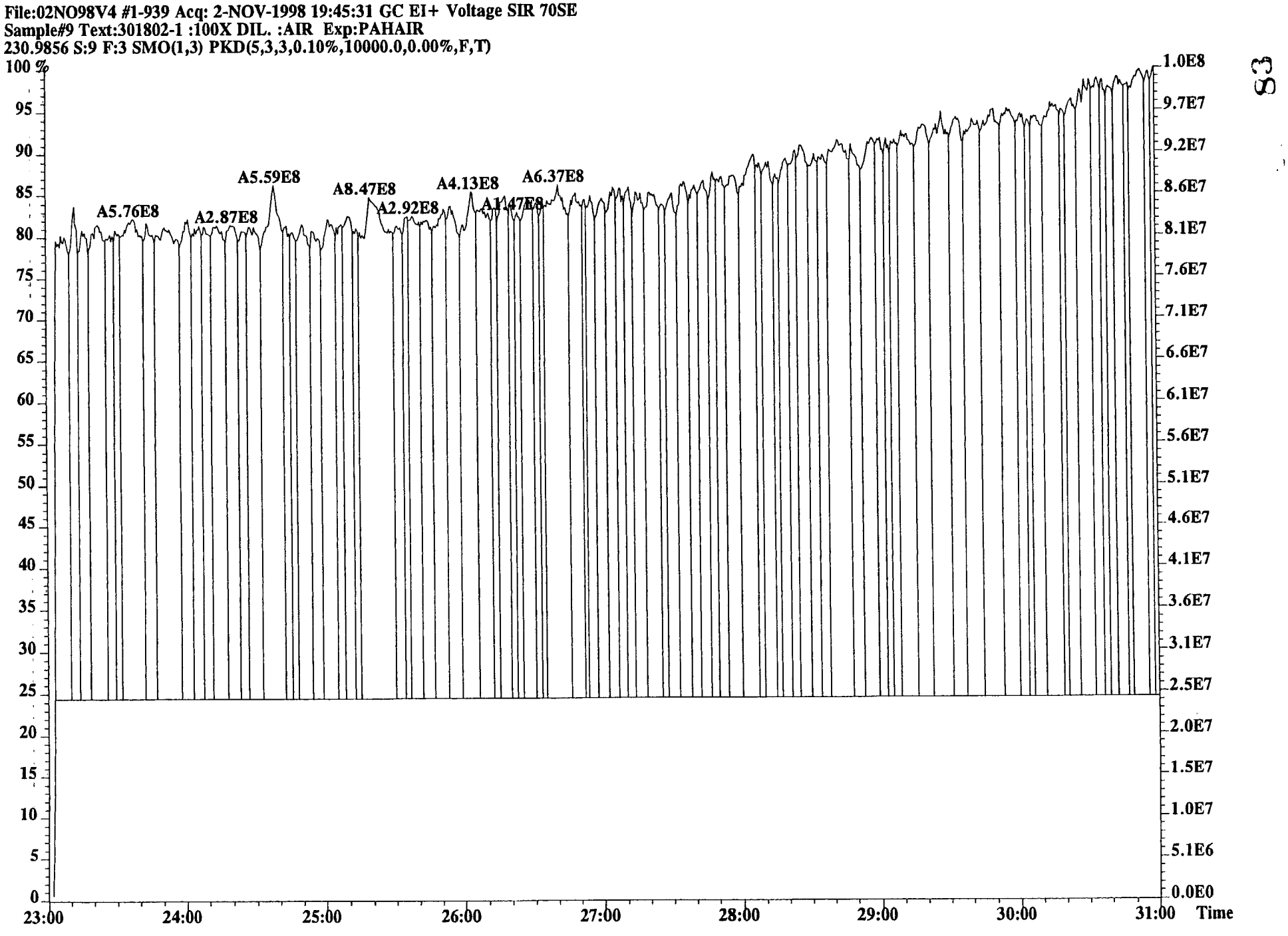


File:02NO98V4 #1-939 Acq: 2-NOV-1998 19:45:31 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-1 :100X DIL. :AIR Exp:PAHAIR
228.0939 S:9 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

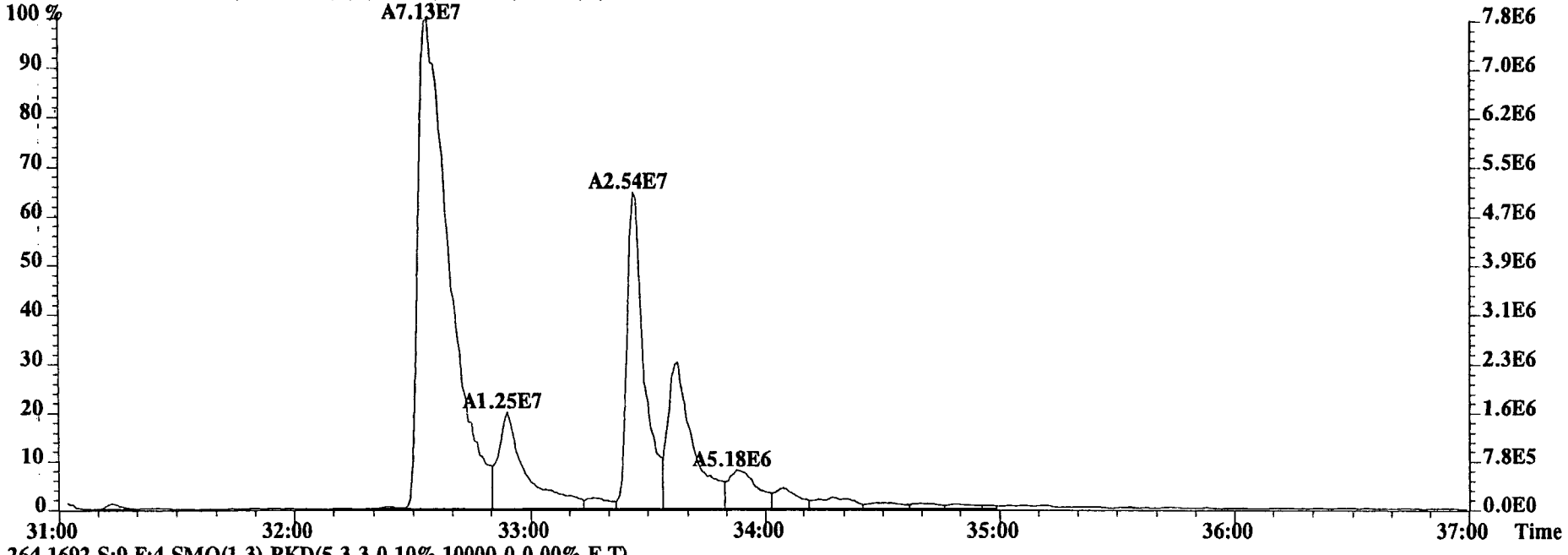


240.1692 S:9 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

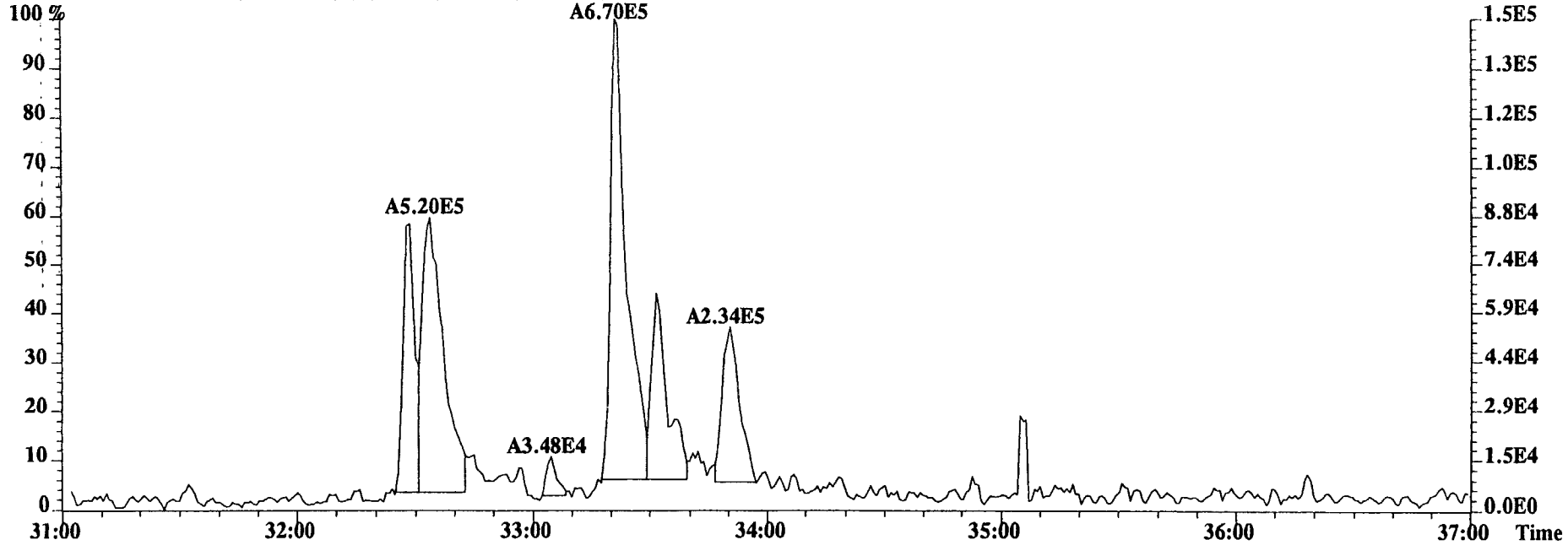


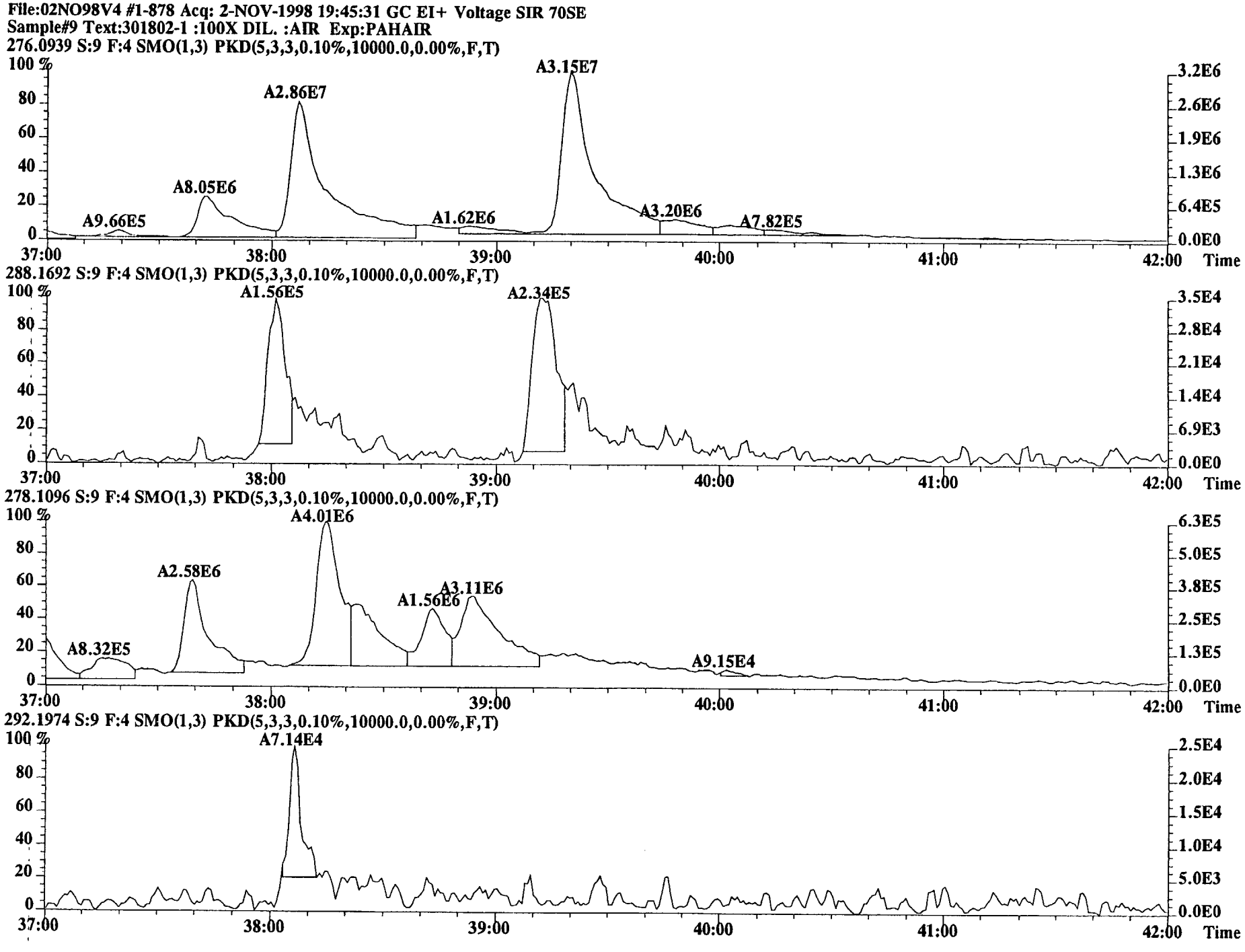

File:02NO98V4 #1-939 Acq: 2-NOV-1998 19:45:31 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-1 :100X DIL. :AIR Exp:PAHAIR
230.9856 S:9 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A5.76E8
A2.87E8
A5.59E8
A8.47E8
A2.92E8
A4.13E8
A1.47E8
A6.37E8
1.0E8
9.7E7
9.2E7
8.6E7
8.1E7
7.6E7
7.1E7
6.6E7
6.1E7
5.6E7
5.1E7
4.6E7
4.1E7
3.6E7
3.1E7
2.5E7
2.0E7
1.5E7
1.0E7
5.1E6
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time

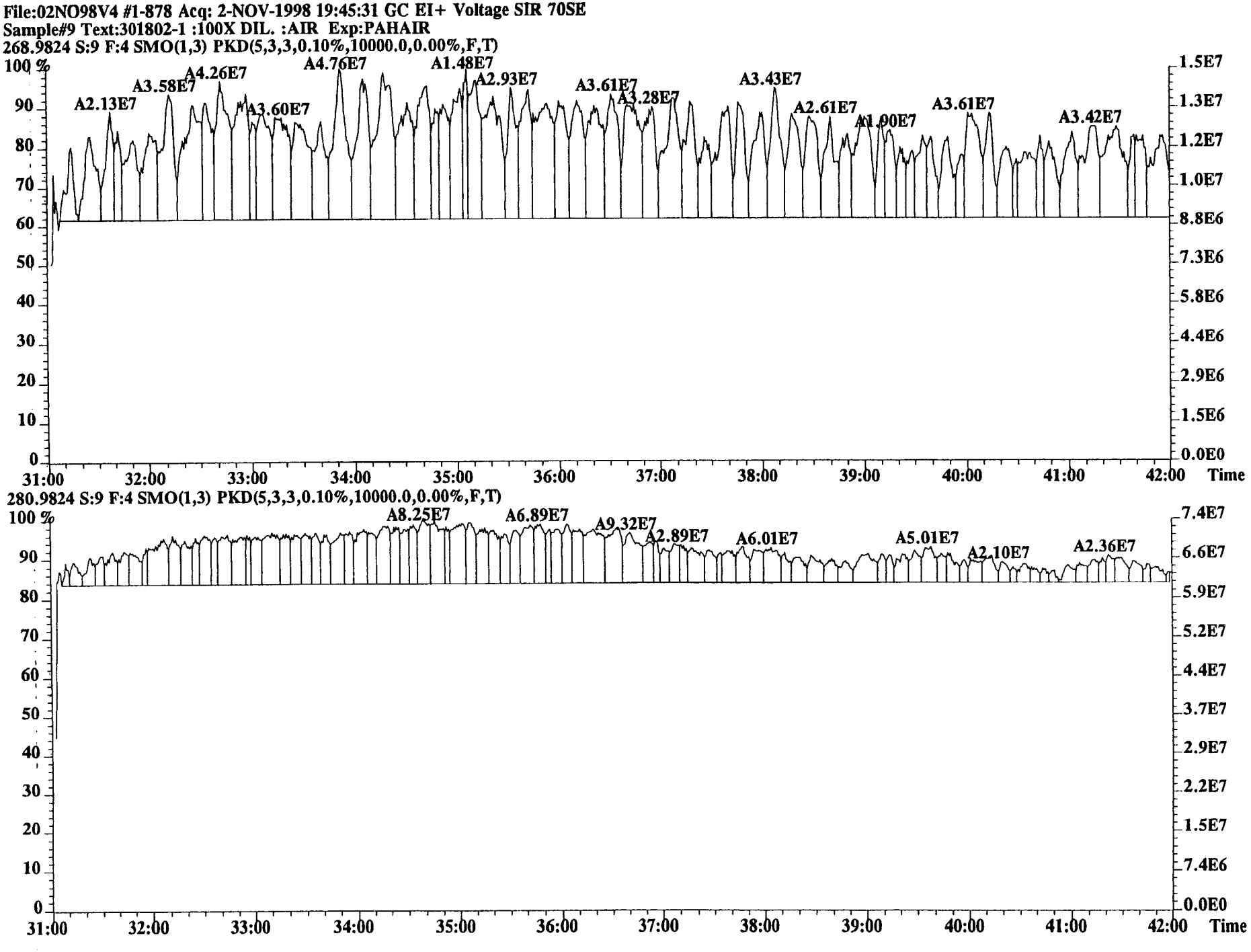
File:02NO98V4 #1-878 Acq: 2-NOV-1998 19:45:31 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-1 :100X DIL. :AIR Exp:PAHAIR
252.0939 S:9 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



264.1692 S:9 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)




File:02NO98V4 #1-878 Acq: 2-NOV-1998 19:45:31 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-1 :100X DIL. :AIR Exp:PAHAIR
276.0939 S:9 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A9.66E5
A8.05E6
A2.86E7
A1.62E6
A3.15E7
A3.20E6
A7.82E5
288.1692 S:9 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.56E5
A2.34E5
278.1096 S:9 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.32E5
A2.58E6
A4.01E6
A1.56E6
A3.11E6
A9.15E4
292.1974 S:9 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.14E4
100 %
80
60
40
20
0
37:00
38:00
39:00
40:00
41:00
42:00
Time
3.2E6
2.6E6
1.9E6
1.3E6
6.4E5
0.0E0
3.5E4
2.8E4
2.1E4
1.4E4
6.9E3
6.3E5
5.0E5
3.8E5
2.5E5
1.3E5
2.5E4
2.0E4
1.5E4
1.0E4
5.0E3


File:02NO98V4 #1-878 Acq: 2-NOV-1998 19:45:31 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-1 :100X DIL. :AIR Exp:PAHAIR
268.9824 S:9 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.13E7
A3.58E7
A4.26E7
A3.60E7
A4.76E7
A1.48E7
A2.93E7
A3.61E7
A3.28E7
A3.43E7
A2.61E7
A1.00E7
A3.61E7
A3.42E7
100 %
90
80
70
60
50
40
30
20
10
0
1.5E7
1.3E7
1.2E7
1.0E7
8.8E6
7.3E6
5.8E6
4.4E6
2.9E6
1.5E6
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time
280.9824 S:9 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.25E7
A6.89E7
A9.32E7
A2.89E7
A6.01E7
A5.01E7
A2.10E7
A2.36E7
100 %
90
80
70
60
50
40
30
20
10
0
7.4E7
6.6E7
5.9E7
5.2E7
4.4E7
3.7E7
2.9E7
2.2E7
1.5E7
7.4E6
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time

04-NOV-1998 05:02:00 PM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4 Results : 29OC98V4211.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 29-OCT-98
Data file : 29OC98V4 [illegible] 10X DIL AIR Ext Test : PAHAIR102998V4 R
Weight : 0.5

Name	Total Response	Isotope Ratio	R. T. mm:ss		RRF	pg/ SAMPLE	Rec/ MDL
d12-Benzo(e)pyrene	35942800	1.00 Y	33: 21	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	14231180	1.00 Y	32: 28	Y	0.45	43.62	87
Benzo(b)fluoranthene	2860000000	1.00 Y	32: 33	Y	1.17	1.7e+04	
d12-Benzo(k)fluoranthene	29376000	1.00 Y	32: 33	Y	0.95	43.10	86
Benzo(k)fluoranthene	3160000000	1.00 Y	32: 38	Y	1.16	9240.29	
d12-Benzo(a)pyrene	18968780	1.00 Y	33: 32	Y	0.68	39.00	78
Benzo(e)pyrene	2022400000	1.00 Y	33: 27	Y	1.64	6497.77	
Benzo(a)pyrene	1284450000	1.00 Y	33: 36	Y	1.07	6316.71	
d12-Perylene	13184320	1.00 Y	33: 49	Y	0.63	29.10	58
Perylene	256000000	1.00 Y	33: 54	Y	1.71	1133.11	
d12-Indeno(123-cd)pyrene	14531060	1.00 Y	38: 0	Y	0.44	45.47	91
Indeno(123-cd)pyrene	1022000000	1.00 Y	38: 7	Y	0.62	1.1e+04	
d14-Dibenz(ah)anthracene	7305720	1.00 Y	38: 4	Y	0.25	41.34	83
Dibenz(ah)anthracene	258000000	1.00 Y	38: 13	Y	1.40	2516.12	
d12-Benzo(ghi)perylene	13293180	1.00 Y	39: 12	Y	0.58	31.90	64
Benzo(ghi)perylene	1548716000	1.00 Y	39: 20	Y	1.02	1.1e+04	

see 100x

0.5
Rec/
MDL

	17971400	17971400
87	7115590	7115590
	1430000000	1430000000
86	14688000	14688000
	1580000000	1580000000
78	9484390	9484390
	1011200000	1011200000
	642225000	642225000
58	6592160	6592160
	128000000	128000000
91	7265530	7265530
	511000000	511000000
83	3652860	3652860
	129000000	129000000
64	6646590	6646590
	774358000	774358000

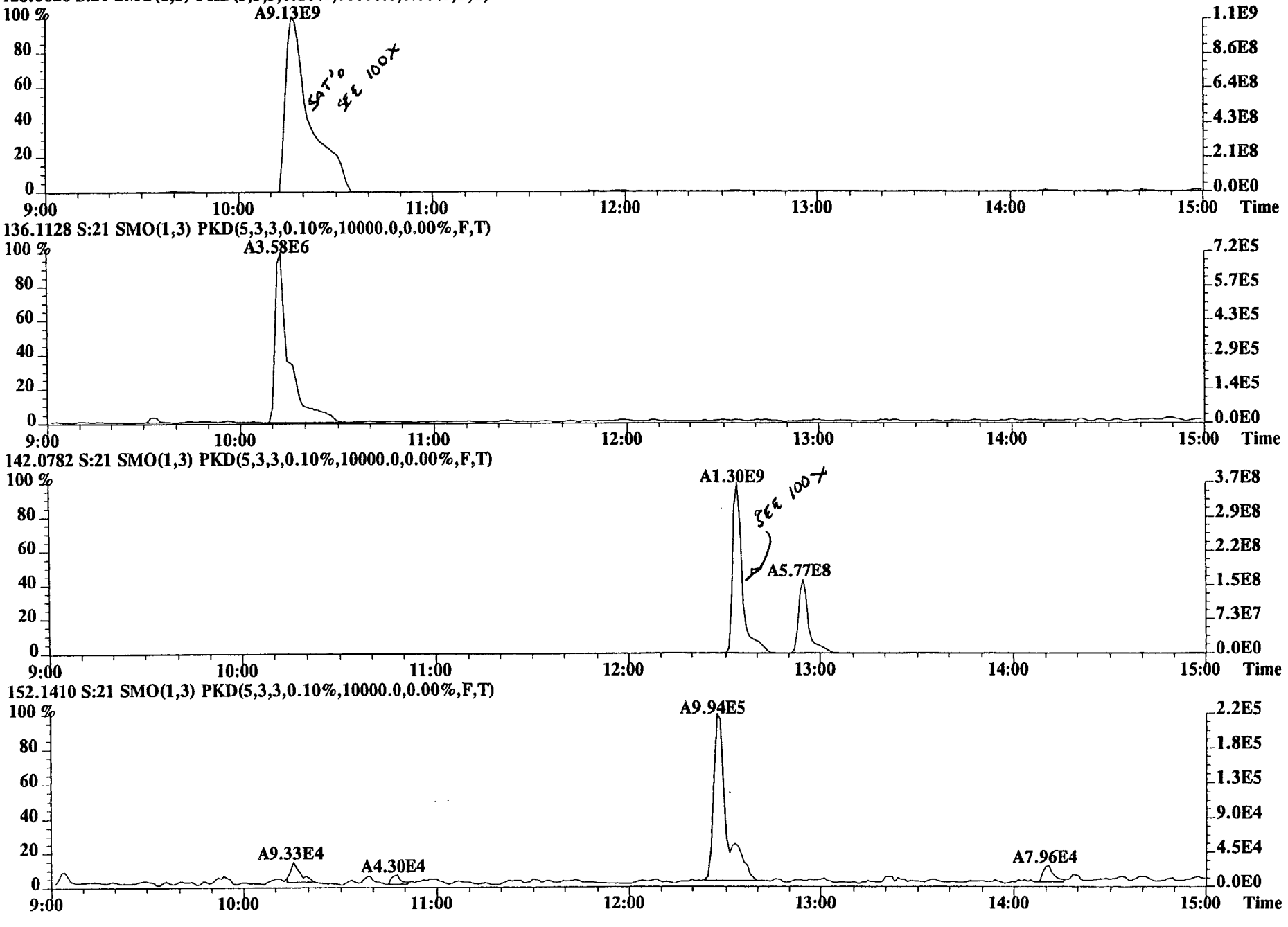
02-NOV-1998 09:41:06 AM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4 | Results : 29OC98V4211.RES | : PAHAIR.TRG
GC Column : DB-5 | Date analyzed : 29-OCT-98
Data file : 29OC98V4 | 301802-1 :10X DIL. :AIR : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

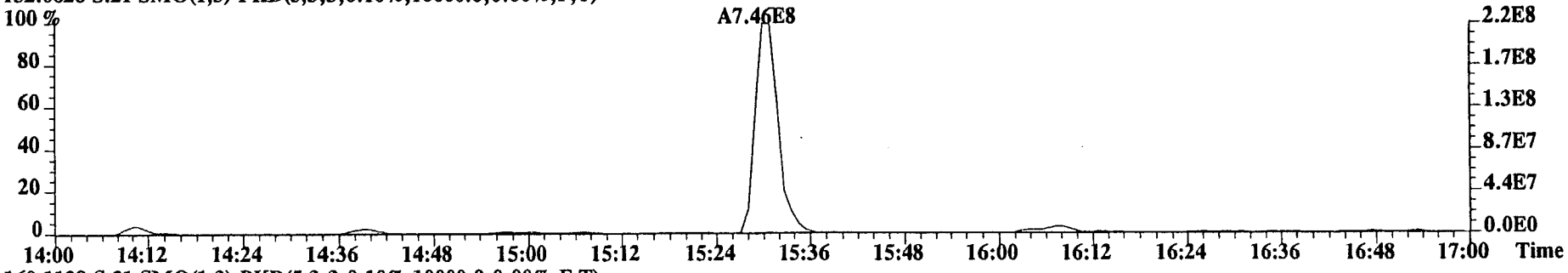
Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMPLE	Rec/ MDL
d10-2-Methylnaphthalene	1987508	1.00	Y	12: 27	Y	1.00	50.00	
d8-Naphthalene	7167580	1.00	Y	10: 13	Y	2.24	80.47	161
Naphthalene	18269040000	1.00	Y	10: 16	Y	1.23	2.1e+05	0.000
2-Methylnaphthalene	2594880000	1.00	Y	12: 34	Y	0.56	6.5e+04	0.000
d8-Acenaphthylene	4874760	1.00	Y	15: 28	Y	1.21	101.04	202
Acenaphthylene	1492652000	1.00	Y	15: 30	Y	0.94	3.2e+04	0.000
d10-Acenaphthene	409646	1.00	Y	16: 2	Y	0.74	13.84	28
Acenaphthene	92561800	1.00	Y	16: 7	Y	1.25	1.8e+04	0.000
d10-Anthracene	4533580	1.00	Y	20: 55	Y	1.00	50.00	
d10-Fluorene	3028760	1.00	Y	17: 41	Y	1.42	23.51	47
Fluorene	2024080000	1.00	Y	17: 47	Y	1.16	5.8e+04	0.000
d10-Phenanthrene	8423420	1.00	Y	20: 45	Y	2.81	33.09	66
Phenanthrene	7383740000	1.00	Y	20: 50	Y	0.89	9.8e+04	0.000
Anthracene	1803014000	1.00	Y	20: 58	Y	0.80	2.7e+04	0.000
d14-Terphenyl	12190760	1.00	Y	26: 0	Y	1.00	50.00	
d10-Fluoranthene	16033260	1.00	Y	24: 35	Y	1.41	46.61	93
Fluoranthene	6834220000	1.00	Y	24: 40	Y	1.11	3.8e+04	0.000
d10-Pyrene	13399300	1.00	Y	25: 17	Y	1.52	36.20	72
Pyrene	6081540000	1.00	Y	25: 21	Y	1.21	3.8e+04	0.000
d12-Benzo(a)anthracene	7458460	1.00	Y	29: 8	Y	0.90	33.99	68
Benzo(a)anthracene	2198000000	1.00	Y	29: 12	Y	1.20	2.4e+04	0.000
d12-Chrysene	10119100	1.00	Y	29: 14	Y	1.28	32.45	65
Chrysene	4591820000	1.00	Y	29: 19	Y	1.08	4.2e+04	0.000
d12-Benzo(e)pyrene	35942800	1.00	Y	33: 21	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	14231180	1.00	Y	32: 28	Y	0.45	43.62	87
Benzo(b)fluoranthene	5954800000	1.00	Y	32: 33	Y	1.17	3.6e+04	0.000
d12-Benzo(k)fluoranthene	29376000	1.00	Y	32: 33	Y	0.95	43.10	86
Benzo(k)fluoranthene	5954800000	1.00	Y	32: 33	Y	1.16	1.7e+04	0.000
d12-Benzo(a)pyrene	18968780	1.00	Y	33: 32	Y	0.68	39.00	78
Benzo(e)pyrene	2022400000	1.00	Y	33: 27	Y	1.64	6497.77	0.000
Benzo(a)pyrene	1284450000	1.00	Y	33: 36	Y	1.07	6316.71	0.000
d12-Perylene	13184320	1.00	Y	33: 49	Y	0.63	29.10	58
Perylene	* No Peak	0.00	N	33: 54	N	1.71	0.00	0.000
d12-Indeno(123-cd)pyrene	14531060	1.00	Y	38: 0	Y	0.44	45.47	91
Indeno(123-cd)pyrene	1397488000	1.00	Y	38: 7	Y	0.62	1.5e+04	0.000
d14-Dibenz(ah)anthracene	7305720	1.00	Y	38: 4	Y	0.25	41.34	83
Dibenz(ah)anthracene	272420000	1.00	Y	38: 13	Y	1.40	2656.75	0.000
d12-Benzo(ghi)perylene	13293180	1.00	Y	39: 12	Y	0.58	31.90	64
Benzo(ghi)perylene	1548716000	1.00	Y	39: 20	Y	1.02	1.1e+04	0.000
d10-Fluorene	3028760	1.00	Y	17: 41	Y	1.42	2.97	6
13C-Fluorene	3398420	1.00	Y	17: 47	Y	1.00	112.20	0.000

SEE 100X DILUTION

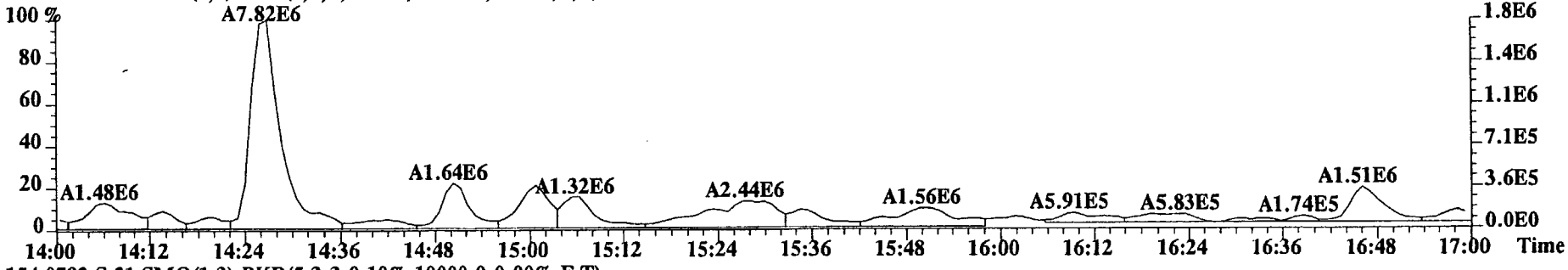
File:29OC98V4 #1-510 Acq:30-OCT-1998 07:48:11 GC EI+ Voltage SIR 70SE
Sample#21 Text:301802-1 :10X DIL. :AIR : Exp:PAHAIR



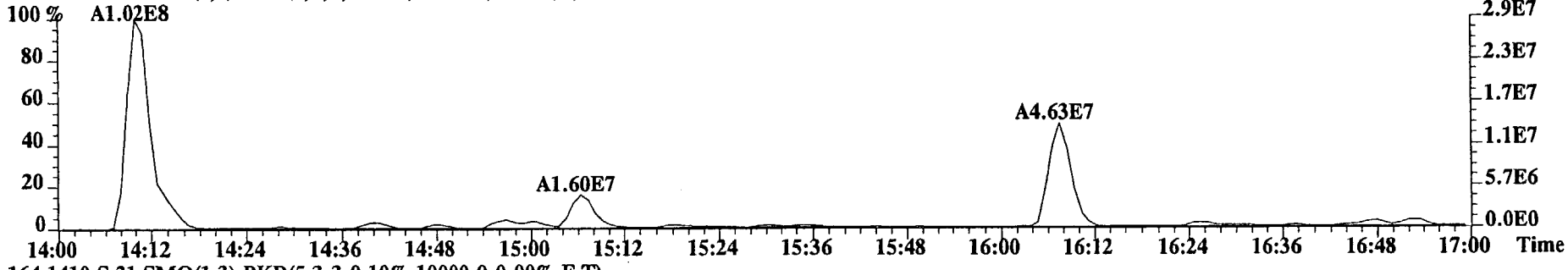
File:29OC98V4 #1-510 Acq:30-OCT-1998 07:48:11 GC EI+ Voltage SIR 70SE
Sample#21 Text:301802-1 :10X DIL. :AIR : Exp:PAHAIR
152.0626 S:21 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



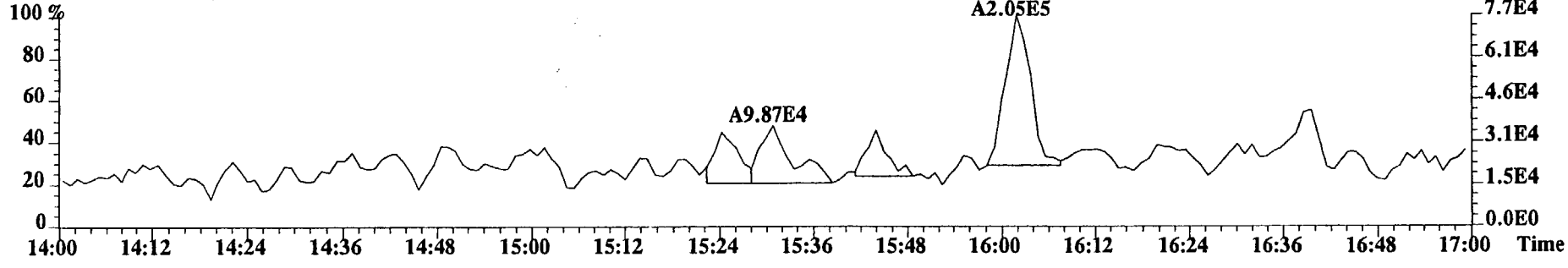
160.1128 S:21 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

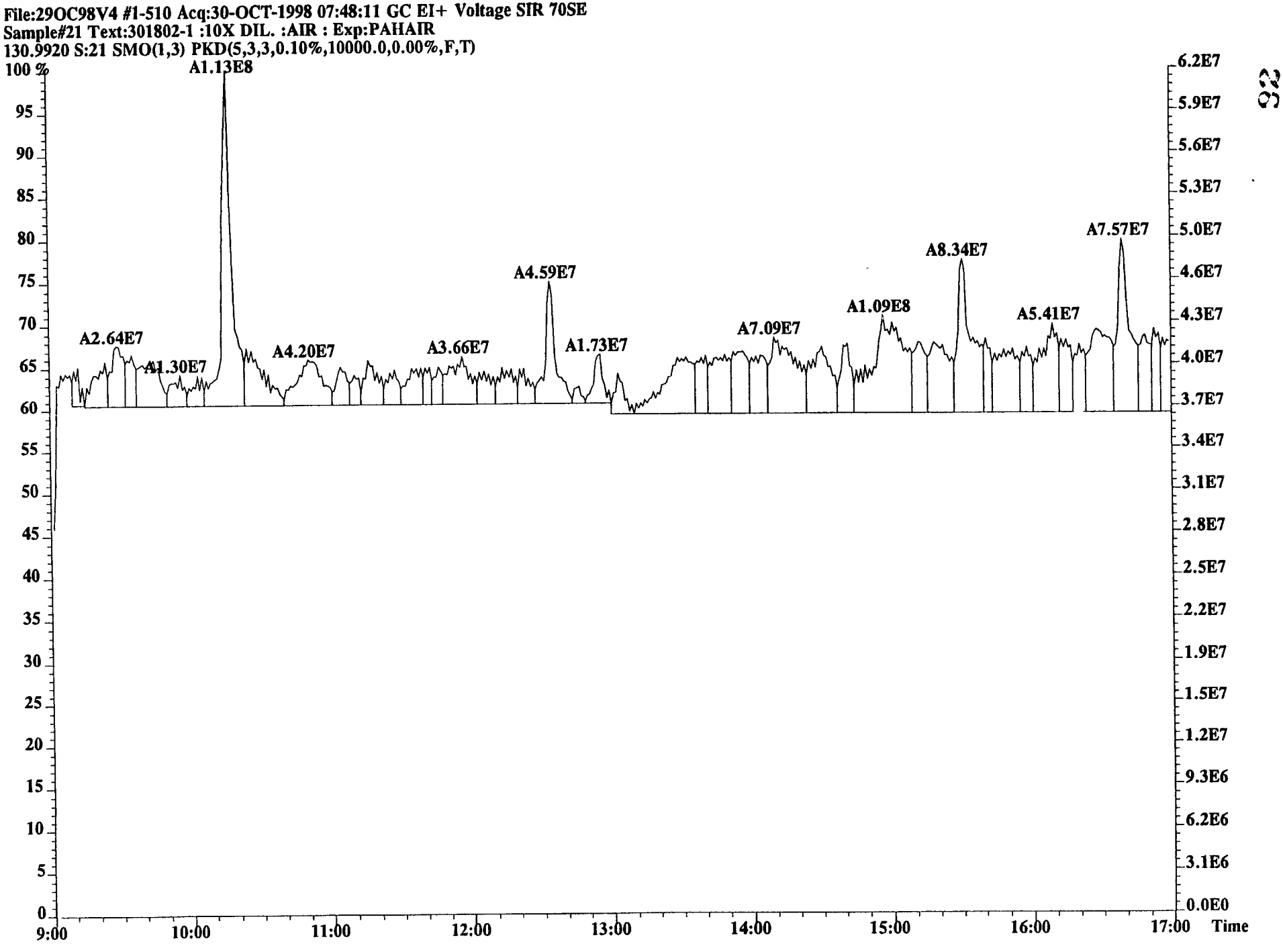


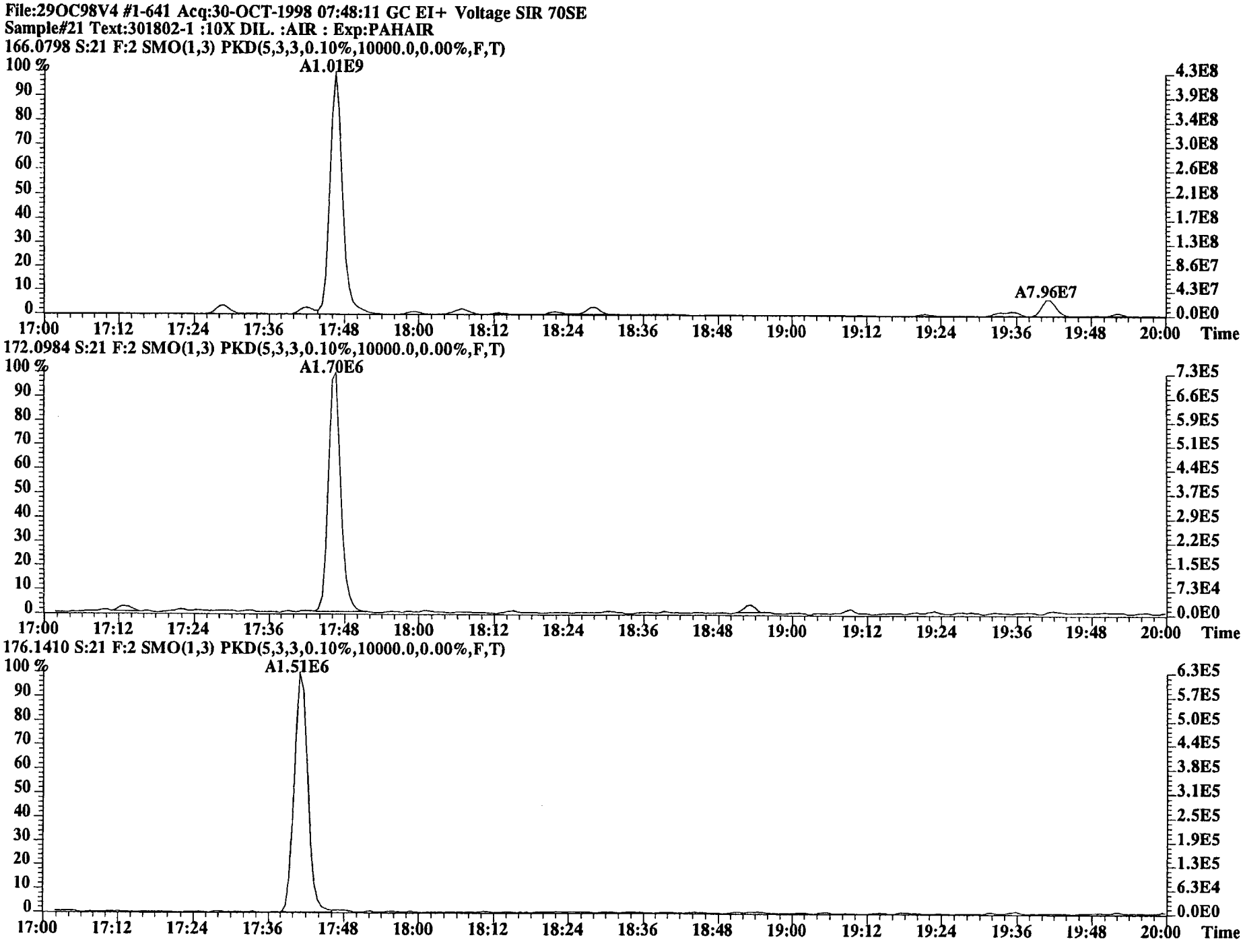
154.0782 S:21 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



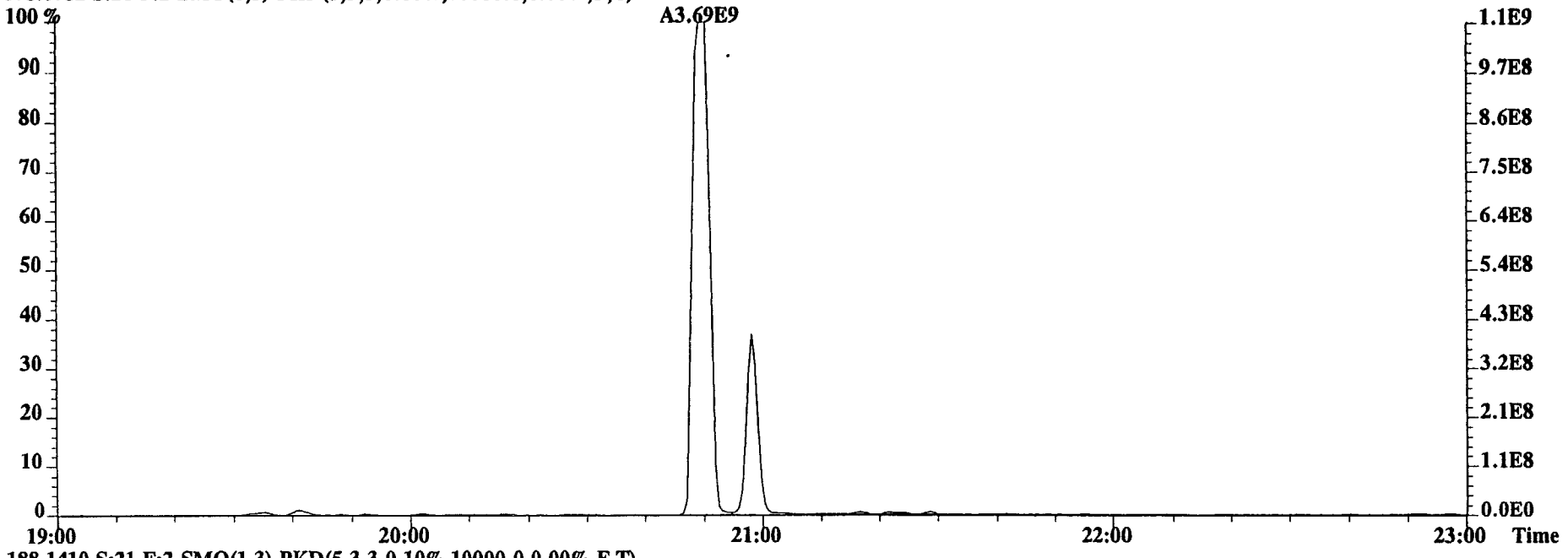
164.1410 S:21 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



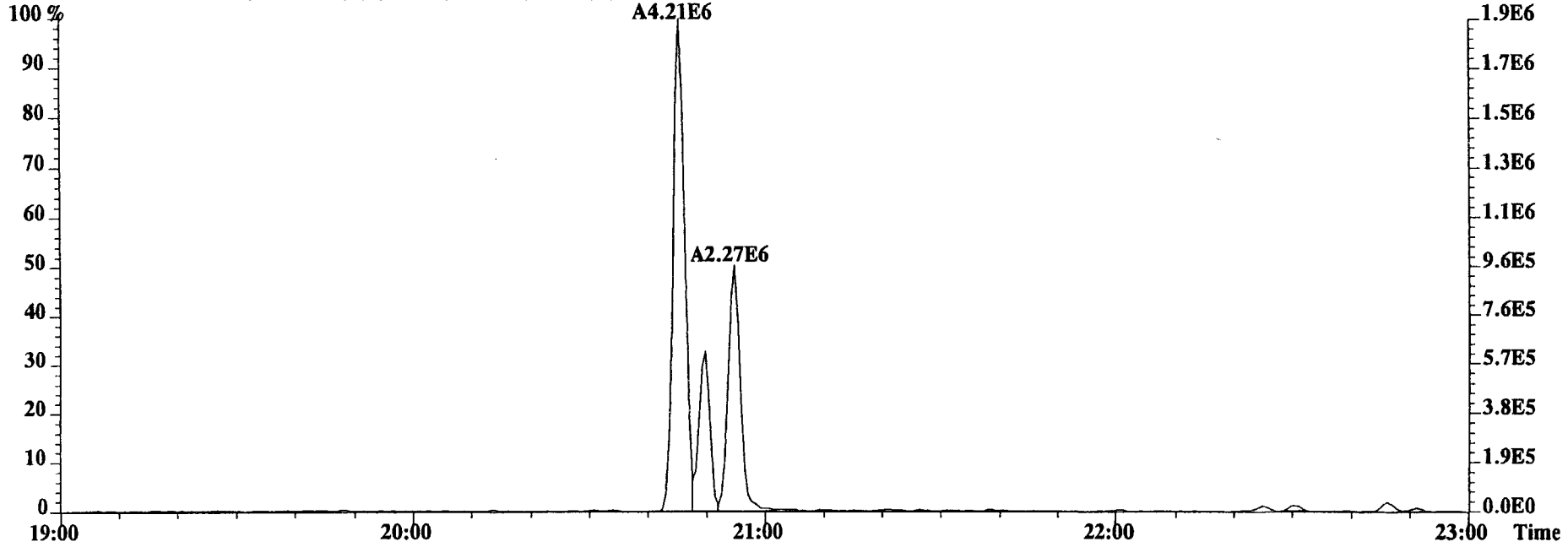

File:29OC98V4 #1-510 Acq:30-OCT-1998 07:48:11 GC EI+ Voltage SIR 70SE
Sample#21 Text:301802-1 :10X DIL. :AIR : Exp:PAHAIR
130.9920 S:21 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.13E8
A2.64E7
A1.30E7
A4.20E7
A3.66E7
A4.59E7
A1.73E7
A7.09E7
A1.09E8
A8.34E7
A5.41E7
A7.57E7
6.2E7
5.9E7
5.6E7
5.3E7
5.0E7
4.6E7
4.3E7
4.0E7
3.7E7
3.4E7
3.1E7
2.8E7
2.5E7
2.2E7
1.9E7
1.5E7
1.2E7
9.3E6
6.2E6
3.1E6
0.0E0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
Time

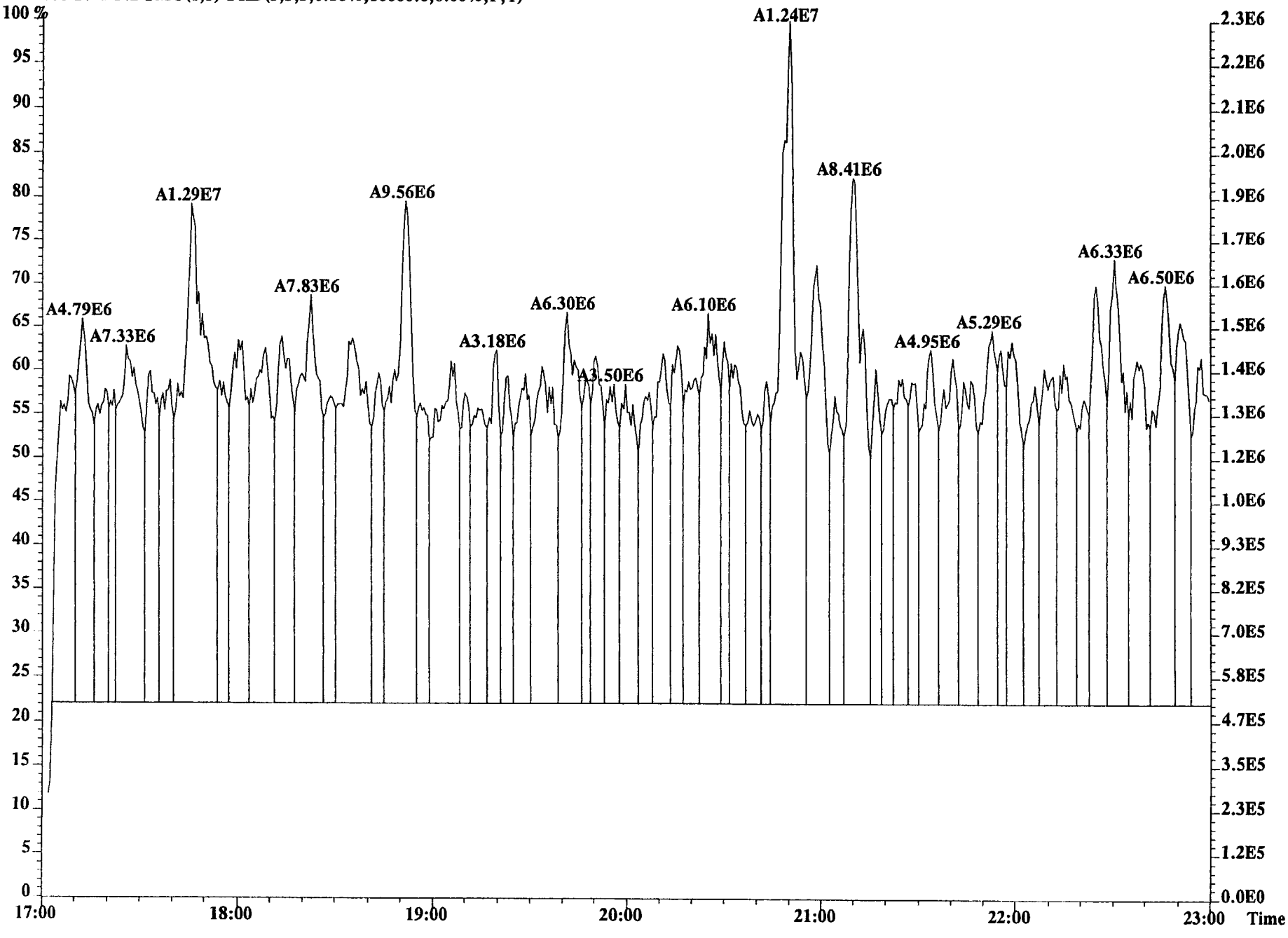

File:29OC98V4 #1-641 Acq:30-OCT-1998 07:48:11 GC EI+ Voltage SIR 70SE
Sample#21 Text:301802-1 :10X DIL. :AIR : Exp:PAHAIR
166.0798 S:21 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.01E9
A7.96E7
172.0984 S:21 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.70E6
176.1410 S:21 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.51E6
100 %
90
80
70
60
50
40
30
20
10
0
4.3E8
3.9E8
3.4E8
3.0E8
2.6E8
2.1E8
1.7E8
1.3E8
8.6E7
4.3E7
0.0E0
7.3E5
6.6E5
5.9E5
5.1E5
4.4E5
3.7E5
2.9E5
2.2E5
1.5E5
7.3E4
6.3E5
5.7E5
5.0E5
4.4E5
3.8E5
3.1E5
2.5E5
1.9E5
1.3E5
6.3E4
17:00
17:12
17:24
17:36
17:48
18:00
18:12
18:24
18:36
18:48
19:00
19:12
19:24
19:36
19:48
20:00
Time

File:29OC98V4 #1-641 Acq:30-OCT-1998 07:48:11 GC EI+ Voltage SIR 70SE
Sample#21 Text:301802-1 :10X DIL. :AIR : Exp:PAHAIR
178.0782 S:21 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

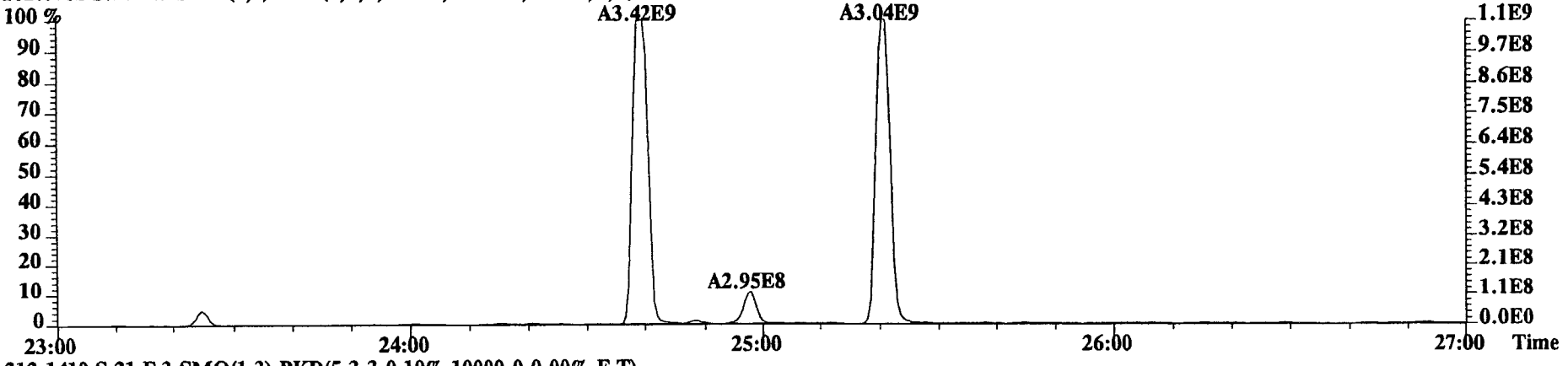


188.1410 S:21 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

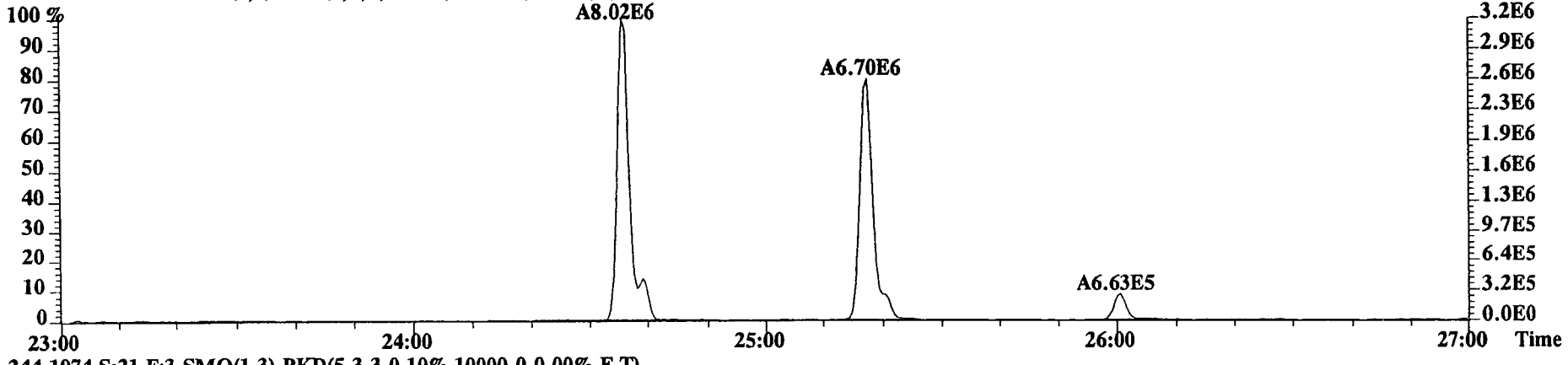



File:29OC98V4 #1-641 Acq:30-OCT-1998 07:48:11 GC EI+ Voltage SIR 70SE
Sample#21 Text:301802-1 :10X DIL. :AIR : Exp:PAHAIR
204.9888 S:21 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A4.79E6
A7.33E6
A1.29E7
A7.83E6
A9.56E6
A3.18E6
A6.30E6
A3.50E6
A6.10E6
A1.24E7
A8.41E6
A4.95E6
A5.29E6
A6.33E6
A6.50E6
2.3E6
2.2E6
2.1E6
2.0E6
1.9E6
1.7E6
1.6E6
1.5E6
1.4E6
1.3E6
1.2E6
1.0E6
9.3E5
8.2E5
7.0E5
5.8E5
4.7E5
3.5E5
2.3E5
1.2E5
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

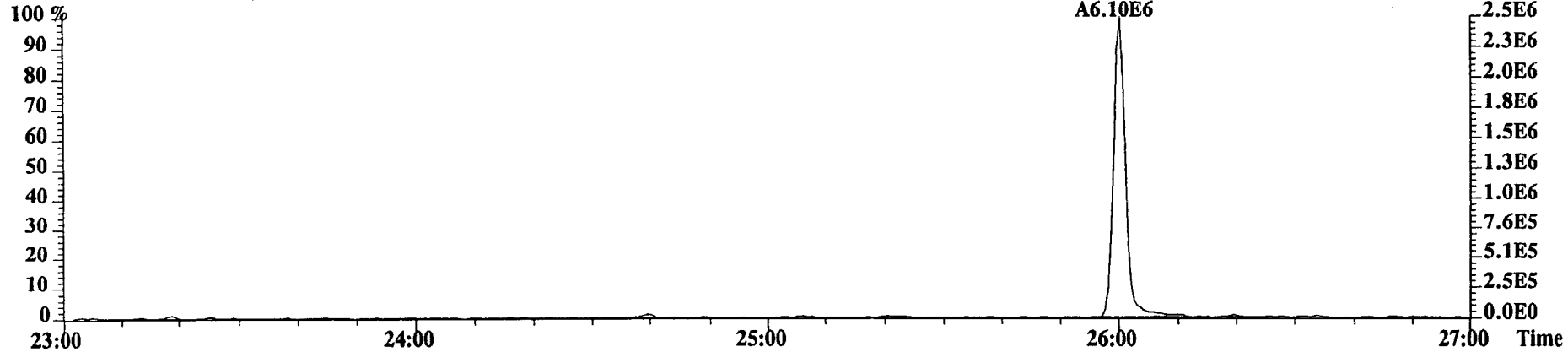
File:29OC98V4 #1-939 Acq:30-OCT-1998 07:48:11 GC EI+ Voltage SIR 70SE
Sample#21 Text:301802-1 :10X DIL. :AIR : Exp:PAHAIR
202.0782 S:21 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

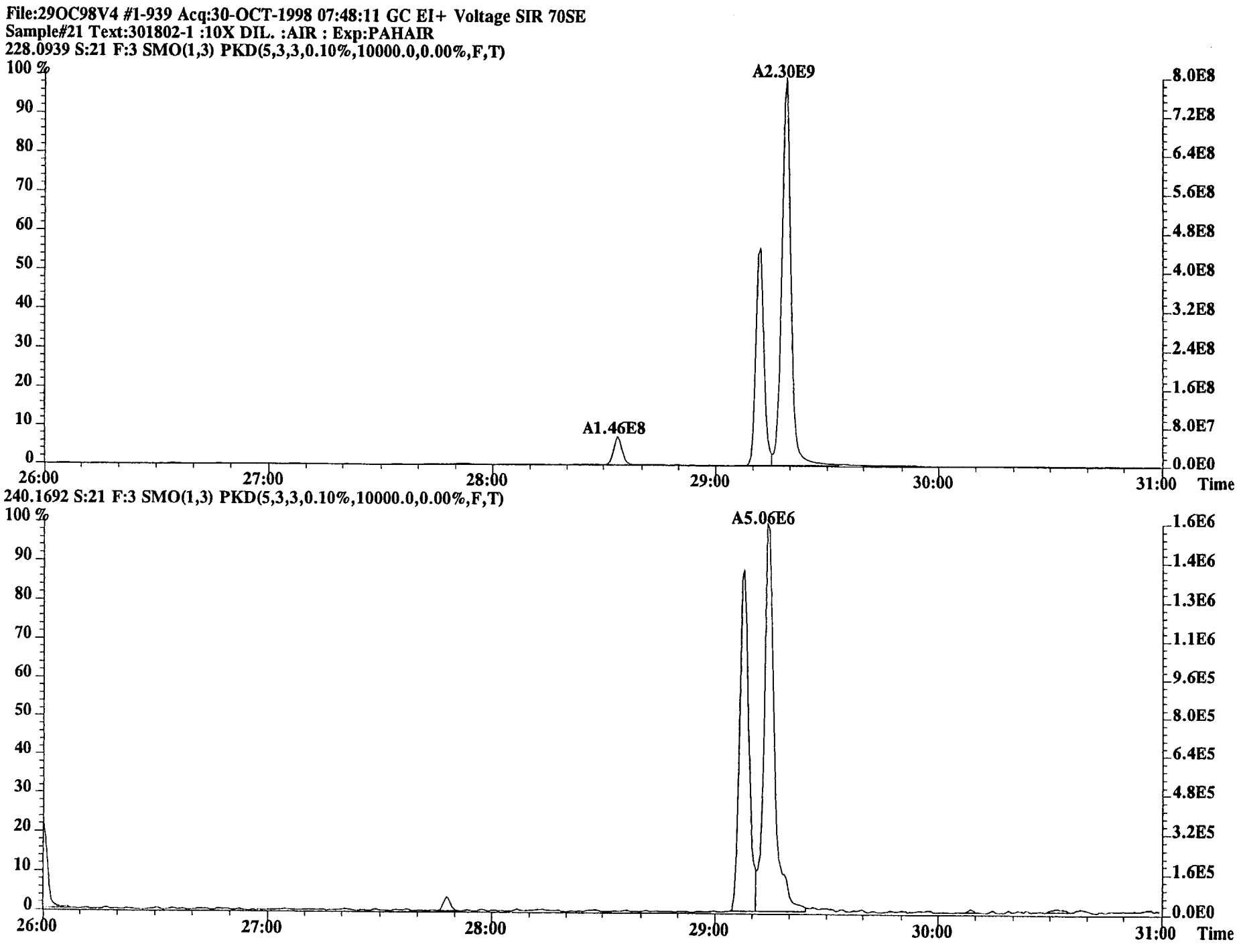


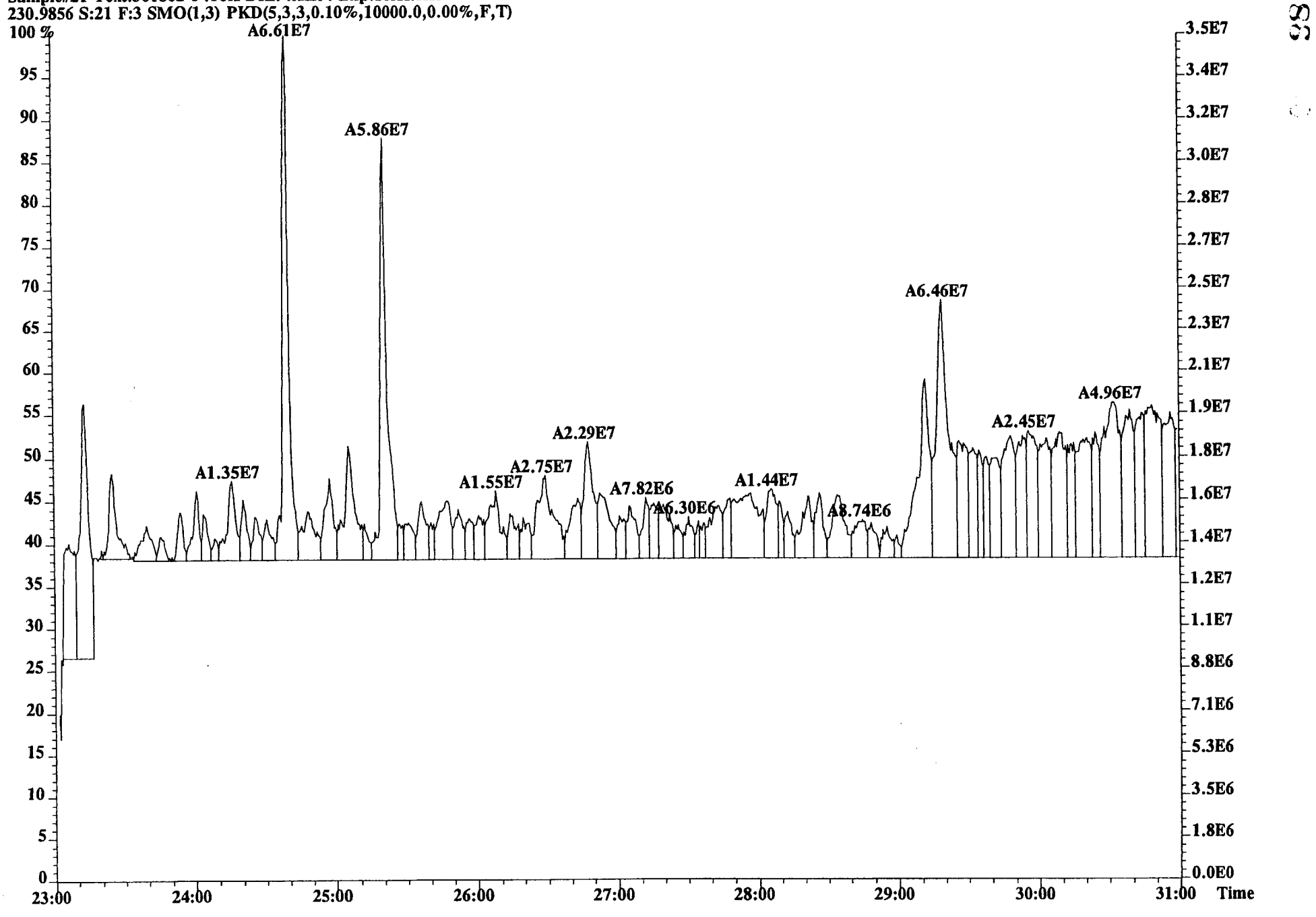
212.1410 S:21 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

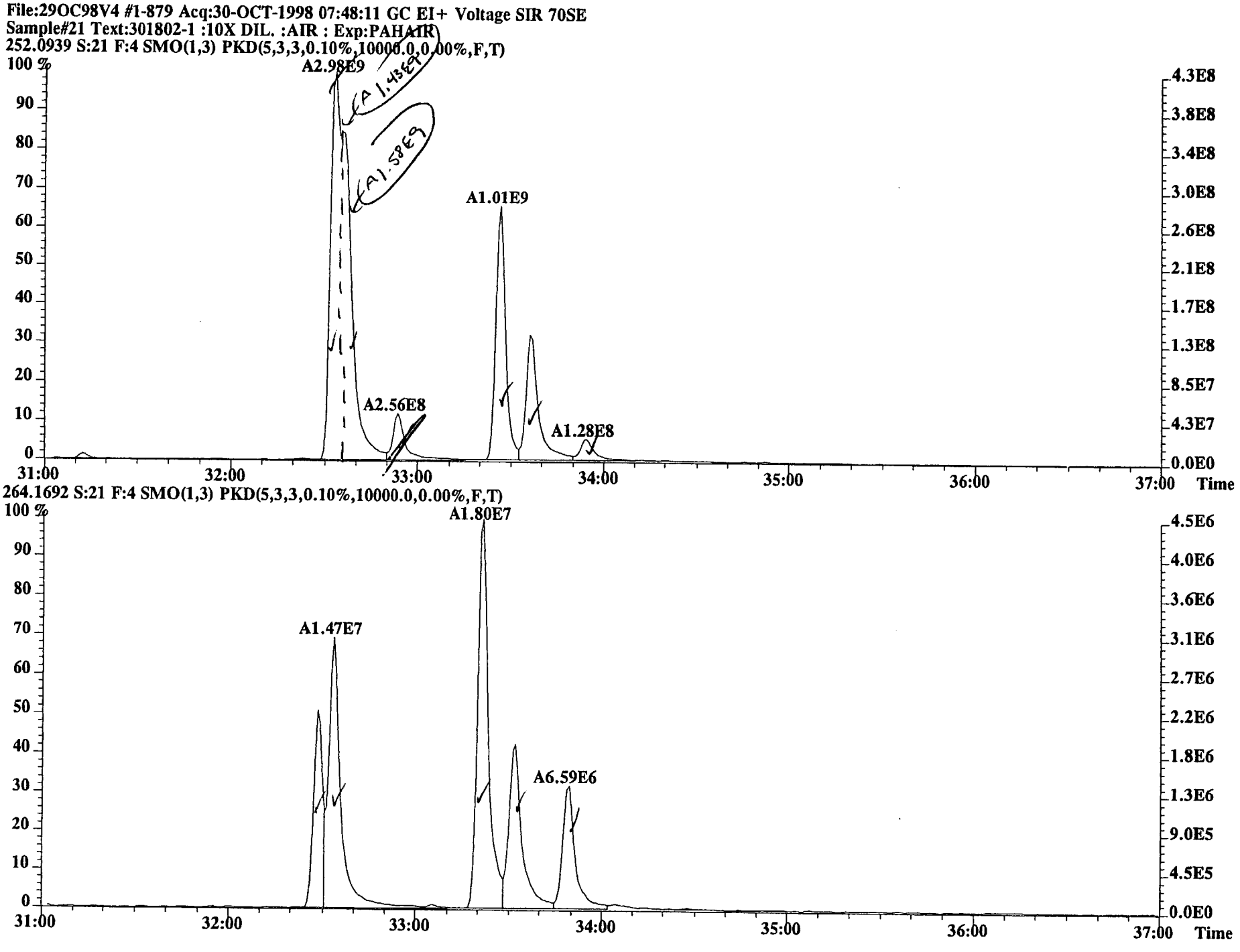


244.1974 S:21 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

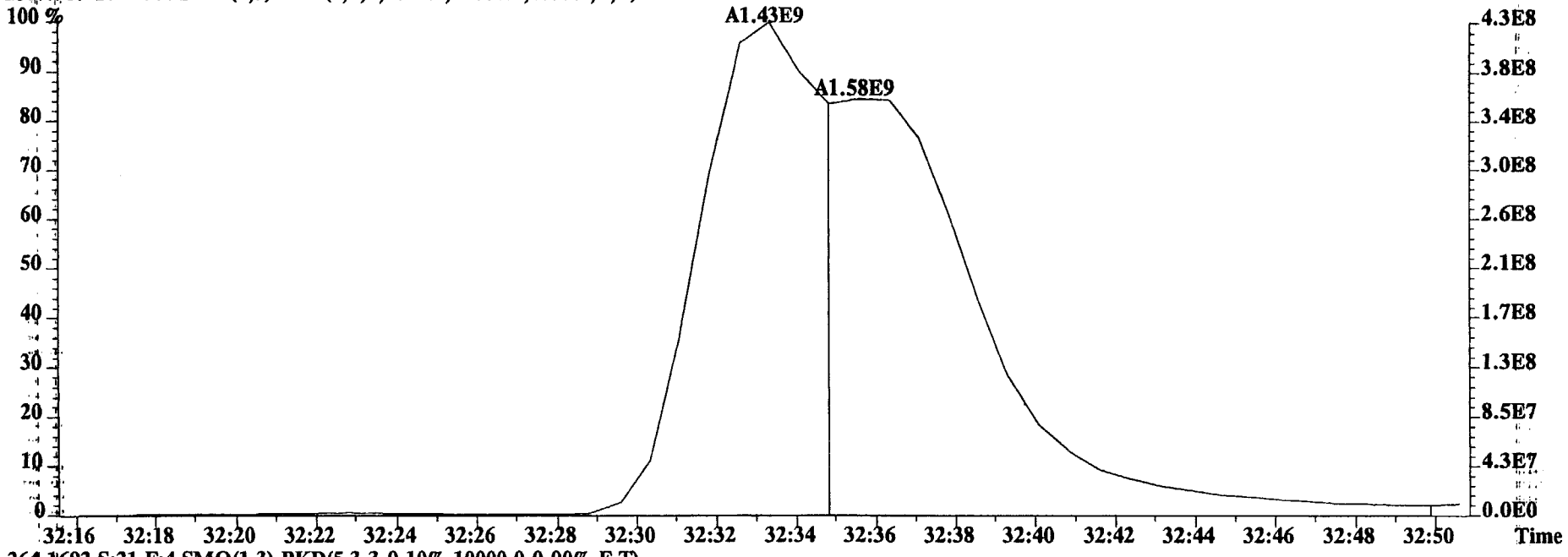



File:29OC98V4 #1-939 Acq:30-OCT-1998 07:48:11 GC EI+ Voltage SIR 70SE
Sample#21 Text:301802-1 :10X DIL. :AIR : Exp:PAHAIR
228.0939 S:21 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A2.30E9
A1.46E8
8.0E8
7.2E8
6.4E8
5.6E8
4.8E8
4.0E8
3.2E8
2.4E8
1.6E8
8.0E7
0.0E0
26:00
27:00
28:00
29:00
30:00
31:00
Time
240.1692 S:21 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A5.06E6
1.6E6
1.4E6
1.3E6
1.1E6
9.6E5
8.0E5
6.4E5
4.8E5
3.2E5
1.6E5
0.0E0
26:00
27:00
28:00
29:00
30:00
31:00
Time

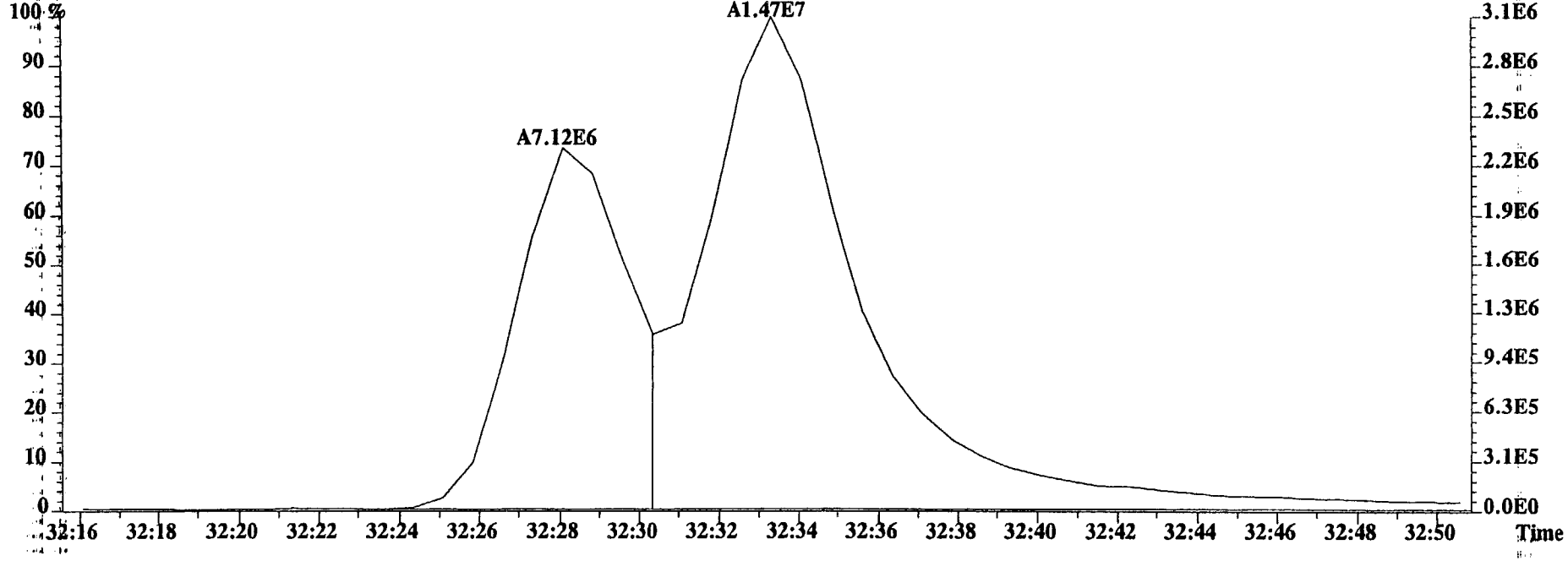

File:29OC98V4 #1-939 Acq:30-OCT-1998 07:48:11 GC EI+ Voltage SIR 70SE
Sample#21 Text:301802-1 :10X DIL. :AIR : Exp:PAHAIR
230.9856 S:21 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A6.61E7
A5.86E7
A6.46E7
A4.96E7
A2.45E7
A2.29E7
A2.75E7
A1.35E7
A1.55E7
A7.82E6
A6.30E6
A1.44E7
A8.74E6
3.5E7
3.4E7
3.2E7
3.0E7
2.8E7
2.7E7
2.5E7
2.3E7
2.1E7
1.9E7
1.8E7
1.6E7
1.4E7
1.2E7
1.1E7
8.8E6
7.1E6
5.3E6
3.5E6
1.8E6
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time

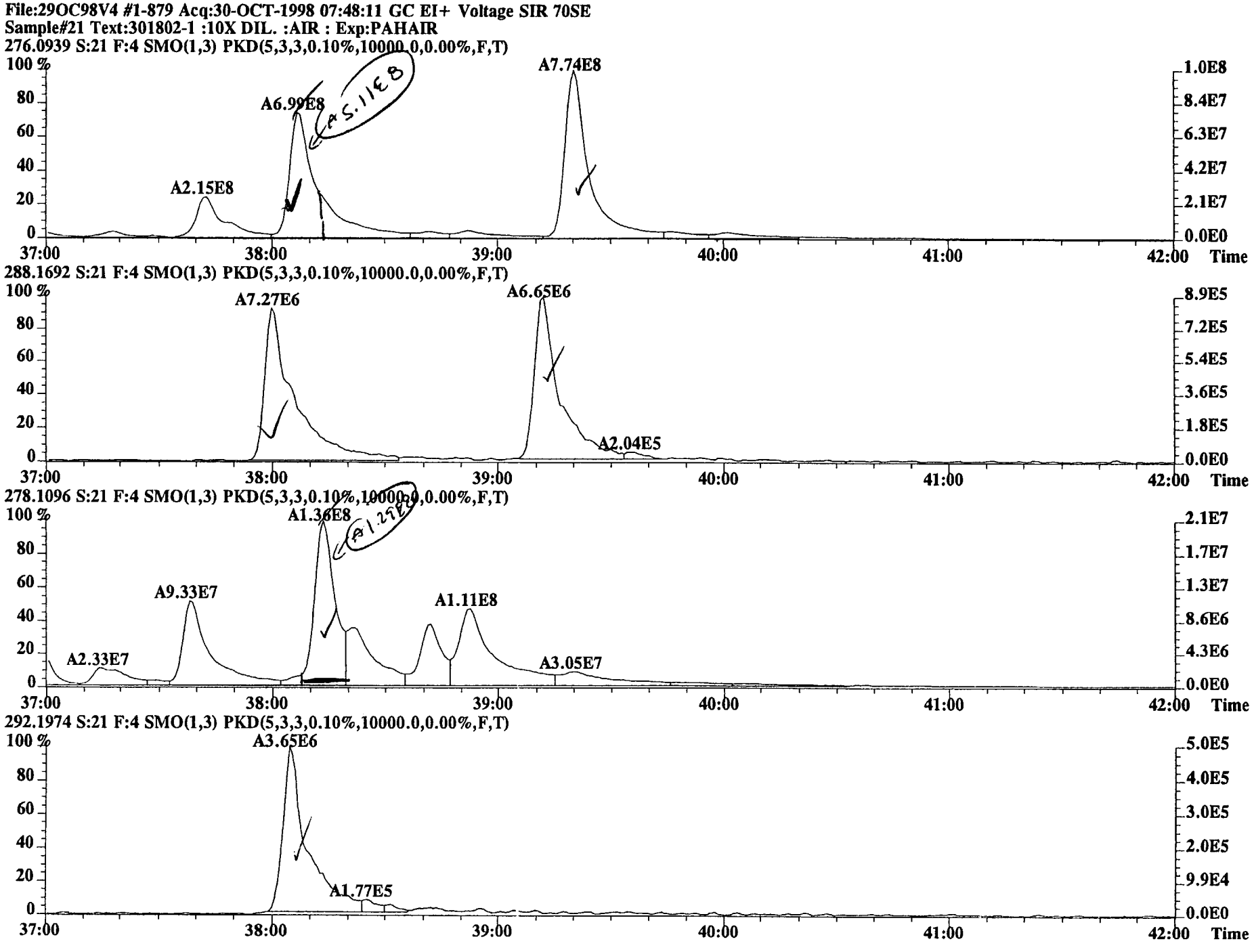

File:29OC98V4 #1-879 Acq:30-OCT-1998 07:48:11 GC EI+ Voltage SIR 70SE
Sample#21 Text:301802-1 :10X DIL. :AIR : Exp:PAHAIR
252.0939 S:21 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.98E9
A1.43E9
A1.58E9
A1.01E9
A2.56E8
A1.28E8
264.1692 S:21 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.80E7
A1.47E7
A6.59E6
Time

File:29OC98V4 #1-879 Acq:30-OCT-1998 07:48:11 GC EI+ Voltage SIR 70SE
Sample#21 Text:301802-1 :10X DIL. :AIR : Exp:PAHAIR
252.0939 S:21 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

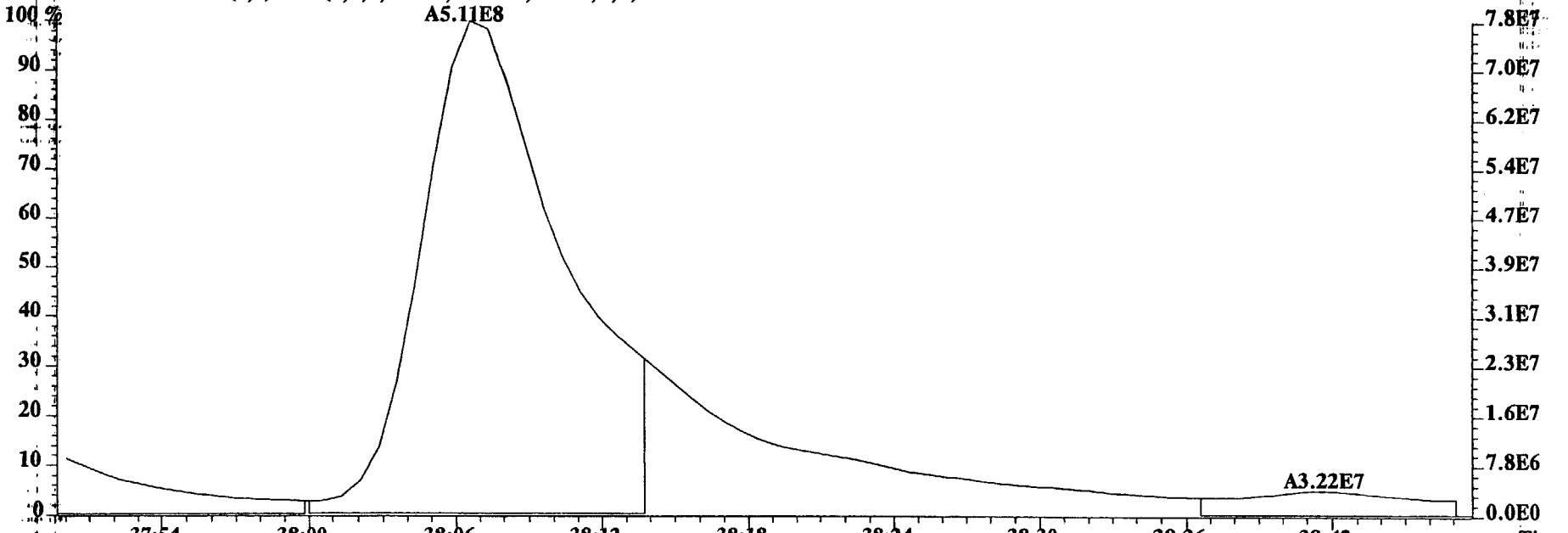


264.1692 S:21 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

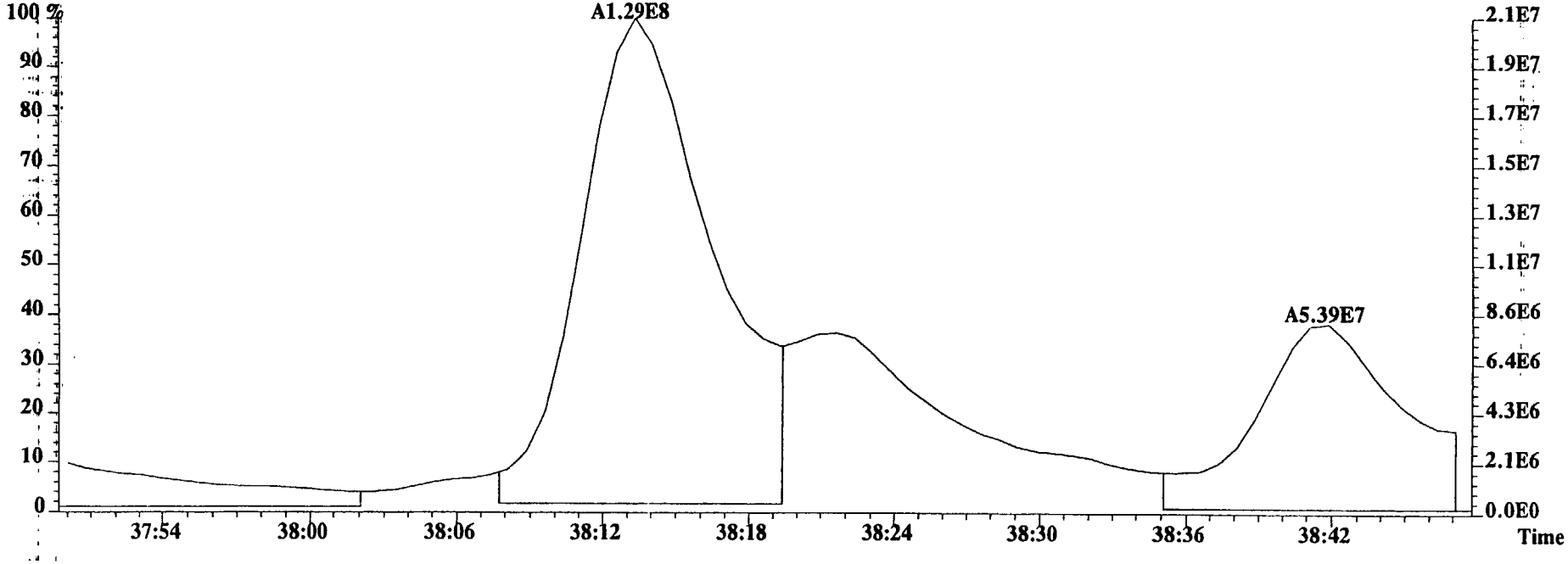


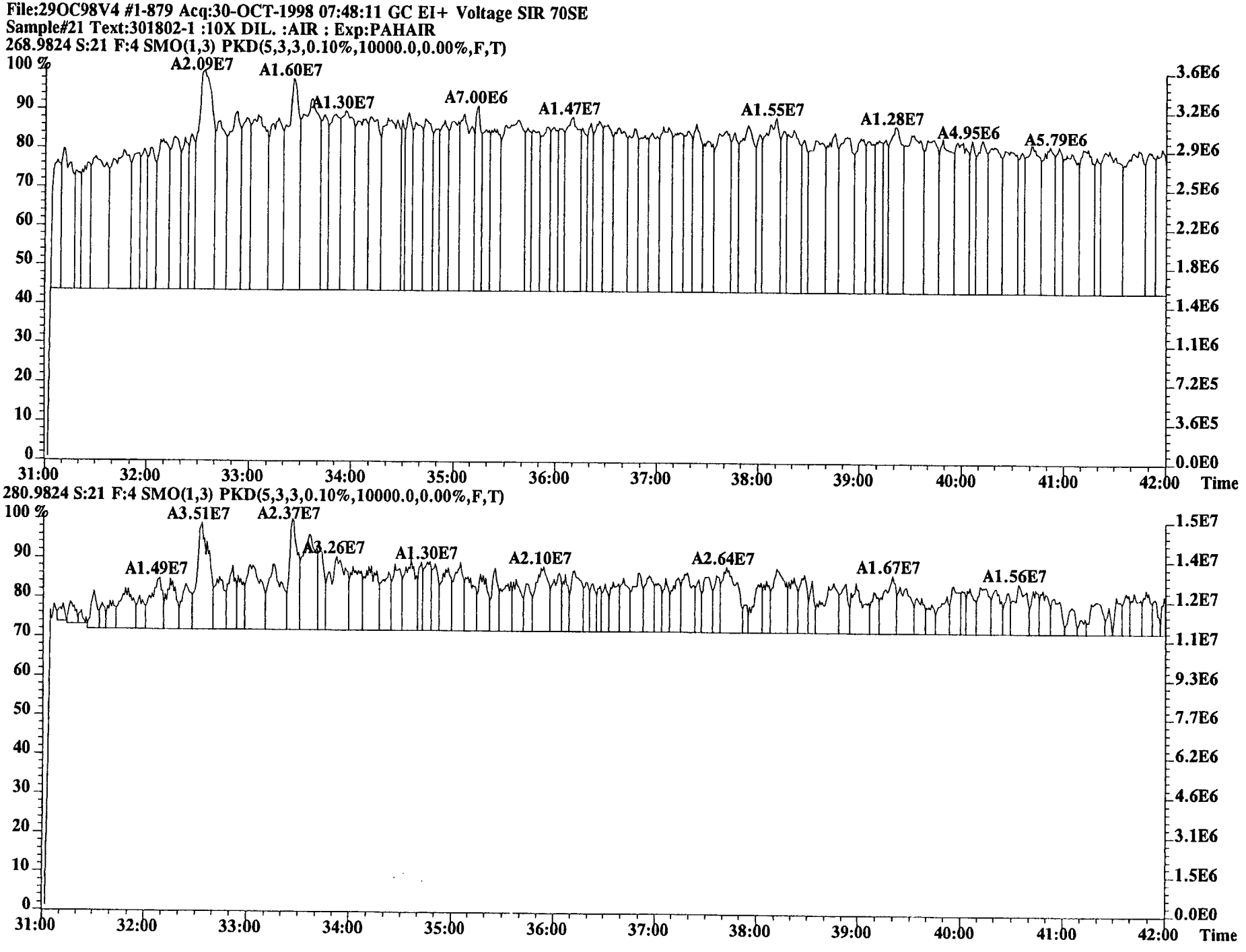

File:29OC98V4 #1-879 Acq:30-OCT-1998 07:48:11 GC EI+ Voltage SIR 70SE
Sample#21 Text:301802-1 :10X DIL. :AIR : Exp:PAHAIR
276.0939 S:21 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A6.99E8
A5.11E8
A7.74E8
A2.15E8
288.1692 S:21 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.27E6
A6.65E6
A2.04E5
278.1096 S:21 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.36E8
A1.29E8
A9.33E7
A1.11E8
A2.33E7
A3.05E7
292.1974 S:21 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.65E6
A1.77E5
100 %
80
60
40
20
0
37:00
38:00
39:00
40:00
41:00
42:00
Time
1.0E8
8.4E7
6.3E7
4.2E7
2.1E7
0.0E0
8.9E5
7.2E5
5.4E5
3.6E5
1.8E5
0.0E0
2.1E7
1.7E7
1.3E7
8.6E6
4.3E6
0.0E0
5.0E5
4.0E5
3.0E5
2.0E5
9.9E4
0.0E0

File:29OC98V4 #1-879 Acq:30-OCT-1998 07:48:11 GC EI+ Voltage SIR 70SE
Sample#21 Text:301802-1 :10X DIL. :AIR : Exp:PAHAIR
276.0939 S:21 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



278.1096 S:21 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)




File:29OC98V4 #1-879 Acq:30-OCT-1998 07:48:11 GC EI+ Voltage SIR 70SE
Sample#21 Text:301802-1 :10X DIL. :AIR : Exp:PAHAIR
268.9824 S:21 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A2.09E7
A1.60E7
A1.30E7
A7.00E6
A1.47E7
A1.55E7
A1.28E7
A4.95E6
A5.79E6
3.6E6
3.2E6
2.9E6
2.5E6
2.2E6
1.8E6
1.4E6
1.1E6
7.2E5
3.6E5
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time
280.9824 S:21 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A3.51E7
A2.37E7
A3.26E7
A1.49E7
A1.30E7
A2.10E7
A2.64E7
A1.67E7
A1.56E7
1.5E7
1.4E7
1.2E7
1.1E7
9.3E6
7.7E6
6.2E6
4.6E6
3.1E6
1.5E6
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-I-429-2
Lab ID: 301802-0002-SA
Matrix: AIRTRAIN Sampled: 22 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 30 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	120000	ng/sample	--	BD
2-Methylnaphthalene	24000	ng/sample	--	B
Acenaphthylene	36000	ng/sample	--	D
Acenaphthene	4300	ng/sample	--	D
Fluorene	16000	ng/sample	--	
Phenanthrene	53000	ng/sample	--	BD
Anthracene	4300	ng/sample	--	
Fluoranthene	18000	ng/sample	--	D
Pyrene	13000	ng/sample	--	
Benzo(a)anthracene	7000	ng/sample	--	
Chrysene	12000	ng/sample	--	
Benzo(b)fluoranthene	5200	ng/sample	--	
Benzo(k)fluoranthene	3700	ng/sample	--	
Benzo(e)pyrene	2600	ng/sample	--	
Benzo(a)pyrene	1900	ng/sample	--	
Perylene	330	ng/sample	--	
Indeno(1,2,3-cd)pyrene	4300	ng/sample	--	
Dibenz(a,h)anthracene	1100	ng/sample	--	
Benzo(g,h,i)perylene	3800	ng/sample	--	

B = Compound is also detected in the blank.
D = Compound quantitated using a secondary dilution.

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-I-429-2
Lab ID: 301802-0002-SA
Matrix: AIRTRAIN Sampled: 22 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 30 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	75	D
Acenaphthylene-d8	58	D
Acenaphthene-d10	64	D
Fluorene-d10	43	m
Phenanthrene-d10	98	D
Fluoranthene-d10	62	D
Pyrene-d10	73	
Benzo(a)anthracene-d12	64	
Perylene-d12	53	
Indeno(123-cd)pyrene-d12	95	
Chrysene-d12	66	
Benzo(b)fluoranthene-d12	103	
Benzo(k)fluoranthene-d12	70	
Benzo(a)pyrene-d12	75	
Dibenz(a,h)anthracene-d14	91	
Benzo(g,h,i)perylene-d12	80	

Field Surrogates	% Recovery
13C-Fluorene	103

D = Compound quantitated using a secondary dilution.
m = Internal Standard recovery is outside method recovery goal.

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

Mass Spec : VG-4 Results : 29OC98V4221.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 29-OCT-98
Data File : 29OC98V4 301802-2 10X Dil Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R.T. mm:ss		RRF	pg/ SAMPLE	Rec/ MDL
d10-2-Methylnaphthalene	3711140	1.00	Y	12: 28	Y	1.00	50.00	
d8-Naphthalene	10509740	1.00	Y	10: 12	Y	2.24	63.19	126
Naphthalene	13241960000	1.00	Y	10: 16	Y	1.23	-	SAT'D
2-Methylnaphthalene	1402202000	1.00	Y	12: 33	Y	0.56	2.4e+04	B E
d8-Acenaphthylene	3715200	1.00	Y	15: 27	Y	1.21	41.24	82
Acenaphthylene	798294000	1.00	Y	15: 30	Y	0.94	-	SEE 100X
d10-Acenaphthene	556866	1.00	Y	16: 1	Y	0.74	10.08	20
Acenaphthene	59635000	1.00	Y	16: 8	Y	1.25	-	SEE 100X
d10-Anthracene	8557100	1.00	Y	20: 55	Y	1.00	50.00	
d10-Fluorene	5255240	1.00	Y	17: 41	Y	1.42	21.61	43
Fluorene	991330000	1.00	Y	17: 46	Y	1.16	1.6e+04	E
d10-Phenanthrene	18520000	1.00	Y	20: 45	Y	2.81	38.54	77
Phenanthrene	6578680000	1.00	Y	20: 49	Y	0.89	-	SAT'D
Anthracene	644164000	1.00	Y	20: 58	Y	0.80	4345.57	
d14-Terphenyl	20776800	1.00	Y	26: 0	Y	1.00	50.00	
d10-Fluoranthene	21887800	1.00	Y	24: 35	Y	1.41	37.34	75
Fluoranthene	5509320000	1.00	Y	24: 39	Y	1.11	-	SAT'D
d10-Pyrene	23113800	1.00	Y	25: 17	Y	1.52	36.64	73
Pyrene	3721240000	1.00	Y	25: 20	Y	1.21	1.3e+04	E
d12-Benzo(a)anthracene	12010700	1.00	Y	29: 7	Y	0.90	32.11	64
Benzo(a)anthracene	1018480000	1.00	Y	29: 12	Y	1.20	7040.05	E
d12-Chrysene	17560360	1.00	Y	29: 14	Y	1.28	33.04	66
Chrysene	2305580000	1.00	Y	29: 19	Y	1.08	1.2e+04	E
d12-Benzo(e)pyrene	45895600	1.00	Y	33: 21	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	21436600	1.00	Y	32: 28	Y	0.45	51.46	103
Benzo(b)fluoranthene	1294000000	1.00	Y	32: 33	Y	1.17	5171.46	E
d12-Benzo(k)fluoranthene	30286400	1.00	Y	32: 33	Y	0.95	34.80	70
Benzo(k)fluoranthene	1290000000	1.00	Y	32: 38	Y	1.16	3658.76	
d12-Benzo(a)pyrene	23346400	1.00	Y	33: 31	Y	0.68	37.59	75
Benzo(e)pyrene	996856000	1.00	Y	33: 26	Y	1.64	2602.25	
Benzo(a)pyrene	485588000	1.00	Y	33: 37	Y	1.07	1940.27	
d12-Perylene	15337980	1.00	Y	33: 49	Y	0.63	26.51	53
Perylene	87000000	1.00	Y	33: 54	Y	1.71	331.01	
d12-Indeno(123-cd)pyrene	19293060	1.00	Y	38: 0	Y	0.44	47.28	95
Indeno(123-cd)pyrene	514000000	1.00	Y	38: 7	Y	0.62	4290.44	
d14-Dibenz(ah)anthracene	10308660	1.00	Y	38: 5	Y	0.25	45.69	91
Dibenz(ah)anthracene	158400000	1.00	Y	38: 14	Y	1.40	1094.78	
d12-Benzo(ghi)perylene	21398400	1.00	Y	39: 12	Y	0.58	40.21	80
Benzo(ghi)perylene	818000000	1.00	Y	39: 20	Y	1.02	3762.46	
d10-Fluorene	5255240	1.00	Y	17: 41	Y	1.00	50.00	
[illegible]Fluorene	1390980	1.00	Y	17: 46	Y	0.81	51.58	

0.5

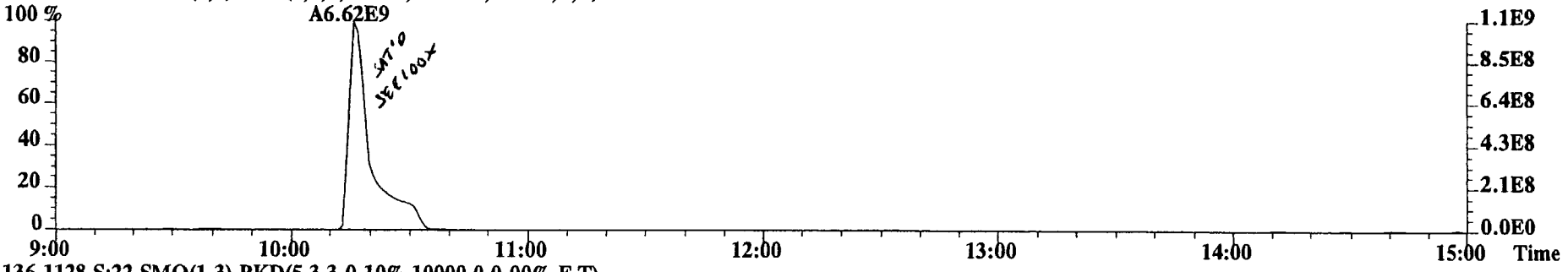
90% RRP		
Rec/		
MDL		
	1855570	1855570
126	5254870	5254870
SAT'D	6620980000	6620980000
B E	701101000	701101000
82	1857600	1857600
SEE	399147000	399147000
100X		
20	278433	278433
SEE	29817500	29817500
100X		
	4278550	4278550
43	2627620	2627620
E	495665000	495665000
77	9260000	9260000
SAT'D	3289340000	3289340000
	322082000	322082000
	10388400	10388400
75	10943900	10943900
SAT'D	2754660000	2754660000
73	11556900	11556900
E	1860620000	1860620000
64	6005350	6005350
E	509240000	509240000
66	8780180	8780180
E	1152790000	1152790000
	22947800	22947800
103	10718300	10718300
E	647000000	647000000
70	15143200	15143200
	645000000	645000000
75	11673200	11673200
	498428000	498428000
	242794000	242794000
53	7668990	7668990
	43500000	43500000
95	9646530	9646530
	257000000	257000000
91	5154330	5154330
	79200000	79200000
80	10699200	10699200
	409000000	409000000

03-NOV-1998 05:52:29 PM 429AIR Unknown RESULTS

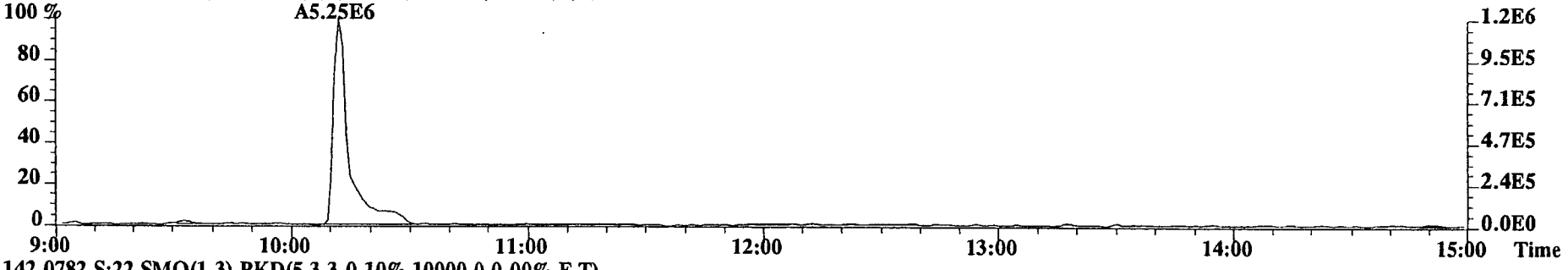
Mass Spec : VG-4 Results : 29OC98V4221.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 29-OCT-98
Data file : 29OC98V4 301802-2 :10X DIL. : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMPLE	Rec/ MDL
d10-2-Methylnaphthalene	3711140	1.00	Y	12: 28	Y	1.00	50.00	
d8-Naphthalene	10509740	1.00	Y	10: 12	Y	2.24	63.19	126
Naphthalene	13241960000	1.00	Y	10: 16	Y	1.23	1.0e+05	0.000
2-Methylnaphthalene	1402202000	1.00	Y	12: 33	Y	0.56	2.4e+04	0.000
d8-Acenaphthylene	3715200	1.00	Y	15: 27	Y	1.21	41.24	82
Acenaphthylene	798294000	1.00	Y	15: 30	Y	0.94	2.3e+04	0.000
d10-Acenaphthene	556866	1.00	Y	16: 1	Y	0.74	10.08	20
Acenaphthene	59635000	1.00	Y	16: 8	Y	1.25	8594.10	0.000
d10-Anthracene	8557100	1.00	Y	20: 55	Y	1.00	50.00	
d10-Fluorene	5255240	1.00	Y	17: 41	Y	1.42	21.61	43
Fluorene	991330000	1.00	Y	17: 46	Y	1.16	1.6e+04	0.000
d10-Phenanthrene	19292200	1.00	Y	20: 45	Y	2.81	40.15	80
Phenanthrene	6578680000	1.00	Y	20: 49	Y	0.89	3.8e+04	0.000
Anthracene	644164000	1.00	Y	20: 58	Y	0.80	4171.63	0.000
d14-Terphenyl	20776800	1.00	Y	26: 0	Y	1.00	50.00	
d10-Fluoranthene	21887800	1.00	Y	24: 35	Y	1.41	37.34	75
Fluoranthene	5509320000	1.00	Y	24: 39	Y	1.11	2.3e+04	0.000
d10-Pyrene	23113800	1.00	Y	25: 17	Y	1.52	36.64	73
Pyrene	3721240000	1.00	Y	25: 20	Y	1.21	1.3e+04	0.000
d12-Benzo(a)anthracene	12010700	1.00	Y	29: 7	Y	0.90	32.11	64
Benzo(a)anthracene	1018480000	1.00	Y	29: 12	Y	1.20	7040.05	0.000
d12-Chrysene	17560360	1.00	Y	29: 14	Y	1.28	33.04	66
Chrysene	2305580000	1.00	Y	29: 19	Y	1.08	1.2e+04	0.000
d12-Benzo(e)pyrene	45895600	1.00	Y	33: 21	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	21436600	1.00	Y	32: 28	Y	0.45	51.46	103
Benzo(b)fluoranthene	2568140000	1.00	Y	32: 33	Y	1.17	1.0e+04	0.000
d12-Benzo(k)fluoranthene	30286400	1.00	Y	32: 33	Y	0.95	34.80	70
Benzo(k)fluoranthene	2568140000	1.00	Y	32: 33	Y	1.16	7283.87	0.000
d12-Benzo(a)pyrene	23346400	1.00	Y	33: 31	Y	0.68	37.59	75
Benzo(e)pyrene	996856000	1.00	Y	33: 26	Y	1.64	2602.25	0.000
Benzo(a)pyrene	485588000	1.00	Y	33: 37	Y	1.07	1940.27	0.000
d12-Perylene	15337980	1.00	Y	33: 49	Y	0.63	26.51	53
Perylene	* No Peak	0.00	N	33: 54	N	1.71	0.00	0.000
d12-Indeno(123-cd)pyrene	19293060	1.00	Y	38: 0	Y	0.44	47.28	95
Indeno(123-cd)pyrene	724340000	1.00	Y	38: 7	Y	0.62	6046.18	0.000
d14-Dibenz(ah)anthracene	10308660	1.00	Y	38: 5	Y	0.25	45.69	91
Dibenz(ah)anthracene	166334400	1.00	Y	38: 14	Y	1.40	1149.62	0.000
d12-Benzo(ghi)perylene	21398400	1.00	Y	39: 12	Y	0.58	40.21	80
Benzo(ghi)perylene	861652000	1.00	Y	39: 20	Y	1.02	3963.24	0.000
d10-Fluorene	5255240	1.00	Y	17: 41	Y	1.42	4.03	8
13C-Fluorene	4390980	1.00	Y	17: 46	Y	1.00	83.55	0.000

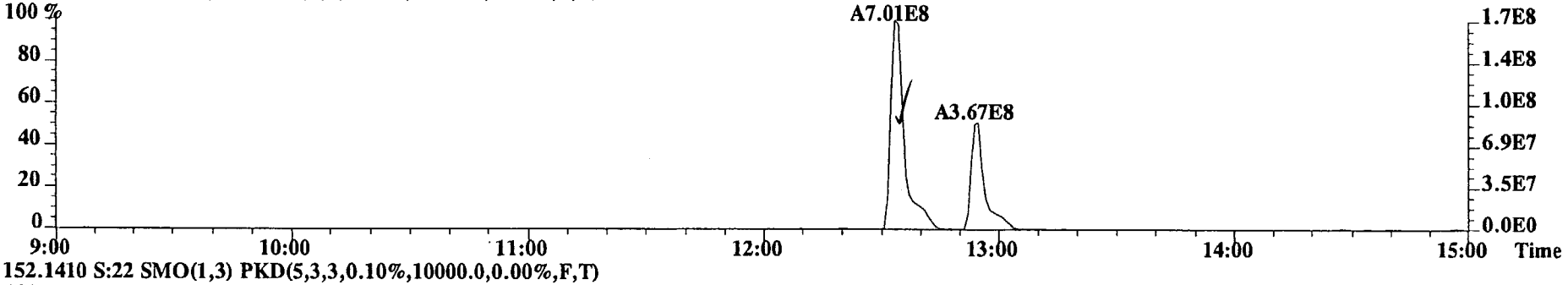
File:29OC98V4 #1-510 Acq:30-OCT-1998 08:37:13 GC EI+ Voltage SIR 70SE
Sample#22 Text:301802-2 :10X DIL. : : : Exp:PAHAIR
128.0626 S:22 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



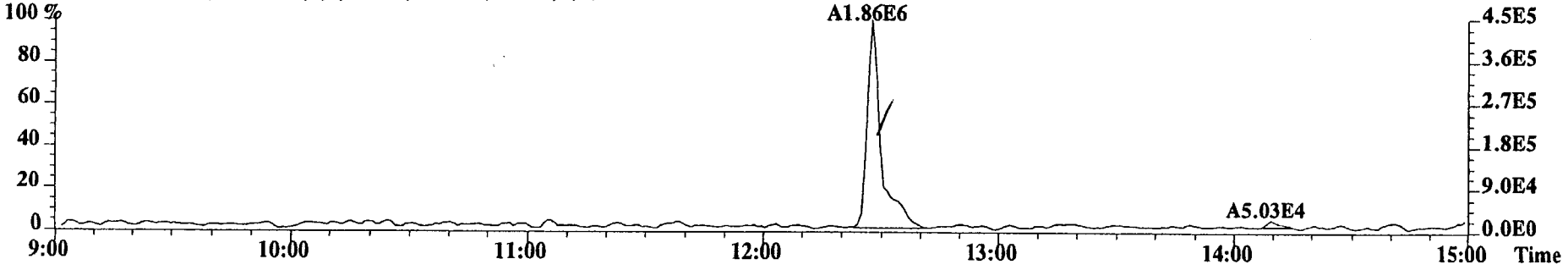
136.1128 S:22 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



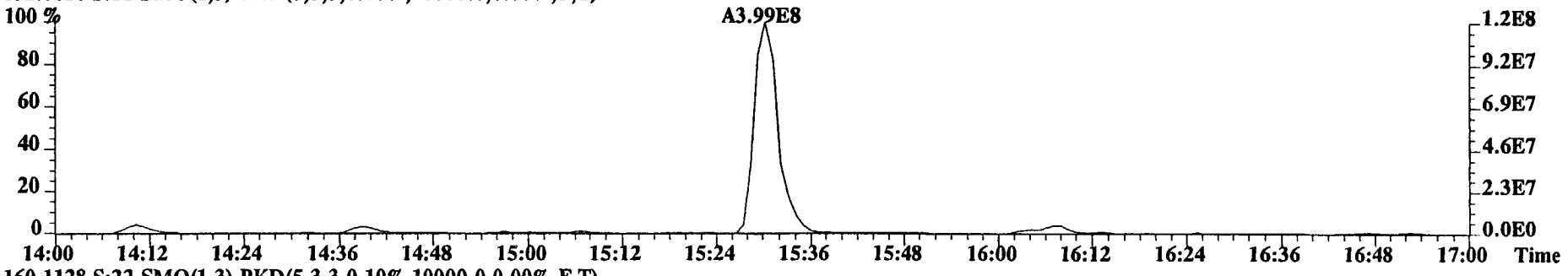
142.0782 S:22 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



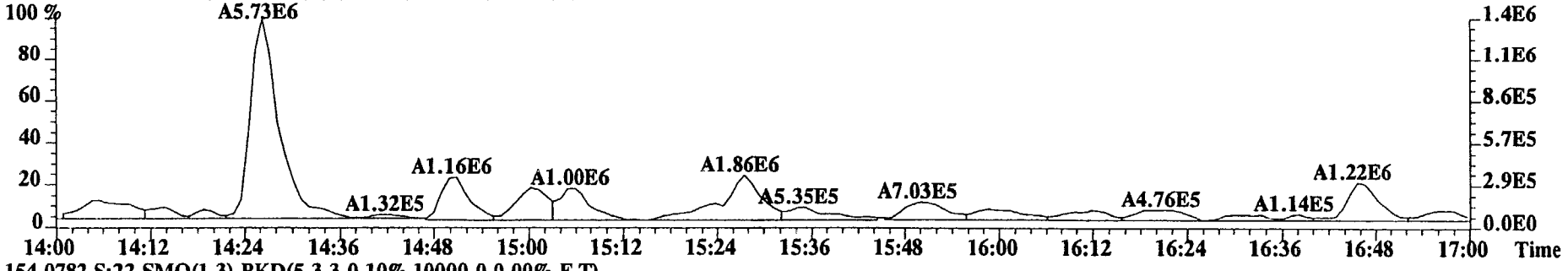
152.1410 S:22 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



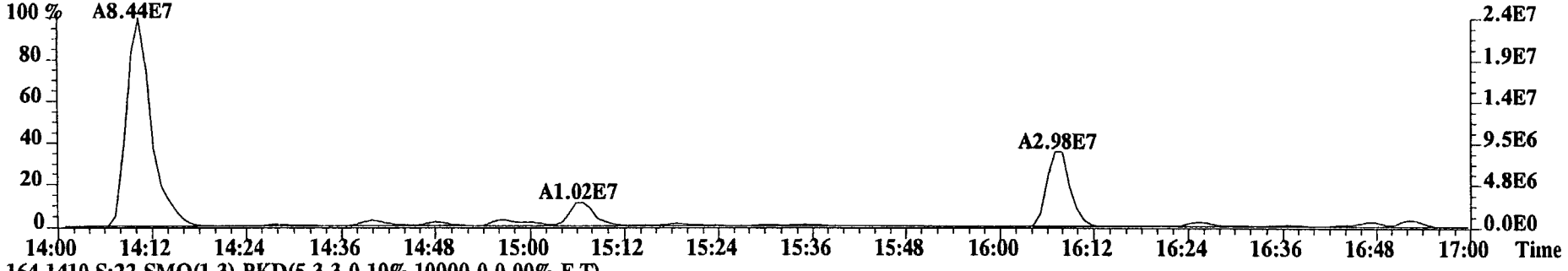
File:29OC98V4 #1-510 Acq:30-OCT-1998 08:37:13 GC EI+ Voltage SIR 70SE
Sample#22 Text:301802-2 :10X DIL. : : : Exp:PAHAIR
152.0626 S:22 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



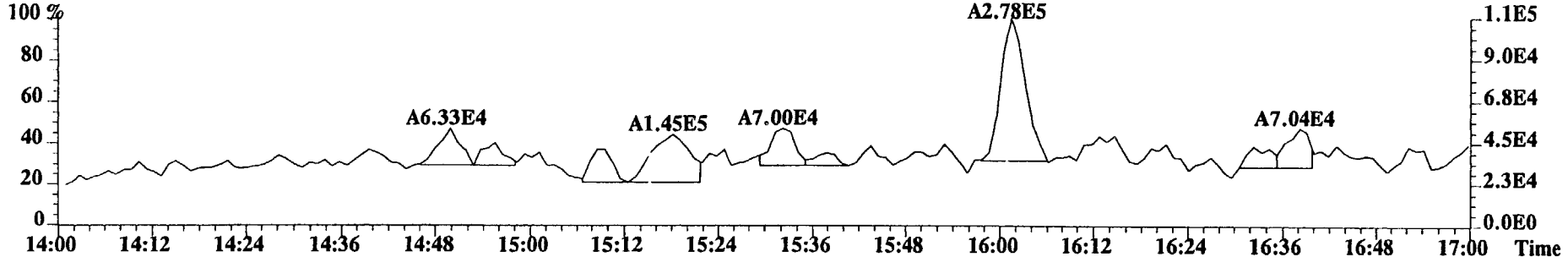
160.1128 S:22 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



154.0782 S:22 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

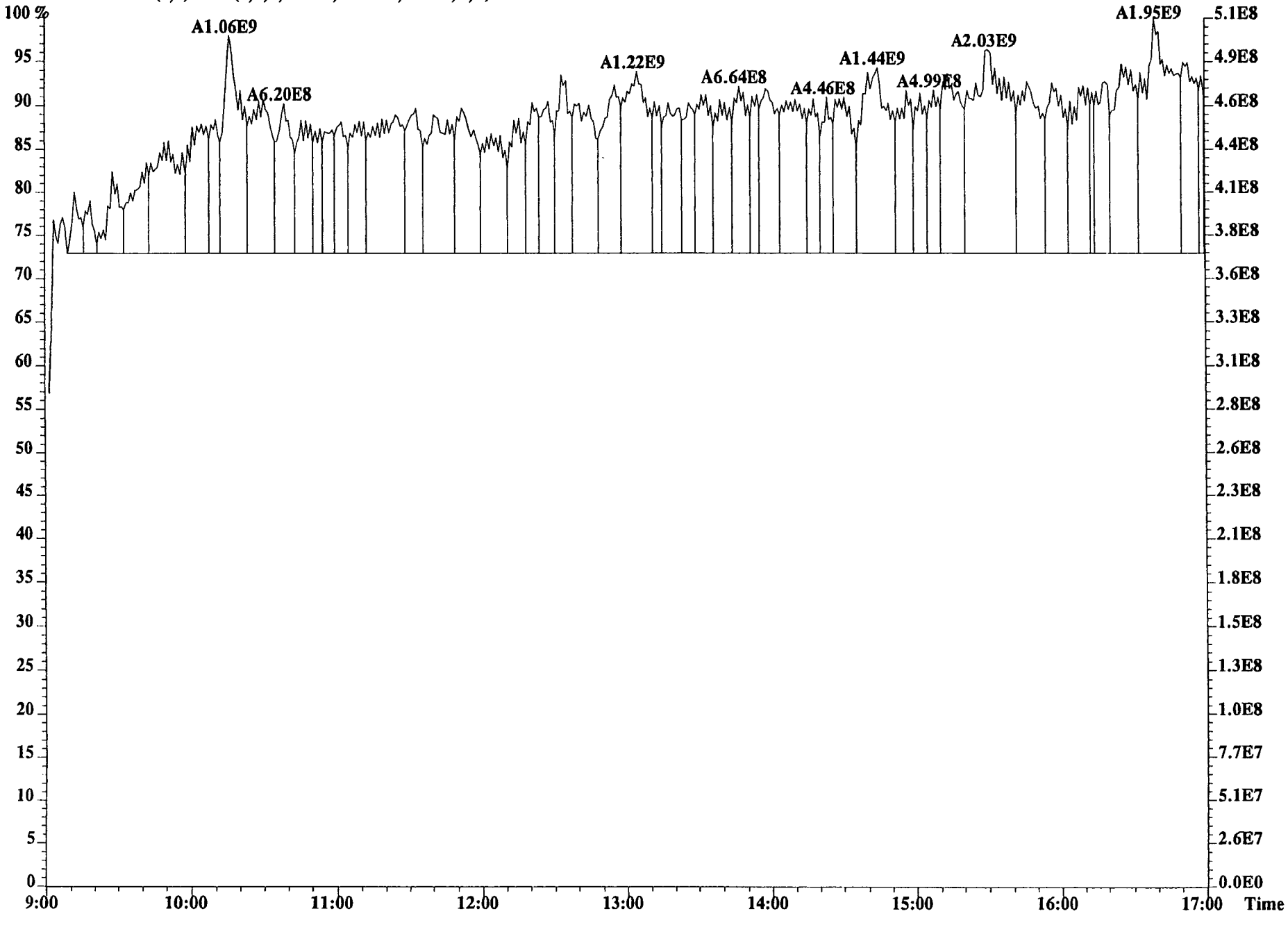


164.1410 S:22 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

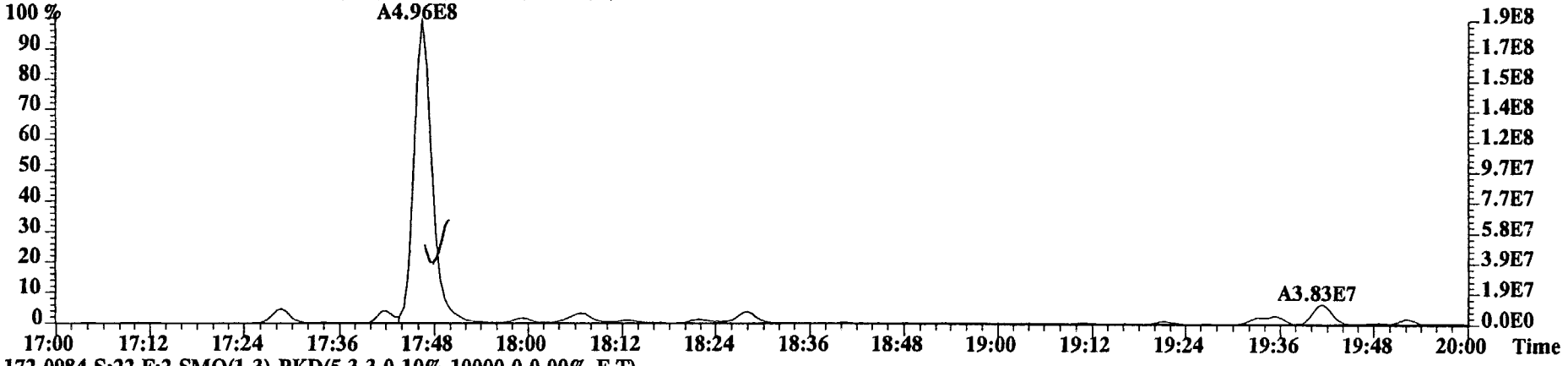


110

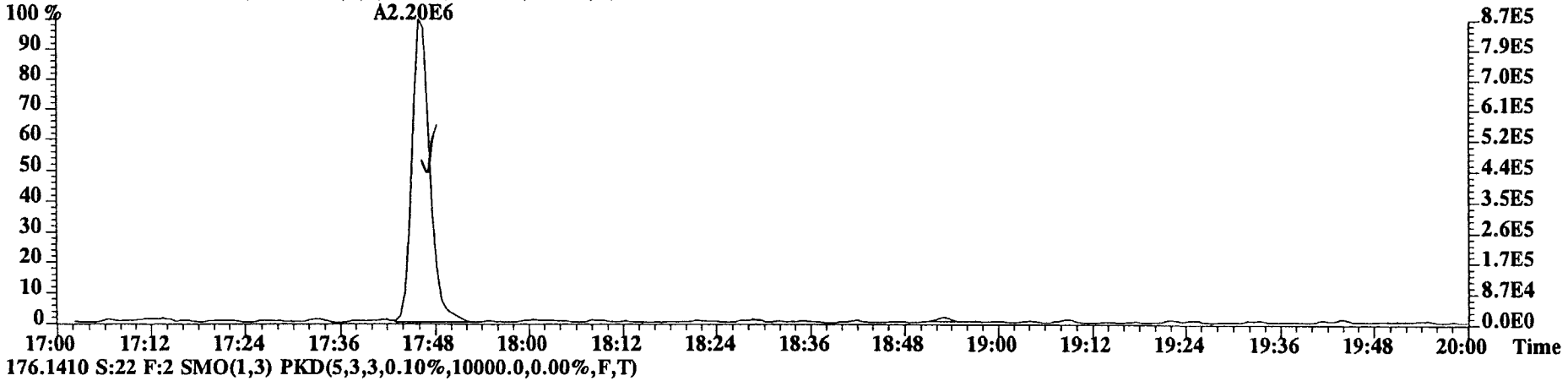
File:29OC98V4 #1-510 Acq:30-OCT-1998 08:37:13 GC EI+ Voltage SIR 70SE
Sample#22 Text:301802-2 :10X DIL. : : : Exp:PAHAIR
130.9920 S:22 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



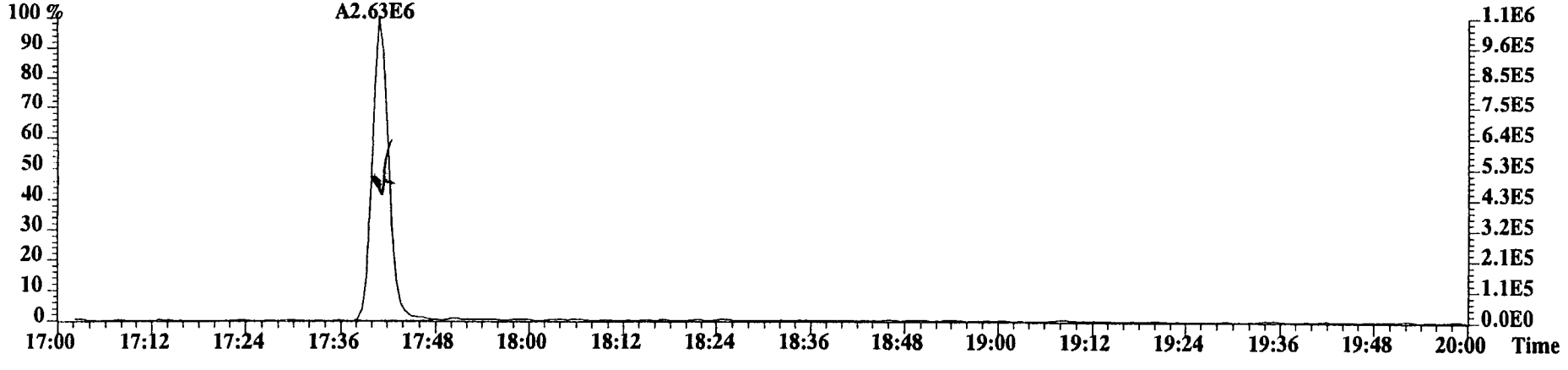
File:29OC98V4 #1-640 Acq:30-OCT-1998 08:37:13 GC EI+ Voltage SIR 70SE
Sample#22 Text:301802-2 :10X DIL. : : : Exp:PAHAIR
166.0798 S:22 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

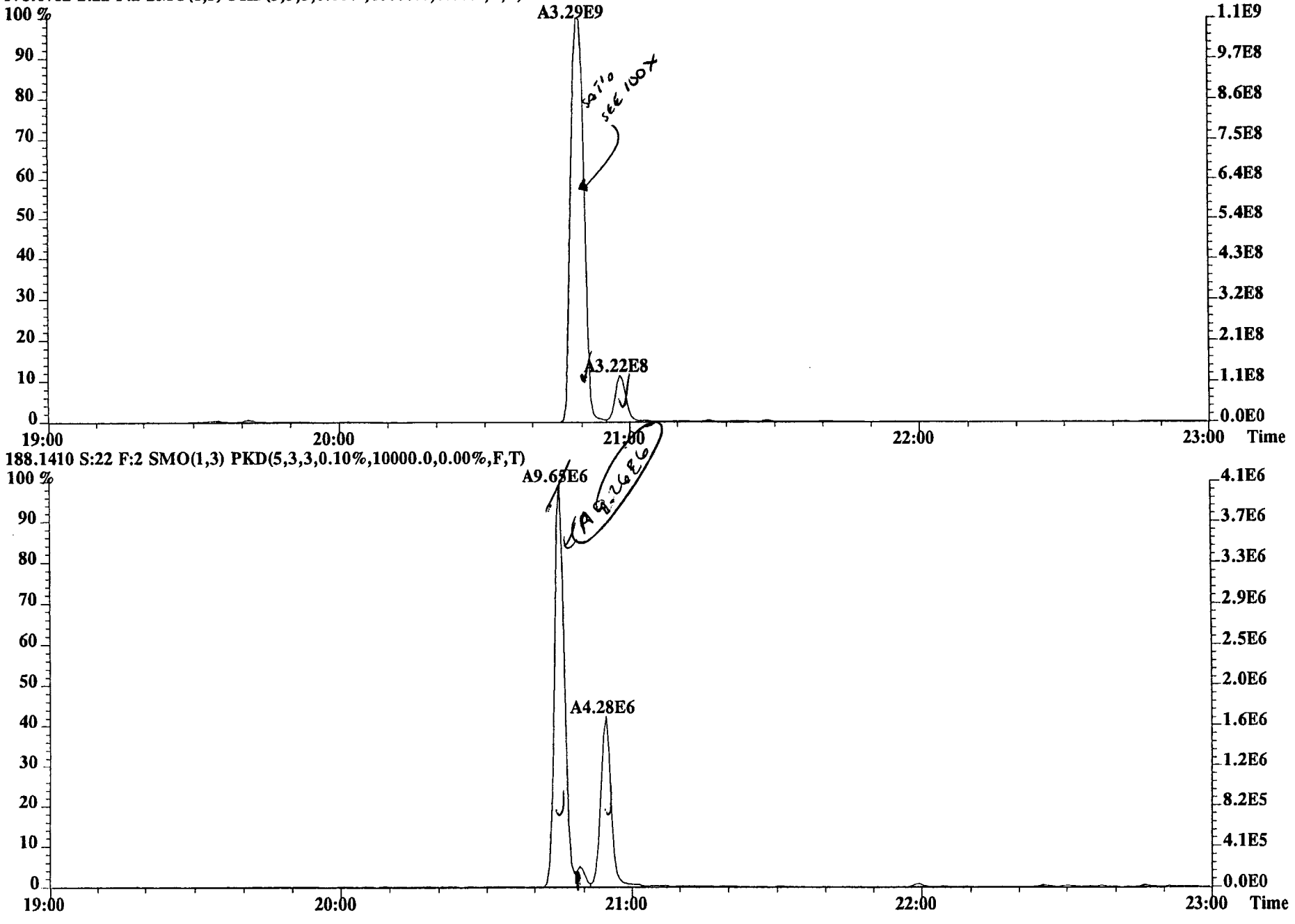


172.0984 S:22 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

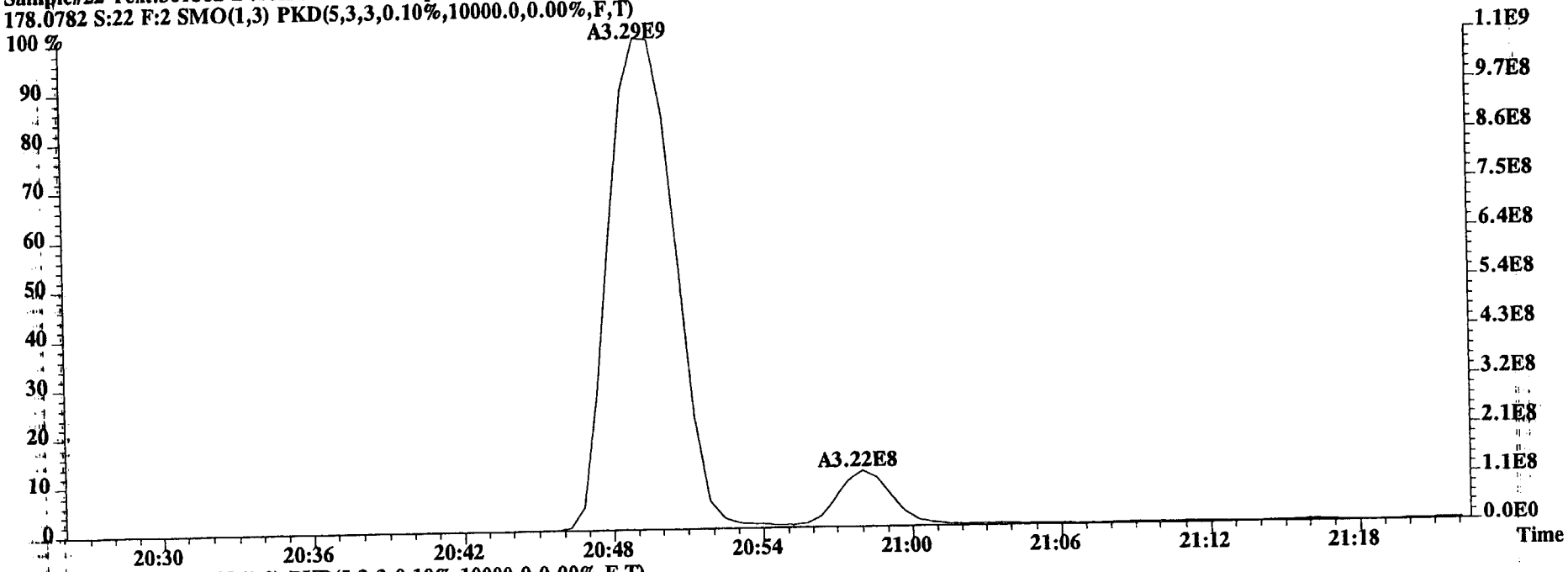


176.1410 S:22 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

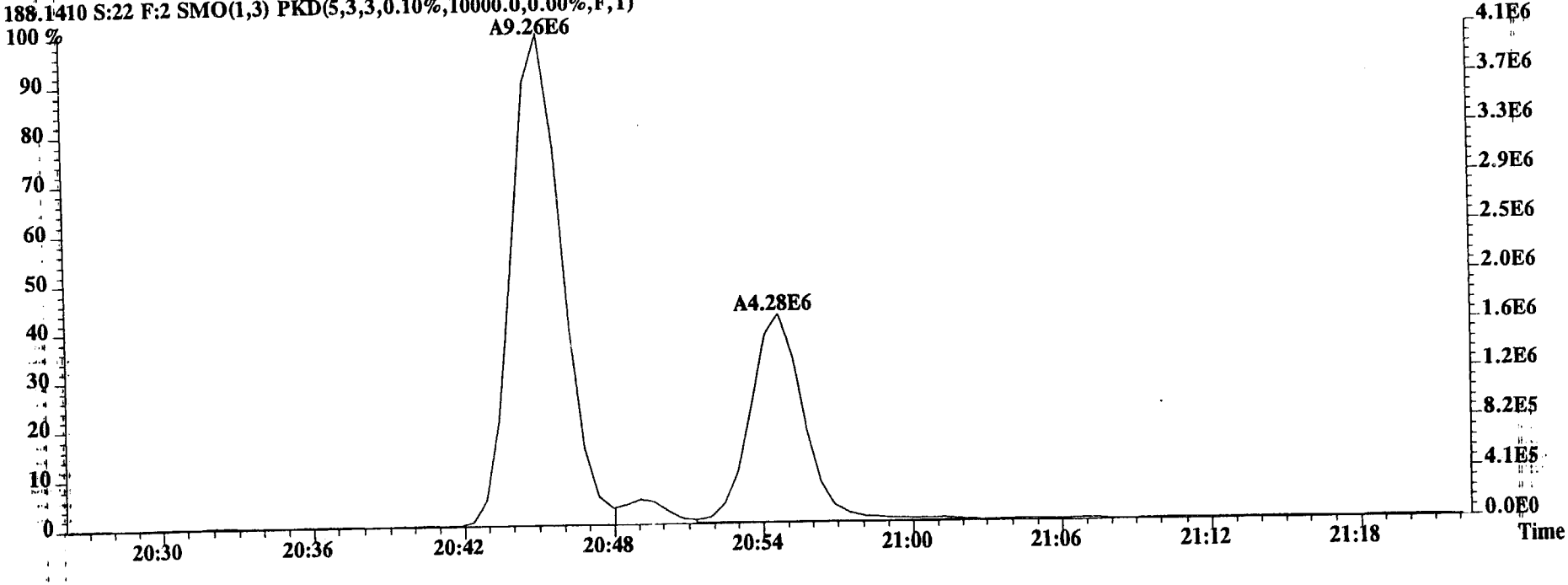


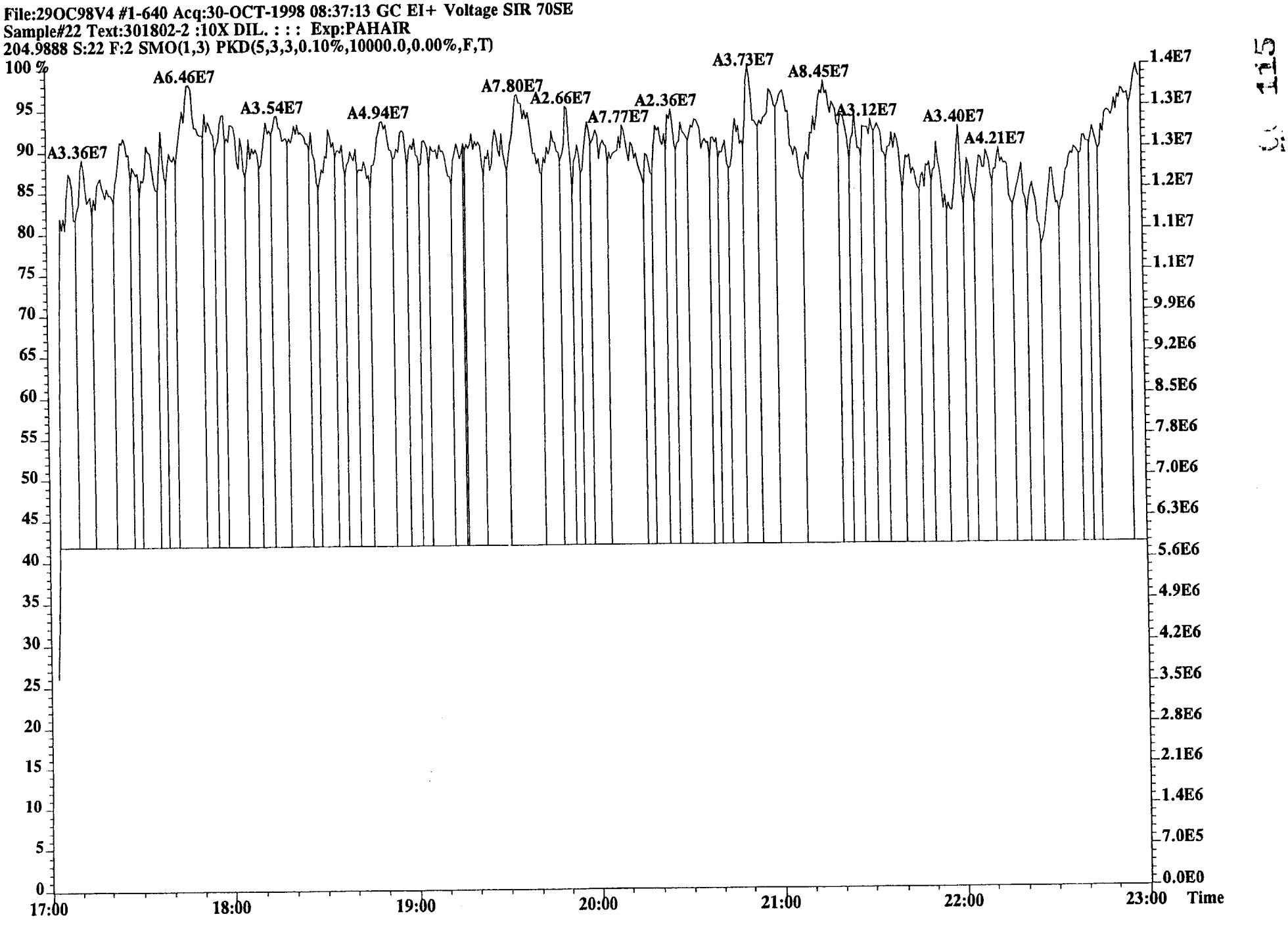

File:29OC98V4 #1-640 Acq:30-OCT-1998 08:37:13 GC EI+ Voltage SIR 70SE
Sample#22 Text:301802-2 :10X DIL. : : : Exp:PAHAIR
178.0782 S:22 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.29E9
A3.22E8
188.1410 S:22 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A9.63E6
A4.28E6
100 %
90
80
70
60
50
40
30
20
10
0
1.1E9
9.7E8
8.6E8
7.5E8
6.4E8
5.4E8
4.3E8
3.2E8
2.1E8
1.1E8
0.0E0
4.1E6
3.7E6
3.3E6
2.9E6
2.5E6
2.0E6
1.6E6
1.2E6
8.2E5
4.1E5
19:00
20:00
21:00
22:00
23:00
Time

File:29OC98V4 #1-640 Acq:30-OCT-1998 08:37:13 GC EI+ Voltage SIR 70SE
Sample#22 Text:301802-2 :10X DIL. : : : Exp:PAHAIR
178.0782 S:22 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

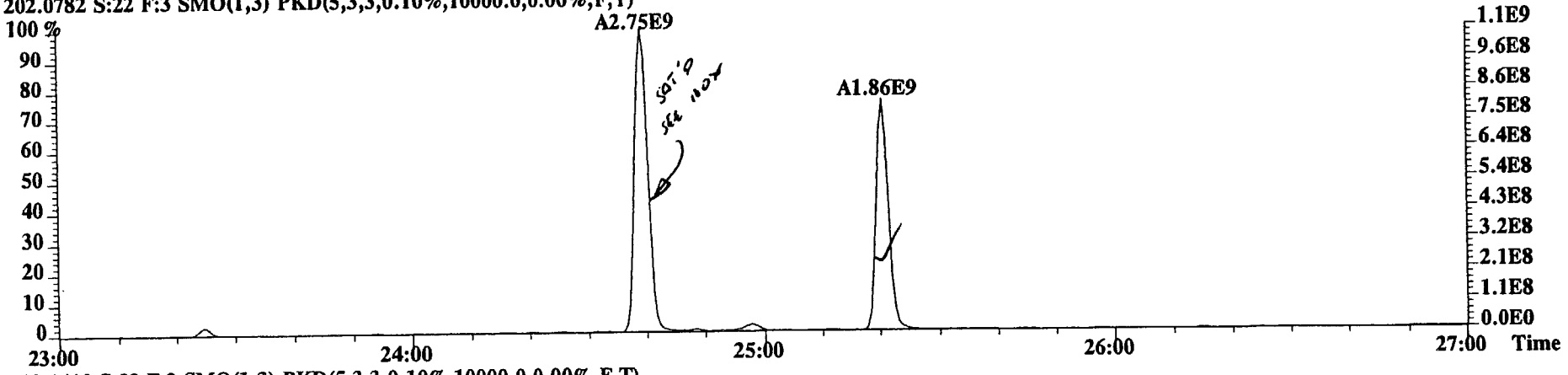


188.1410 S:22 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

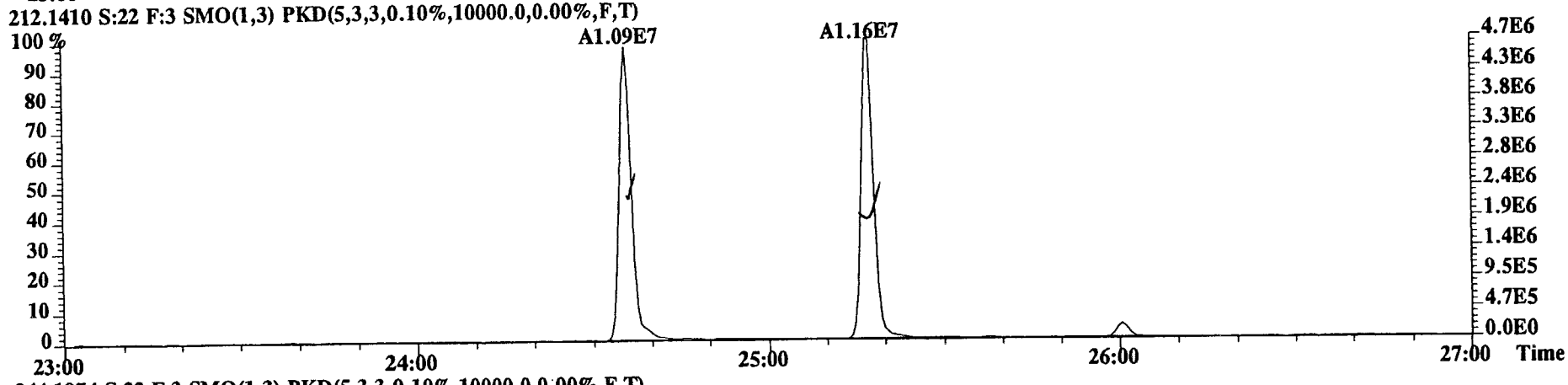



File:29OC98V4 #1-640 Acq:30-OCT-1998 08:37:13 GC EI+ Voltage SIR 70SE
Sample#22 Text:301802-2 :10X DIL. : : : Exp:PAHAIR
204.9888 S:22 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A3.36E7
A6.46E7
A3.54E7
A4.94E7
A7.80E7
A2.66E7
A7.77E7
A2.36E7
A3.73E7
A8.45E7
A3.12E7
A3.40E7
A4.21E7
1.4E7
1.3E7
1.3E7
1.2E7
1.1E7
1.1E7
9.9E6
9.2E6
8.5E6
7.8E6
7.0E6
6.3E6
5.6E6
4.9E6
4.2E6
3.5E6
2.8E6
2.1E6
1.4E6
7.0E5
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

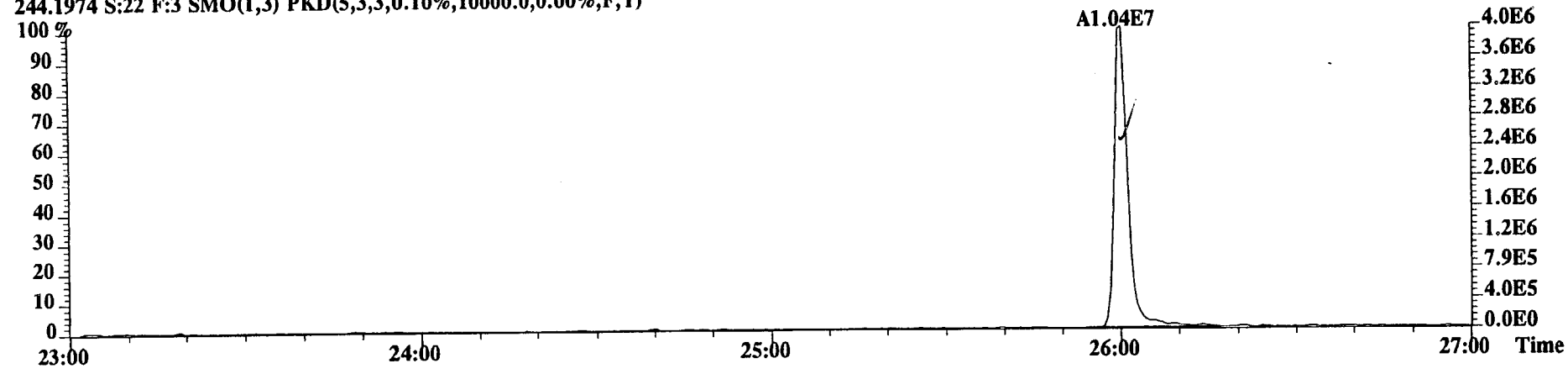
File:29OC98V4 #1-939 Acq:30-OCT-1998 08:37:13 GC EI+ Voltage SIR 70SE
Sample#22 Text:301802-2 :10X DIL. : : : Exp:PAHAIR
202.0782 S:22 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

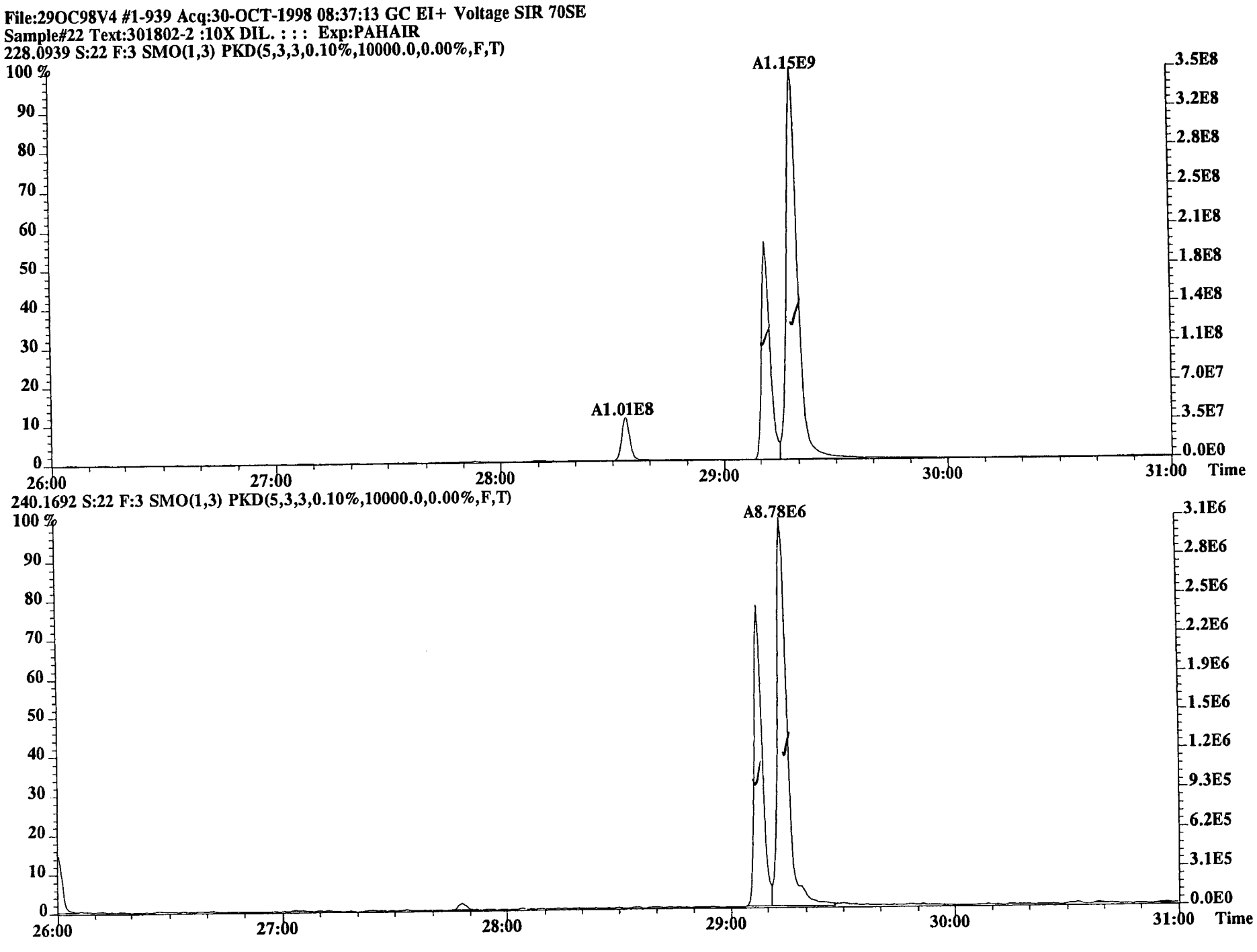


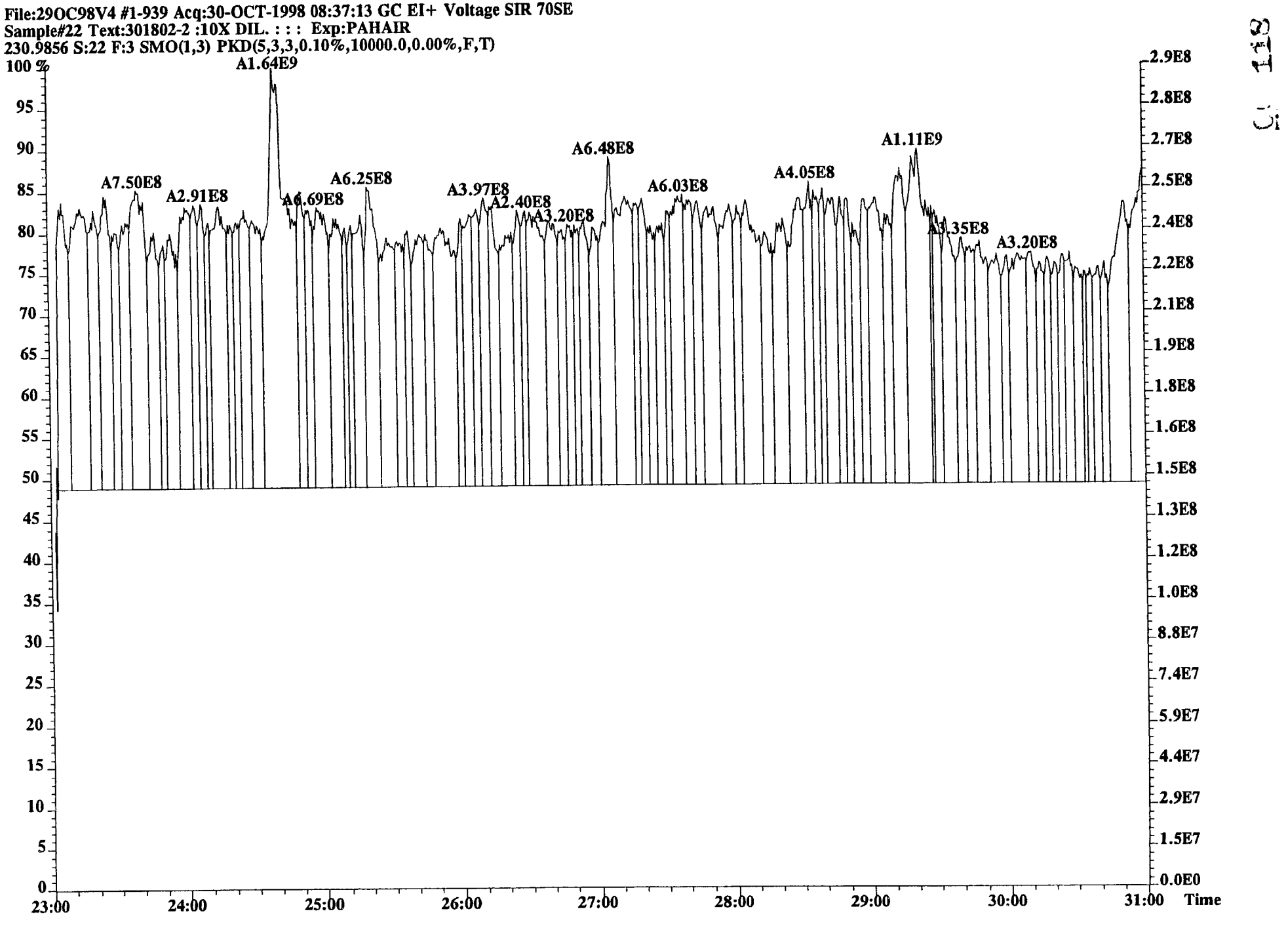
212.1410 S:22 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

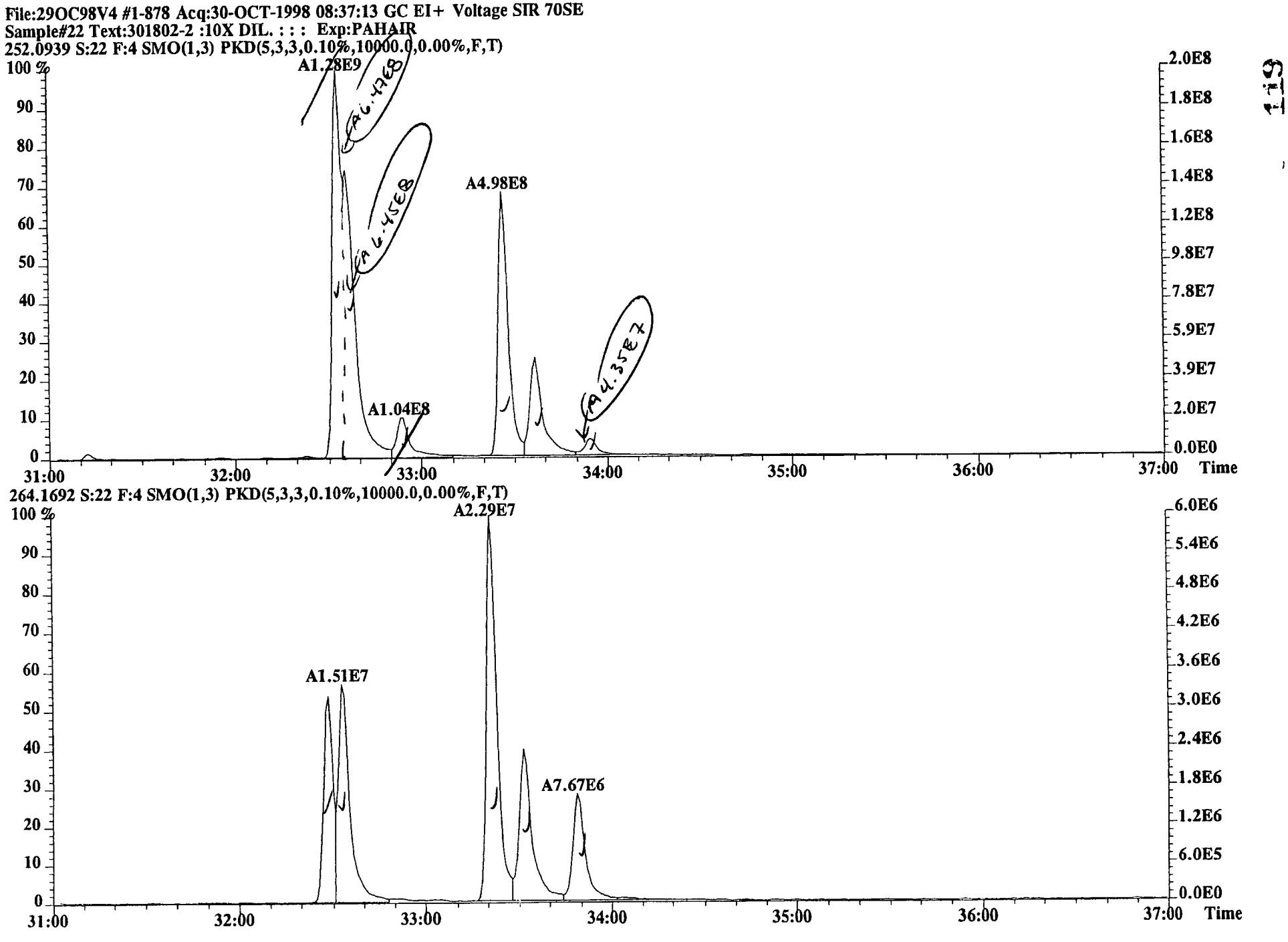


244.1974 S:22 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

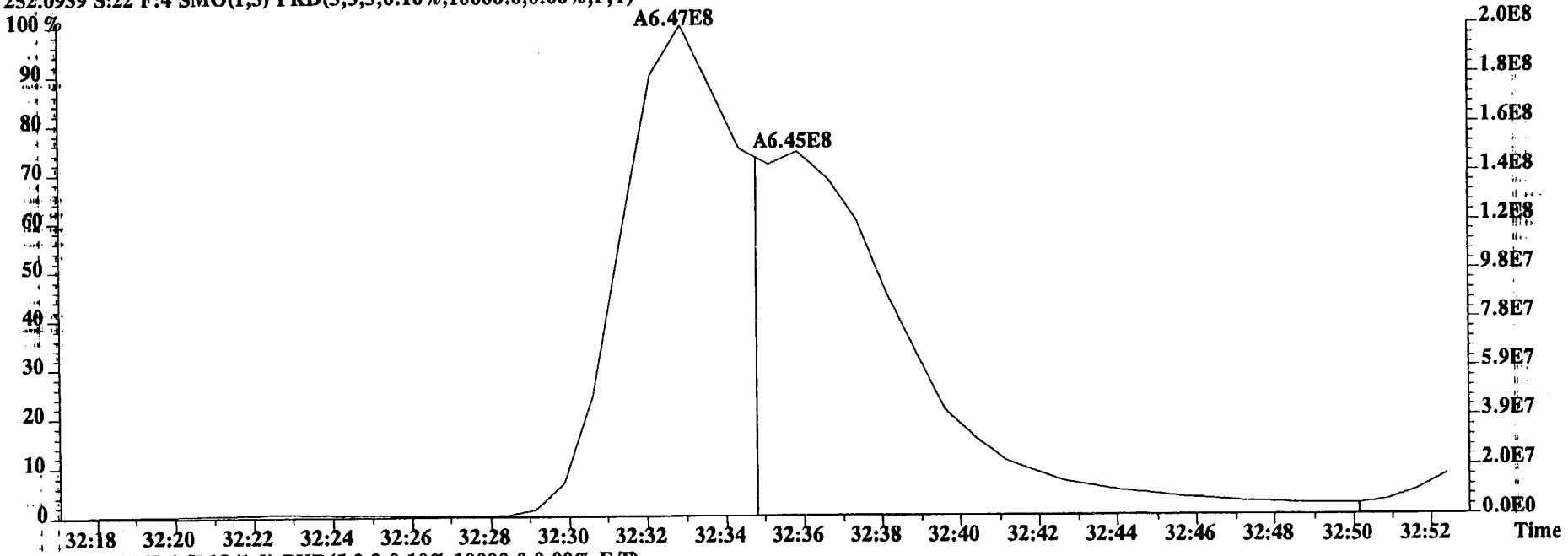



File:29OC98V4 #1-939 Acq:30-OCT-1998 08:37:13 GC EI+ Voltage SIR 70SE
Sample#22 Text:301802-2 :10X DIL. : : : Exp:PAHAIR
228.0939 S:22 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.15E9
A1.01E8
240.1692 S:22 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.78E6
Time

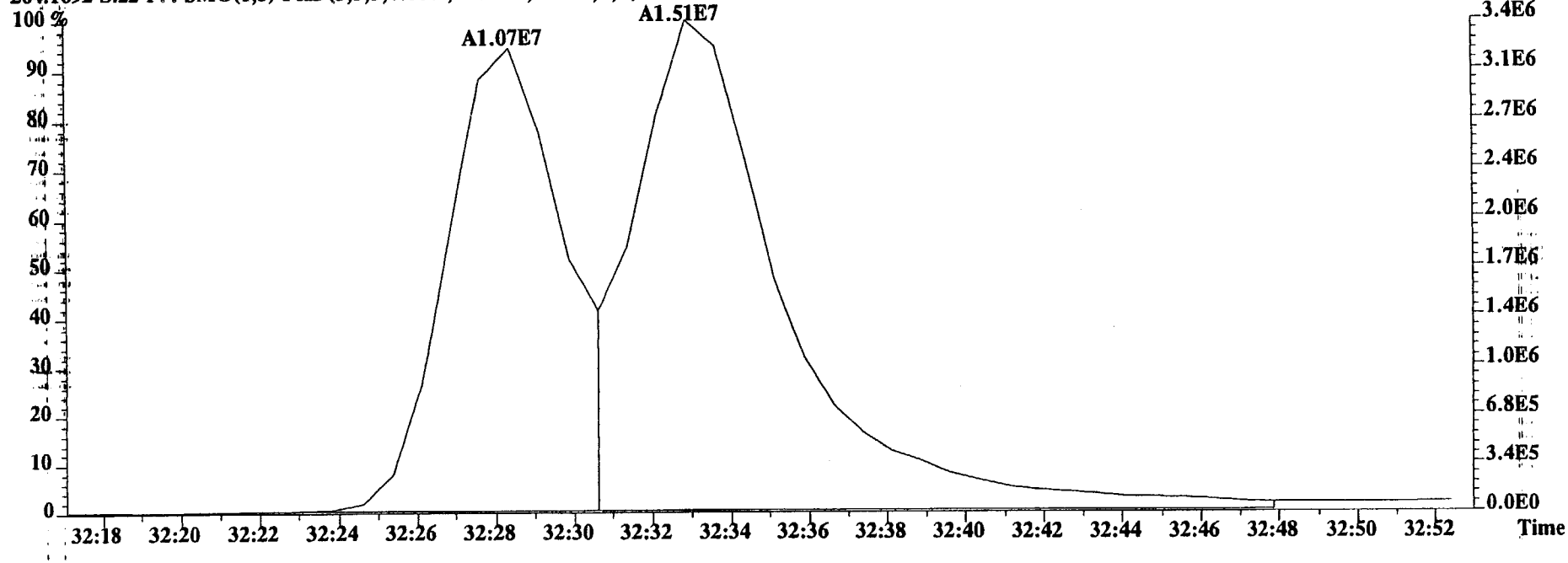

File:29OC98V4 #1-939 Acq:30-OCT-1998 08:37:13 GC EI+ Voltage SIR 70SE
Sample#22 Text:301802-2 :10X DIL. : : : Exp:PAHAIR
230.9856 S:22 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.64E9
A7.50E8
A2.91E8
A6.69E8
A6.25E8
A3.97E8
A2.40E8
A3.20E8
A6.48E8
A6.03E8
A4.05E8
A1.11E9
A3.35E8
A3.20E8
2.9E8
2.8E8
2.7E8
2.5E8
2.4E8
2.2E8
2.1E8
1.9E8
1.8E8
1.6E8
1.5E8
1.3E8
1.2E8
1.0E8
8.8E7
7.4E7
5.9E7
4.4E7
2.9E7
1.5E7
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time

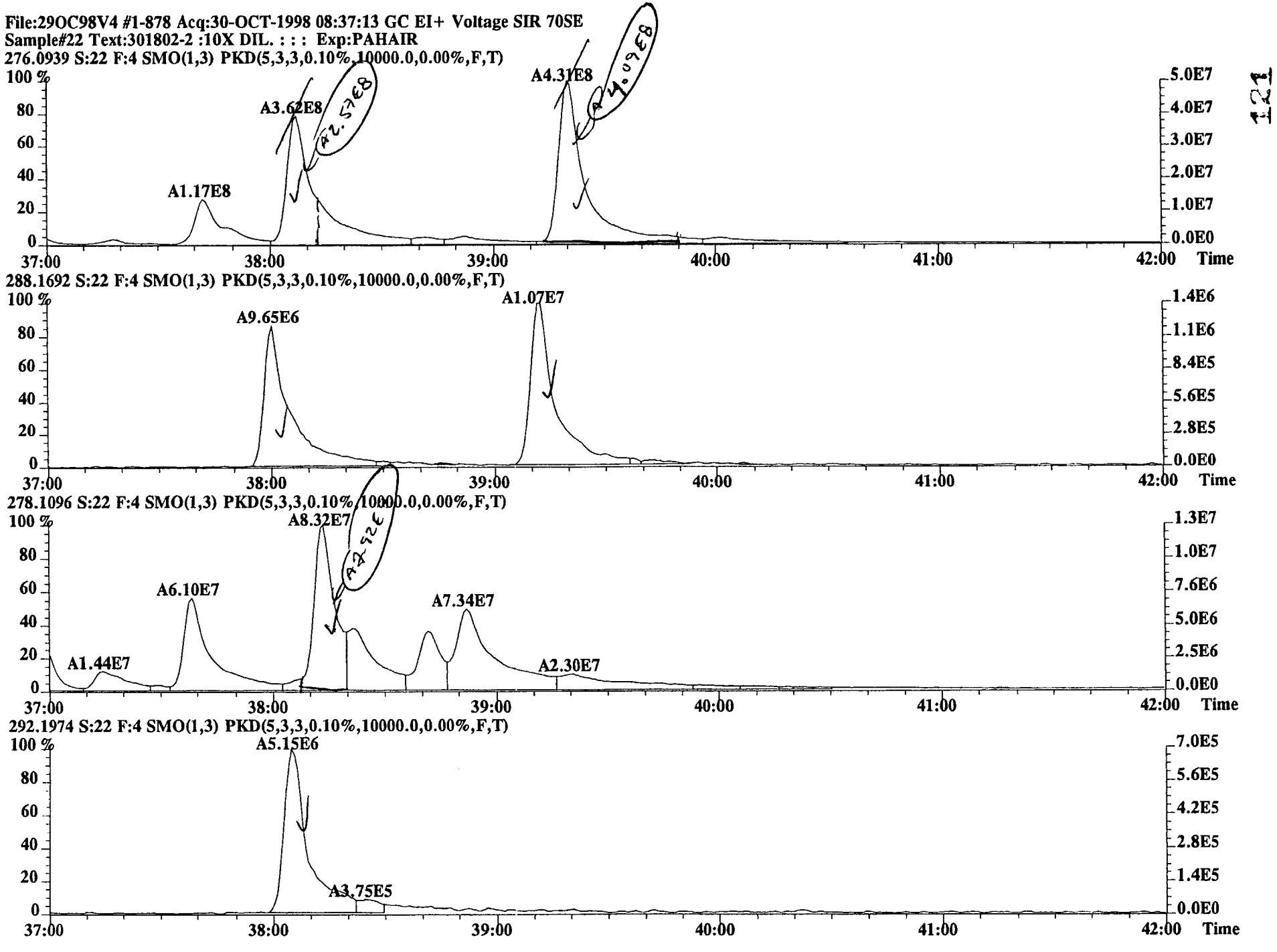

File:29OC98V4 #1-878 Acq:30-OCT-1998 08:37:13 GC EI+ Voltage SIR 70SE
Sample#22 Text:301802-2 :10X DIL. : : : Exp:PAHAIR
252.0939 S:22 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.28E9
A6.47E8
A6.45E8
A4.98E8
A1.04E8
A4.35E7
264.1692 S:22 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.29E7
A1.51E7
A7.67E6
Time

File:29OC98V4 #1-878 Acq:30-OCT-1998 08:37:13 GC EI+ Voltage SIR 70SE
Sample#22 Text:301802-2 :10X DIL. : : : Exp:PAHAIR
252.0939 S:22 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

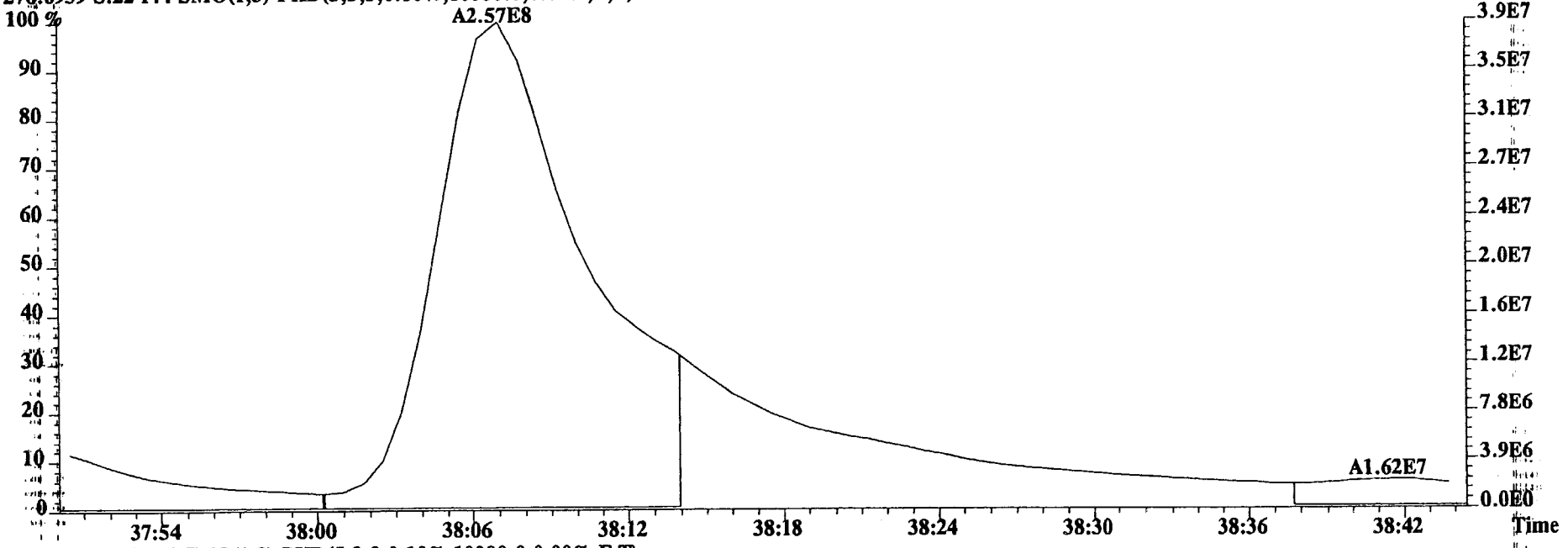


264.1692 S:22 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

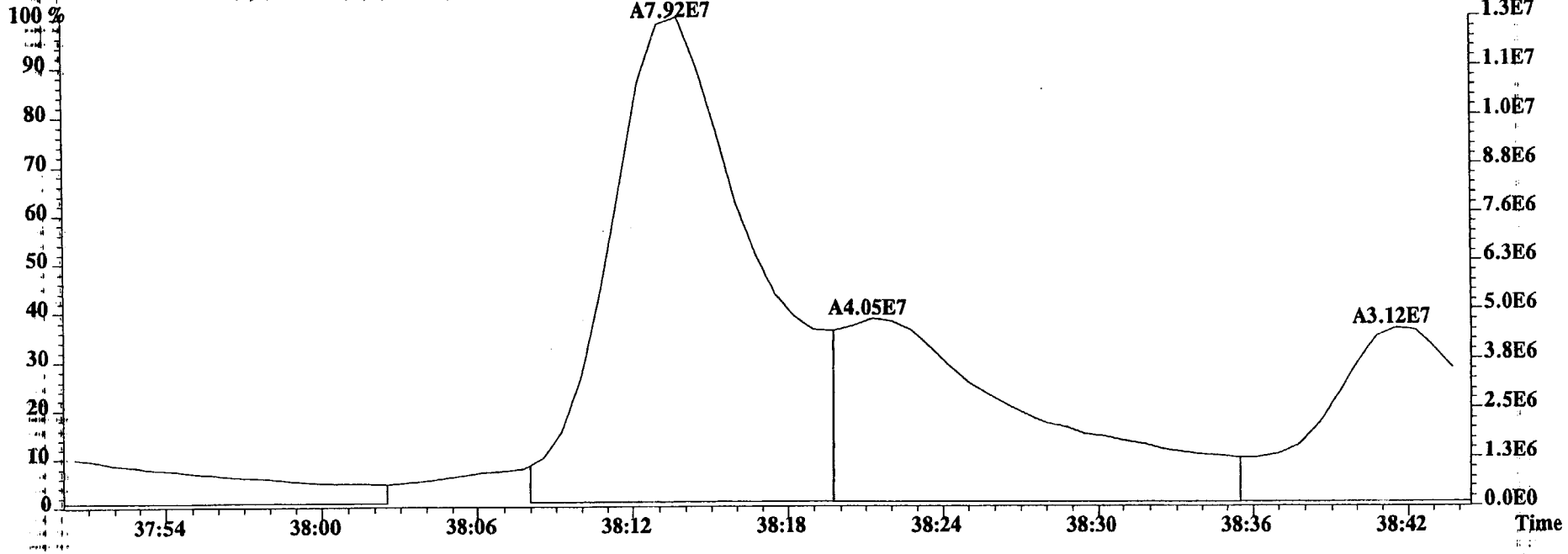



File:29OC98V4 #1-878 Acq:30-OCT-1998 08:37:13 GC EI+ Voltage SIR 70SE
Sample#22 Text:301802-2 :10X DIL. : : : Exp:PAHAIR
276.0939 S:22 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.17E8
A3.62E8
A4.31E8
288.1692 S:22 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A9.65E6
A1.07E7
278.1096 S:22 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.44E7
A6.10E7
A8.32E7
A7.34E7
A2.30E7
292.1974 S:22 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A5.15E6
A3.75E5
100 %
80
60
40
20
0
37:00
38:00
39:00
40:00
41:00
42:00
Time
5.0E7
4.0E7
3.0E7
2.0E7
1.0E7
0.0E0
1.4E6
1.1E6
8.4E5
5.6E5
2.8E5
1.3E7
1.0E7
7.6E6
5.0E6
2.5E6
7.0E5
5.6E5
4.2E5
2.8E5
1.4E5

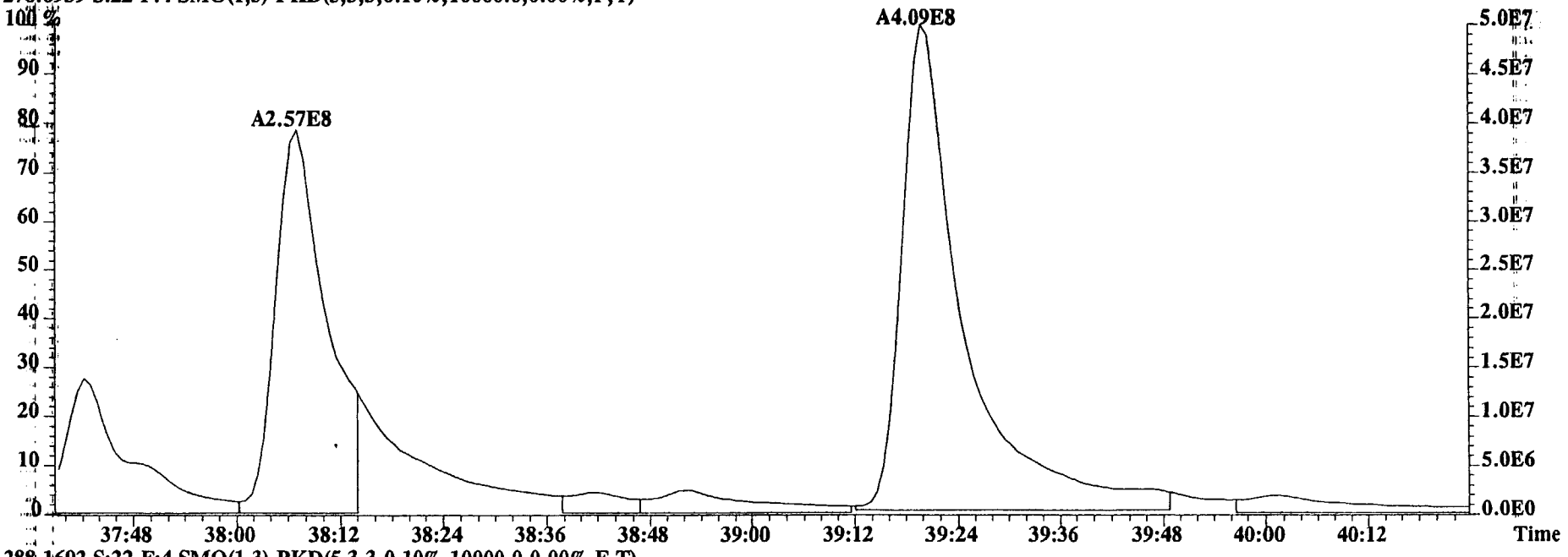
File:29OC98V4 #1-878 Acq:30-OCT-1998 08:37:13 GC EI+ Voltage SIR 70SE
Sample#22 Text:301802-2 :10X DIL. : : : Exp:PAHAIR
276.0939 S:22 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



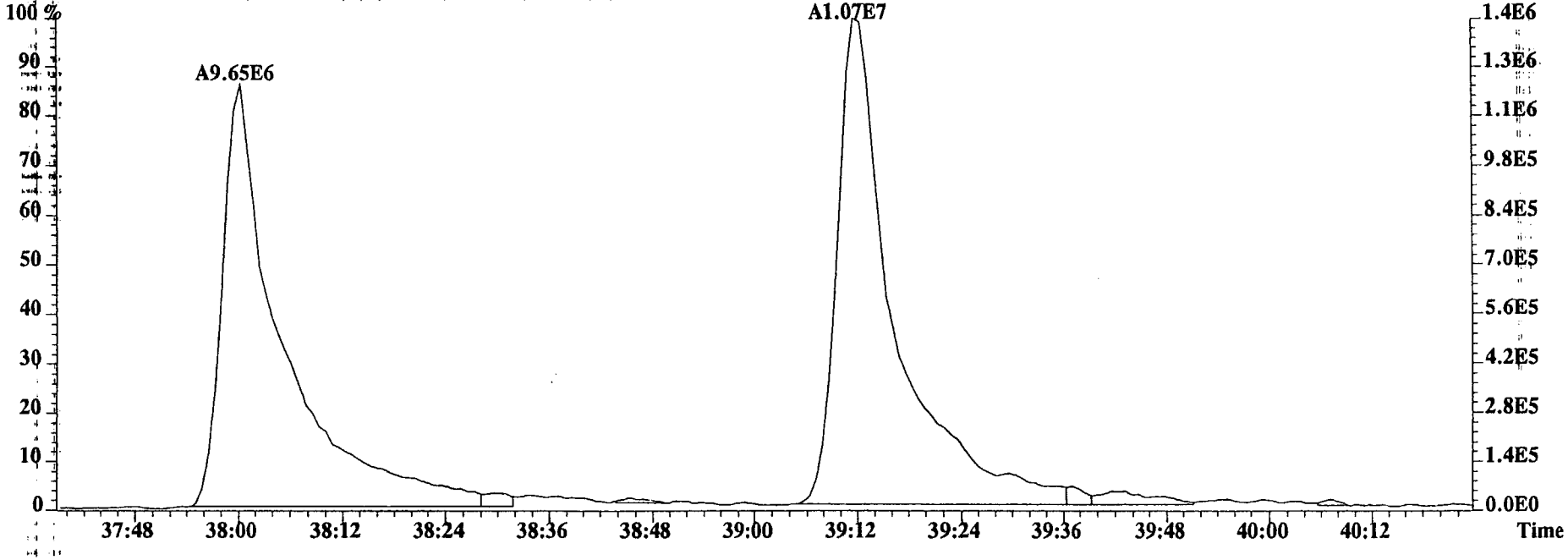
278.1096 S:22 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

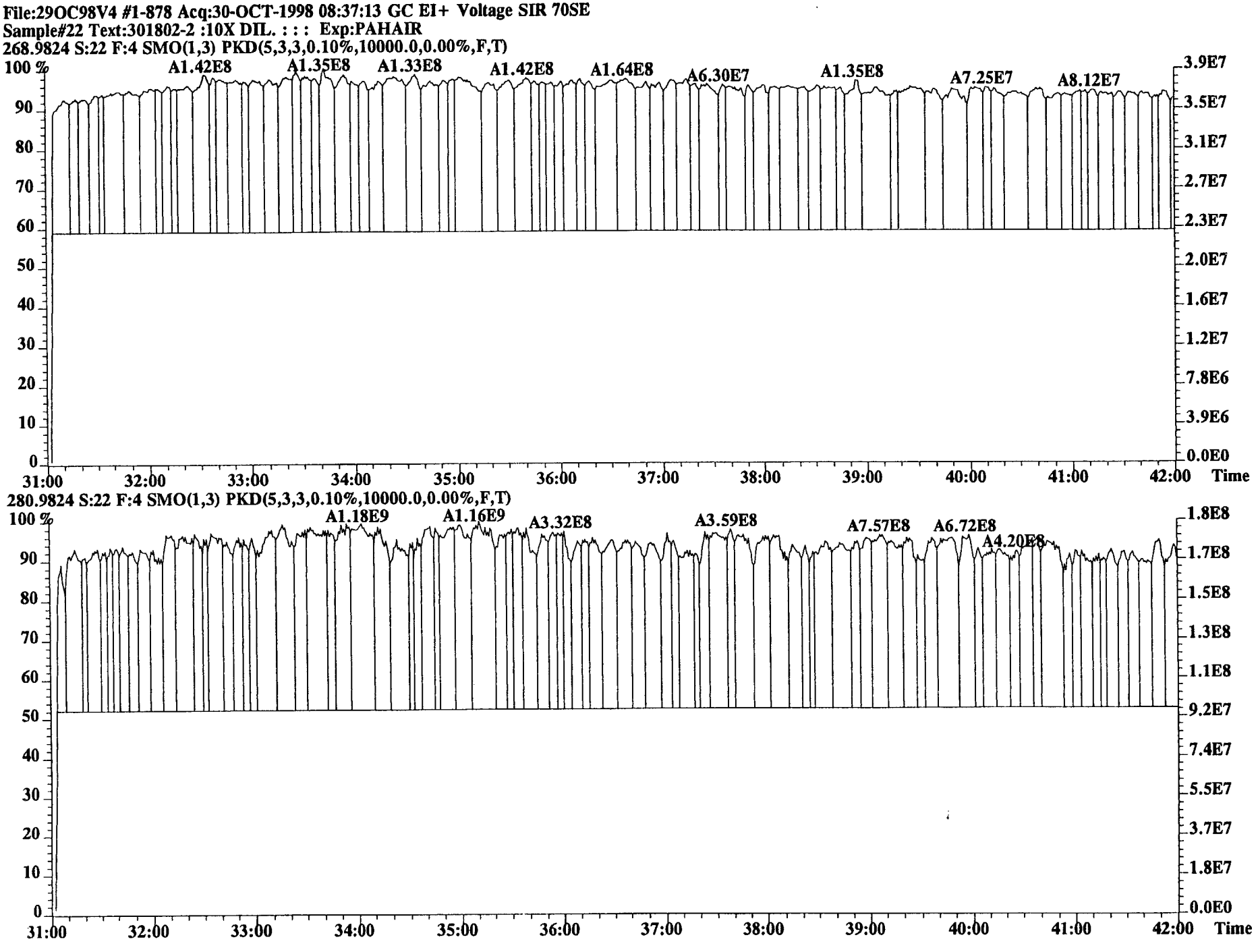


File:29OC98V4 #1-878 Acq:30-OCT-1998 08:37:13 GC EI+ Voltage SIR 70SE
Sample#22 Text:301802-2 :10X DIL. : : : Exp:PAHAIR
276.0939 S:22 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



288.1692 S:22 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)




File:29OC98V4 #1-878 Acq:30-OCT-1998 08:37:13 GC EI+ Voltage SIR 70SE
Sample#22 Text:301802-2 :10X DIL. : : : Exp:PAHAIR
268.9824 S:22 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.42E8
A1.35E8
A1.33E8
A1.42E8
A1.64E8
A6.30E7
A1.35E8
A7.25E7
A8.12E7
3.9E7
3.5E7
3.1E7
2.7E7
2.3E7
2.0E7
1.6E7
1.2E7
7.8E6
3.9E6
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time
280.9824 S:22 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.18E9
A1.16E9
A3.32E8
A3.59E8
A7.57E8
A6.72E8
A4.20E8
1.8E8
1.7E8
1.5E8
1.3E8
1.1E8
9.2E7
7.4E7
5.5E7
3.7E7
1.8E7
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time

04-NOV-1998 03:07:13 PM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4 Results : 02NO98V4101.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 02-NOV-98
Data file : 02NO98V4 301802-2 100X DIL. : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	ng/ TRAIN	Rec/ MDL	
d10-2-Methylnaphthalene	302000	1.00	Y	12: 29	Y	1.00	50.00		
d8-Naphthalene	508000	1.00	Y	10: 12	Y	2.24	37.54	75	
Naphthalene	745170000	1.00	Y	10: 16	Y	1.23	1.2e+05	B	E
d8-Acenaphthylene	214000	1.00	Y	15: 28	Y	1.21	29.19	68	
Acenaphthylene	73468800	1.00	Y	15: 31	Y	0.94	3.6e+04		
d10-Acenaphthene	143292	1.00	Y	16: 2	Y	0.74	31.86	64	
Acenaphthene	7620000	1.00	Y	16: 7	Y	1.25	4267.58		
d10-Anthracene	202000	1.00	Y	20: 55	Y	1.00	50.00		
d10-Phenanthrene	558000	1.00	Y	20: 45	Y	2.81	49.20	98	
Phenanthrene	266236000	1.00	Y	20: 49	Y	0.89	5.3e+04	B	E
d14-Terphenyl	534000	1.00	Y	26: 1	Y	1.00	50.00		
d10-Fluoranthene	470000	1.00	Y	24: 36	Y	1.41	31.19	62	
Fluoranthene	91496200	1.00	Y	24: 39	Y	1.11	1.8e+04		

11-4-98
CP

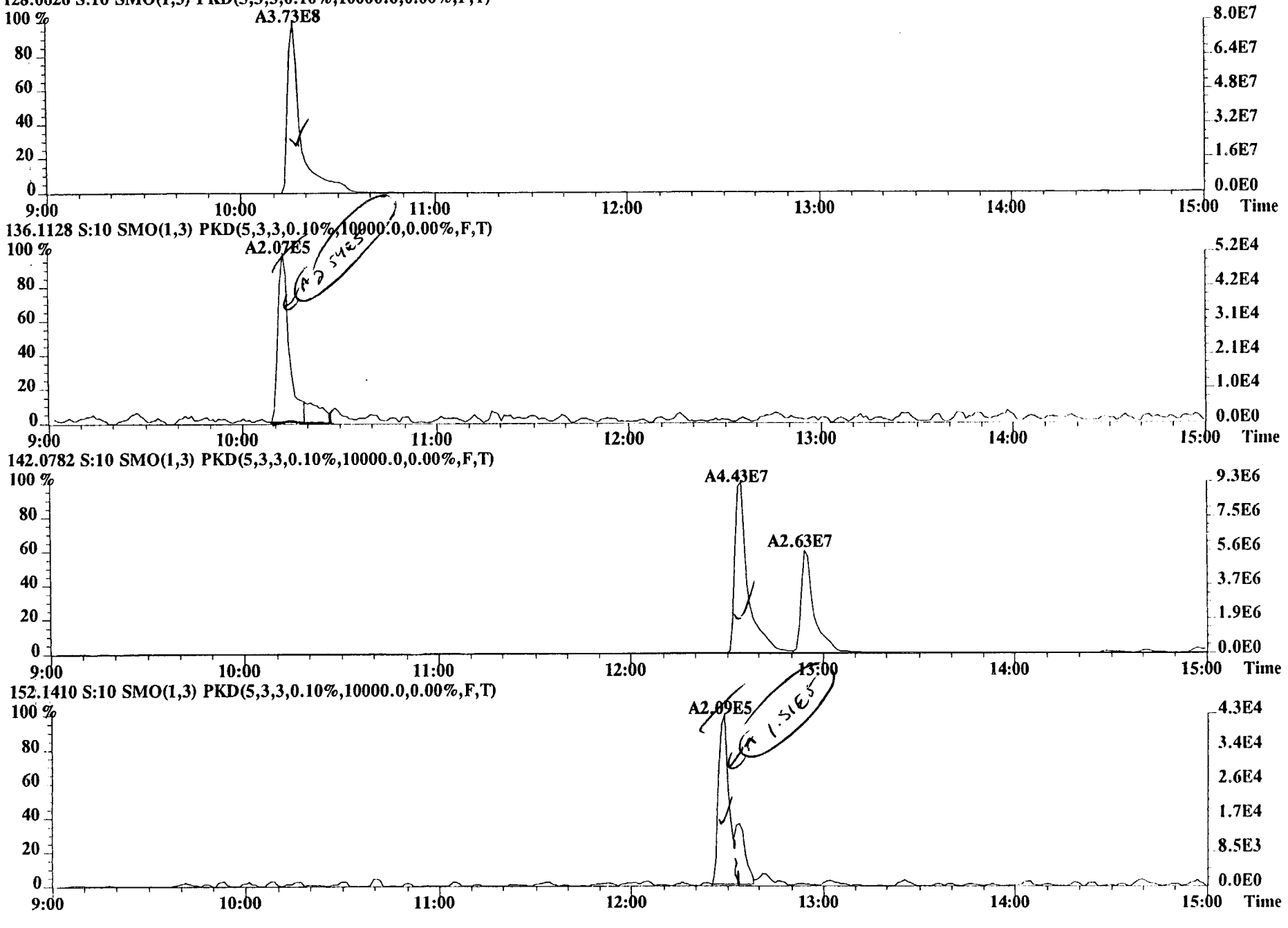
	0.5	
8874 RRF		
Rec/ MDL		
	151000	151000
75	254000	254000
B E	372585000	372585000
58	107000	107000
	36734400	36734400
64	71646	71646
	3810000	3810000
	101000	101000
98	279000	279000
B E	133118000	133118000
	267000	267000
62	235000	235000
	45748100	45748100

03-NOV-1998 08:33:30 AM 429AIR Unknown RESULTS

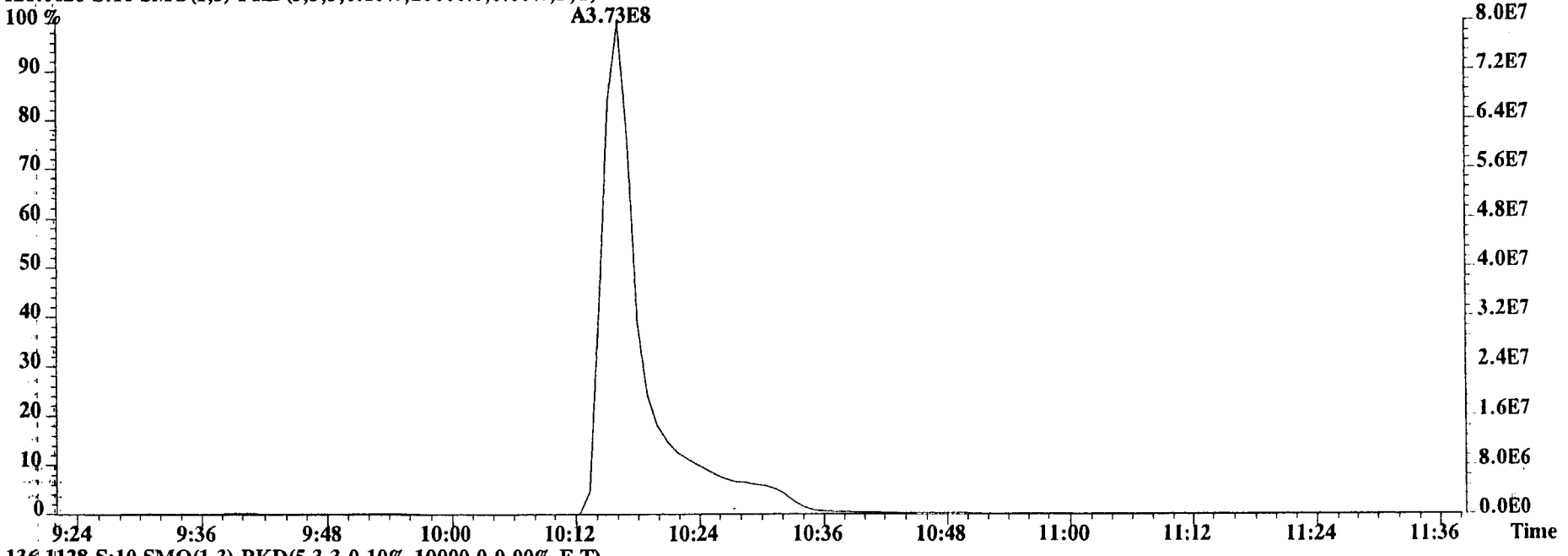
Mass Spec : VG-4 Results : 02NO98V4101.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 02-NOV-98
Data file : 02NO98V4 301802-2 :100X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	ng/ TRAIN	Rec/ MDL
d10-2-Methylnaphthalene	418344	1.00	Y	12: 29	Y	1.00	50.00	
d8-Naphthalene	413156	1.00	Y	10: 12	Y	2.24	22.04	44
Naphthalene	745170000	1.00	Y	10: 16	Y	1.23	1.5e+05	0.000
2-Methylnaphthalene	88557800	1.00	Y	12: 34	Y	0.56	3.8e+04	0.000
d8-Acenaphthylene	199044	1.00	Y	15: 28	Y	1.21	19.60	39
Acenaphthylene	73468800	1.00	Y	15: 31	Y	0.94	3.9e+04	0.000
d10-Acenaphthene	143292	1.00	Y	16: 2	Y	0.74	23.00	46
Acenaphthene	9442080	1.00	Y	16: 7	Y	1.25	5288.04	0.000
d10-Anthracene	181369	1.00	Y	20: 55	Y	1.00	50.00	
d10-Fluorene	150584	1.00	Y	17: 42	Y	1.42	29.22	58
Fluorene	1530162	1.00	Y	17: 47	Y	1.16	875.60	0.000
d10-Phenanthrene	538016	1.00	Y	20: 45	Y	2.81	52.83	106
Phenanthrene	266236000	1.00	Y	20: 49	Y	0.89	5.5e+04	0.000
Anthracene	* No Peak	0.00	N	20: 59	N	0.80	0.00	0.000
d14-Terphenyl	515862	1.00	Y	26: 1	Y	1.00	50.00	
d10-Fluoranthene	431102	1.00	Y	24: 36	Y	1.41	29.62	59
Fluoranthene	91496200	1.00	Y	24: 39	Y	1.11	1.9e+04	0.000
d10-Pyrene	487738	1.00	Y	25: 17	Y	1.52	31.14	62
Pyrene	53965600	1.00	Y	25: 21	Y	1.21	9181.68	0.000
d12-Benzo(a)anthracene	422002	1.00	Y	29: 9	Y	0.90	45.45	91
Benzo(a)anthracene	21731600	1.00	Y	29: 12	Y	1.20	4275.32	0.000
d12-Chrysene	587974	1.00	Y	29: 15	Y	1.28	44.55	89
Chrysene	66603200	1.00	Y	29: 19	Y	1.08	1.0e+04	0.000
d12-Benzo(e)pyrene	835210	1.00	Y	33: 23	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	228304	1.00	Y	32: 29	Y	0.45	30.11	60
Benzo(b)fluoranthene	32515000	1.00	Y	32: 34	Y	1.17	1.2e+04	0.000
d12-Benzo(k)fluoranthene	541238	1.00	Y	32: 34	Y	0.95	34.18	68
Benzo(k)fluoranthene	32515000	1.00	Y	32: 34	Y	1.16	5160.44	0.000
d12-Benzo(a)pyrene	422678	1.00	Y	33: 32	Y	0.68	37.39	75
Benzo(e)pyrene	14489580	1.00	Y	33: 27	Y	1.64	2089.21	0.000
Benzo(a)pyrene	8103760	1.00	Y	33: 38	Y	1.07	1788.51	0.000
d12-Perylene	91735	1.00	Y	33: 51	Y	0.63	8.71	17
Perylene	* No Peak	0.00	N	33: 56	N	1.71	0.00	0.000
d12-Indeno(123-cd)pyrene	90541	1.00	Y	38: 3	Y	0.44	12.19	24
Indeno(123-cd)pyrene	10478100	1.00	Y	38: 9	Y	0.62	1.9e+04	0.000
d14-Dibenz(ah)anthracene	* No Peak	0.00	N	38: 6	N	0.25	0.00	0
Dibenz(ah)anthracene	2920500	1.00	Y	38: 16	Y	1.40	*NoINoIs	
d12-Benzo(ghi)perylene	291436	1.00	Y	39: 15	Y	0.58	30.10	60
Benzo(ghi)perylene	16019160	1.00	Y	39: 21	Y	1.02	5409.99	0.000
d10-Fluorene	150584	1.00	Y	17: 42	Y	1.42	6.34	13
13C-Fluorene	* No Peak	0.00	N	17: 48	N	1.00	0.00	0.000

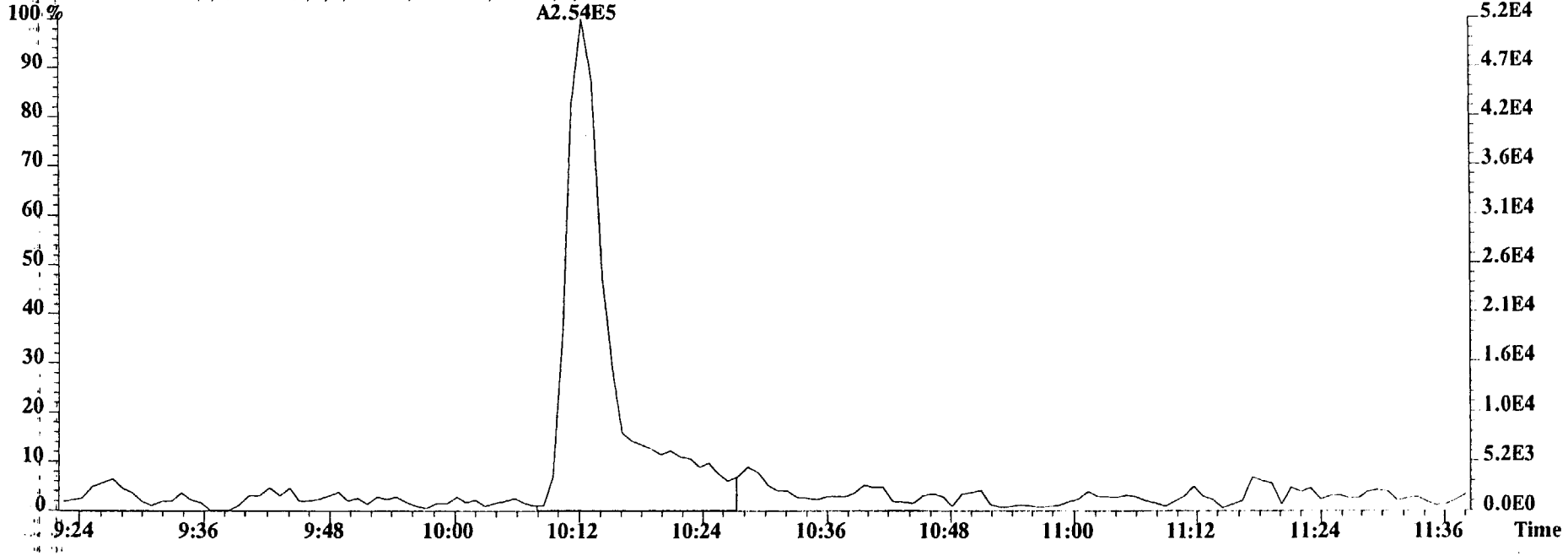
File:02NO98V4 #1-510 Acq: 2-NOV-1998 20:34:33 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR



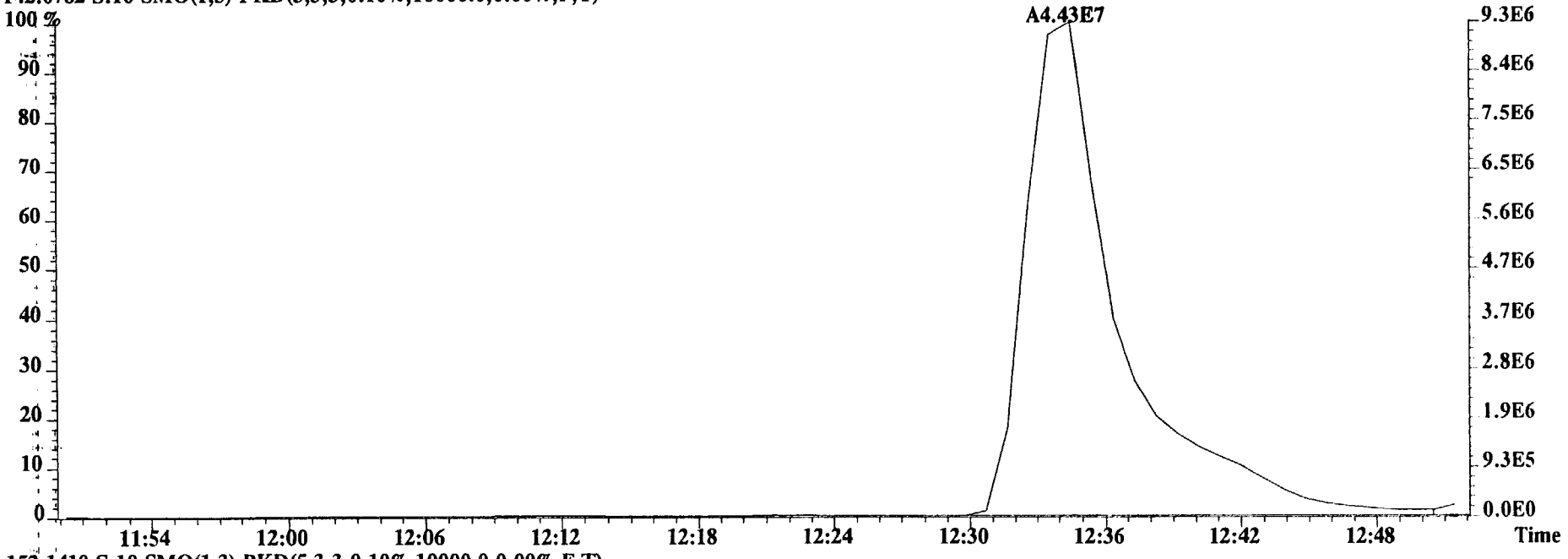
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Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR
128.0626 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



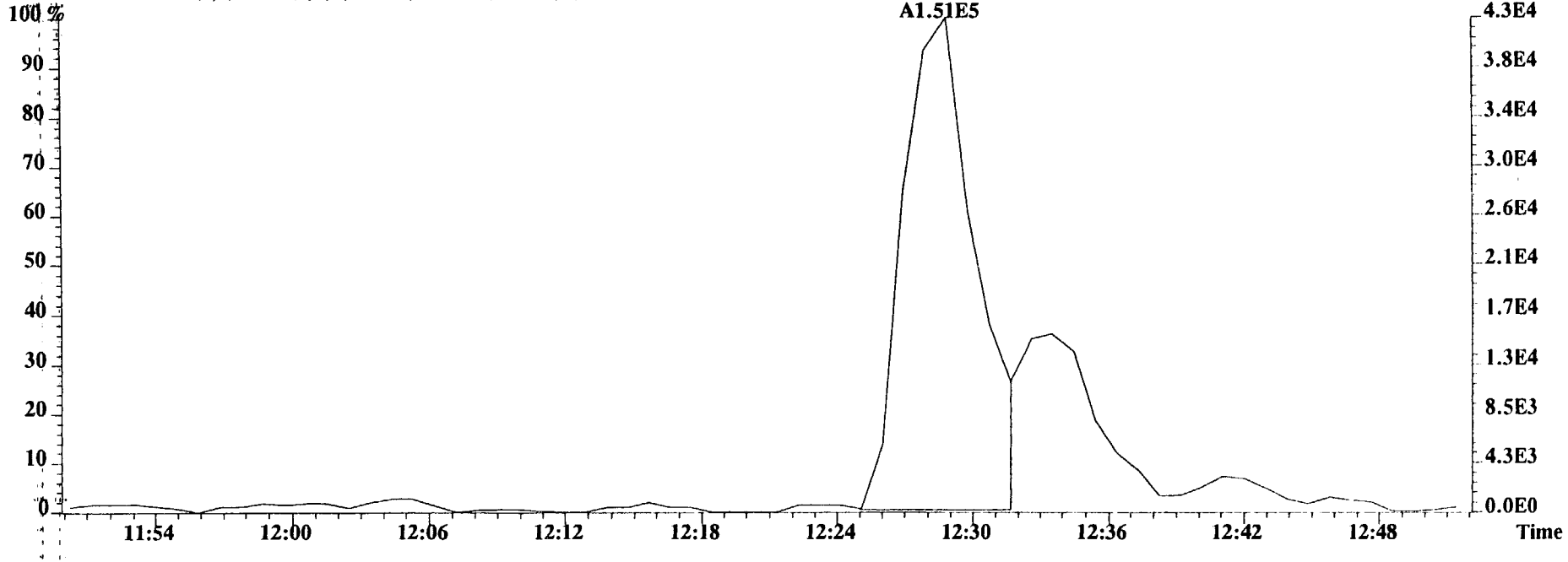
136.1128 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



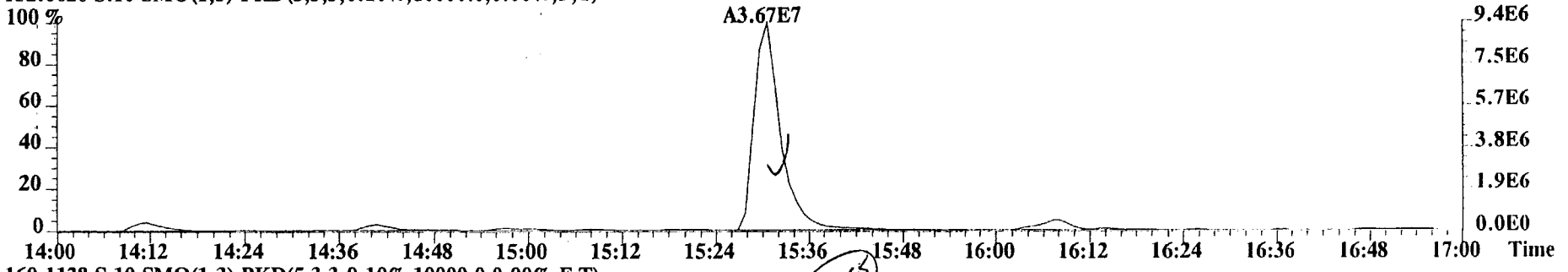
File:02NO98V4 #1-510 Acq: 2-NOV-1998 20:34:33 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR
142.0782 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



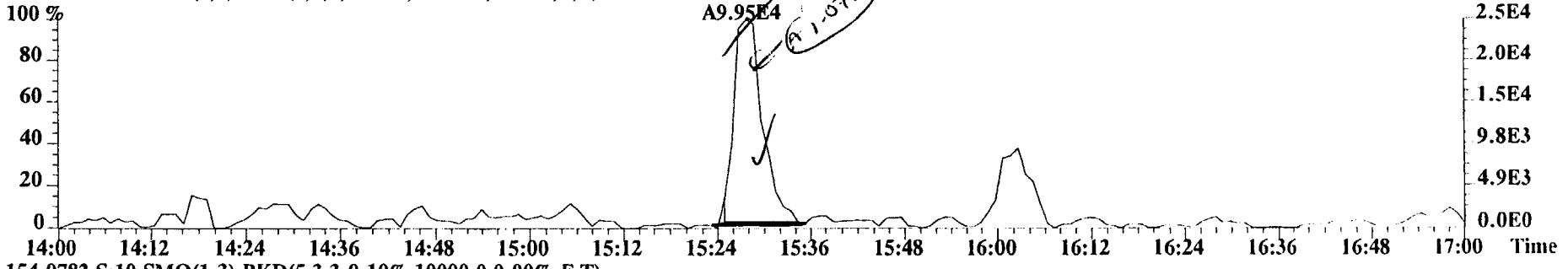
152.1410 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



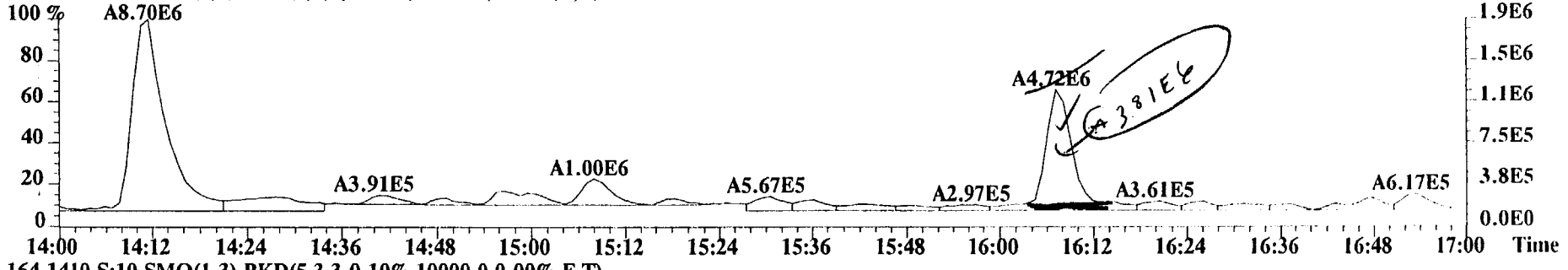
File:02NO98V4 #1-510 Acq: 2-NOV-1998 20:34:33 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR
152.0626 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



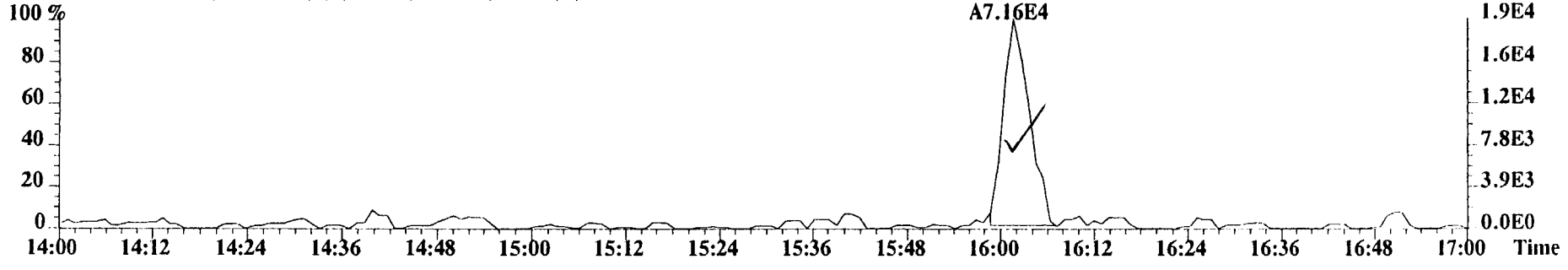
160.1128 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



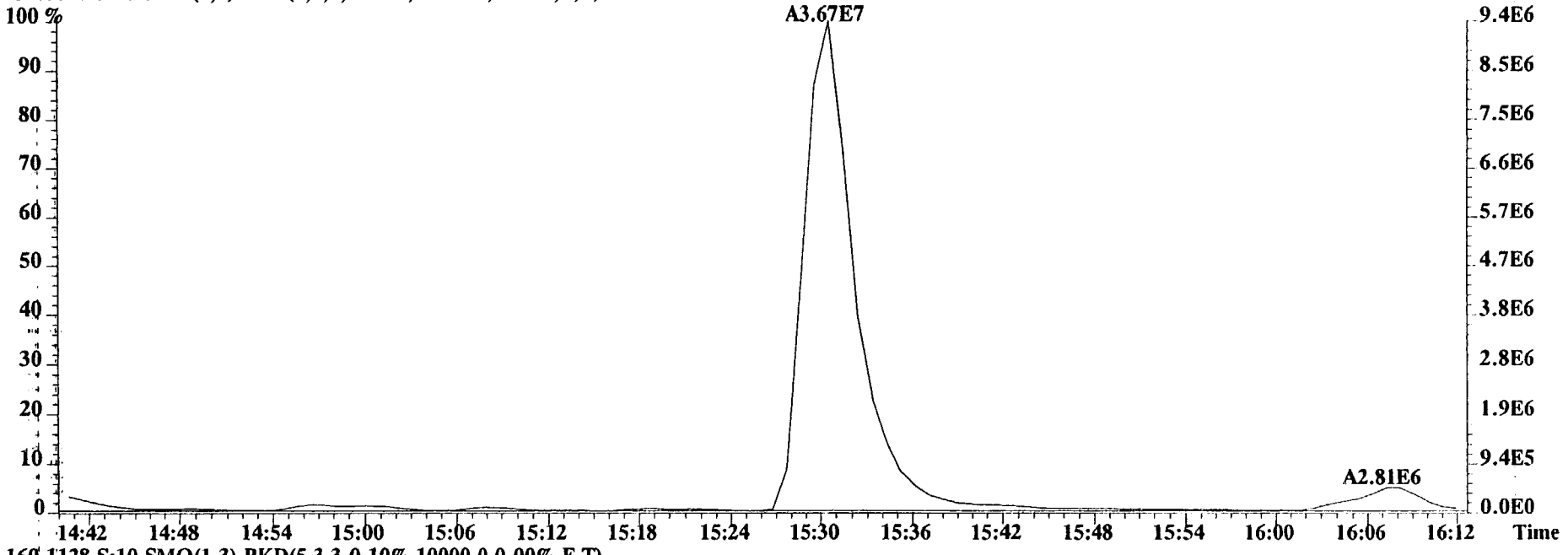
154.0782 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



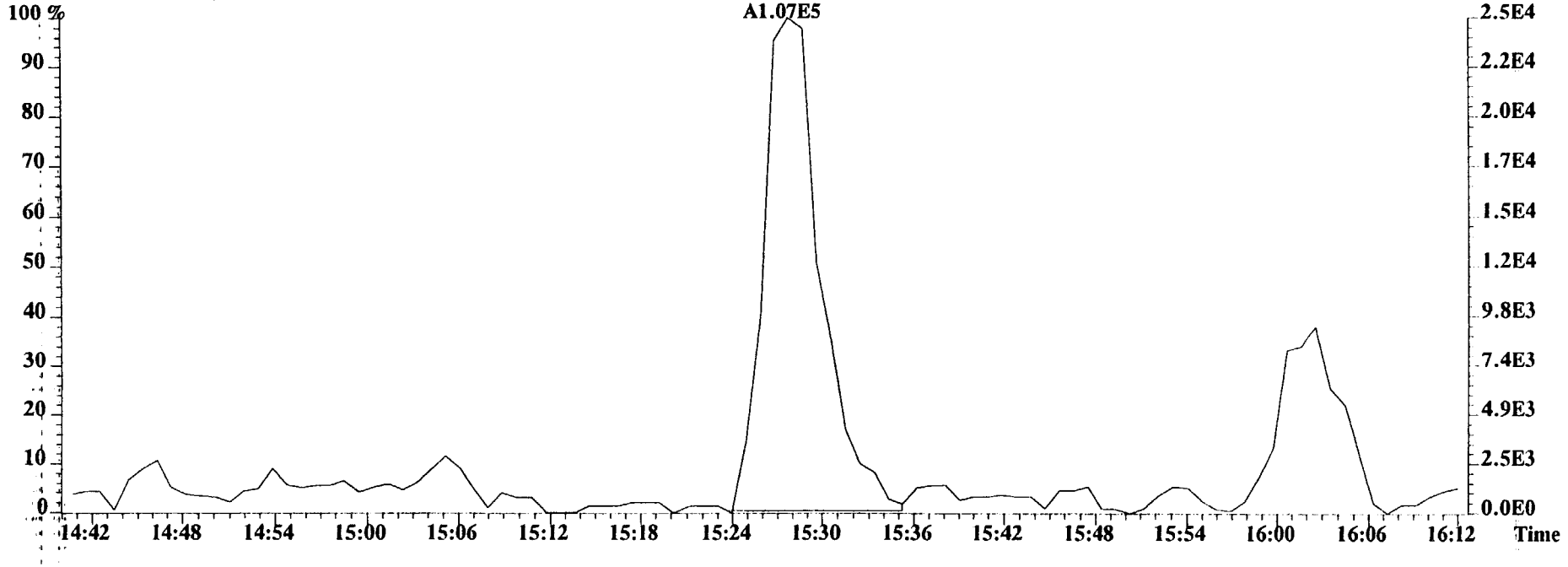
164.1410 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



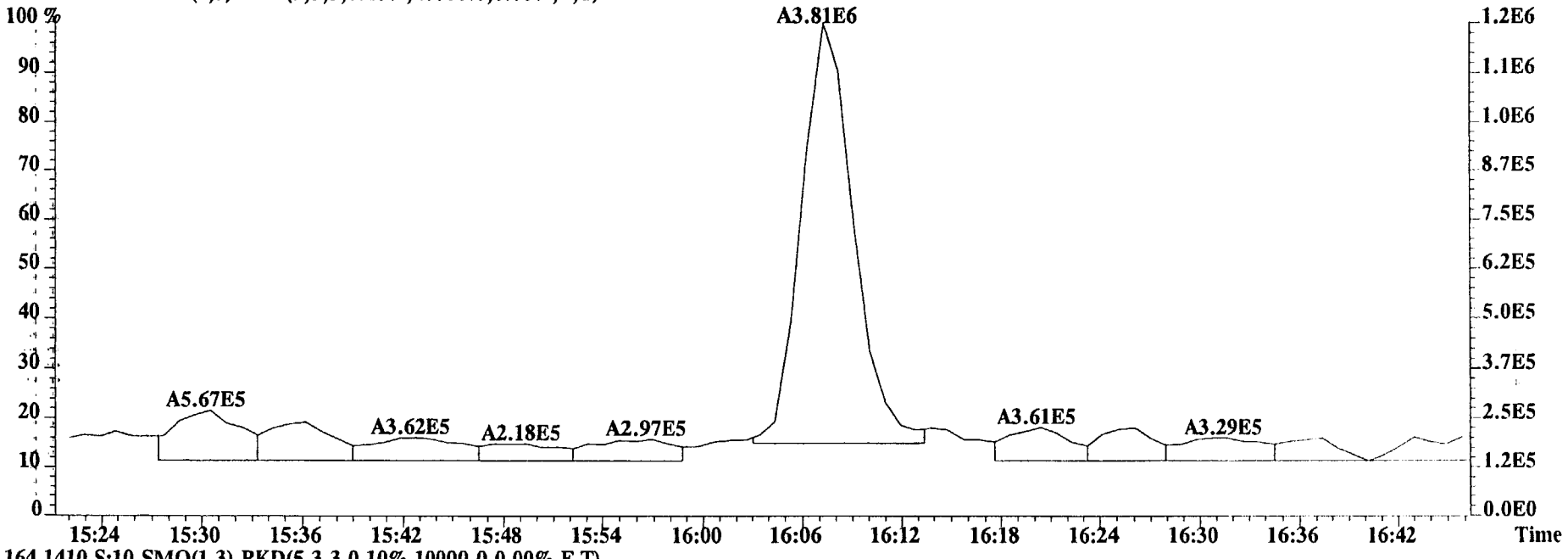
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Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR
152.0626 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



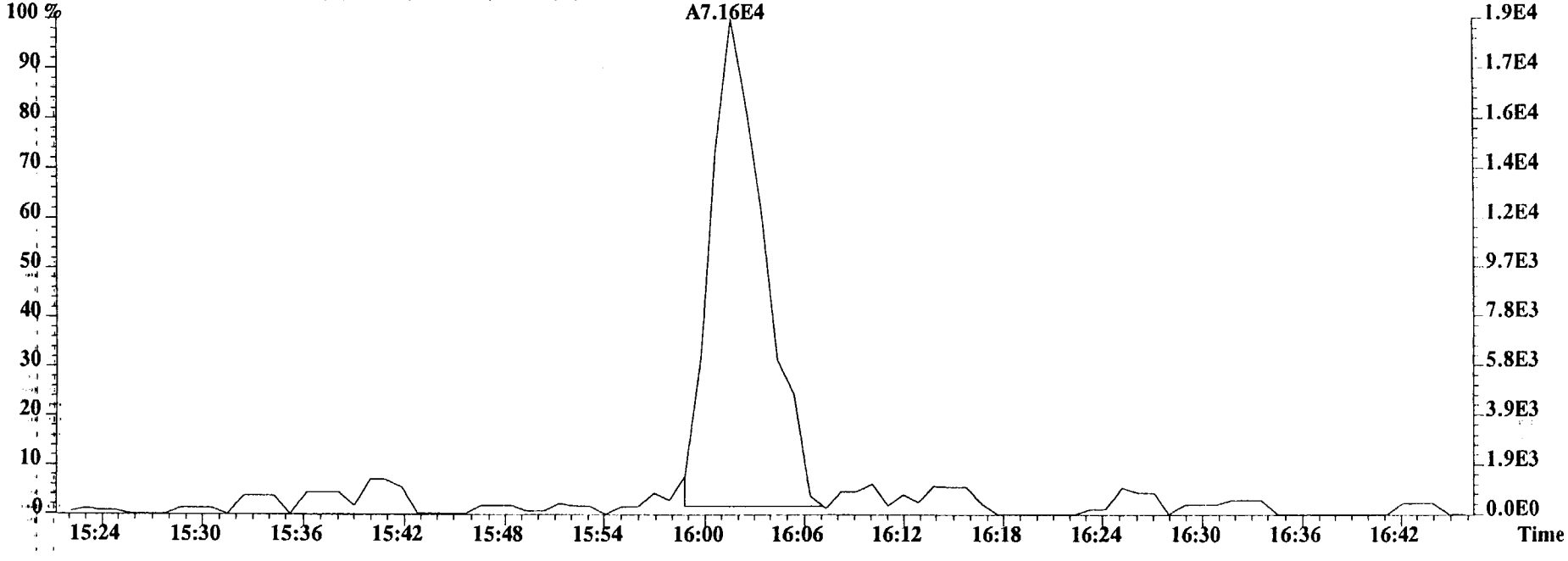
160.1128 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



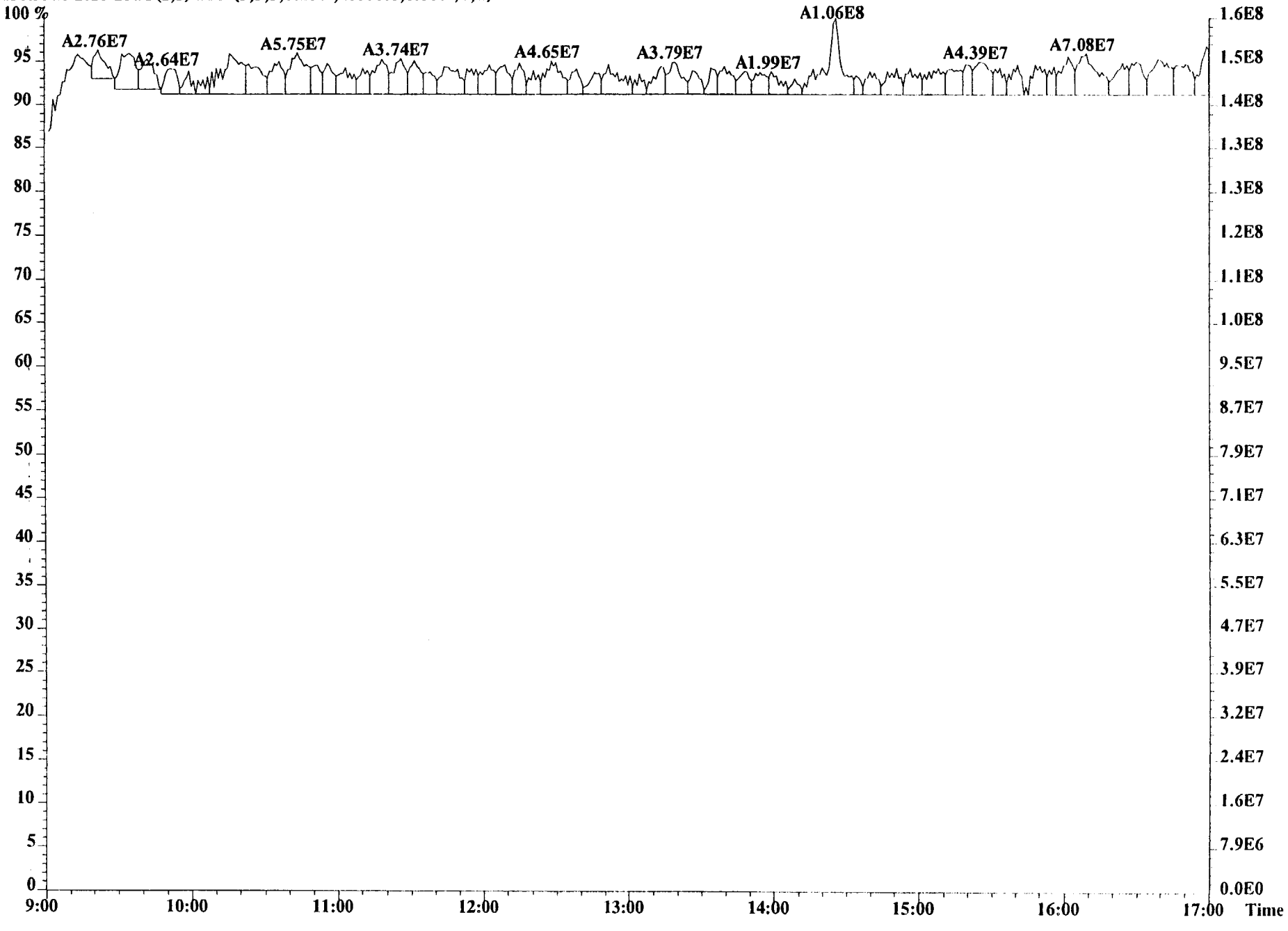
File:02NO98V4 #1-510 Acq: 2-NOV-1998 20:34:33 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR
154.0782 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

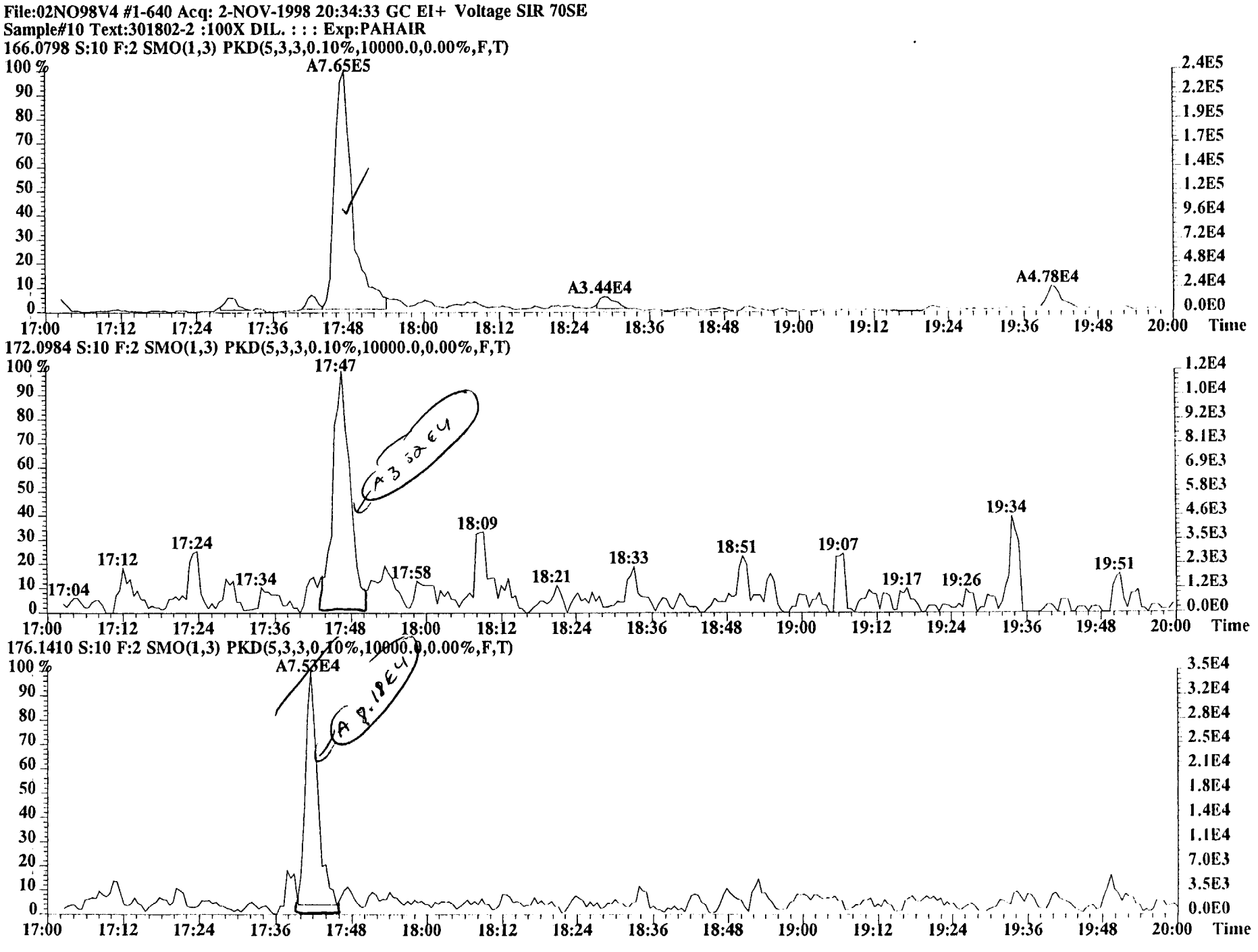


164.1410 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

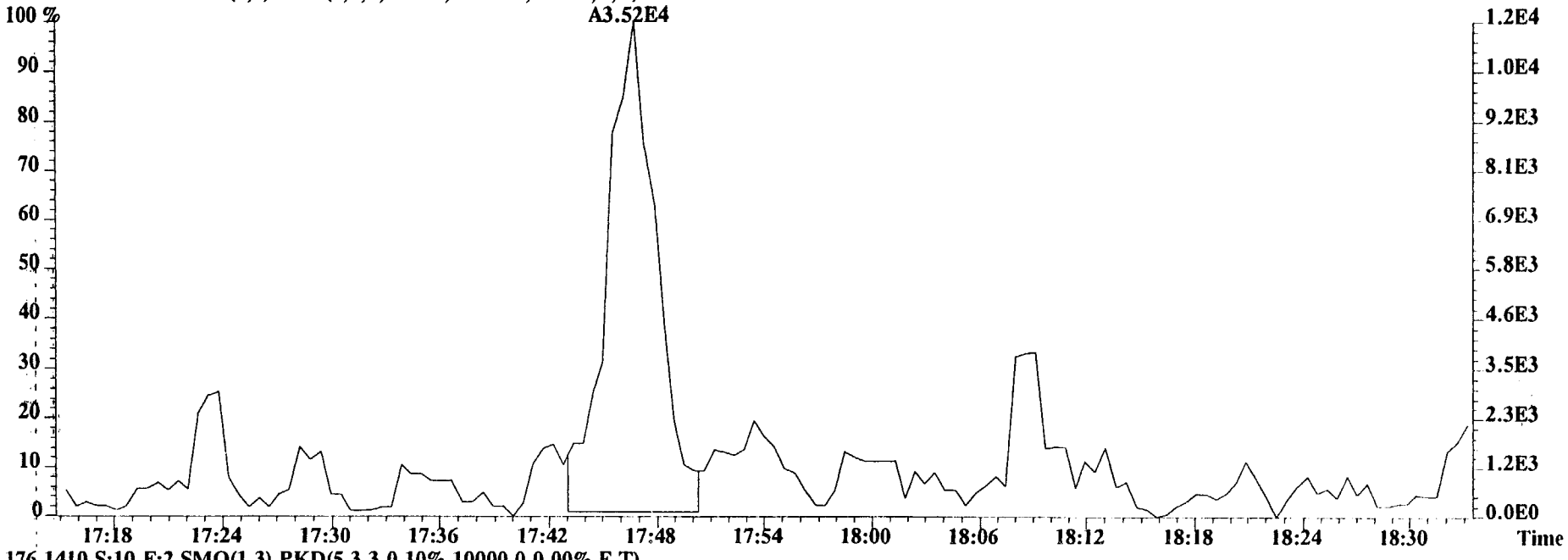


File:02NO98V4 #1-510 Acq: 2-NOV-1998 20:34:33 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR
130.9920 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

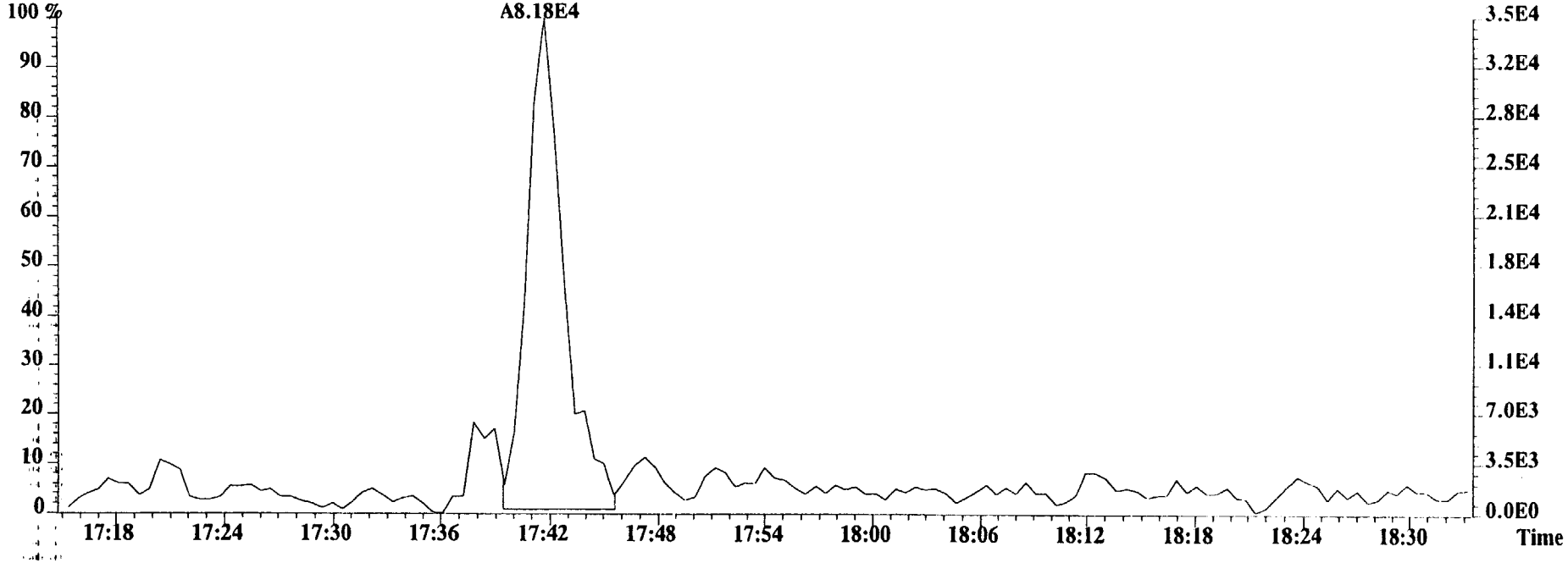


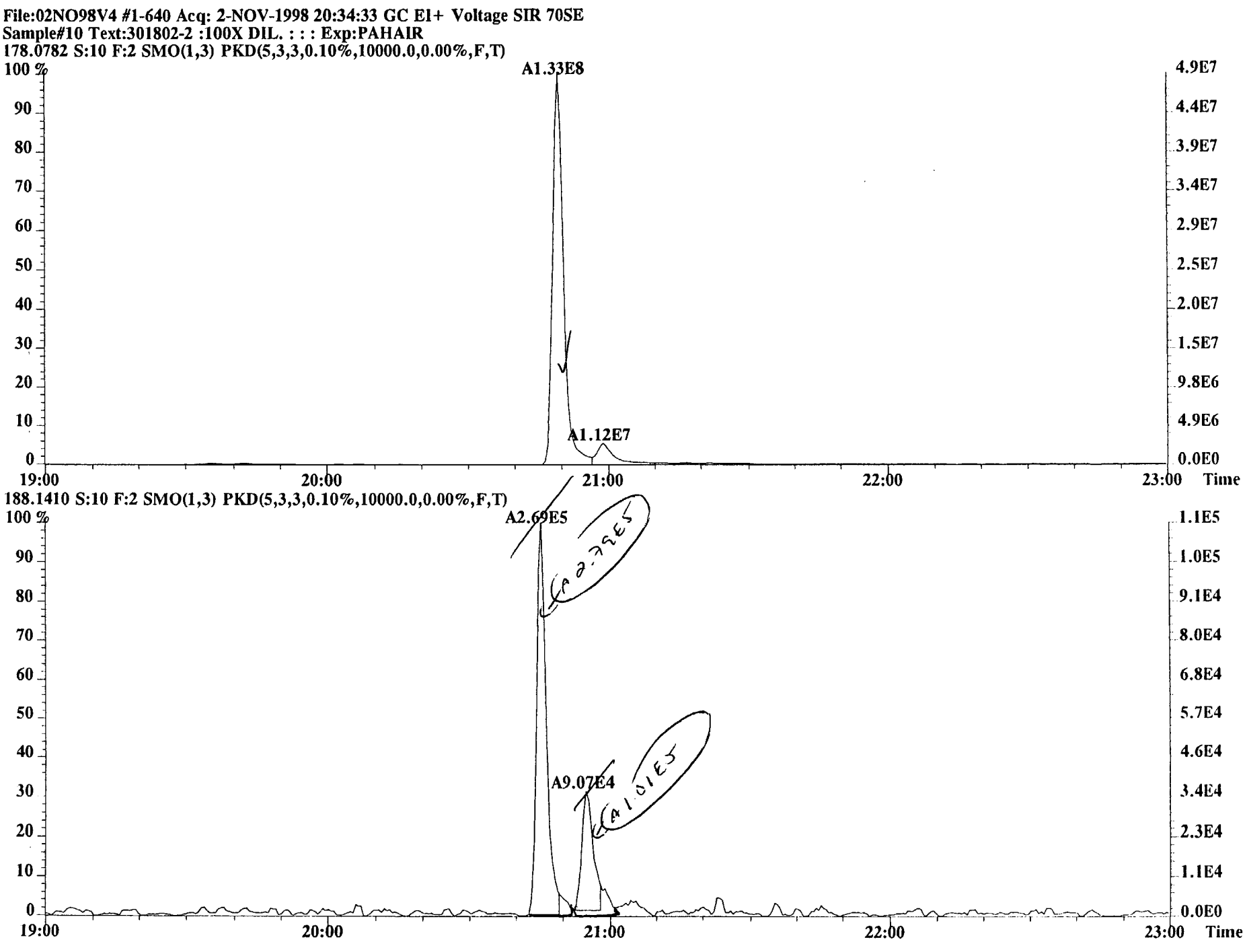

File:02NO98V4 #1-640 Acq: 2-NOV-1998 20:34:33 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR
166.0798 S:10 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.65E5
A3.44E4
A4.78E4
172.0984 S:10 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
17:47
A 3.30E4
17:04
17:12
17:24
17:34
17:58
18:09
18:21
18:33
18:51
19:07
19:17
19:26
19:34
19:51
176.1410 S:10 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.53E4
A 8.18E4
Time

File:02NO98V4 #1-640 Acq: 2-NOV-1998 20:34:33 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR
172.0984 S:10 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

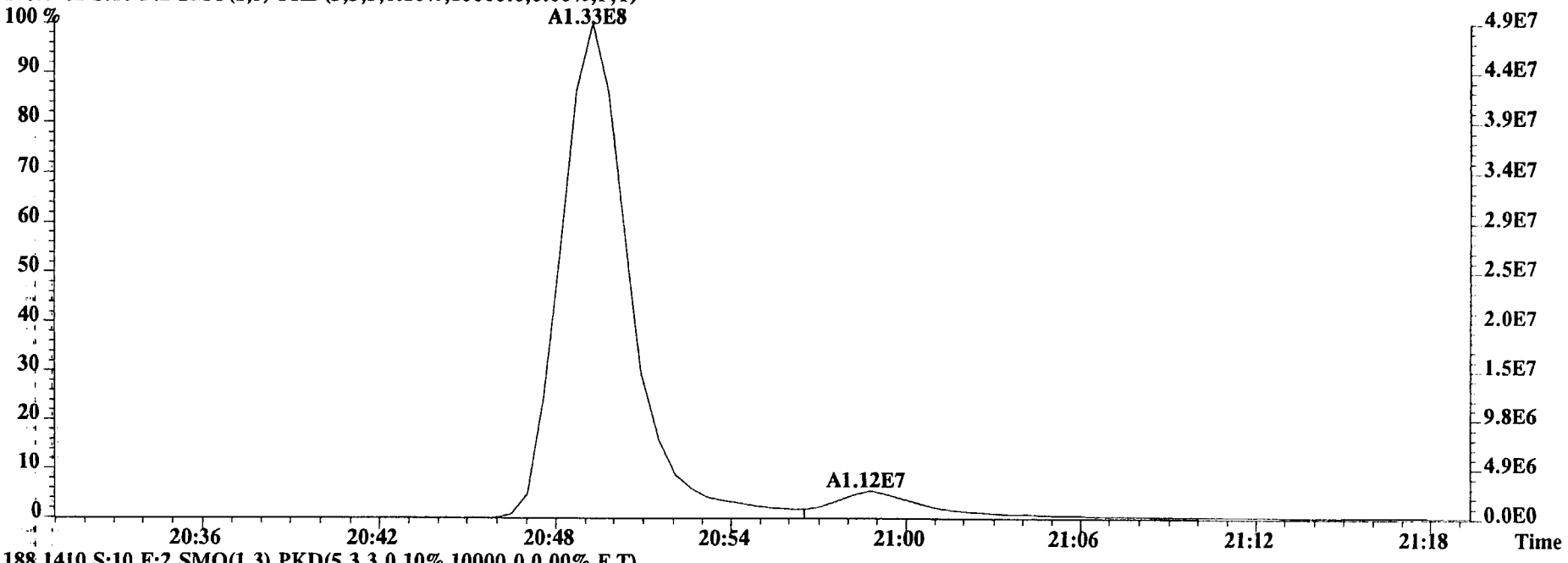


176.1410 S:10 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

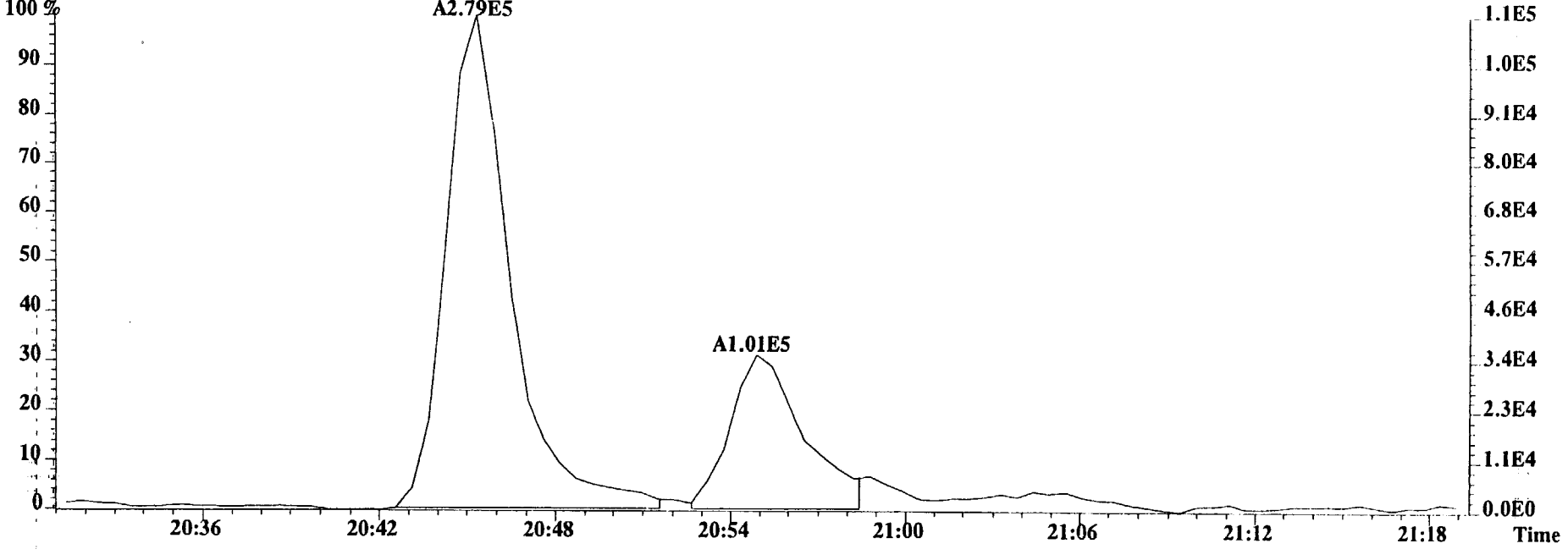


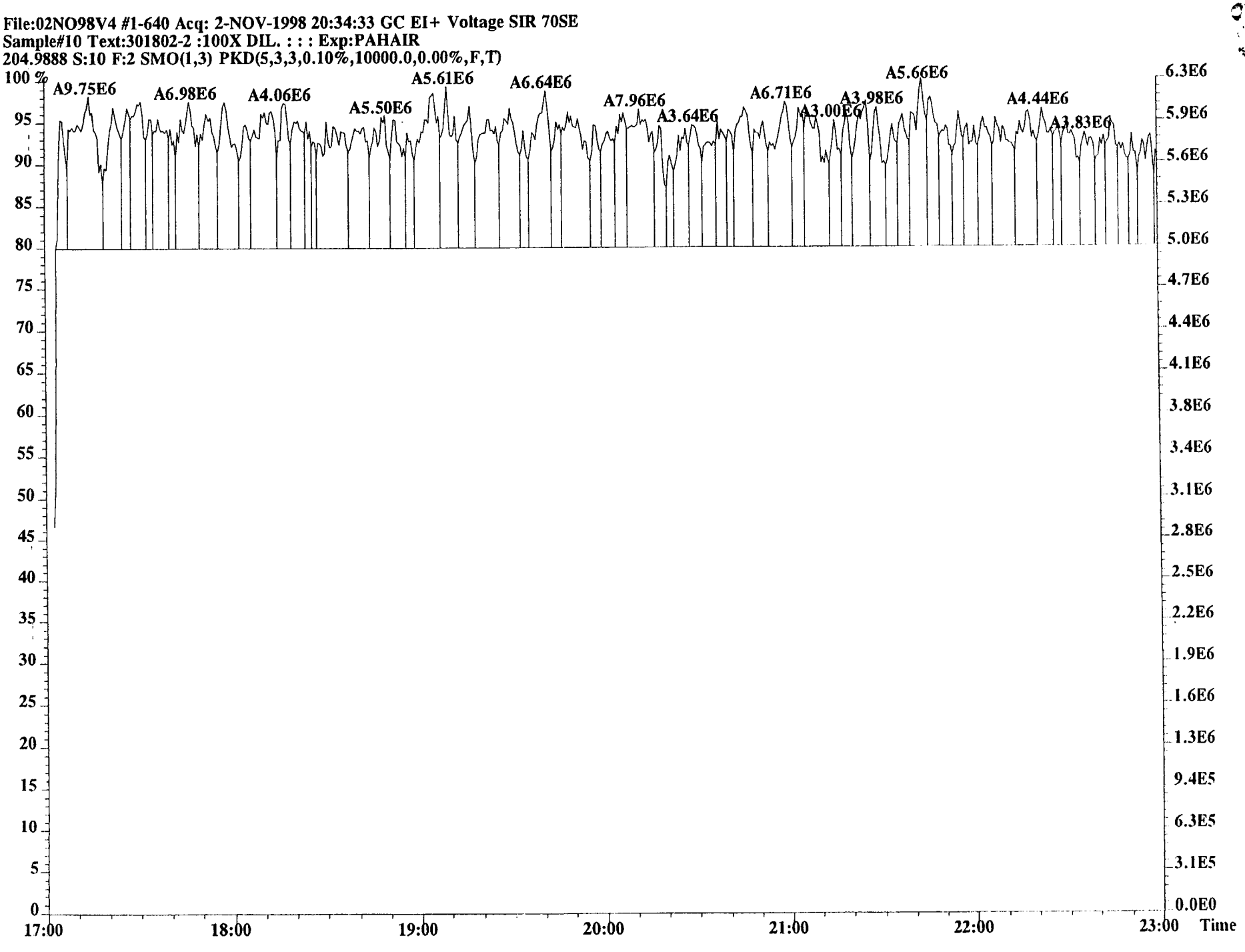

File:02NO98V4 #1-640 Acq: 2-NOV-1998 20:34:33 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR
178.0782 S:10 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.33E8
A1.12E7
4.9E7
4.4E7
3.9E7
3.4E7
2.9E7
2.5E7
2.0E7
1.5E7
9.8E6
4.9E6
0.0E0
19:00
20:00
21:00
22:00
23:00
Time
188.1410 S:10 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A2.69E5
A9.07E4
1.1E5
1.0E5
9.1E4
8.0E4
6.8E4
5.7E4
4.6E4
3.4E4
2.3E4
1.1E4
0.0E0
19:00
20:00
21:00
22:00
23:00
Time

File:02NO98V4 #1-640 Acq: 2-NOV-1998 20:34:33 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR
178.0782 S:10 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

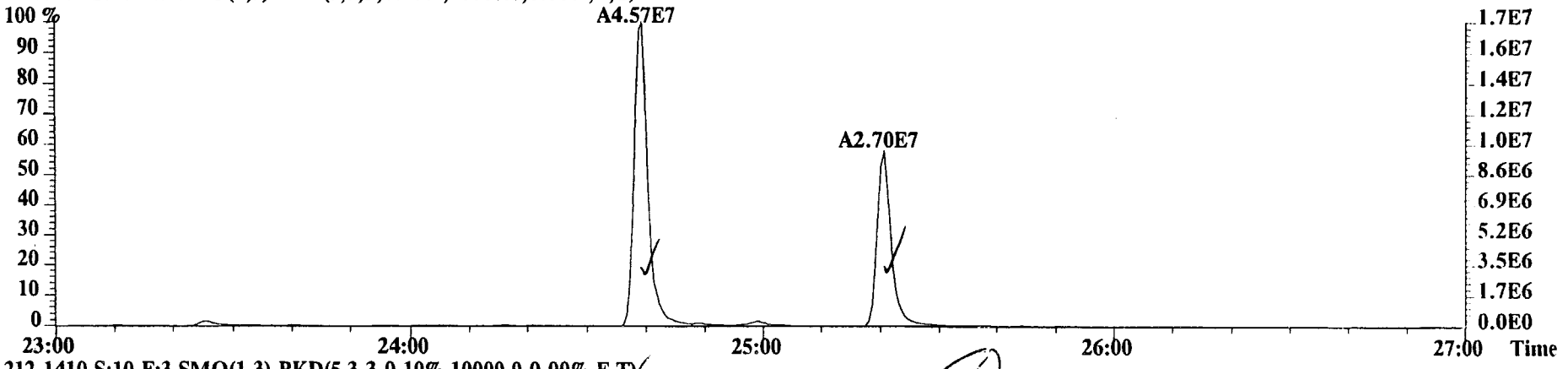


188.1410 S:10 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

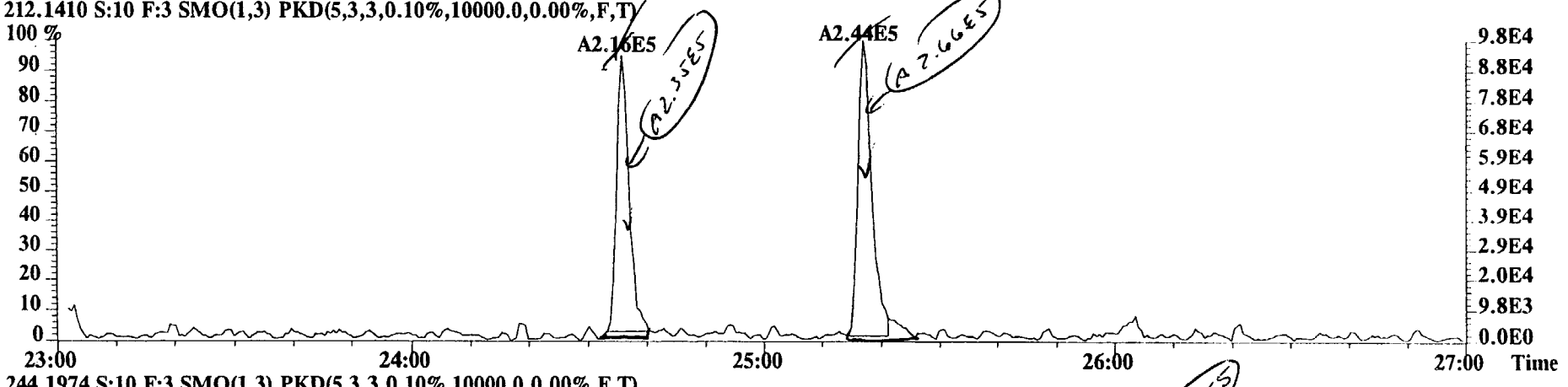



File:02NO98V4 #1-640 Acq: 2-NOV-1998 20:34:33 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR
204.9888 S:10 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A9.75E6
A6.98E6
A4.06E6
A5.50E6
A5.61E6
A6.64E6
A7.96E6
A3.64E6
A6.71E6
A3.00E6
A3.98E6
A5.66E6
A4.44E6
A3.83E6
6.3E6
5.9E6
5.6E6
5.3E6
5.0E6
4.7E6
4.4E6
4.1E6
3.8E6
3.4E6
3.1E6
2.8E6
2.5E6
2.2E6
1.9E6
1.6E6
1.3E6
9.4E5
6.3E5
3.1E5
0.0E0
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
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15
10
5
0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

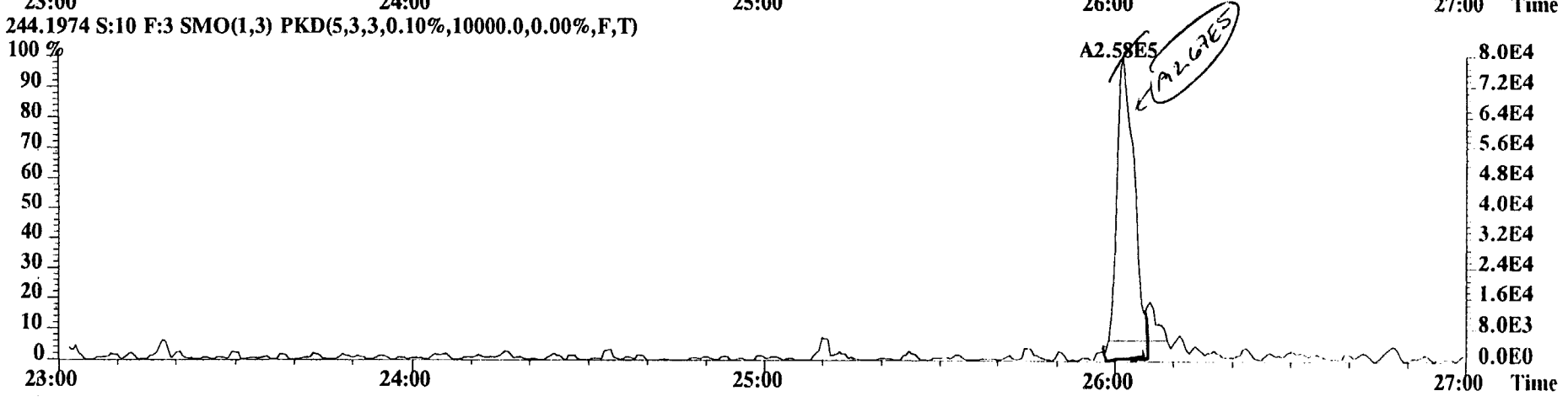
File:02NO98V4 #1-939 Acq: 2-NOV-1998 20:34:33 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR
202.0782 S:10 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



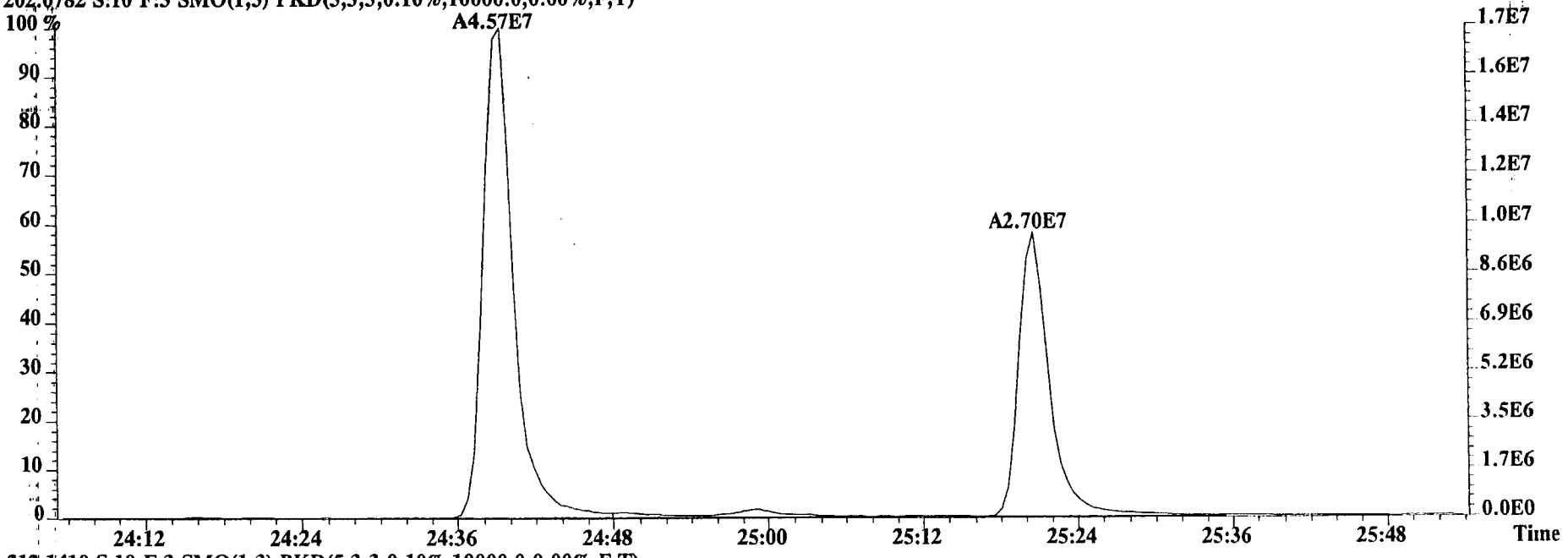
212.1410 S:10 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



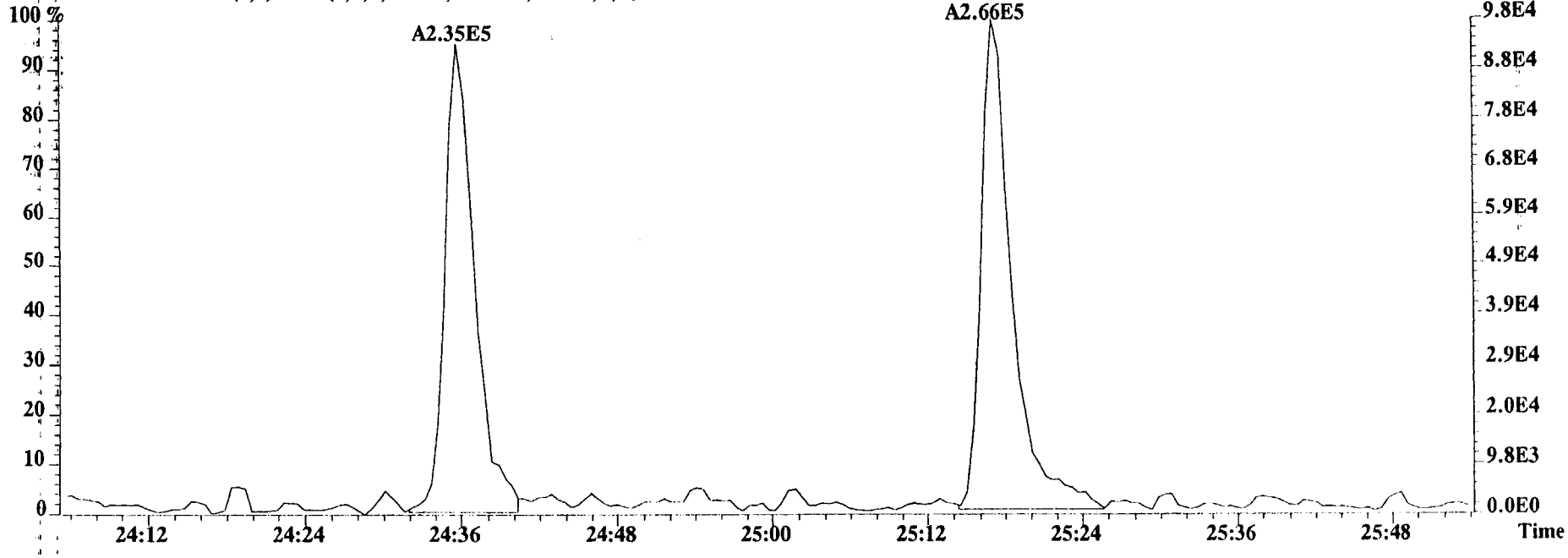
244.1974 S:10 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



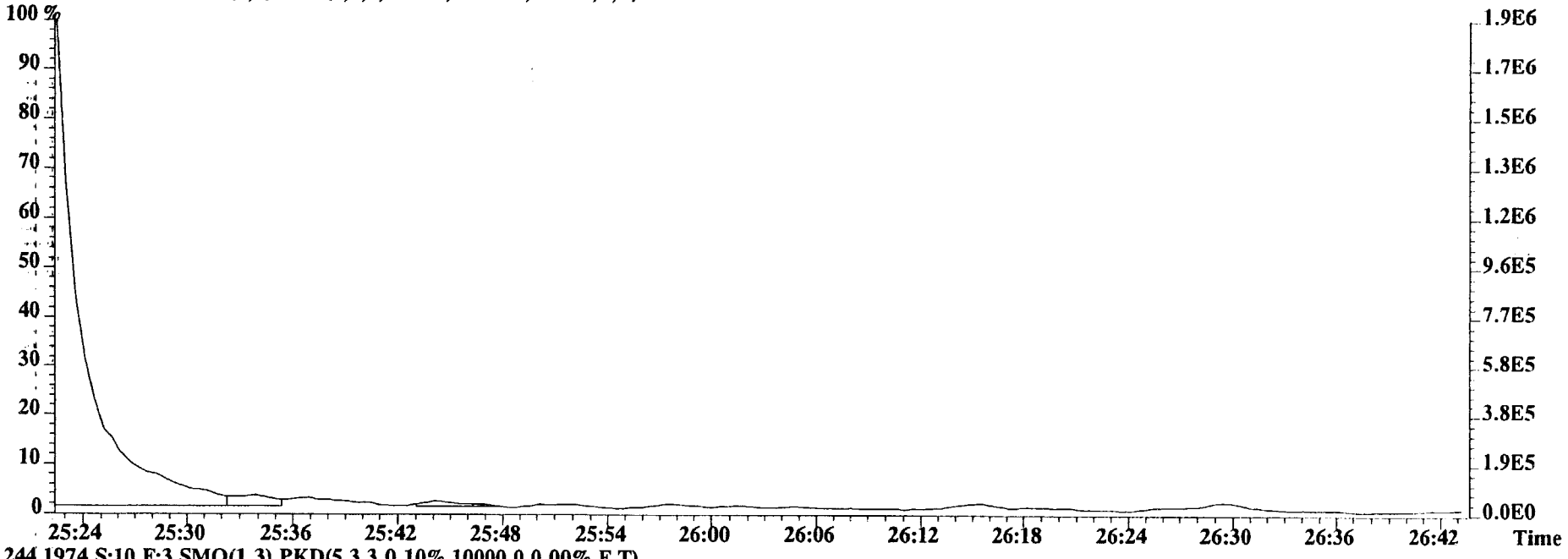
File:02NO98V4 #1-939 Acq: 2-NOV-1998 20:34:33 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR
202.0782 S:10 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



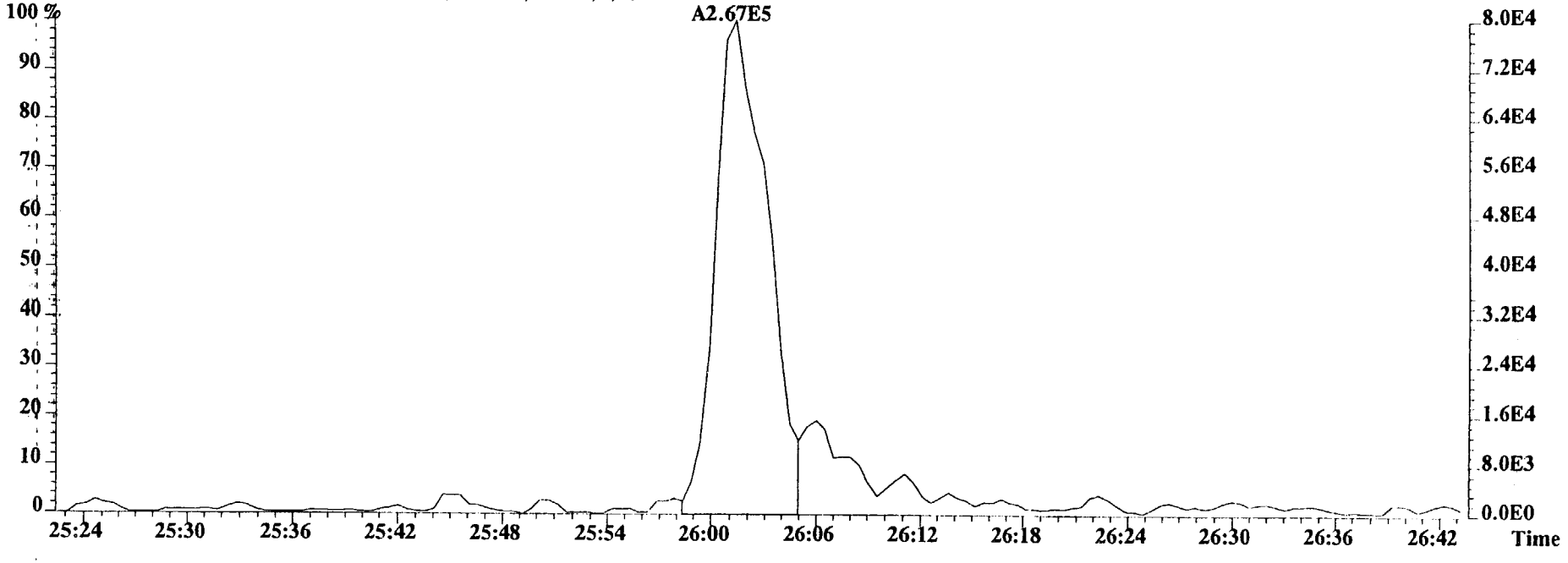
212.1410 S:10 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



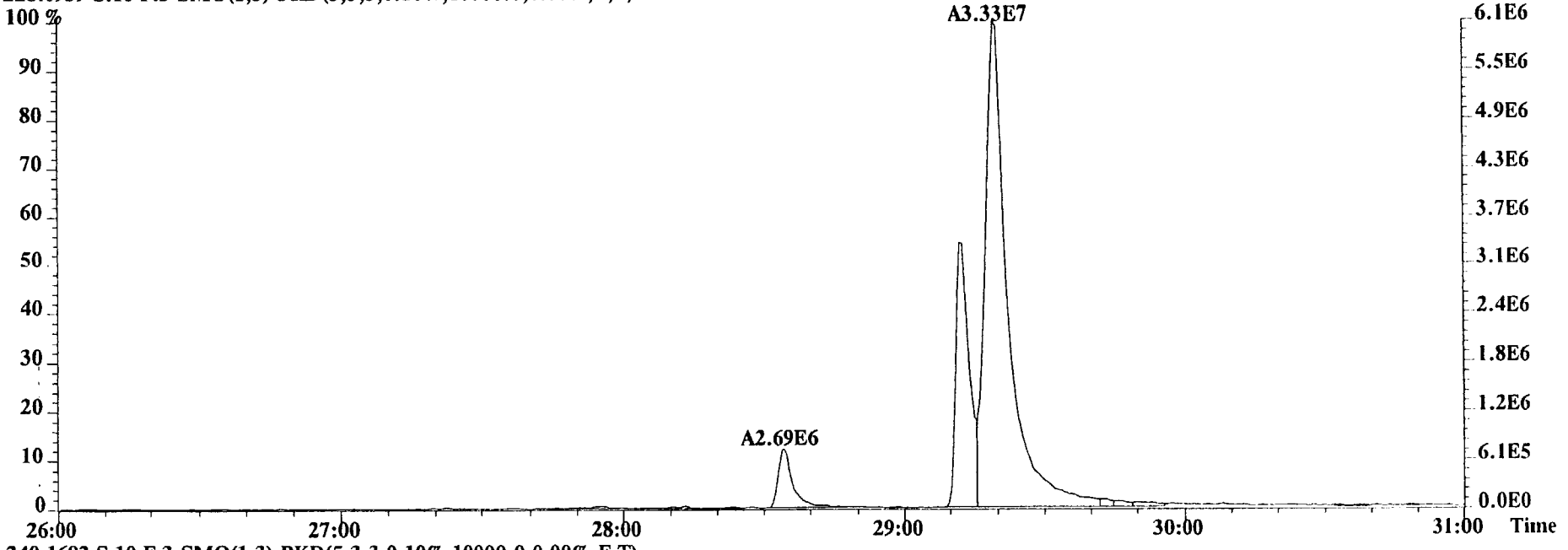
File:02NO98V4 #1-939 Acq: 2-NOV-1998 20:34:33 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR
202.0782 S:10 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



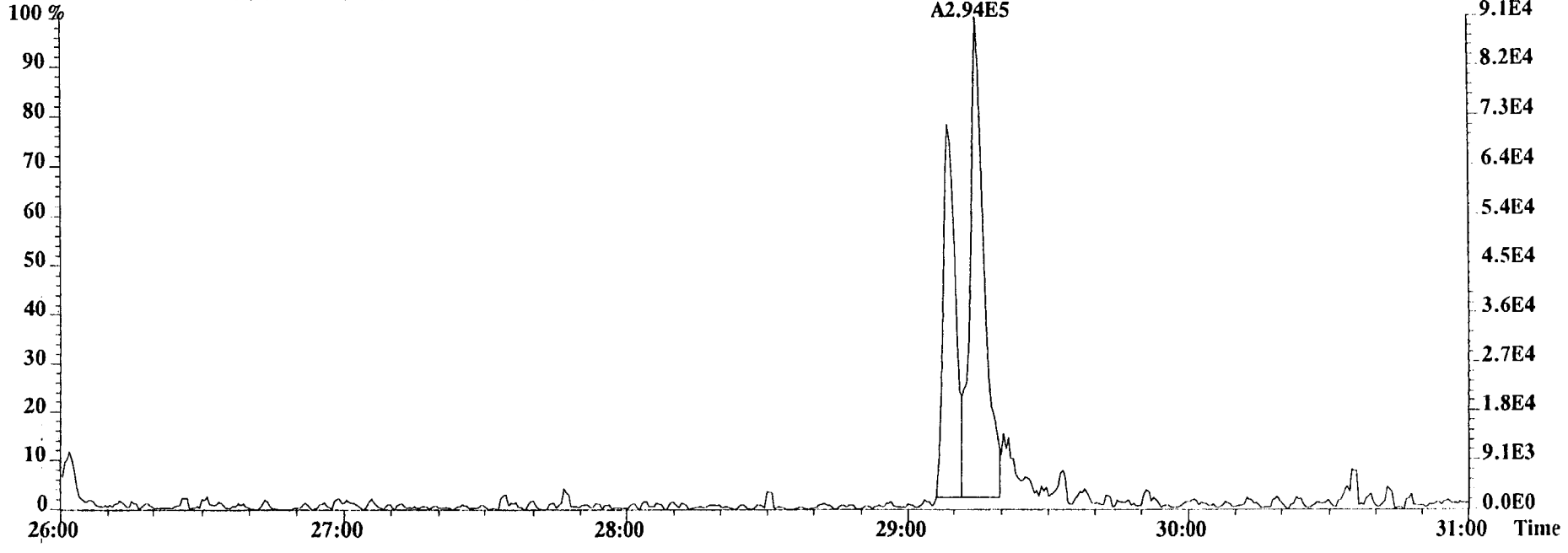
244.1974 S:10 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



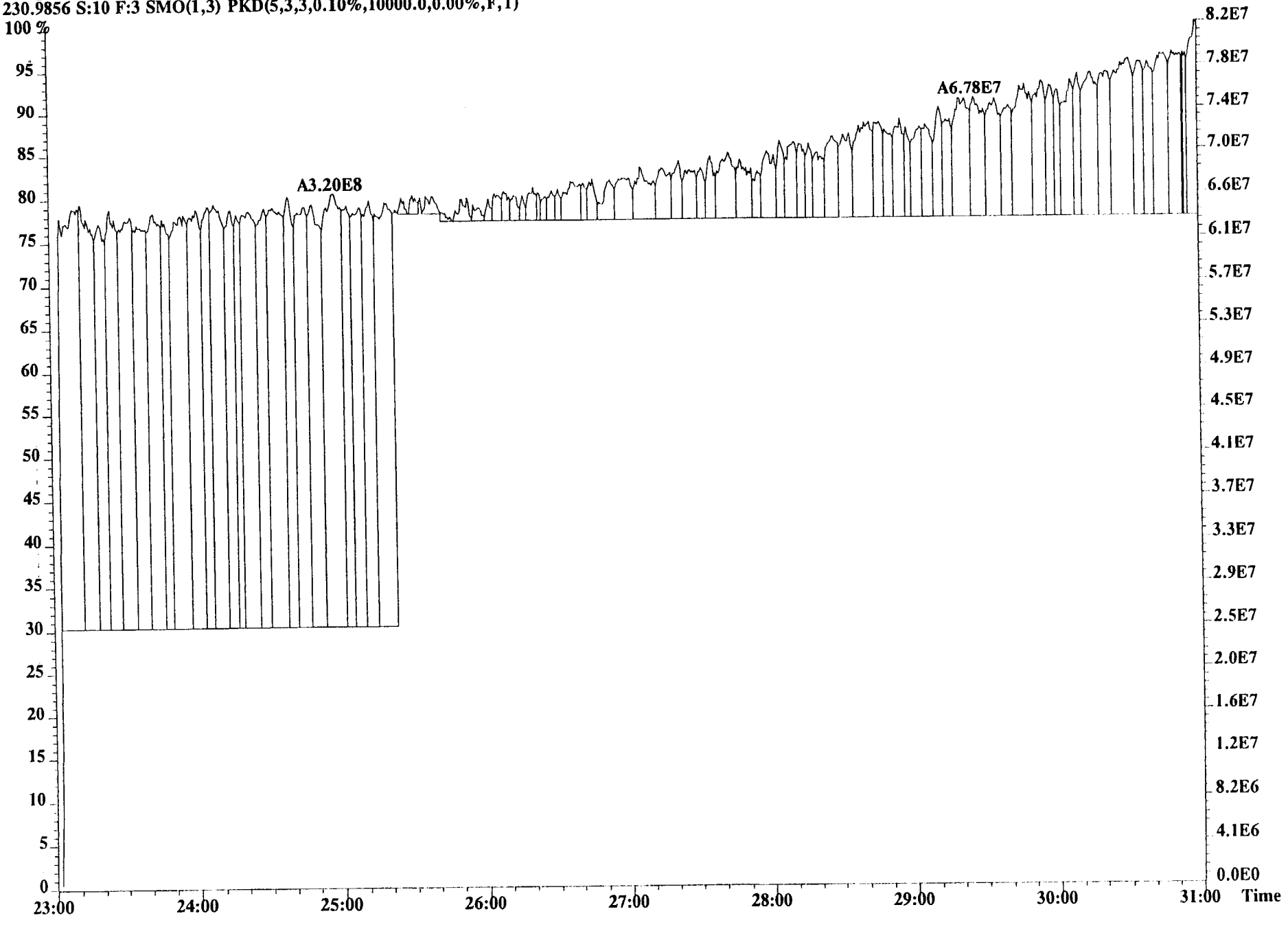
File:02NO98V4 #1-939 Acq: 2-NOV-1998 20:34:33 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR
228.0939 S:10 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



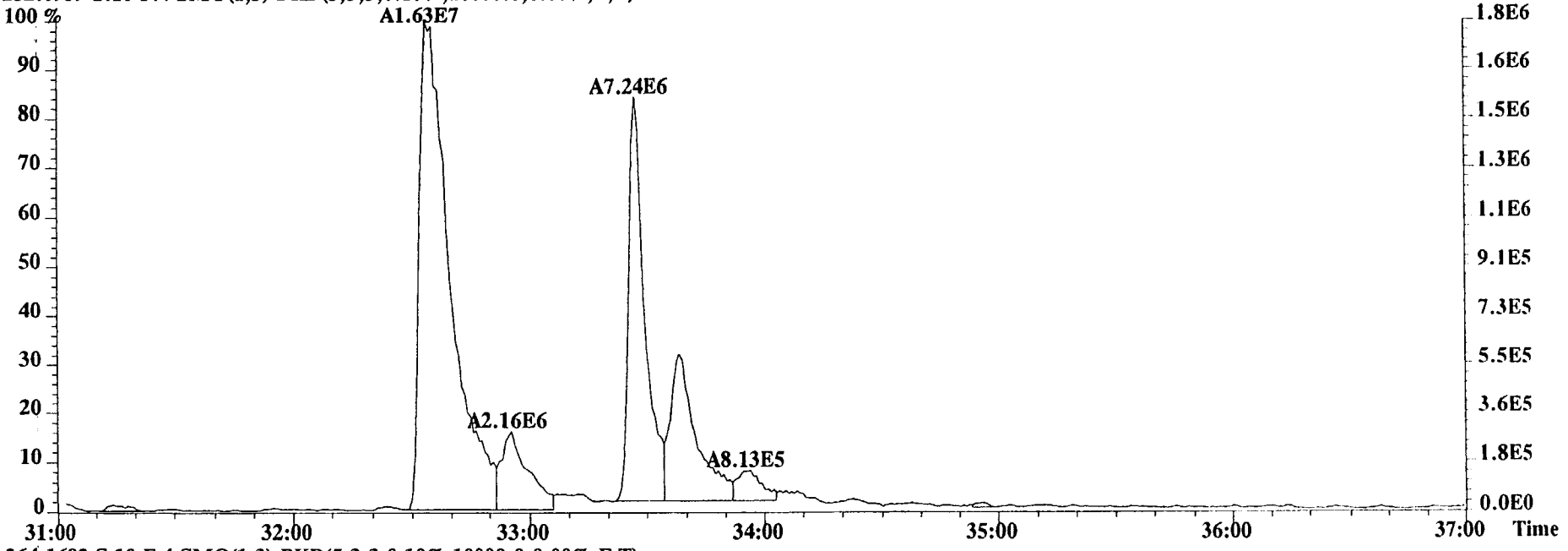
240.1692 S:10 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



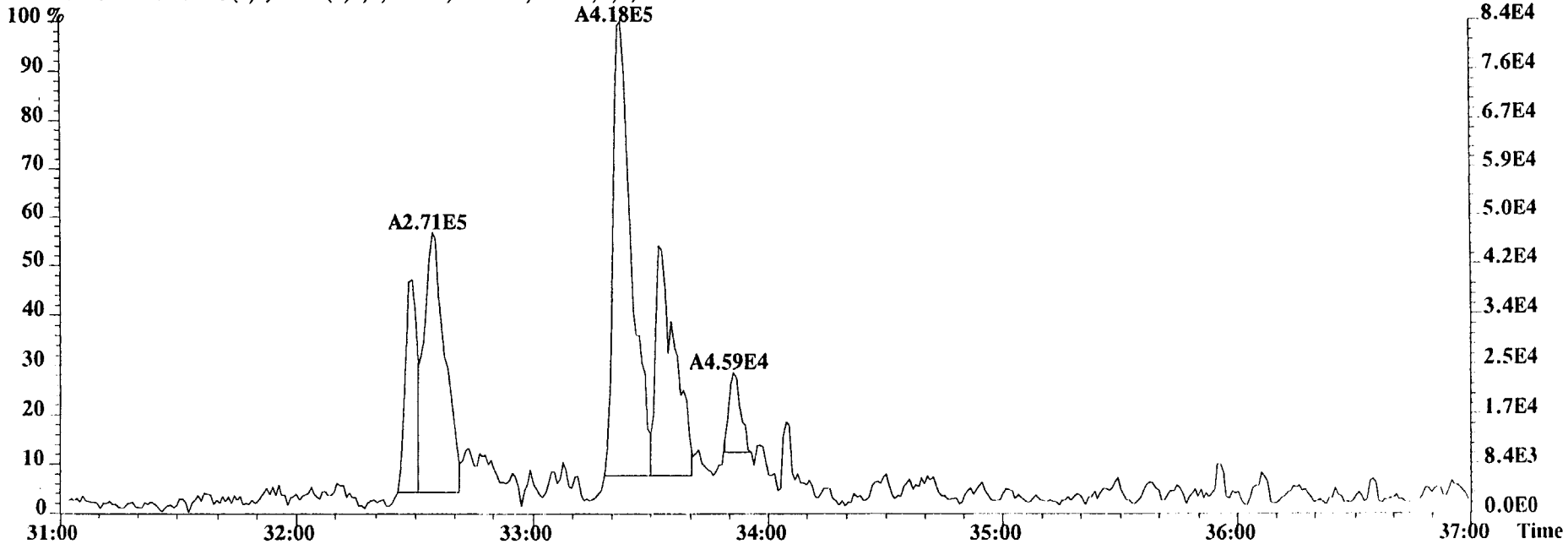
File:02NO98V4 #1-939 Acq: 2-NOV-1998 20:34:33 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR
230.9856 S:10 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



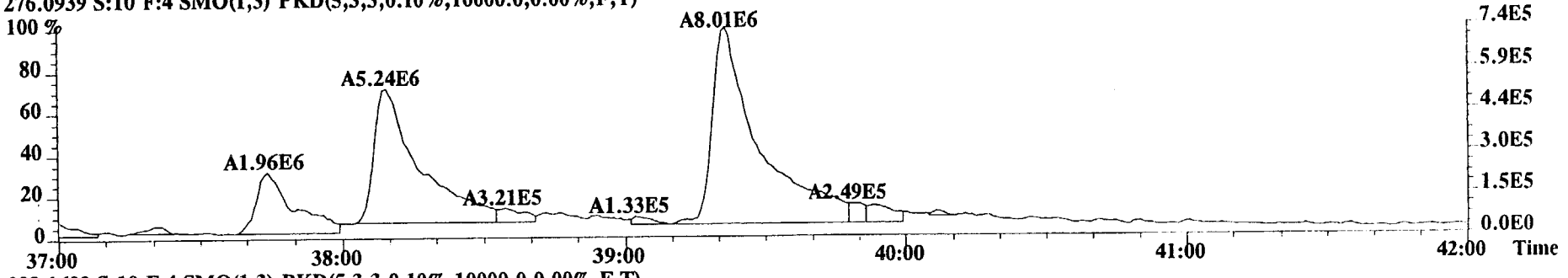
File:02NO98V4 #1-878 Acq: 2-NOV-1998 20:34:33 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR
252.0939 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



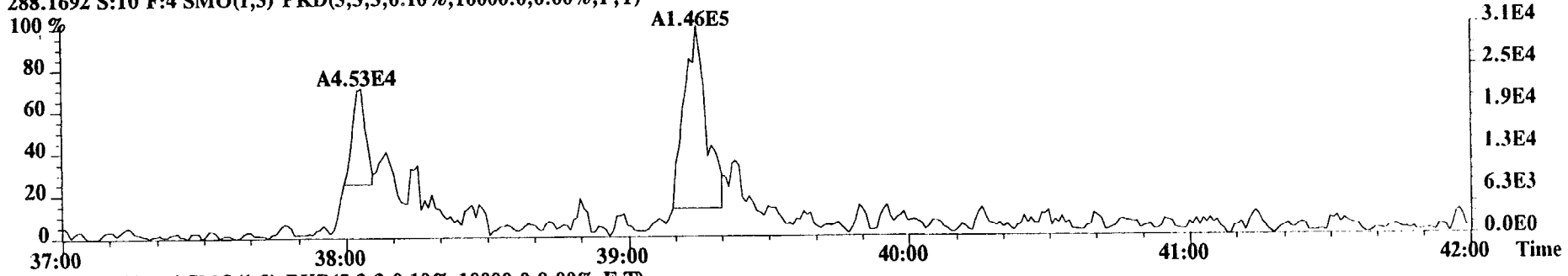
264.1692 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



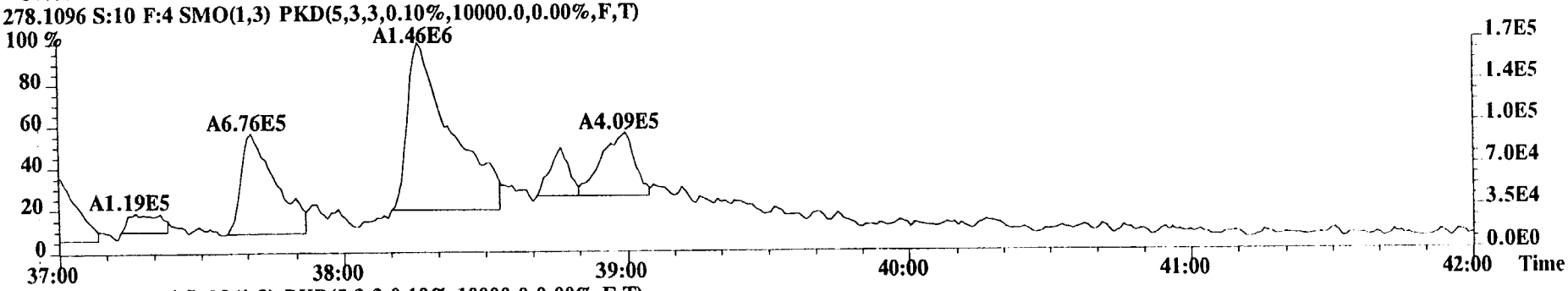
File:02NO98V4 #1-878 Acq: 2-NOV-1998 20:34:33 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR
276.0939 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



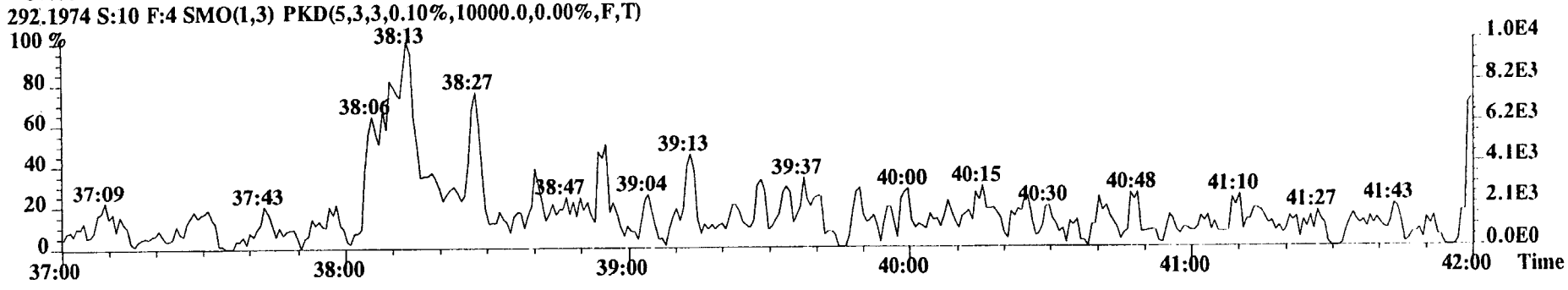
288.1692 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



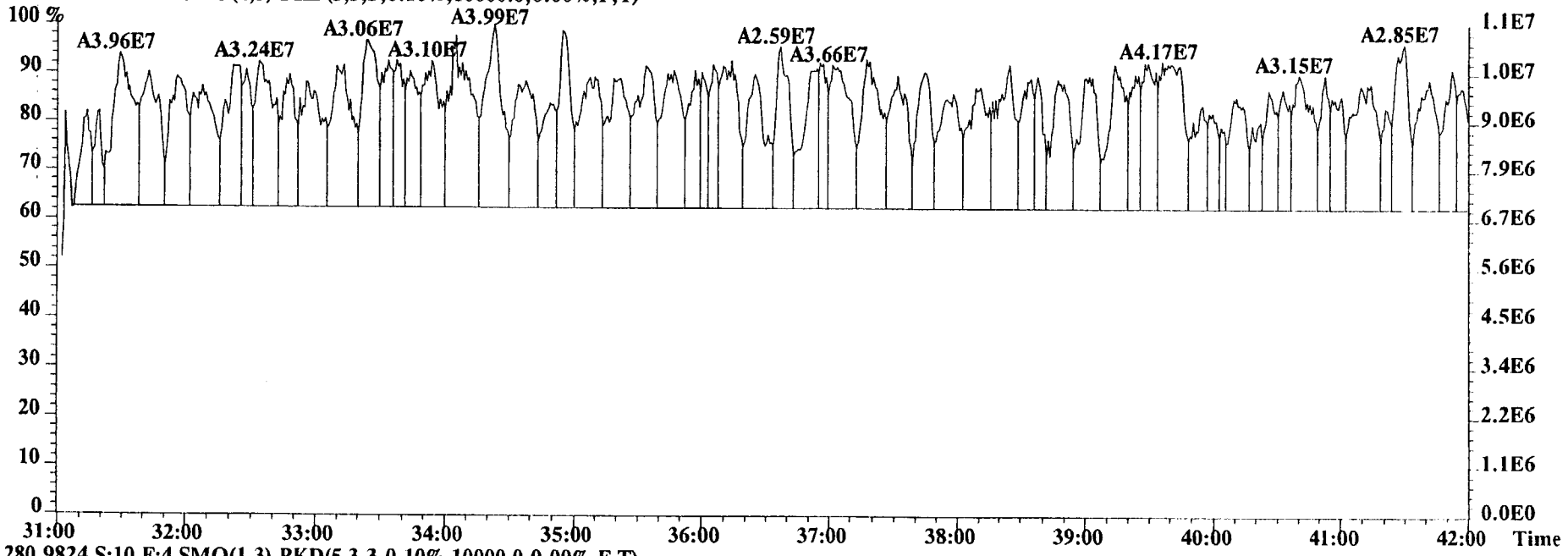
278.1096 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



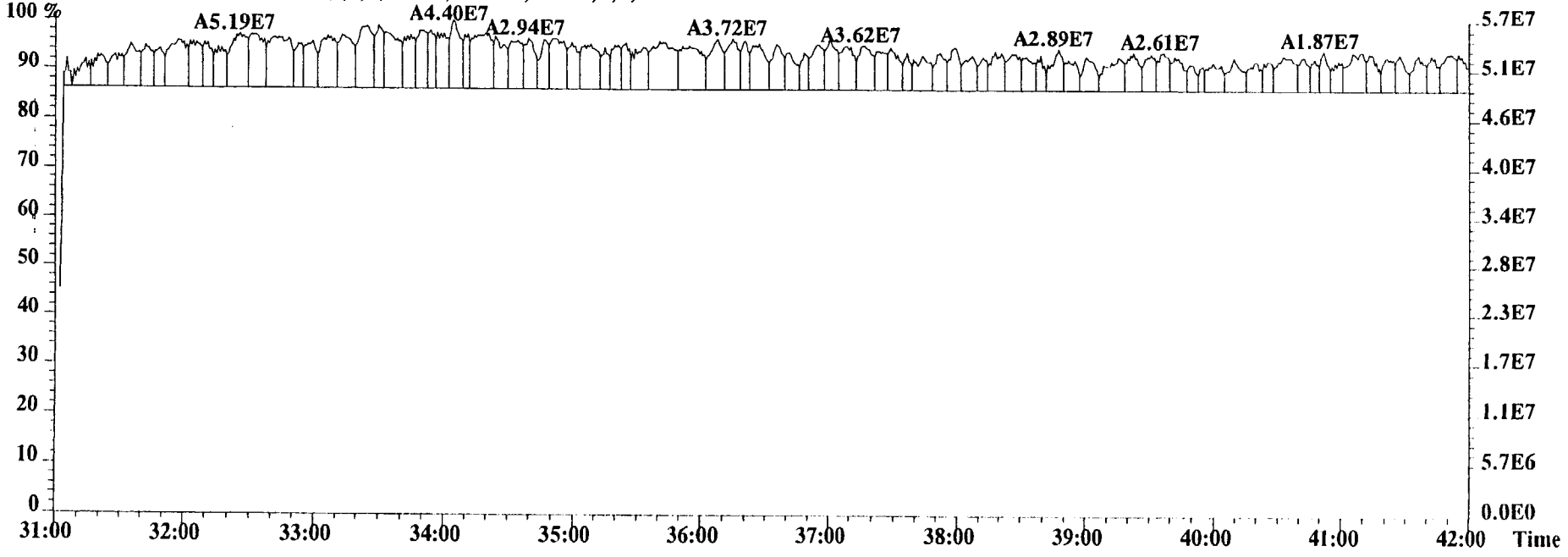
292.1974 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



File:02NO98V4 #1-878 Acq: 2-NOV-1998 20:34:33 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-2 :100X DIL. : : : Exp:PAHAIR
268.9824 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



280.9824 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-I-429-3
Lab ID: 301802-0003-SA
Matrix: AIRTRAIN
Authorized: 29 SEP 98
Dilution Factor: 1.0

Sampled: 23 SEP 98
Prepared: 03 OCT 98

Received: 29 SEP 98
Analyzed: 30 OCT 98

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	160000	ng/sample	--	BD
2-Methylnaphthalene	41000	ng/sample	--	BD
Acenaphthylene	33000	ng/sample	--	D
Acenaphthene	6300	ng/sample	--	D
Fluorene	18000	ng/sample	--	
Phenanthrene	66000	ng/sample	--	BD
Anthracene	9100	ng/sample	--	
Fluoranthene	25000	ng/sample	--	D
Pyrene	18000	ng/sample	--	
Benzo(a)anthracene	11000	ng/sample	--	
Chrysene	18000	ng/sample	--	
Benzo(b)fluoranthene	6100	ng/sample	--	
Benzo(k)fluoranthene	3600	ng/sample	--	
Benzo(e)pyrene	3300	ng/sample	--	
Benzo(a)pyrene	1800	ng/sample	--	
Perylene	280	ng/sample	--	
Indeno(1,2,3-cd)pyrene	3900	ng/sample	--	
Dibenz(a,h)anthracene	980	ng/sample	--	
Benzo(g,h,i)perylene	4000	ng/sample	--	

B = Compound is also detected in the blank.
D = Compound quantitated using a secondary dilution.

Reported By: Clark Pickell

Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-I-429-3
Lab ID: 301802-0003-SA
Matrix: AIRTRAIN Sampled: 23 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 30 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	77	D
Acenaphthylene-d8	58	D
Acenaphthene-d10	70	D
Fluorene-d10	50	
Phenanthrene-d10	99	D
Fluoranthene-d10	49	Dm
Pyrene-d10	80	
Benzo(a)anthracene-d12	75	
Perylene-d12	54	
Indeno(123-cd)pyrene-d12	90	
Chrysene-d12	68	
Benzo(b)fluoranthene-d12	99	
Benzo(k)fluoranthene-d12	73	
Benzo(a)pyrene-d12	68	
Dibenz(a,h)anthracene-d14	87	
Benzo(g,h,i)perylene-d12	68	

Field Surrogates	% Recovery
13C-Fluorene	94

D = Compound quantitated using a secondary dilution.
m = Internal Standard recovery is outside method recovery goal.

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

Mass Spec : VG-4 Results : 29OC98V4231.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 29-OCT-98
Data file : 29OC98V4 301802 3 10X DIL. Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio	R. T. mm:ss		RRF	pg/ SAMPLE	Rec/ MDL
d10-2-Methylnaphthalene	3132140	1.00 Y	12: 28	Y	1.00	50.00	
d10-Anthracene	8497880	1.00 Y	20: 55	Y	1.00	50.00	
d10-Fluorene	5992040	1.00 Y	17: 41	Y	1.42	24.81	50
Fluorene	1233420000	1.00 Y	17: 46	Y	1.16	1.8e+04	E
d10-Phenanthrene	18510260	1.00 Y	20: 45	Y	2.81	38.79	78
Phenanthrene	7088220000	1.00 Y	20: 50	Y	0.89	-	SAT'D
Anthracene	1341438000	1.00 Y	20: 58	Y	0.80	9054.19	E
d14-Terphenyl	19624660	1.00 Y	26: 0	Y	1.00	50.00	
d10-Fluoranthene	23382400	1.00 Y	24: 35	Y	1.41	42.23	84
Fluoranthene	6301600000	1.00 Y	24: 39	Y	1.11	-	SAT'D
d10-Pyrene	23884800	1.00 Y	25: 17	Y	1.52	40.08	80
Pyrene	5274840000	1.00 Y	25: 20	Y	1.21	1.8e+04	E
d12-Benzo(a)anthracene	13300020	1.00 Y	29: 7	Y	0.90	37.65	75
Benzo(a)anthracene	1754802000	1.00 Y	29: 11	Y	1.20	1.1e+04	E
d12-Chrysene	17052780	1.00 Y	29: 14	Y	1.28	33.97	68
Chrysene	3397960000	1.00 Y	29: 19	Y	1.08	1.8e+04	E
d12-Benzo(e)pyrene	42941600	1.00 Y	33: 21	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	19385000	1.00 Y	32: 28	Y	0.45	49.73	99
Benzo(b)fluoranthene	1370000000	1.00 Y	32: 33	Y	1.17	6054.65	E
d12-Benzo(k)fluoranthene	29788200	1.00 Y	32: 34	Y	0.95	36.58	73
Benzo(k)fluoranthene	1236000000	1.00 Y	32: 38	Y	1.16	3564.23	
d12-Benzo(a)pyrene	19833040	1.00 Y	33: 31	Y	0.68	34.13	68
Benzo(e)pyrene	1072592000	1.00 Y	33: 26	Y	1.64	3295.96	
Benzo(a)pyrene	392810000	1.00 Y	33: 37	Y	1.07	1847.59	
d12-Perylene	14616040	1.00 Y	33: 49	Y	0.63	27.00	54
Perylene	69000000	1.00 Y	33: 54	Y	1.71	275.49	
d12-Indeno(123-cd)pyrene	17111840	1.00 Y	38: 0	Y	0.44	44.82	90
Indeno(123-cd)pyrene	410000000	1.00 Y	38: 7	Y	0.62	3858.57	
d14-Dibenz(ah)anthracene	9231500	1.00 Y	38: 5	Y	0.25	43.73	87
Dibenz(ah)anthracene	126400000	1.00 Y	38: 14	Y	1.40	975.55	
d12-Benzo(ghi)perylene	16911140	1.00 Y	39: 11	Y	0.58	33.97	68
Benzo(ghi)perylene	687614000	1.00 Y	39: 20	Y	1.02	4001.95	
d10-Fluorene	5992040	1.00 Y	17: 41	Y	1.00	50.00	
13C-Fluorene	4554900	1.00 Y	17: 46	Y	0.81	46.92	94

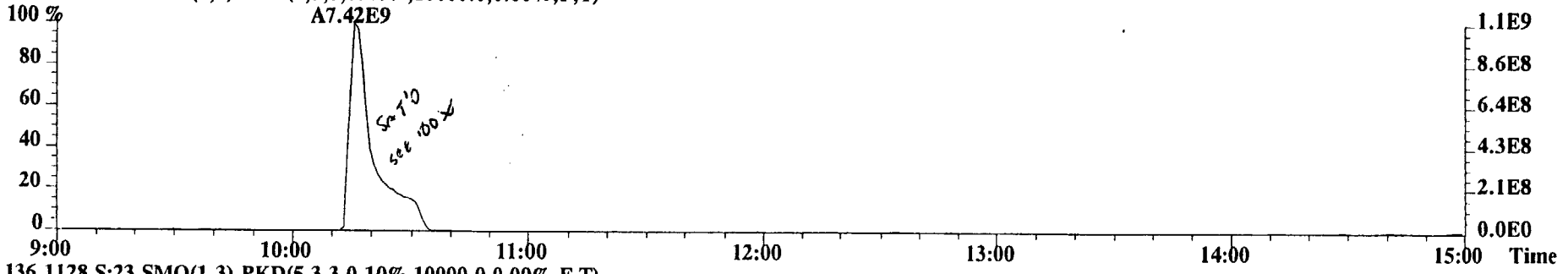
11-4-98
CP

	0.5	
Rec/ MDL		
	1566070	1566070
	4248940	4248940
50	2996020	2996020
E	616710000	616710000
78	9255130	9255130
SAT'D	3544110000	3544110000
E	670719000	670719000
	9812330	9812330
84	11691200	11691200
SAT'D	3150800000	3150800000
80	11942400	11942400
E	2637420000	2637420000
75	6650010	6650010
E	877401000	877401000
68	8526390	8526390
E	1698980000	1698980000
	21470800	21470800
99	9692500	9692500
E	685000000	685000000
73	14894100	14894100
	618000000	618000000
68	9916520	9916520
	536296000	536296000
	196405000	196405000
54	7308020	7308020
	34500000	34500000
90	8555920	8555920
	205000000	205000000
87	4615750	4615750
	63200000	63200000
68	8455570	8455570
	343807000	343807000

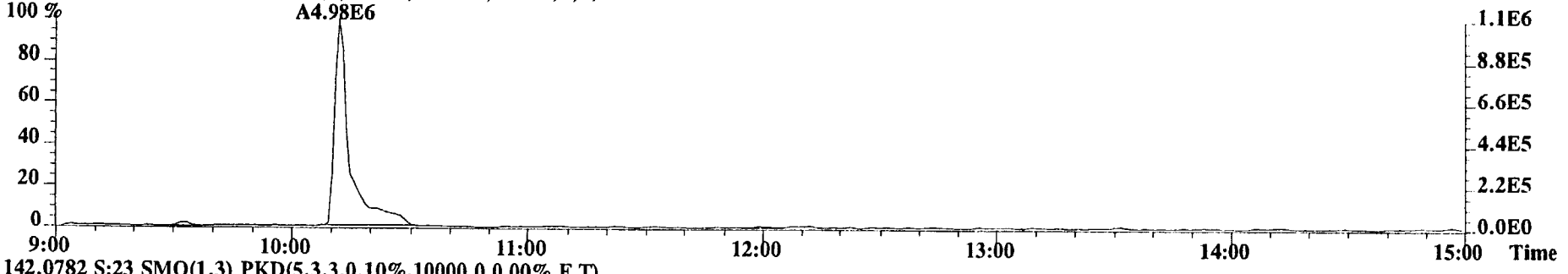
Mass Spec : VG-4 Results : 29OC98V4231.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 29-OCT-98
Data file : 29OC98V4 301802-3 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMPLE	Rec/ MDL
d10-2-Methylnaphthalene	3132140	1.00	Y	12: 28	Y	1.00	50.00	
d8-Naphthalene	9950900	1.00	Y	10: 12	Y	2.24	70.89	142
Naphthalene	14849580000	1.00	Y	10: 16	Y	1.23	1.2e+05	0.000
2-Methylnaphthalene	1886674000	1.00	Y	12: 34	Y	0.56	3.4e+04	0.000
d8-Acenaphthylene	5457260	1.00	Y	15: 27	Y	1.21	71.77	144
Acenaphthylene	760106000	1.00	Y	15: 30	Y	0.94	1.5e+04	0.000
d10-Acenaphthene	515556	1.00	Y	16: 2	Y	0.74	11.05	22
Acenaphthene	86485400	1.00	Y	16: 8	Y	1.25	1.3e+04	0.000
d10-Anthracene	8497880	1.00	Y	20: 55	Y	1.00	50.00	
d10-Fluorene	5992040	1.00	Y	17: 41	Y	1.42	24.81	50
Fluorene	1233420000	1.00	Y	17: 46	Y	1.16	1.8e+04	0.000
d10-Phenanthrene	18510260	1.00	Y	20: 45	Y	2.81	38.79	78
Phenanthrene	7088220000	1.00	Y	20: 50	Y	0.89	4.3e+04	0.000
Anthracene	1341438000	1.00	Y	20: 58	Y	0.80	9054.19	0.000
d14-Terphenyl	19624660	1.00	Y	26: 0	Y	1.00	50.00	
d10-Fluoranthene	23382400	1.00	Y	24: 35	Y	1.41	42.23	84
Fluoranthene	6301600000	1.00	Y	24: 39	Y	1.11	2.4e+04	0.000
d10-Pyrene	23884800	1.00	Y	25: 17	Y	1.52	40.08	80
Pyrene	5274840000	1.00	Y	25: 20	Y	1.21	1.8e+04	0.000
d12-Benzo(a)anthracene	13300020	1.00	Y	29: 7	Y	0.90	37.65	75
Benzo(a)anthracene	1754802000	1.00	Y	29: 11	Y	1.20	1.1e+04	0.000
d12-Chrysene	17052780	1.00	Y	29: 14	Y	1.28	33.97	68
Chrysene	3397960000	1.00	Y	29: 19	Y	1.08	1.8e+04	0.000
d12-Benzo(e)pyrene	42941600	1.00	Y	33: 21	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	19385000	1.00	Y	32: 28	Y	0.45	49.73	99
Benzo(b)fluoranthene	2624100000	1.00	Y	32: 33	Y	1.17	1.2e+04	0.000
d12-Benzo(k)fluoranthene	29788200	1.00	Y	32: 34	Y	0.95	36.58	73
Benzo(k)fluoranthene	2624100000	1.00	Y	32: 33	Y	1.16	7567.06	0.000
d12-Benzo(a)pyrene	19833040	1.00	Y	33: 31	Y	0.68	34.13	68
Benzo(e)pyrene	1072592000	1.00	Y	33: 26	Y	1.64	3295.96	0.000
Benzo(a)pyrene	392810000	1.00	Y	33: 37	Y	1.07	1847.59	0.000
d12-Perylene	14616040	1.00	Y	33: 49	Y	0.63	27.00	54
Perylene	* No Peak	0.00	N	33: 54	N	1.71	0.00	0.000
d12-Indeno(123-cd)pyrene	17111840	1.00	Y	38: 0	Y	0.14	44.82	90
Indeno(123-cd)pyrene	574154000	1.00	Y	38: 7	Y	0.62	5403.45	0.000
d14-Dibenz(ah)anthracene	9231500	1.00	Y	38: 5	Y	0.25	43.73	87
Dibenz(ah)anthracene	188216600	1.00	Y	38: 14	Y	1.40	1452.65	0.000
d12-Benzo(ghi)perylene	16911140	1.00	Y	39: 11	Y	0.58	33.97	68
Benzo(ghi)perylene	687614000	1.00	Y	39: 20	Y	1.02	4001.95	0.000
d10-Fluorene	5992040	1.00	Y	17: 41	Y	1.42	4.91	10
13C-Fluorene	4554900	1.00	Y	17: 46	Y	1.00	76.02	0.000

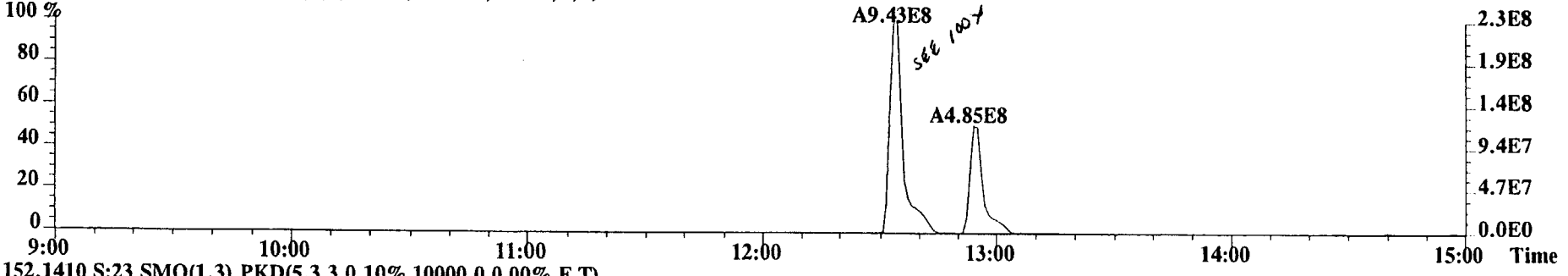
File:29OC98V4 #1-510 Acq:30-OCT-1998 09:26:14 GC EI+ Voltage SIR 70SE
Sample#23 Text:301802-3 :10X DIL. : : : Exp:PAHAIR
128.0626 S:23 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



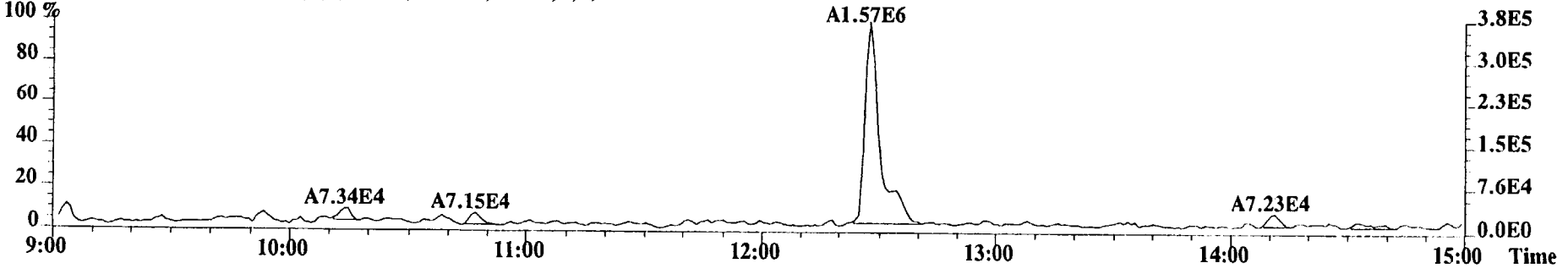
136.1128 S:23 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



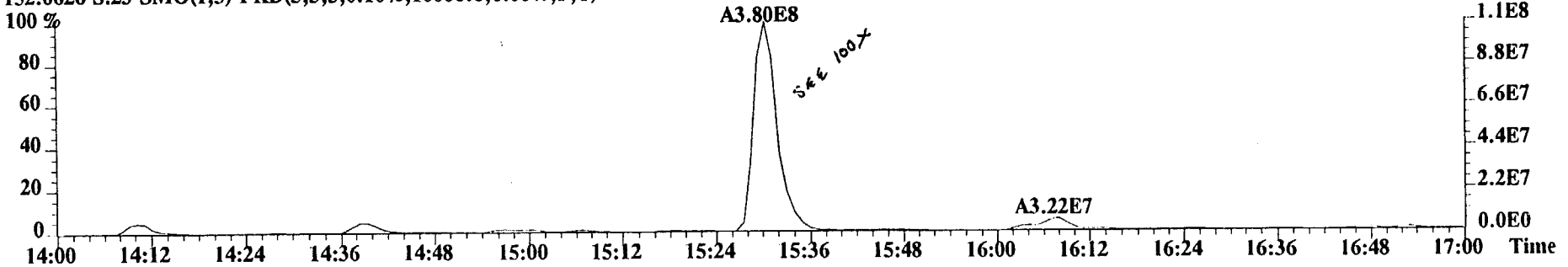
142.0782 S:23 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



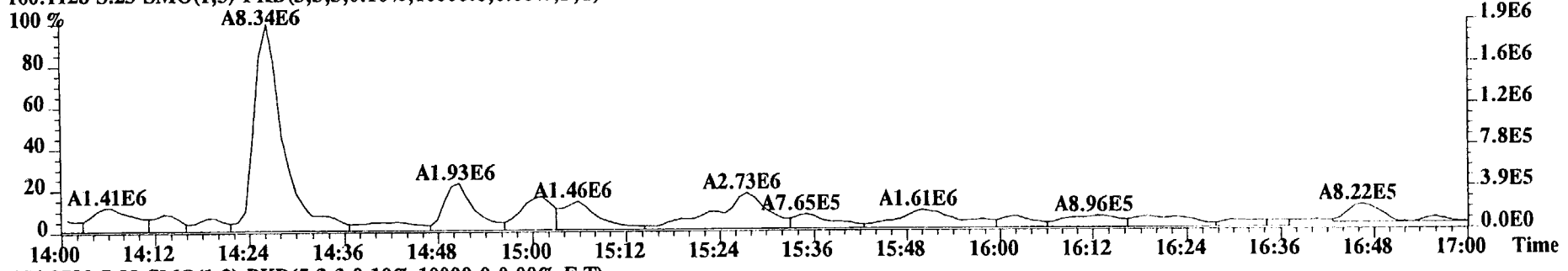
152.1410 S:23 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



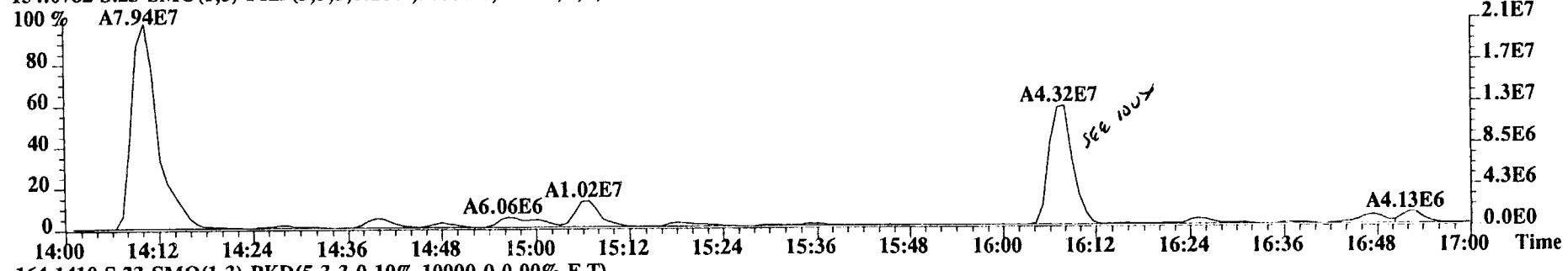
File:29OC98V4 #1-510 Acq:30-OCT-1998 09:26:14 GC EI+ Voltage SIR 70SE
Sample#23 Text:301802-3 :10X DIL. : : : Exp:PAHAIR
152.0626 S:23 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



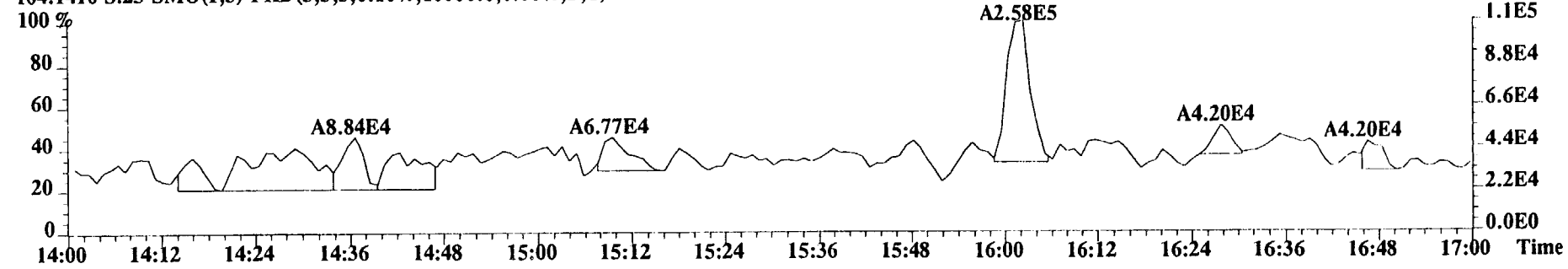
160.1128 S:23 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

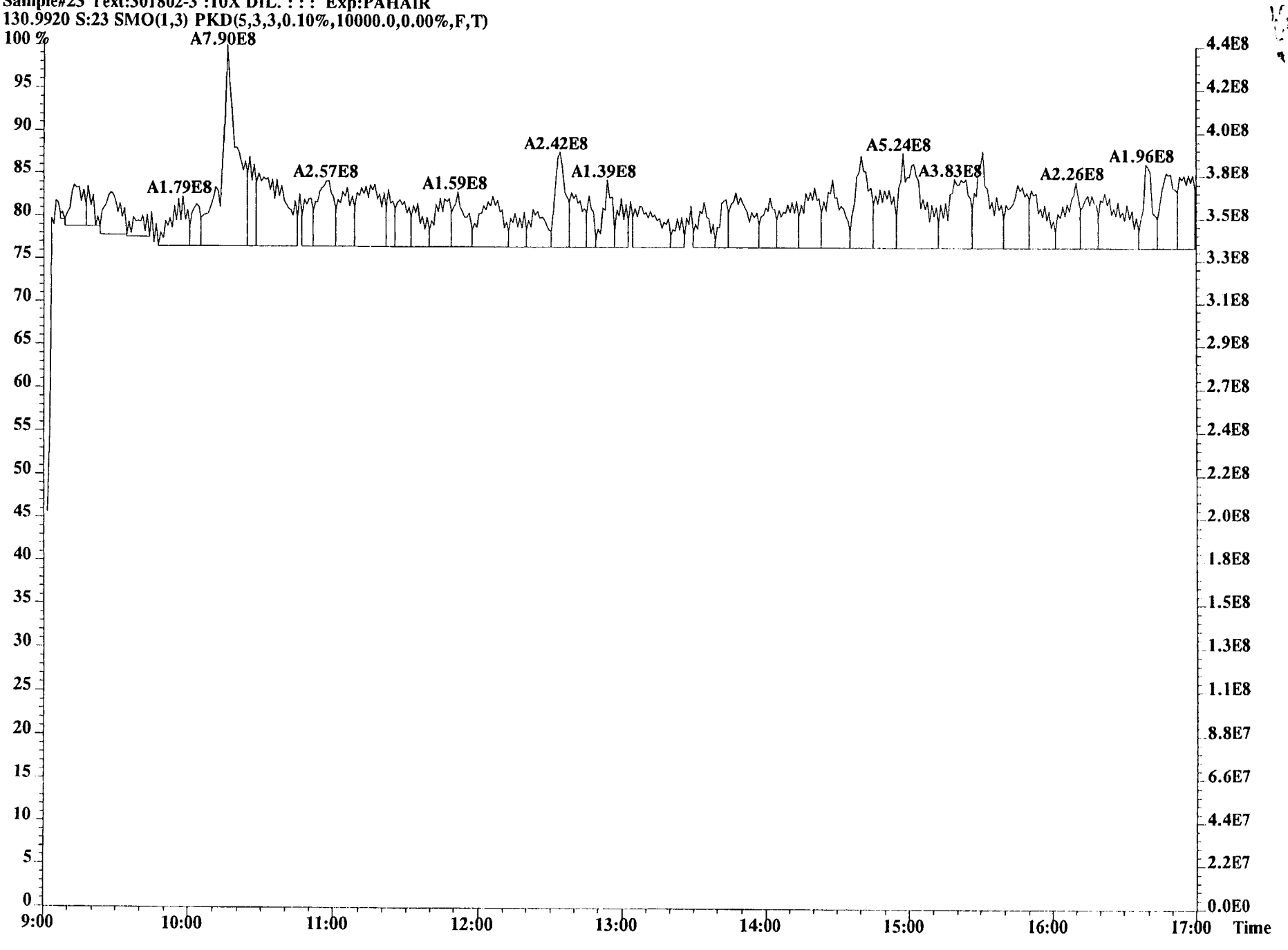


154.0782 S:23 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

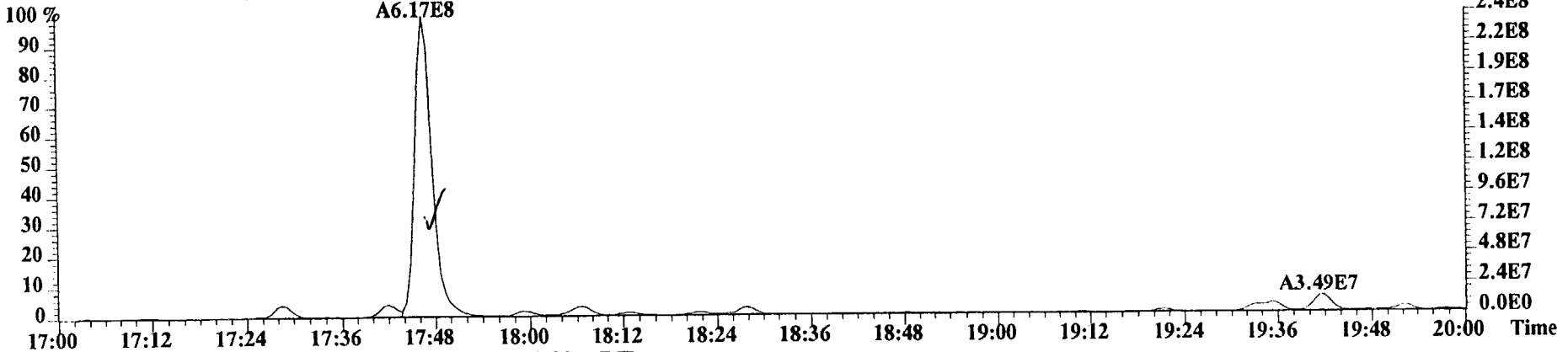


164.1410 S:23 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

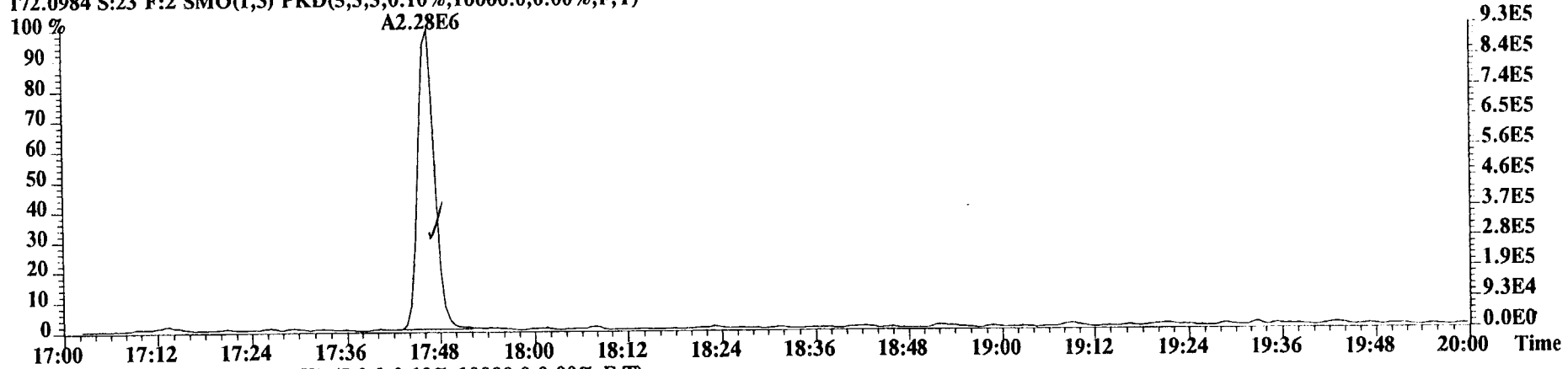



File:29OC98V4 #1-510 Acq:30-OCT-1998 09:26:14 GC EI+ Voltage SIR 70SE
Sample#23 Text:301802-3 :10X DIL. : : : Exp:PAHAIR
130.9920 S:23 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A7.90E8
A1.79E8
A2.57E8
A1.59E8
A2.42E8
A1.39E8
A5.24E8
A3.83E8
A2.26E8
A1.96E8
4.4E8
4.2E8
4.0E8
3.8E8
3.5E8
3.3E8
3.1E8
2.9E8
2.7E8
2.4E8
2.2E8
2.0E8
1.8E8
1.5E8
1.3E8
1.1E8
8.8E7
6.6E7
4.4E7
2.2E7
0.0E0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
Time

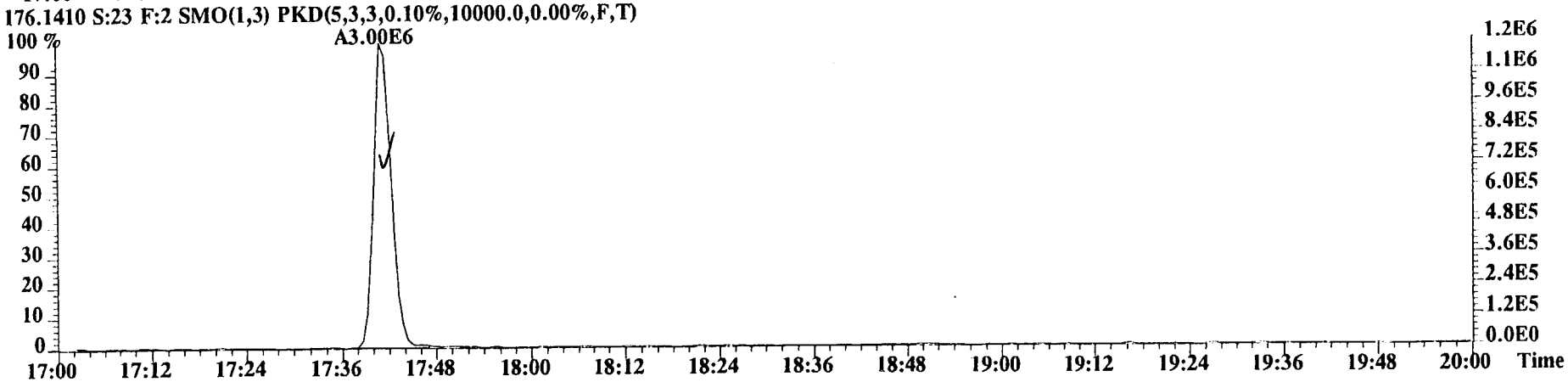
File:29OC98V4 #1-640 Acq:30-OCT-1998 09:26:14 GC EI+ Voltage SIR 70SE
Sample#23 Text:301802-3 :10X DIL. : : : Exp:PAHAIR
166.0798 S:23 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



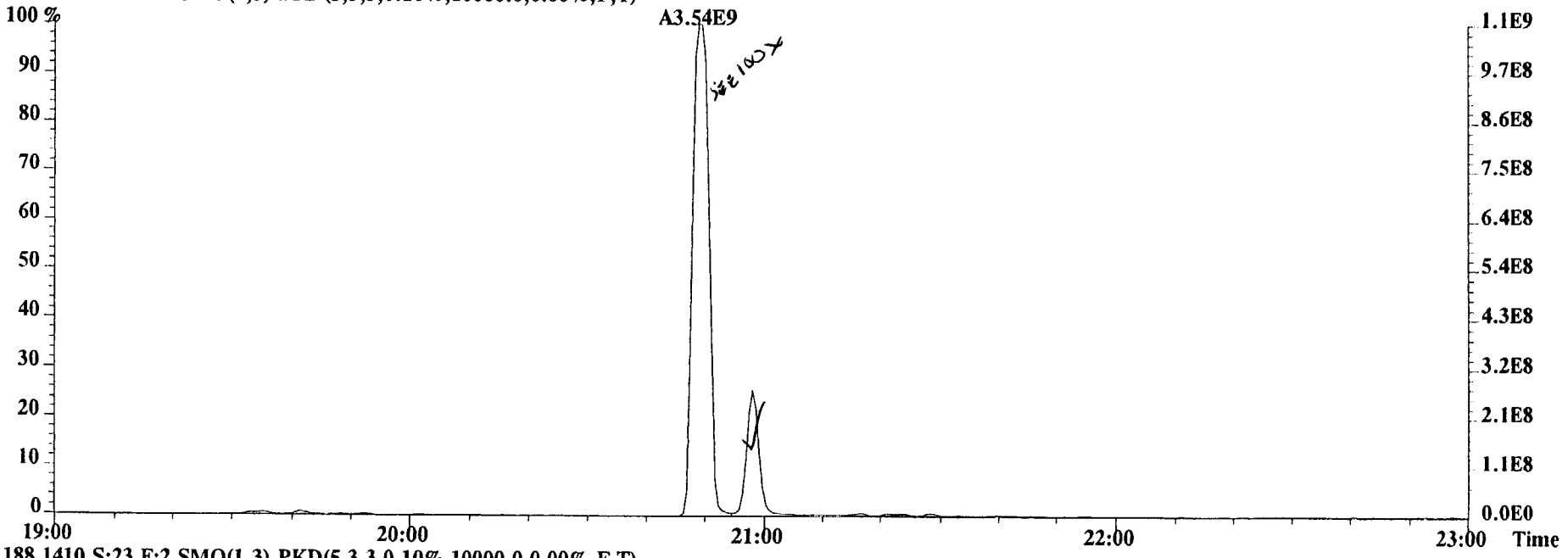
172.0984 S:23 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



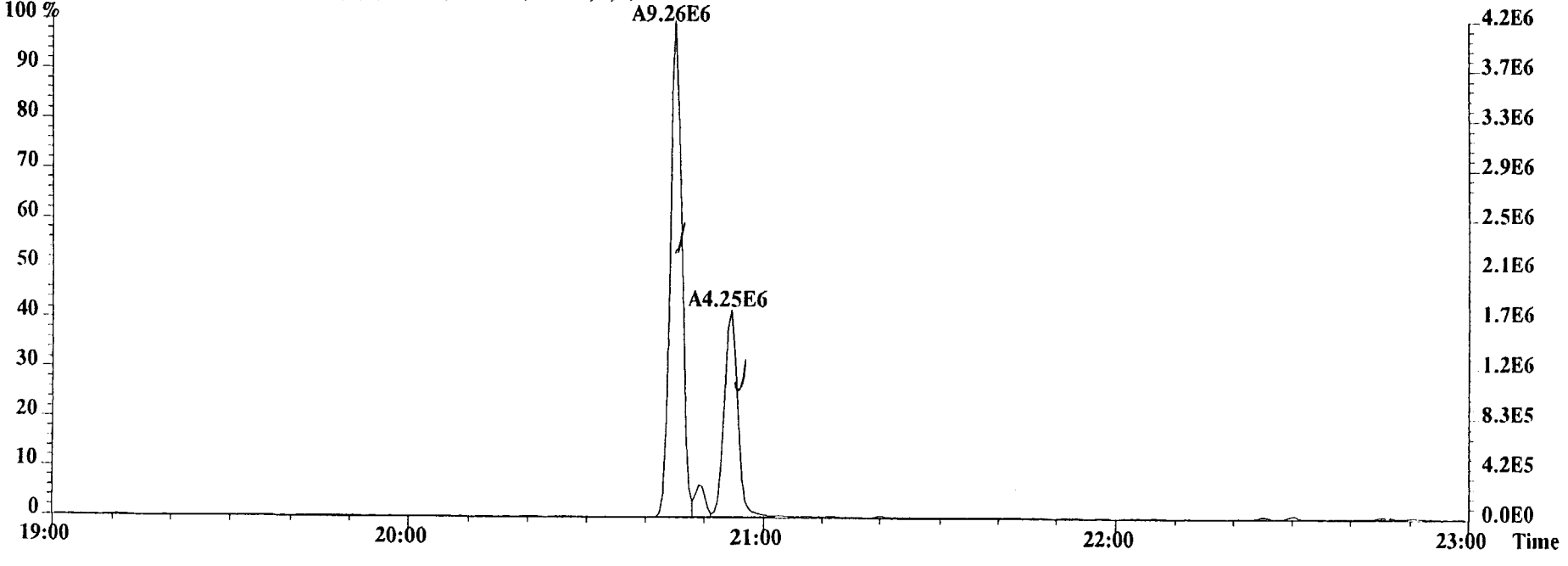
176.1410 S:23 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

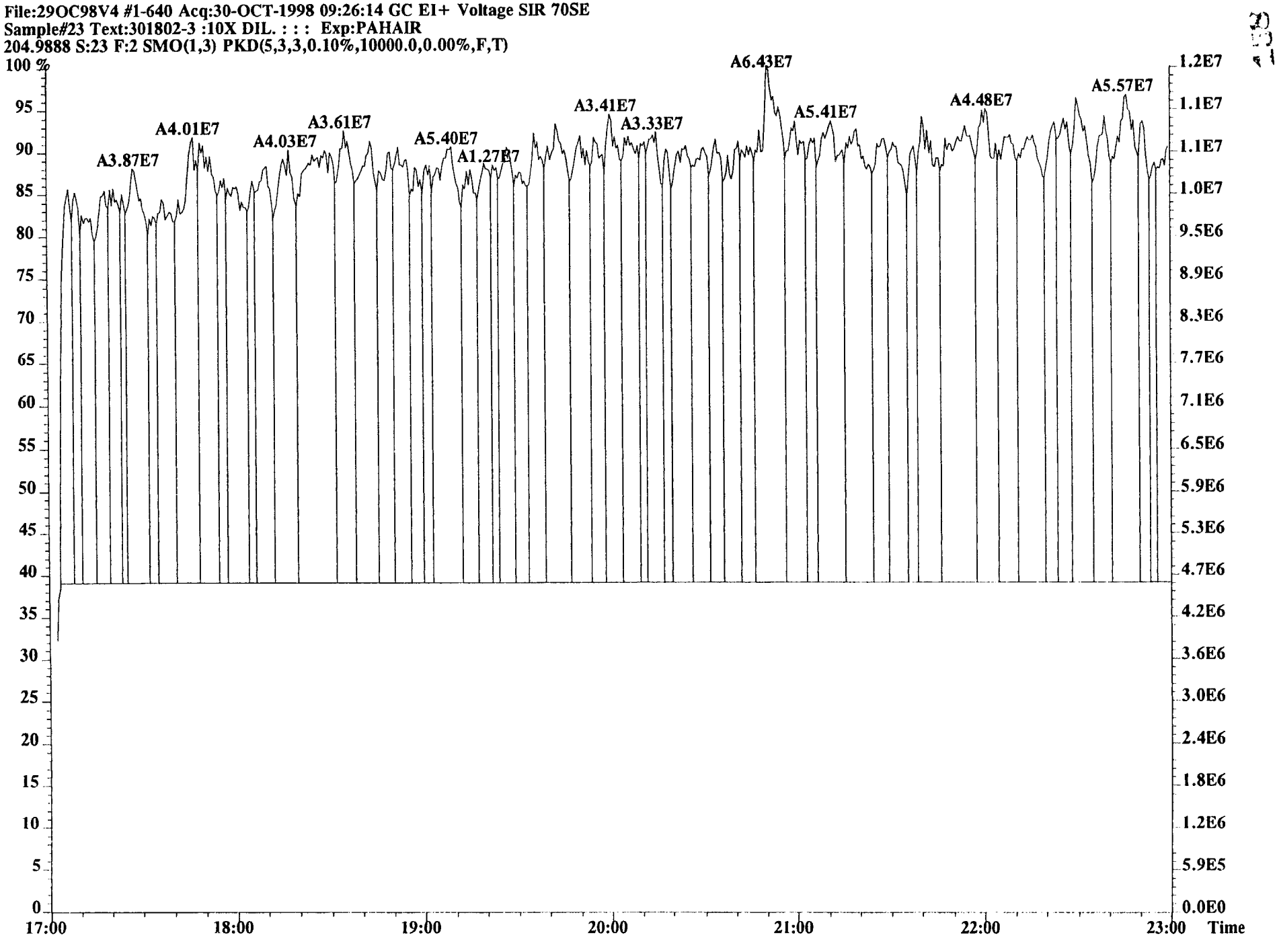


File:29OC98V4 #1-640 Acq:30-OCT-1998 09:26:14 GC EI+ Voltage SIR 70SE
Sample#23 Text:301802-3 :10X DIL. : : : Exp:PAHAIR
178.0782 S:23 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

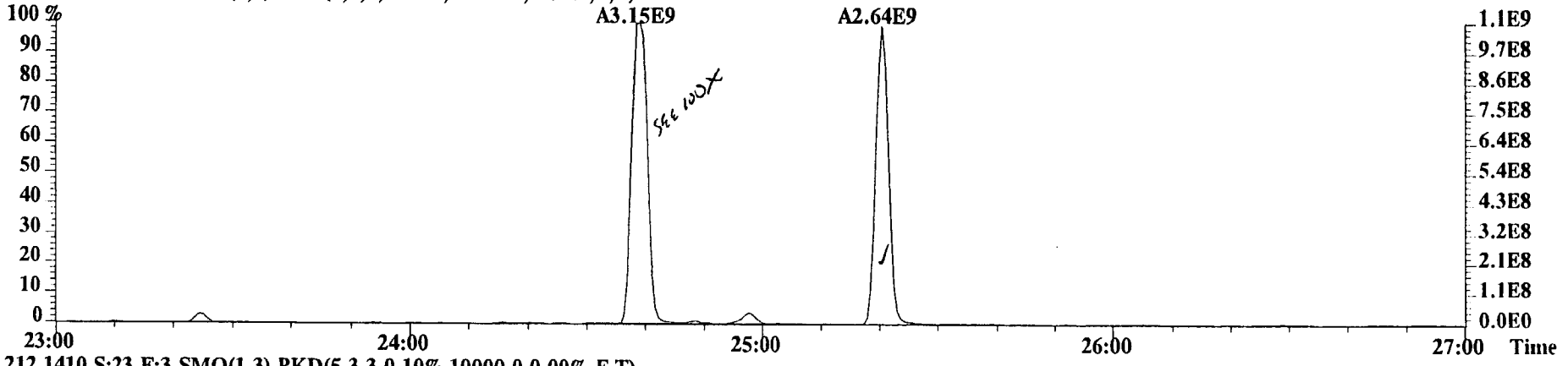


188.1410 S:23 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

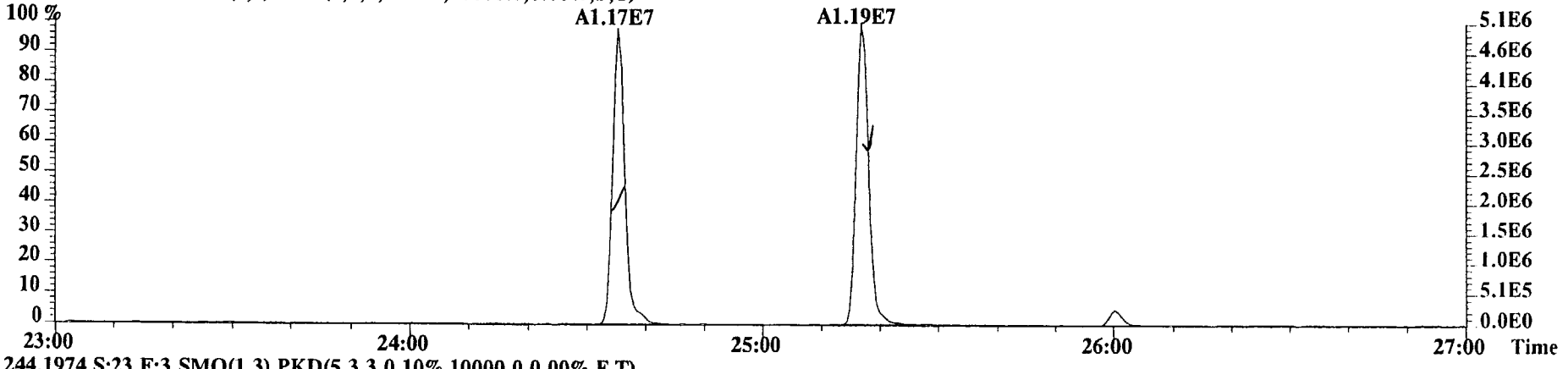



File:29OC98V4 #1-640 Acq:30-OCT-1998 09:26:14 GC EI+ Voltage SIR 70SE
Sample#23 Text:301802-3 :10X DIL. : : : Exp:PAHAIR
204.9888 S:23 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A3.87E7
A4.01E7
A4.03E7
A3.61E7
A5.40E7
A1.27E7
A3.41E7
A3.33E7
A6.43E7
A5.41E7
A4.48E7
A5.57E7
1.2E7
1.1E7
1.1E7
1.0E7
9.5E6
8.9E6
8.3E6
7.7E6
7.1E6
6.5E6
5.9E6
5.3E6
4.7E6
4.2E6
3.6E6
3.0E6
2.4E6
1.8E6
1.2E6
5.9E5
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

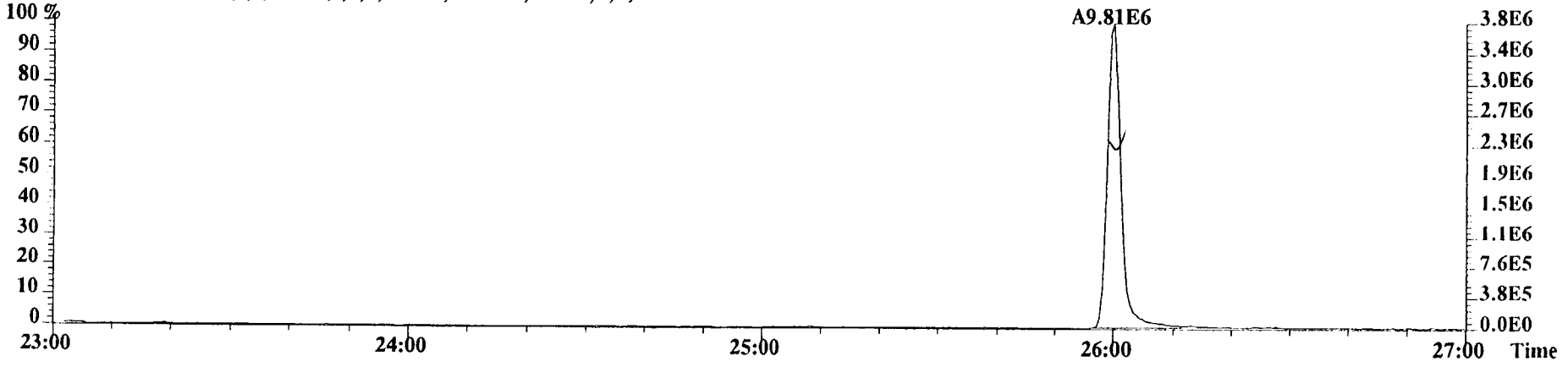
File:29OC98V4 #1-939 Acq:30-OCT-1998 09:26:14 GC EI+ Voltage SIR 70SE
Sample#23 Text:301802-3 :10X DIL. : : : Exp:PAHAIR
202.0782 S:23 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

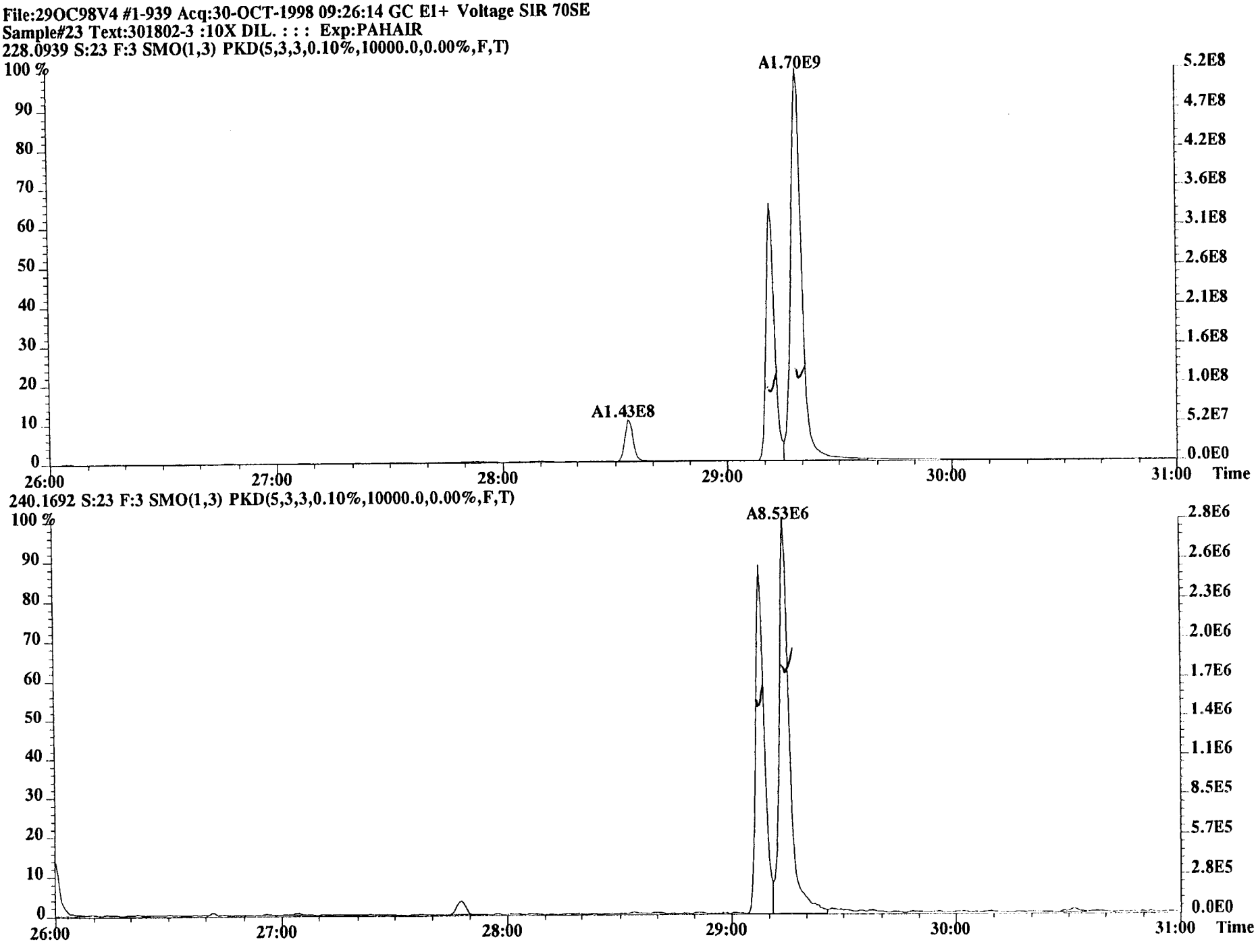


212.1410 S:23 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

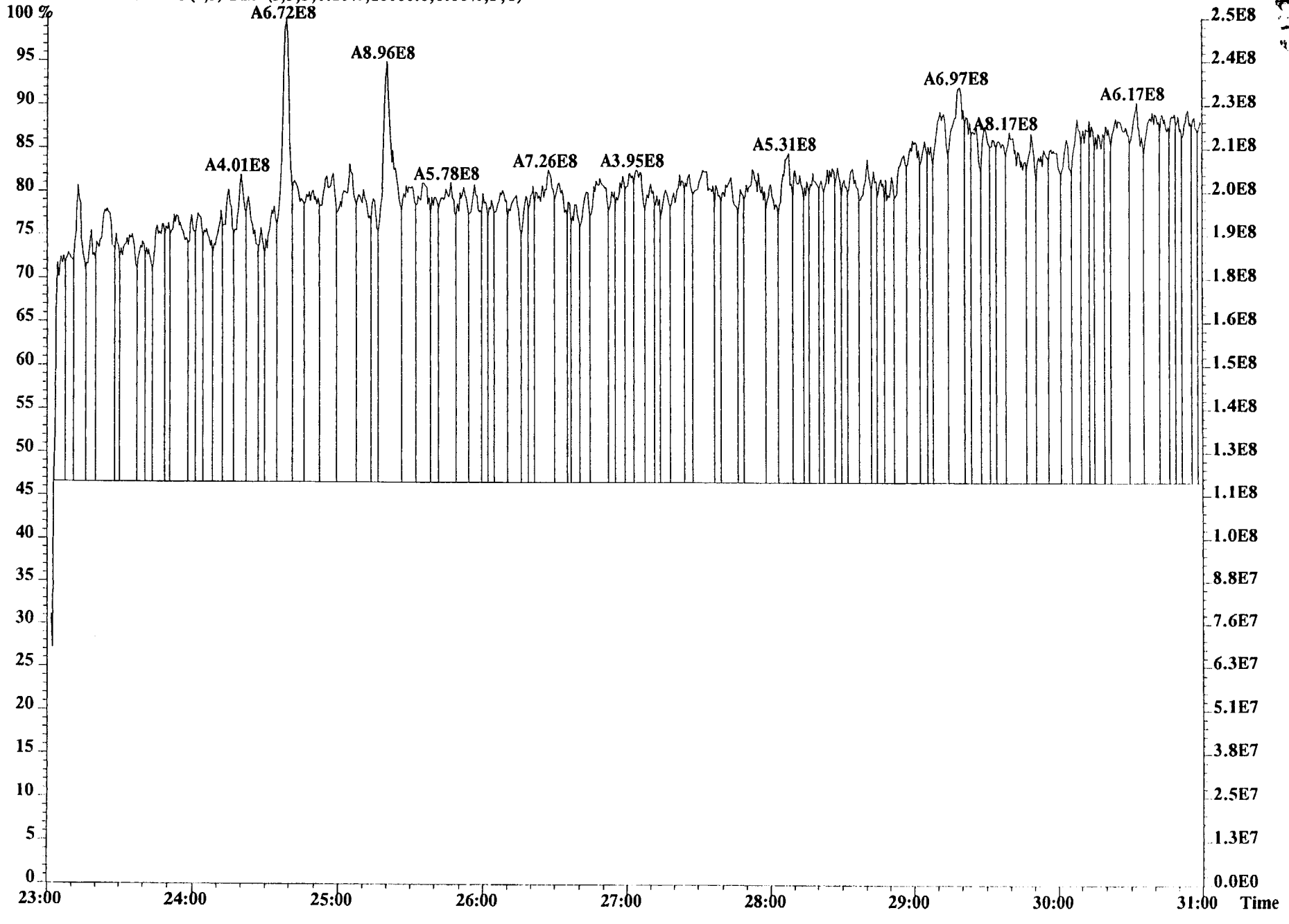


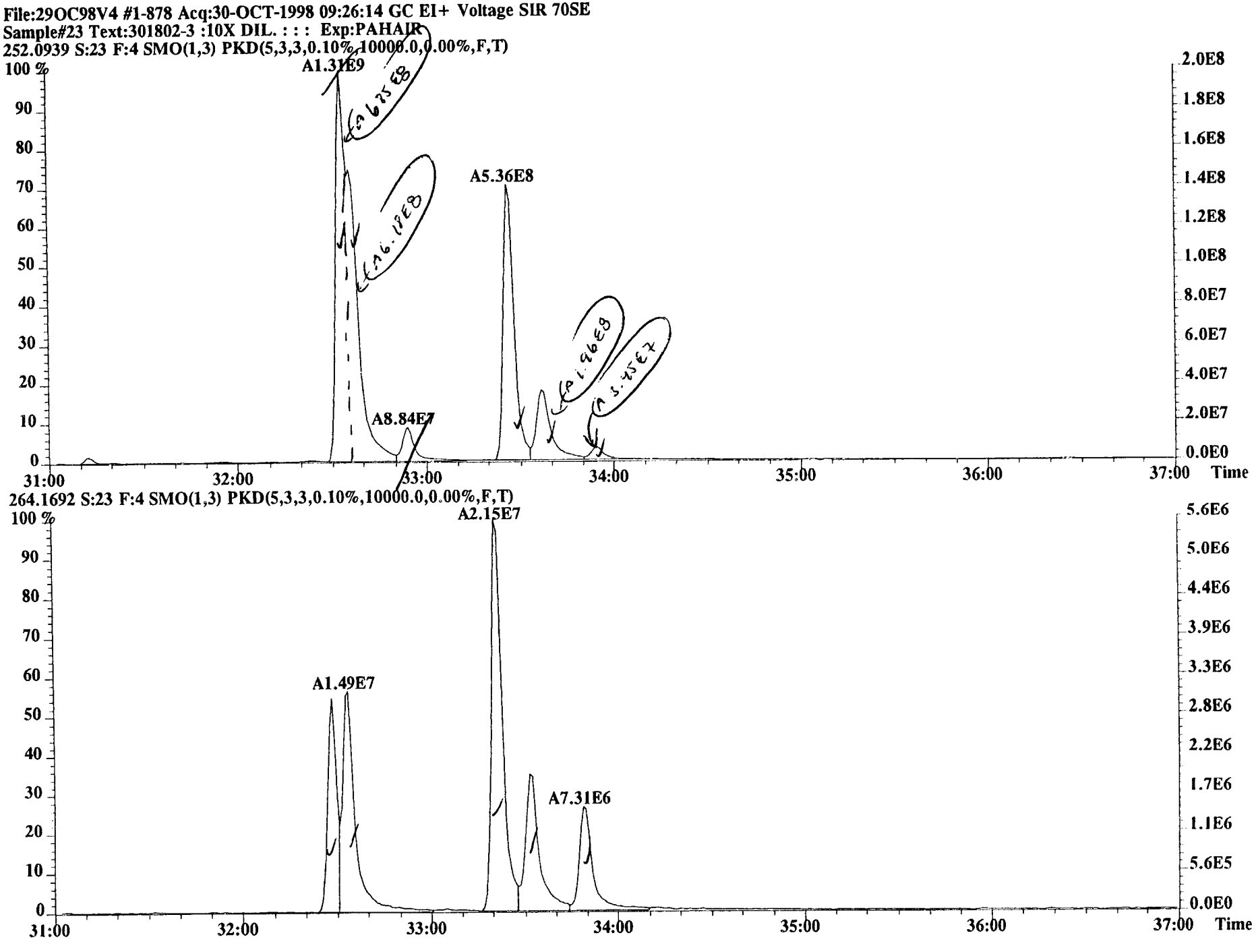
244.1974 S:23 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



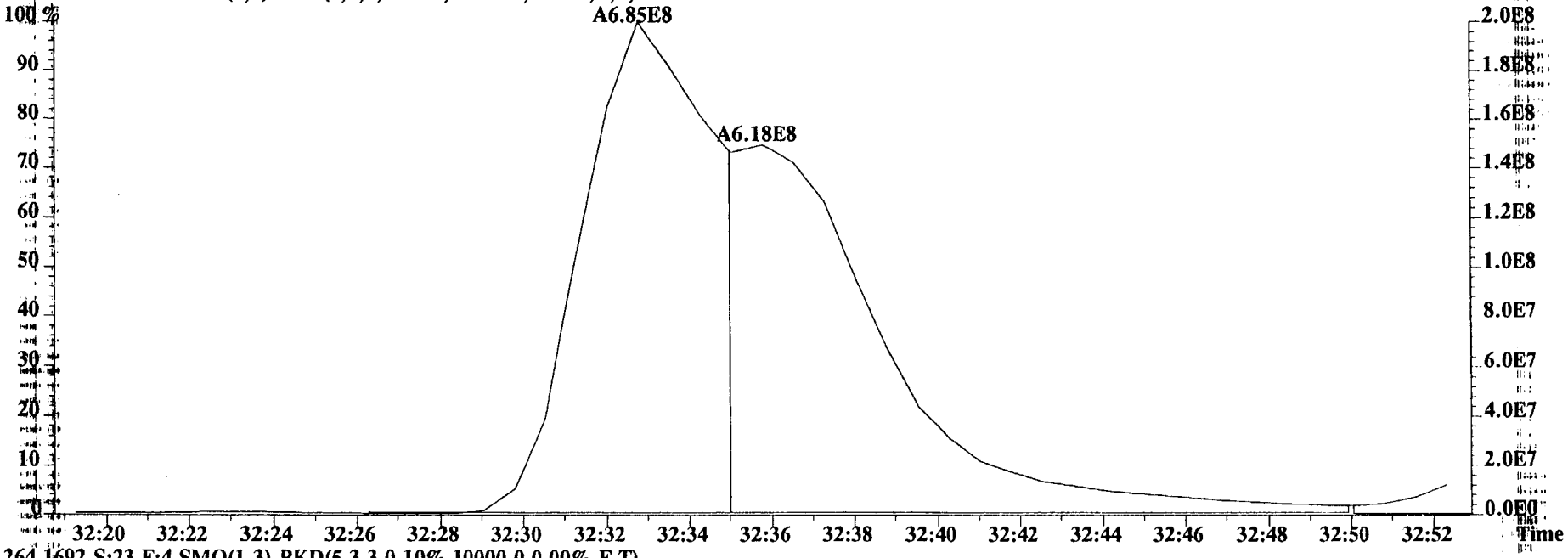

File:29OC98V4 #1-939 Acq:30-OCT-1998 09:26:14 GC EI+ Voltage SIR 70SE
Sample#23 Text:301802-3 :10X DIL. : : : Exp:PAHAIR
228.0939 S:23 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.70E9
A1.43E8
5.2E8
4.7E8
4.2E8
3.6E8
3.1E8
2.6E8
2.1E8
1.6E8
1.0E8
5.2E7
0.0E0
26:00
27:00
28:00
29:00
30:00
31:00
Time
240.1692 S:23 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A8.53E6
2.8E6
2.6E6
2.3E6
2.0E6
1.7E6
1.4E6
1.1E6
8.5E5
5.7E5
2.8E5
0.0E0
26:00
27:00
28:00
29:00
30:00
31:00
Time

File:29OC98V4 #1-939 Acq:30-OCT-1998 09:26:14 GC EI+ Voltage SIR 70SE
Sample#23 Text:301802-3 :10X DIL. : : : Exp:PAHAIR
230.9856 S:23 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

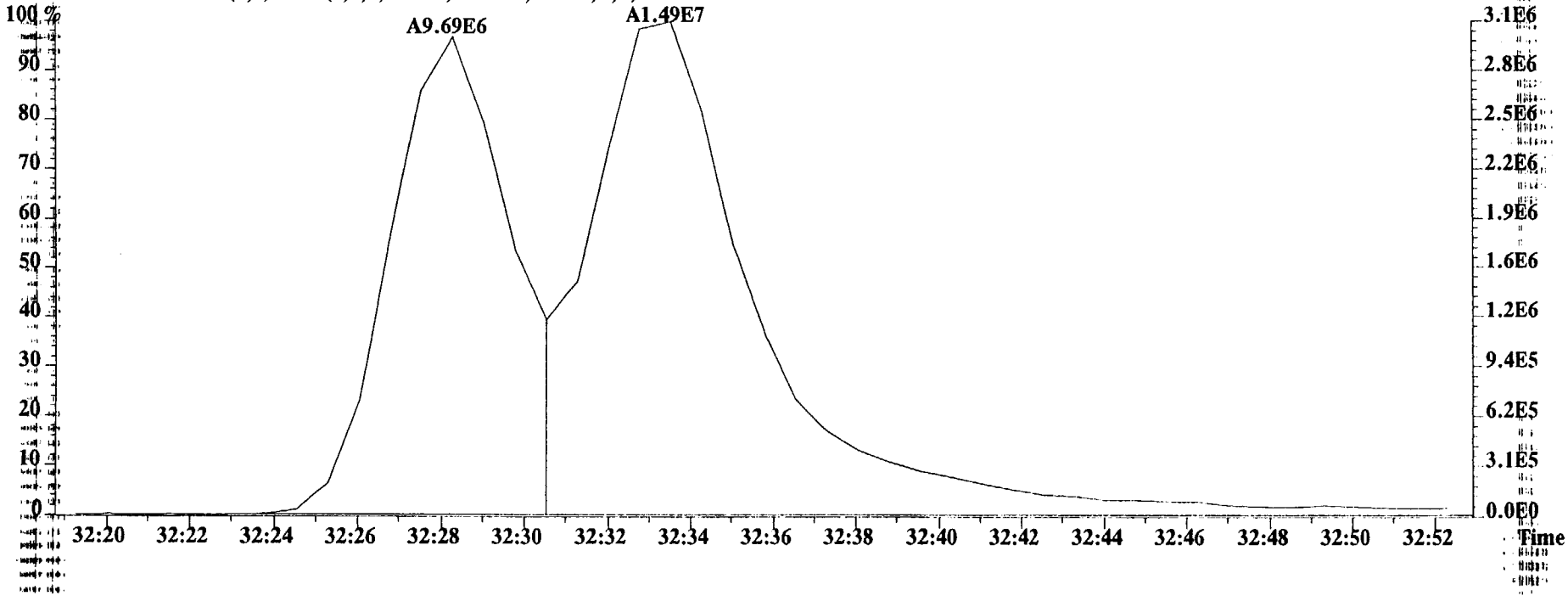


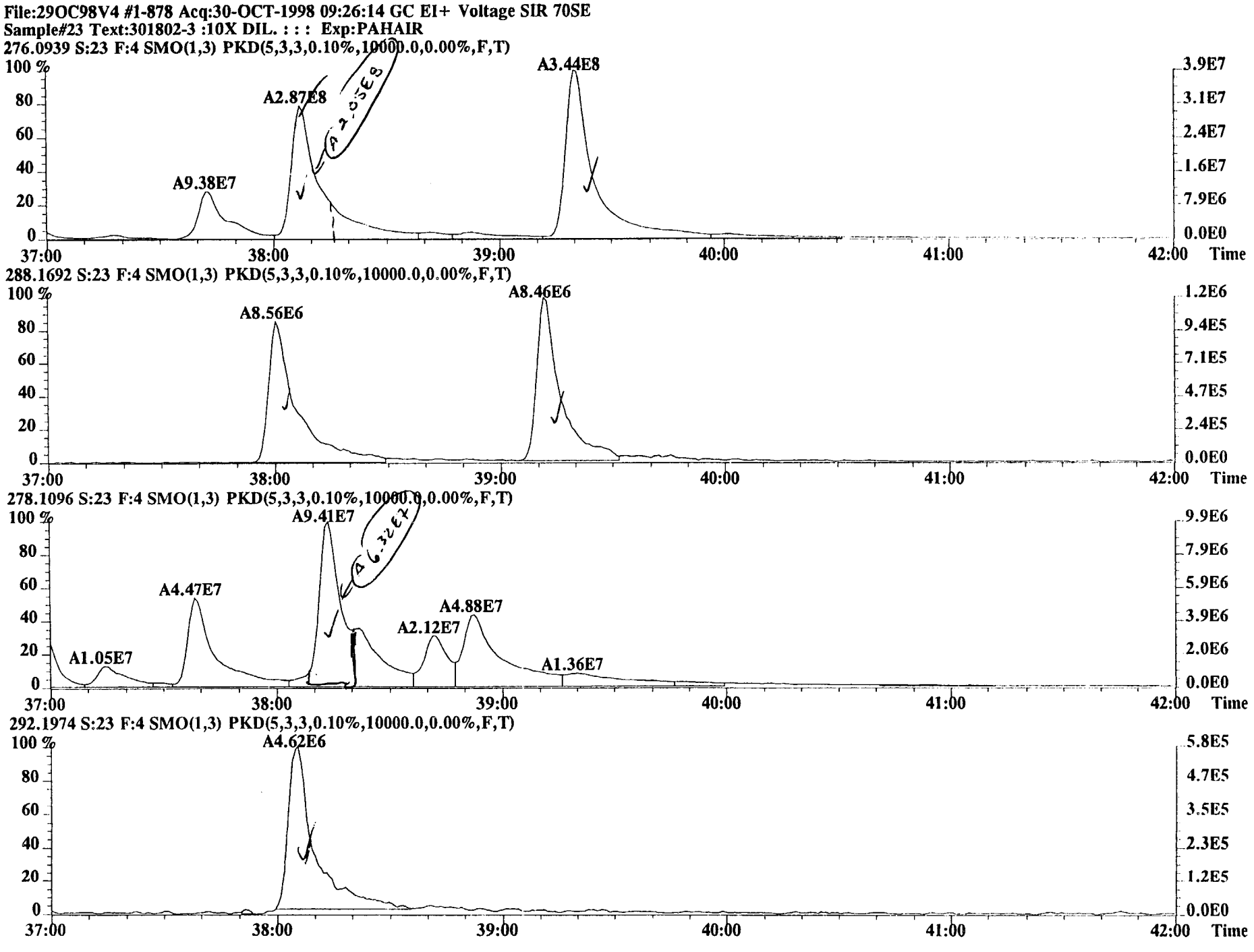

File:29OC98V4 #1-878 Acq:30-OCT-1998 09:26:14 GC EI+ Voltage SIR 70SE
Sample#23 Text:301802-3 :10X DIL. : : : Exp:PAHAIR
252.0939 S:23 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.31E9
A5.36E8
A8.84E7
264.1692 S:23 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.15E7
A1.49E7
A7.31E6
Time

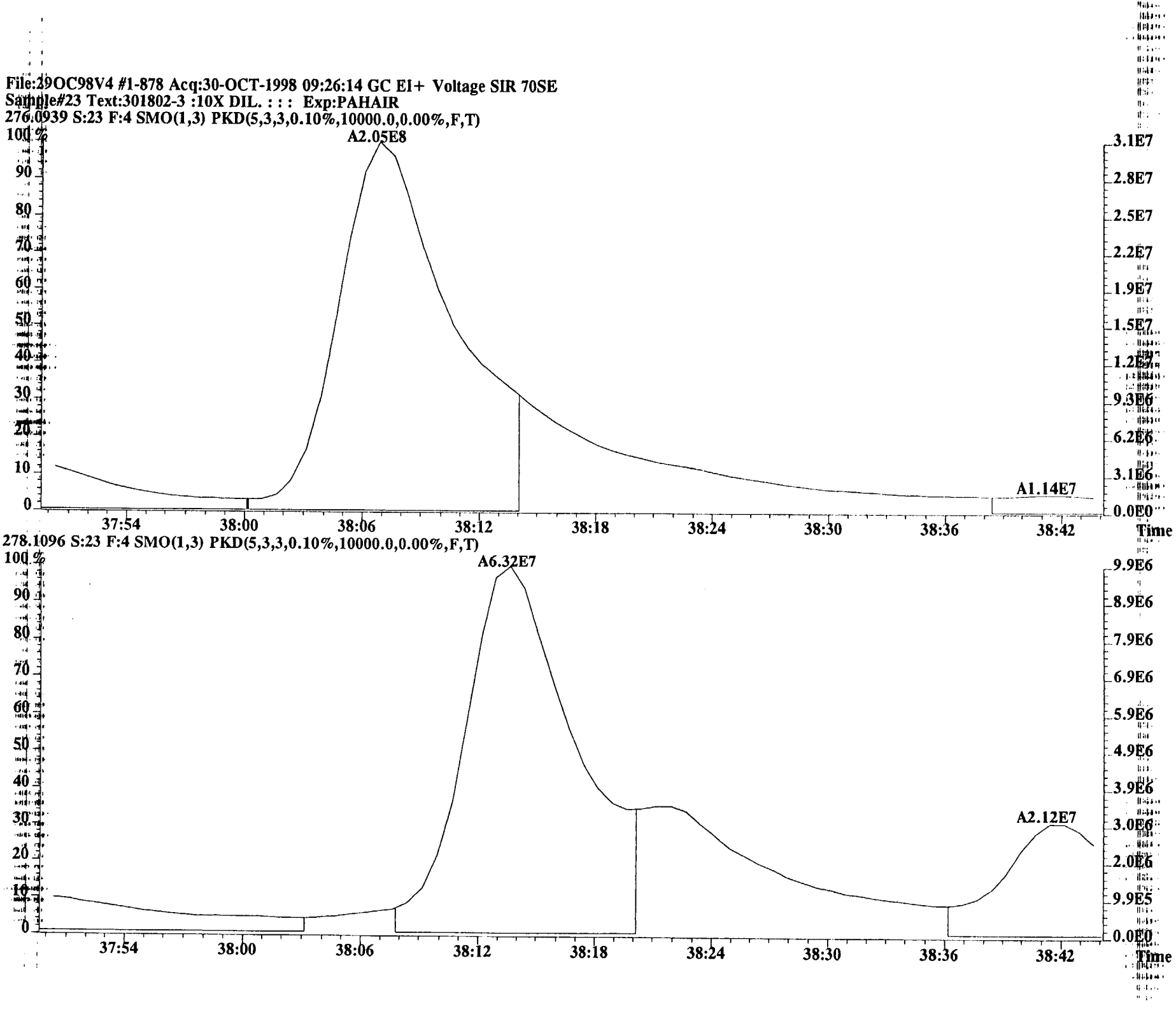
File:29OC98V4 #1-878 Acq:30-OCT-1998 09:26:14 GC EI+ Voltage SIR 70SE
Sample#23 Text:301802-3 :10X DIL. : : : Exp:PAHAIR
252.0939 S:23 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



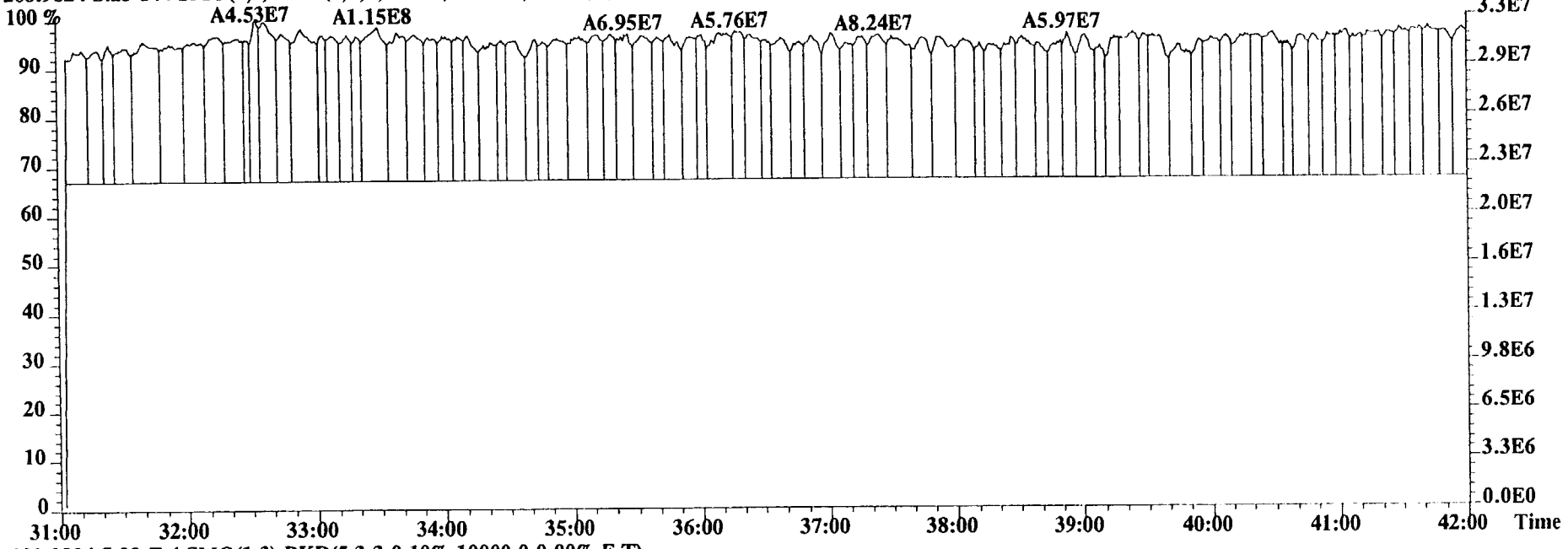
264.1692 S:23 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



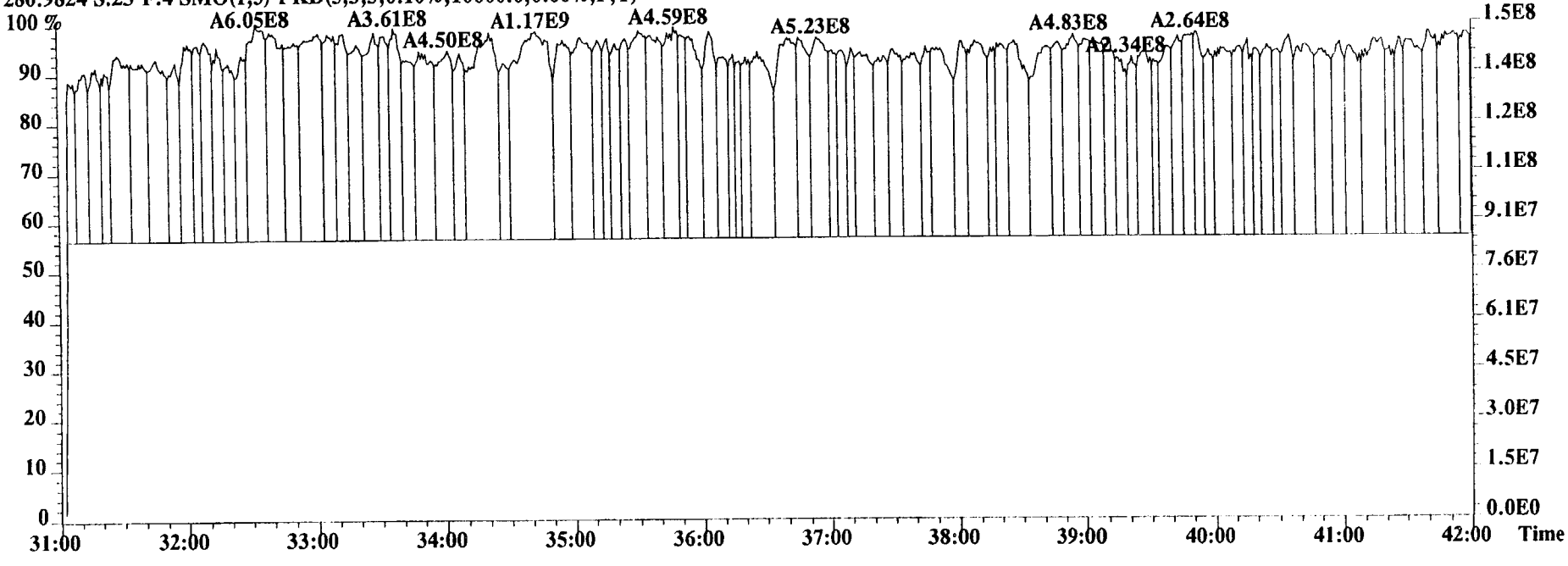

File:29OC98V4 #1-878 Acq:30-OCT-1998 09:26:14 GC EI+ Voltage SIR 70SE
Sample#23 Text:301802-3 :10X DIL. : : : Exp:PAHAIR
276.0939 S:23 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A9.38E7
A2.87E8
A3.44E8
288.1692 S:23 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.56E6
A8.46E6
278.1096 S:23 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.05E7
A4.47E7
A9.41E7
A2.12E7
A4.88E7
A1.36E7
292.1974 S:23 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.62E6
100 %
80
60
40
20
0
37:00
38:00
39:00
40:00
41:00
42:00
Time
3.9E7
3.1E7
2.4E7
1.6E7
7.9E6
0.0E0
1.2E6
9.4E5
7.1E5
4.7E5
2.4E5
9.9E6
7.9E6
5.9E6
3.9E6
2.0E6
5.8E5
4.7E5
3.5E5
2.3E5
1.2E5


File:29OC98V4 #1-878 Acq:30-OCT-1998 09:26:14 GC EI+ Voltage SIR 70SE
Sample#23 Text:301802-3 :10X DIL. : : : Exp:PAHAIR
276.0939 S:23 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.05E8
A1.14E7
278.1096 S:23 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A6.32E7
A2.12E7
100 %
90
80
70
60
50
40
30
20
10
0
37:54
38:00
38:06
38:12
38:18
38:24
38:30
38:36
38:42
Time
3.1E7
2.8E7
2.5E7
2.2E7
1.9E7
1.5E7
1.2E7
9.3E6
6.2E6
3.1E6
0.0E0
9.9E6
8.9E6
7.9E6
6.9E6
5.9E6
4.9E6
3.9E6
3.0E6
2.0E6
9.9E5
0.0E0

File:29OC98V4 #1-878 Acq:30-OCT-1998 09:26:14 GC EI+ Voltage SIR 70SE
Sample#23 Text:301802-3 :10X DIL. : : : Exp:PAHAIR
268.9824 S:23 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



280.9824 S:23 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



04-NOV-1998 05:09:30 PM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4
GC Column : DB-5
Data file : 02NO98V4
Weight : 0.5

Results : 02NO98V4111.RES : PAHAIR.TRG
Date analyzed : 02-NOV-98
301802-3 :100X DIL. : : : Ex Cal : PAHAIR102998V4.R

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	ng/ TRAIN	Rec/ MDL	
d10-2-Methylnaphthalene	289378	1.00	Y	12: 28	Y	1.00	50.00		
d8-Naphthalene	498000	1.00	Y	10: 12	Y	2.24	38.40	77	
Naphthalene	961520000	1.00	Y	10: 16	Y	1.23	1.6e+05	B	B
2-Methylnaphthalene	114770200	1.00	Y	12: 34	Y	0.56	4.1e+04	B	
d8-Acenaphthylene	202984	1.00	Y	15: 28	Y	1.21	28.90	58	
Acenaphthylene	64111400	1.00	Y	15: 31	Y	0.94	3.3e+04		
d10-Acenaphthene	150263	1.00	Y	16: 2	Y	0.74	34.87	70	
Acenaphthene	11882380	1.00	Y	16: 7	Y	1.25	6346.01		
d10-Anthracene	166005	1.00	Y	20: 55	Y	1.00	50.00		
d10-Phenanthrene	462260	1.00	Y	20: 45	Y	2.81	49.59	99	
Phenanthrene	272442000	1.00	Y	20: 49	Y	0.89	6.6e+04	B	B
d14-Terphenyl	542000	1.00	Y	26: 2	Y	1.00	50.00		
d10-Fluoranthene	374000	1.00	Y	24: 35	Y	1.41	24.46	49	m
Fluoranthene	103869200	1.00	Y	24: 39	Y	1.11	2.5e+04		

11-4-98
CL

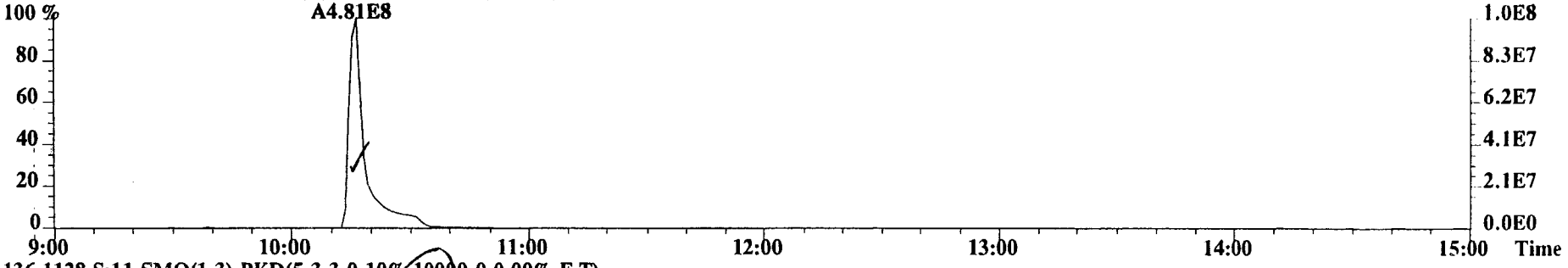
	0.5	
8V4	[illegible]	
Rec/ MDL		
	144689	144689
77	249000	249000
B E	480760000	480760000
B	57385100	57385100
58	101492	101492
	32055700	32055700
70	75132	75132
	5941190	5941190
	83002	83002
99	231130	231130
B E	136221000	136221000
	271000	271000
49	187000	187000
	51934600	51934600

03-NOV-1998 08:37:07 AM 429AIR Unknown RESULTS

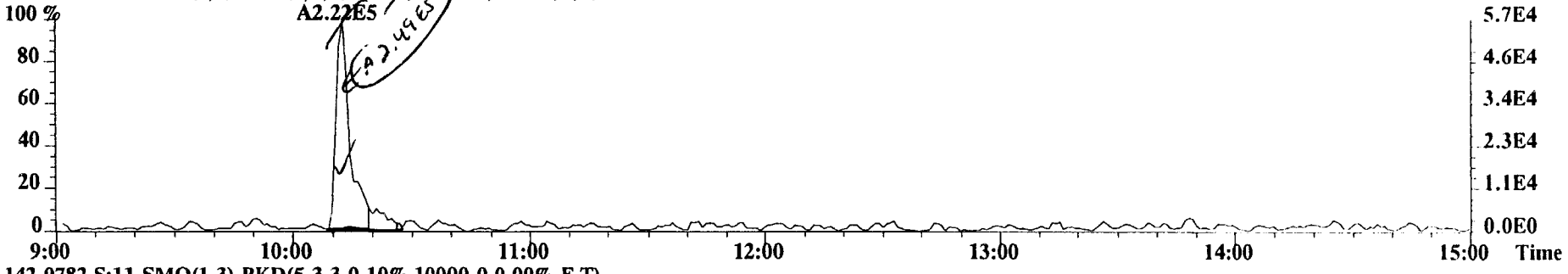
Mass Spec : VG-4 Results : 02NO98V4111.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 02-NOV-98
Data file : 02NO98V4 301802-3 :100X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	ng/ TRAIN	Rec/ MDL
d10-2-Methylnaphthalene	289378	1.00	Y	12: 28	Y	1.00	50.00	
d8-Naphthalene	444984	1.00	Y	10: 12	Y	2.24	34.31	69
Naphthalene	961520000	1.00	Y	10: 16	Y	1.23	1.8e+05	0.000
2-Methylnaphthalene	114770200	1.00	Y	12: 34	Y	0.56	4.6e+04	0.000
d8-Acenaphthylene	202984	1.00	Y	15: 28	Y	1.21	28.90	58
Acenaphthylene	64111400	1.00	Y	15: 31	Y	0.94	3.3e+04	0.000
d10-Acenaphthene	150263	1.00	Y	16: 2	Y	0.74	34.87	70
Acenaphthene	11882380	1.00	Y	16: 7	Y	1.25	6346.01	0.000
d10-Anthracene	166005	1.00	Y	20: 55	Y	1.00	50.00	
d10-Fluorene	75455	1.00	Y	17: 41	Y	1.42	15.99	32
Fluorene	1165690	1.00	Y	17: 46	Y	1.16	1331.20	0.000
d10-Phenanthrene	462260	1.00	Y	20: 45	Y	2.81	49.59	99
Phenanthrene	272442000	1.00	Y	20: 49	Y	0.89	6.6e+04	0.000
Anthracene	* No Peak	0.00	N	20: 59	N	0.80	0.00	0.000
d14-Terphenyl	501878	1.00	Y	26: 2	Y	1.00	50.00	
d10-Fluoranthene	314968	1.00	Y	24: 35	Y	1.41	22.24	44
Fluoranthene	103869200	1.00	Y	24: 39	Y	1.11	3.0e+04	0.000
d10-Pyrene	415390	1.00	Y	25: 17	Y	1.52	27.26	55
Pyrene	72381000	1.00	Y	25: 20	Y	1.21	1.4e+04	0.000
d12-Benzo(a)anthracene	327288	1.00	Y	29: 8	Y	0.90	36.23	72
Benzo(a)anthracene	33901000	1.00	Y	29: 12	Y	1.20	8599.51	0.000
d12-Chrysene	469998	1.00	Y	29: 15	Y	1.28	36.60	73
Chrysene	90611800	1.00	Y	29: 19	Y	1.08	1.8e+04	0.000
d12-Benzo(e)pyrene	794292	1.00	Y	33: 21	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	252920	1.00	Y	32: 29	Y	0.45	35.08	70
Benzo(b)fluoranthene	31804200	1.00	Y	32: 34	Y	1.17	1.1e+04	0.000
d12-Benzo(k)fluoranthene	287312	1.00	Y	32: 35	Y	0.95	19.08	38
Benzo(k)fluoranthene	31804200	1.00	Y	32: 34	Y	1.16	9508.72	0.000
d12-Benzo(a)pyrene	341496	1.00	Y	33: 33	Y	0.68	31.77	64
Benzo(e)pyrene	13925560	1.00	Y	33: 27	Y	1.64	2485.21	0.000
Benzo(a)pyrene	6532300	1.00	Y	33: 38	Y	1.07	1784.41	0.000
d12-Perylene	* No Peak	0.00	N	33: 48	N	0.63	0.00	0
Perylene	* No Peak	0.00	N	33: 54	N	1.71	*NoINoIs	
d12-Indeno(123-cd)pyrene	121646	1.00	Y	38: 2	Y	0.44	17.23	34
Indeno(123-cd)pyrene	7905860	1.00	Y	38: 9	Y	0.62	1.0e+04	0.000
d14-Dibenz(ah)anthracene	* No Peak	0.00	N	38: 4	N	0.25	0.00	0
Dibenz(ah)anthracene	2401180	1.00	Y	38: 17	Y	1.40	*NoINoIs	
d12-Benzo(ghi)perylene	175940	1.00	Y	39: 14	Y	0.58	19.10	38
Benzo(ghi)perylene	12347540	1.00	Y	39: 22	Y	1.02	6907.42	0.000
d10-Fluorene	75455	1.00	Y	17: 41	Y	1.42	3.34	7
13C-Fluorene	57304	1.00	Y	17: 46	Y	1.00	75.94	0.000

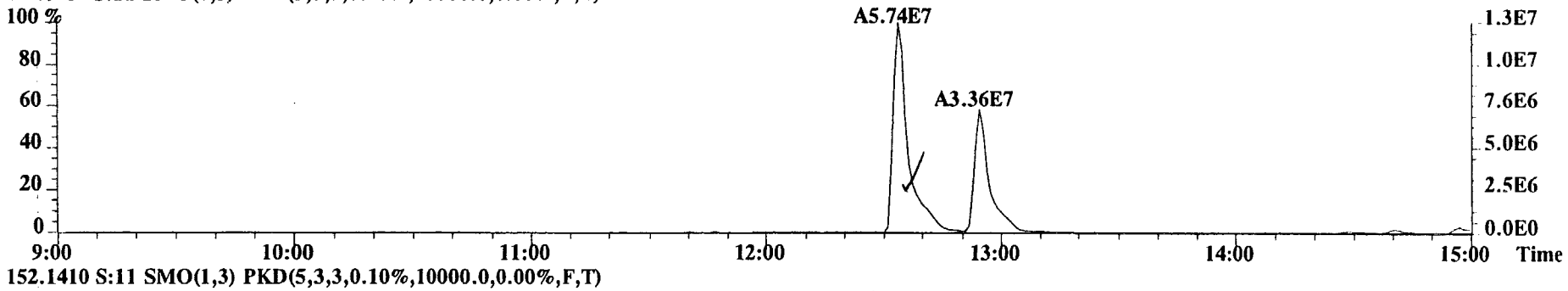
File:02NO98V4 #1-509 Acq: 2-NOV-1998 21:23:33 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-3 :100X DIL. : : : Exp:PAHAIR
128.0626 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



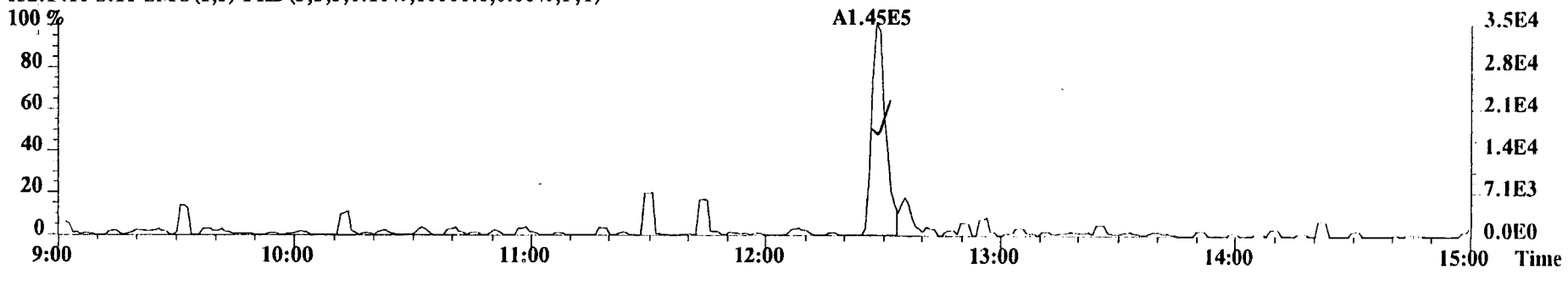
136.1128 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



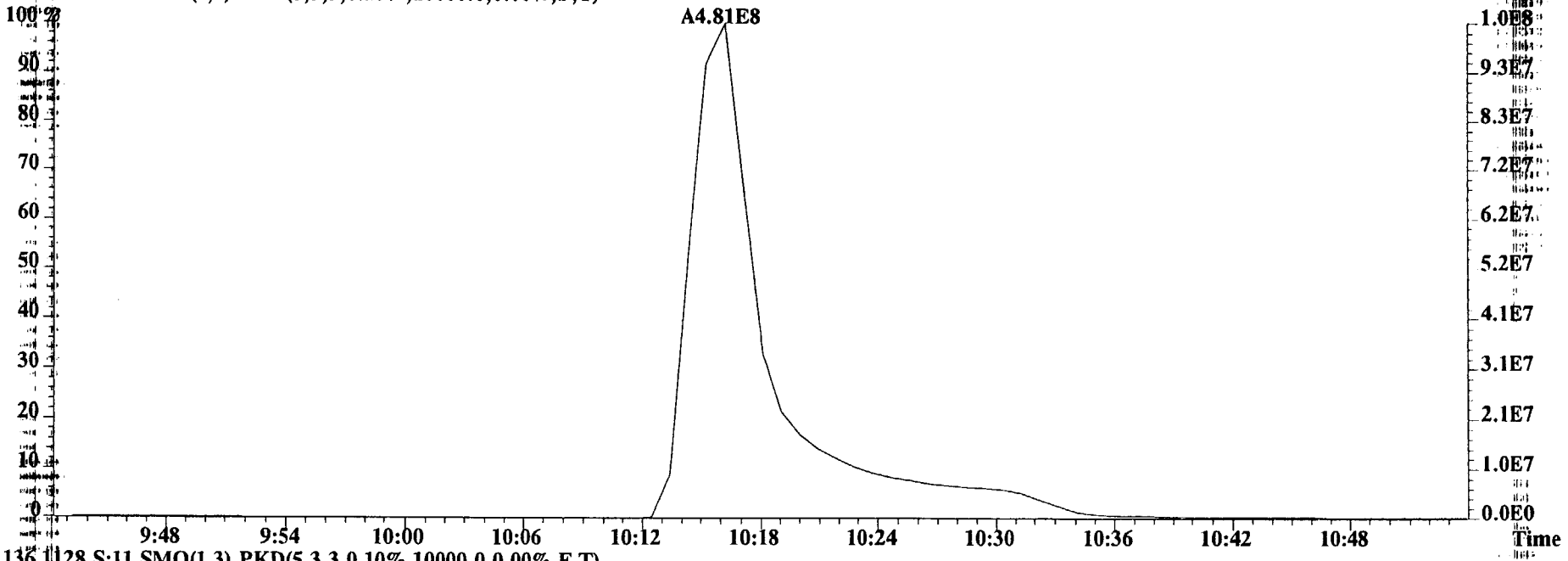
142.0782 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



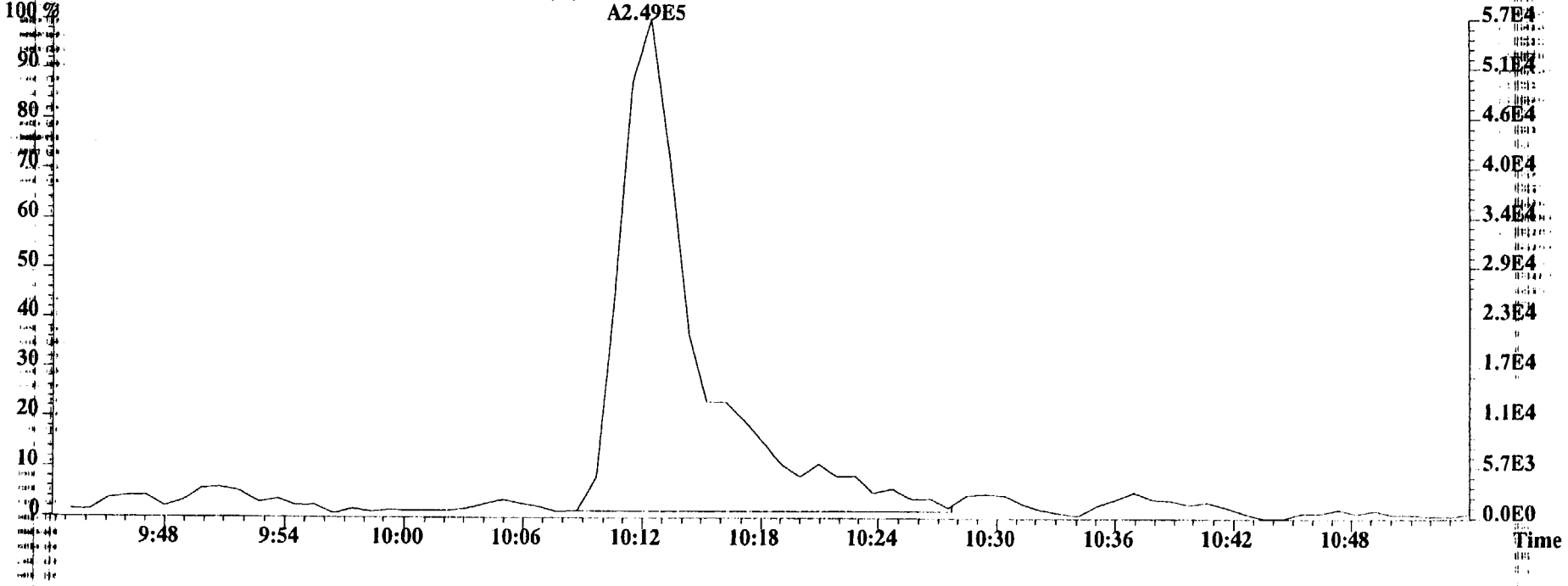
152.1410 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



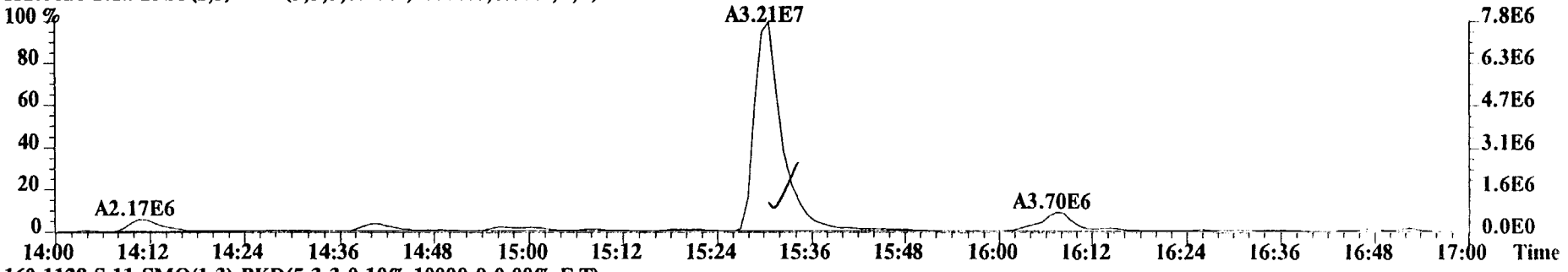
File:02NO98V4 #1-509 Acq: 2-NOV-1998 21:23:33 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-3 :100X DIL. : : : Exp:PAHAIR
128.0626 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



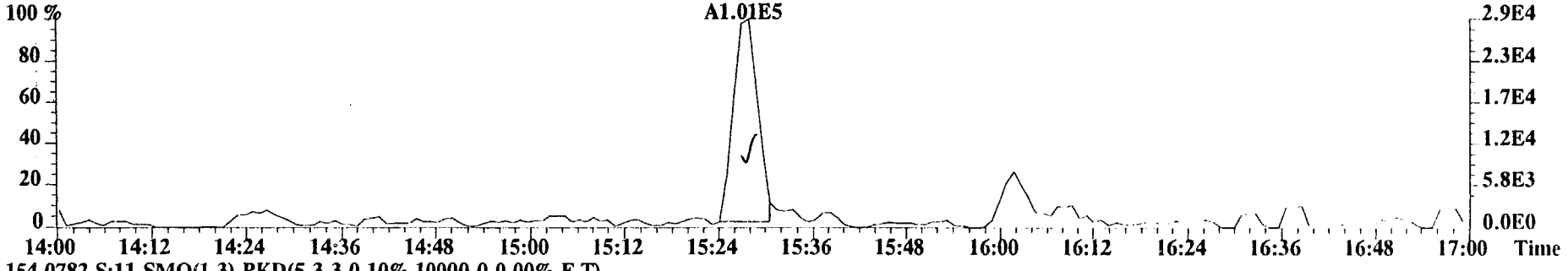
136.1128 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



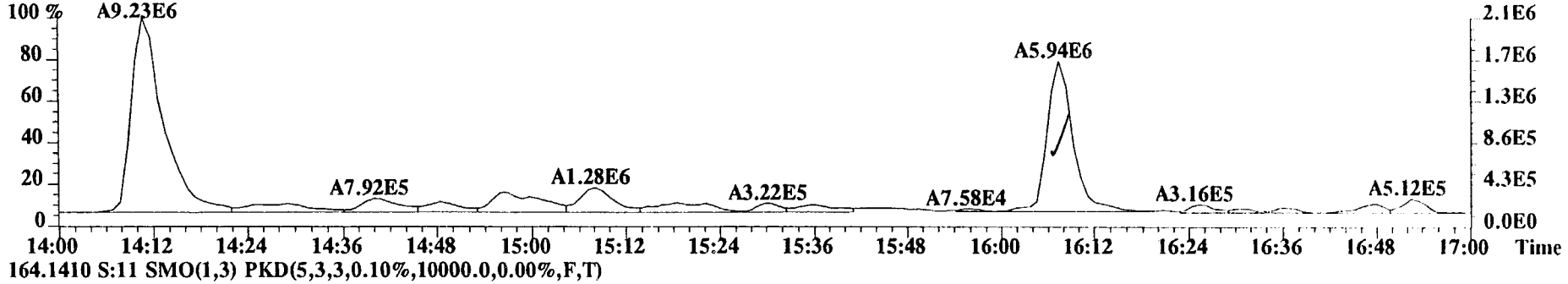
File:02NO98V4 #1-509 Acq: 2-NOV-1998 21:23:33 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-3 :100X DIL. : : : Exp:PAHAIR
152.0626 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



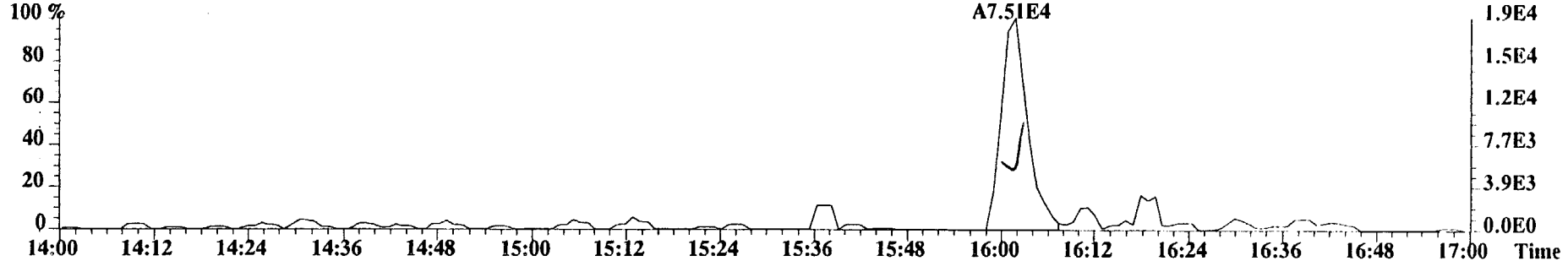
160.1128 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



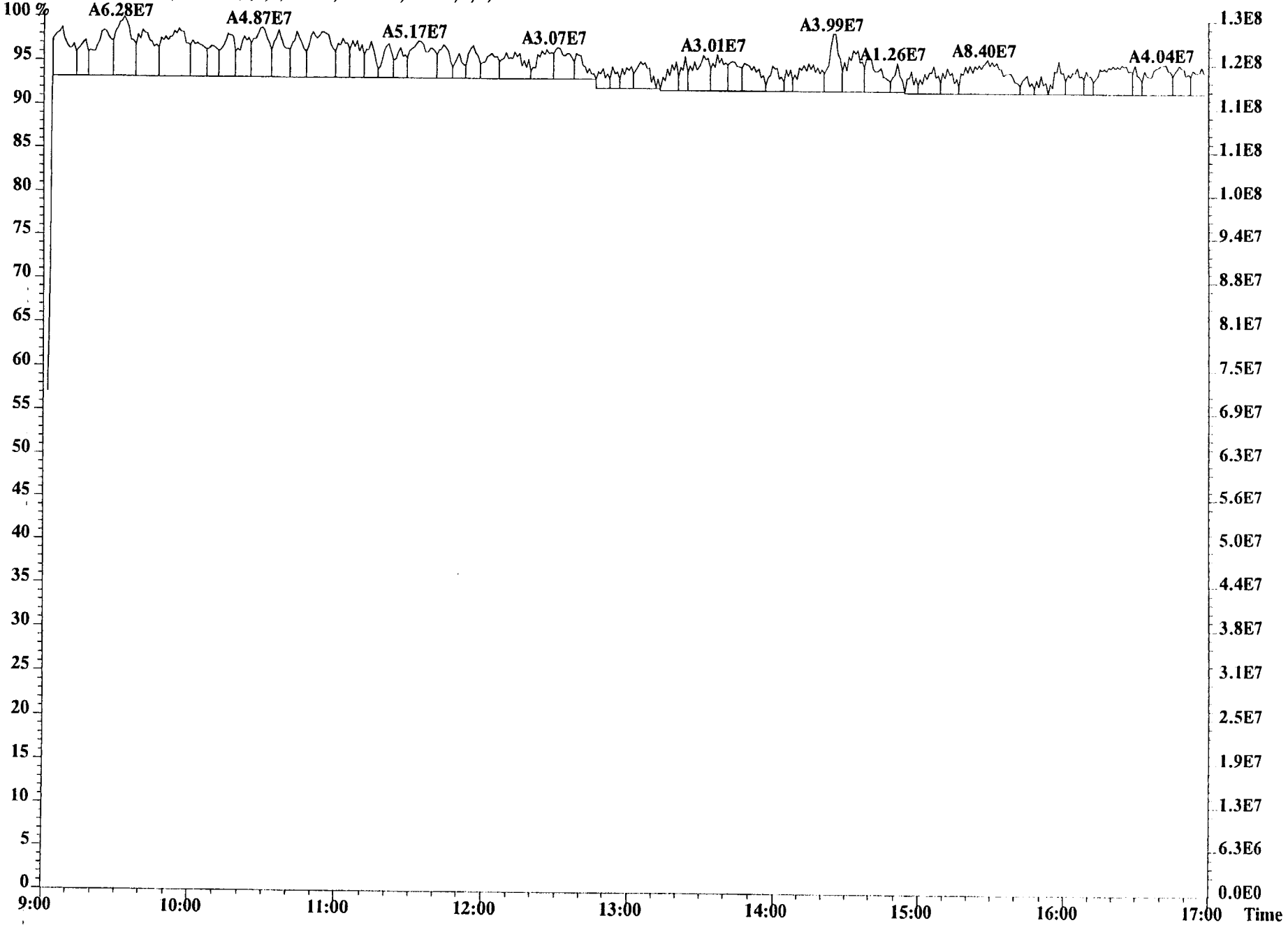
154.0782 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



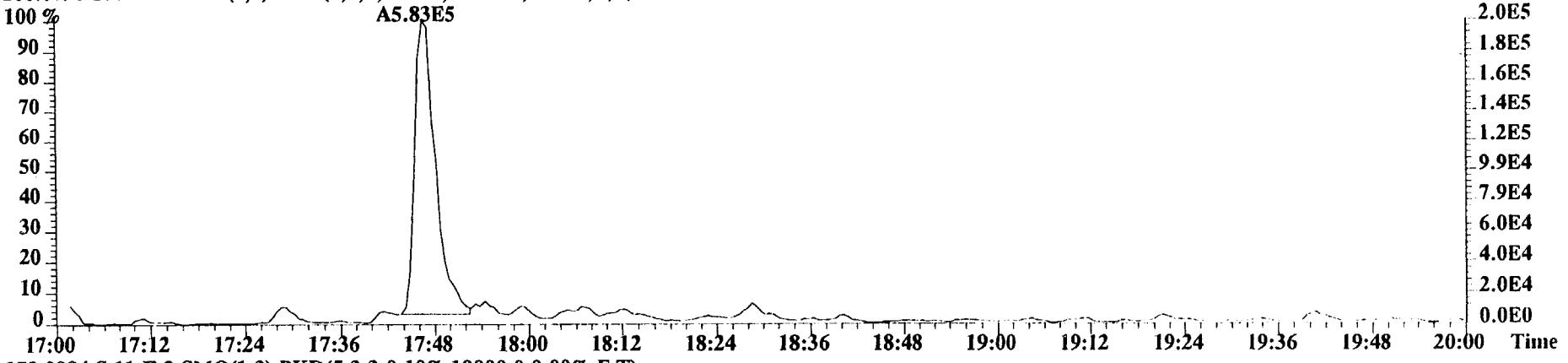
164.1410 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



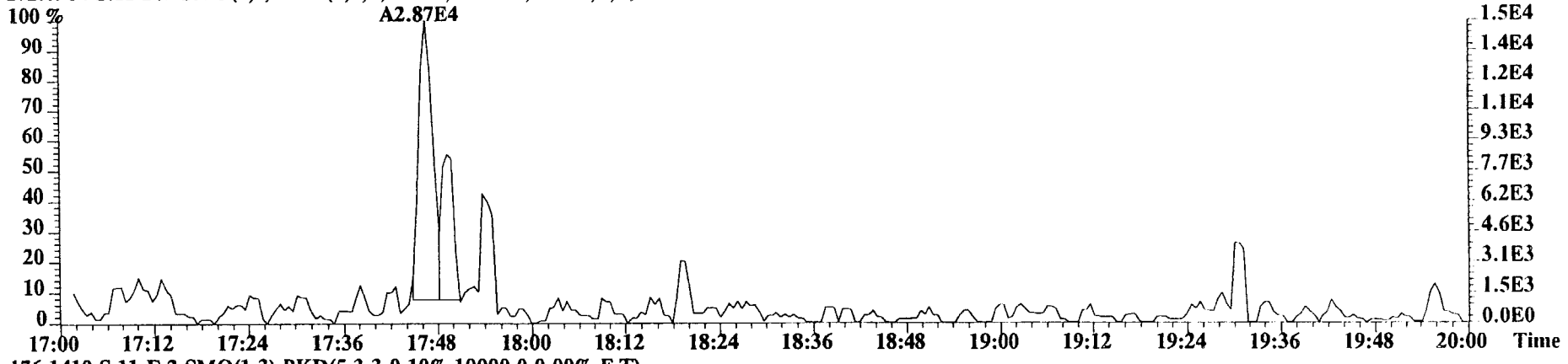
File:02NO98V4 #1-509 Acq: 2-NOV-1998 21:23:33 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-3 :100X DIL. : : : Exp:PAHAIR
130.9920 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



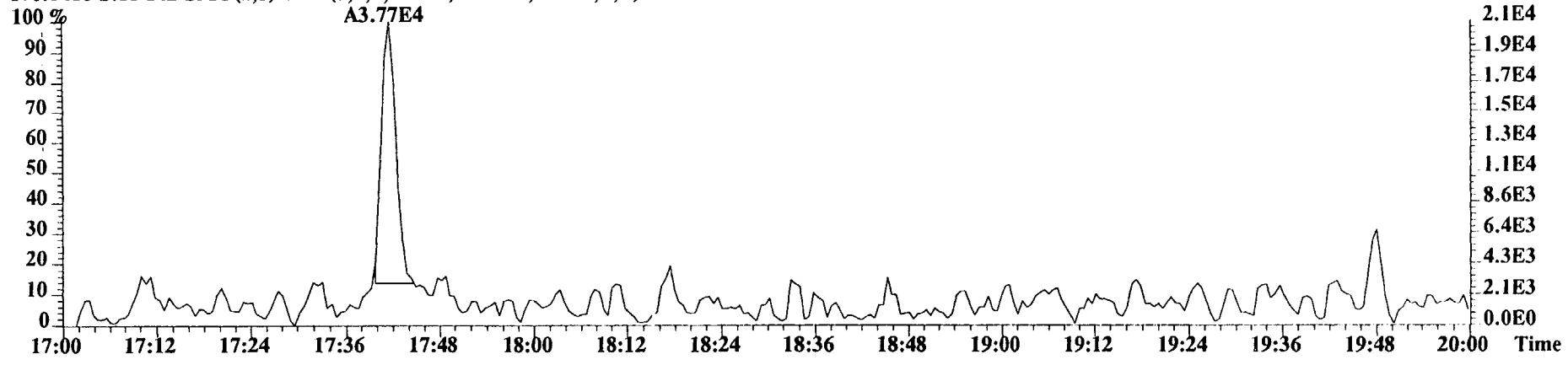
File:02NO98V4 #1-641 Acq: 2-NOV-1998 21:23:33 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-3 :100X DIL. : : : Exp:PAHAIR
166.0798 S:11 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



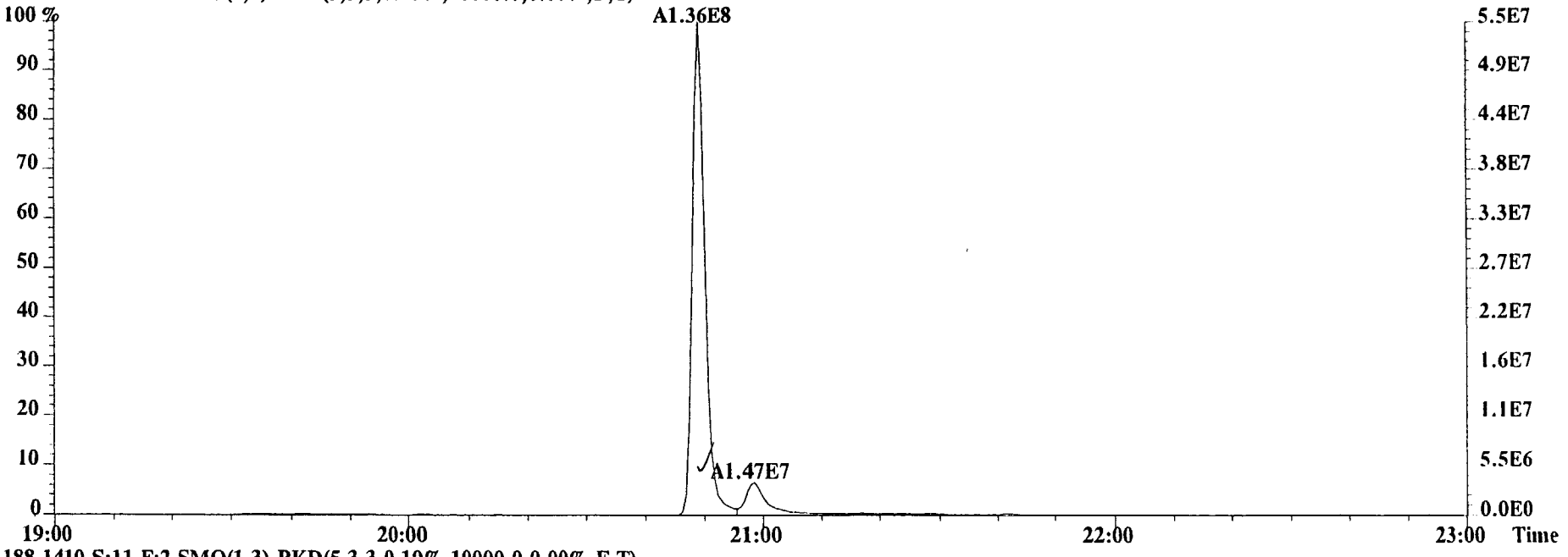
172.0984 S:11 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



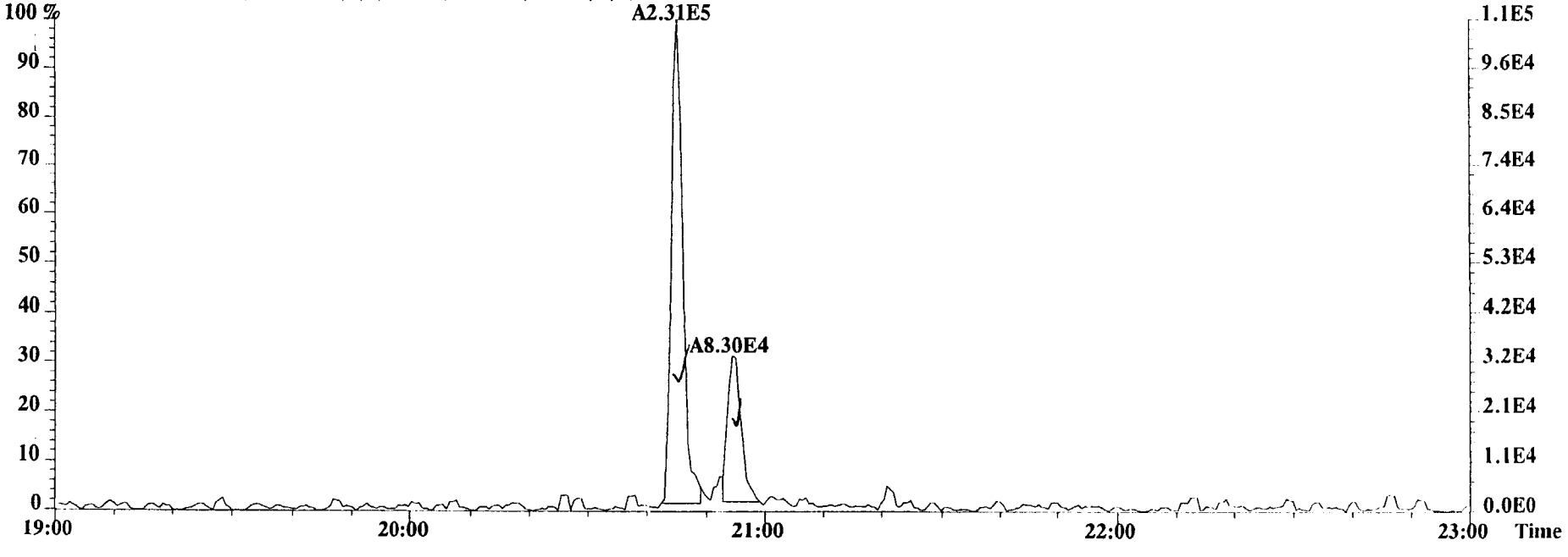
176.1410 S:11 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

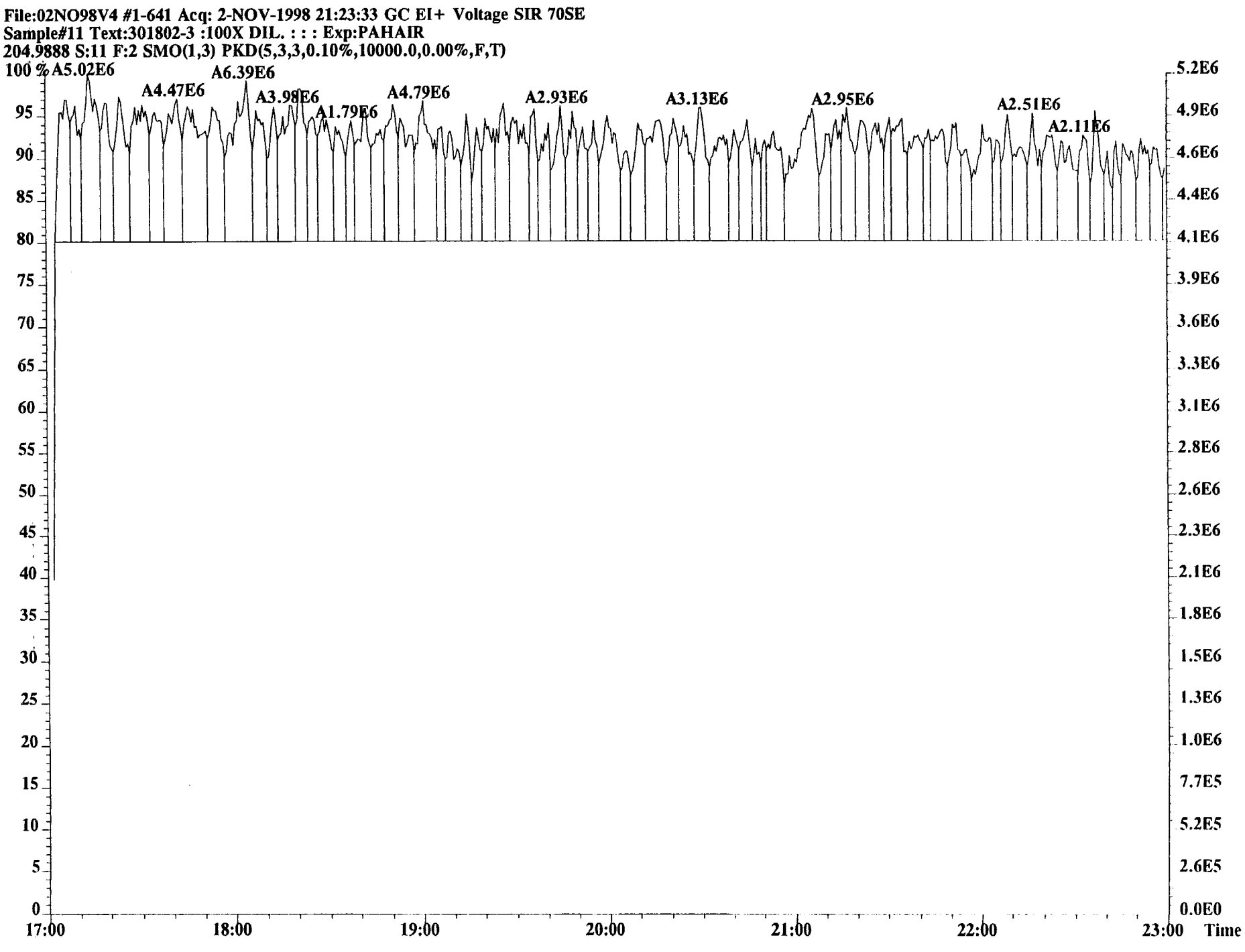


File:02NO98V4 #1-641 Acq: 2-NOV-1998 21:23:33 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-3 :100X DIL. : : : Exp:PAHAIR
178.0782 S:11 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

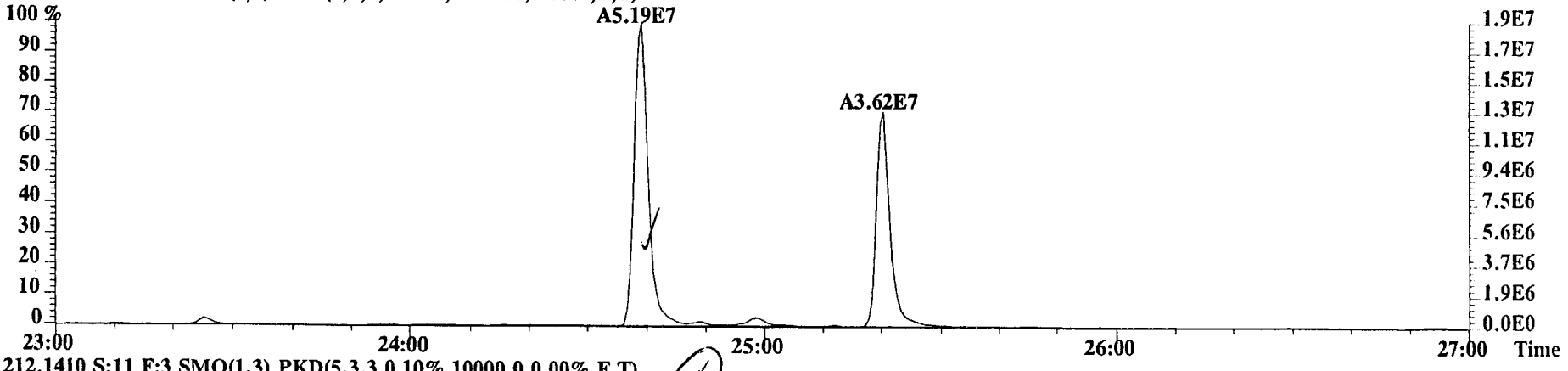


188.1410 S:11 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

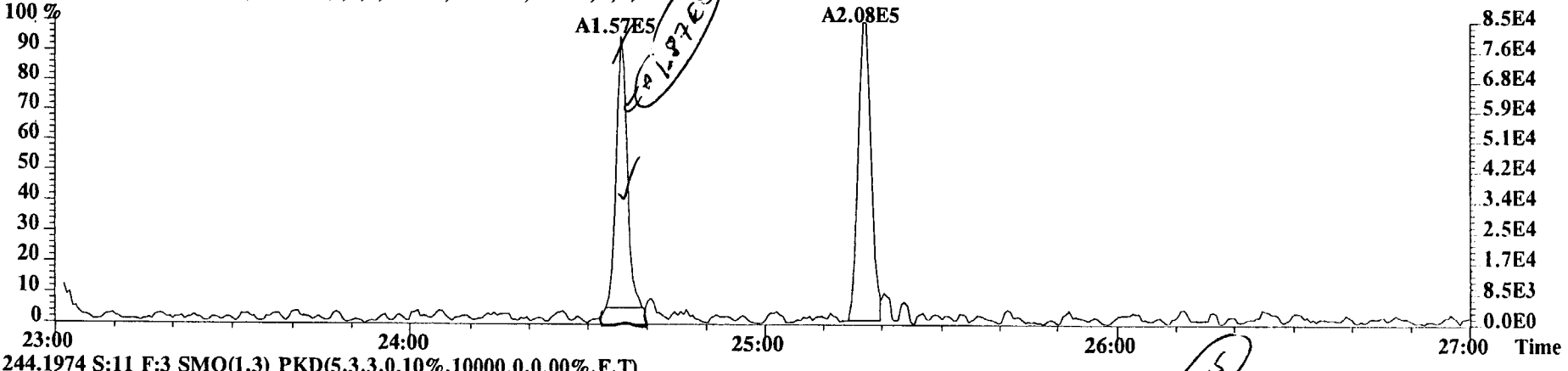



File:02NO98V4 #1-641 Acq: 2-NOV-1998 21:23:33 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-3 :100X DIL. : : : Exp:PAHAIR
204.9888 S:11 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A5.02E6
A4.47E6
A6.39E6
A3.98E6
A1.79E6
A4.79E6
A2.93E6
A3.13E6
A2.95E6
A2.51E6
A2.11E6
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
5.2E6
4.9E6
4.6E6
4.4E6
4.1E6
3.9E6
3.6E6
3.3E6
3.1E6
2.8E6
2.6E6
2.3E6
2.1E6
1.8E6
1.5E6
1.3E6
1.0E6
7.7E5
5.2E5
2.6E5
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

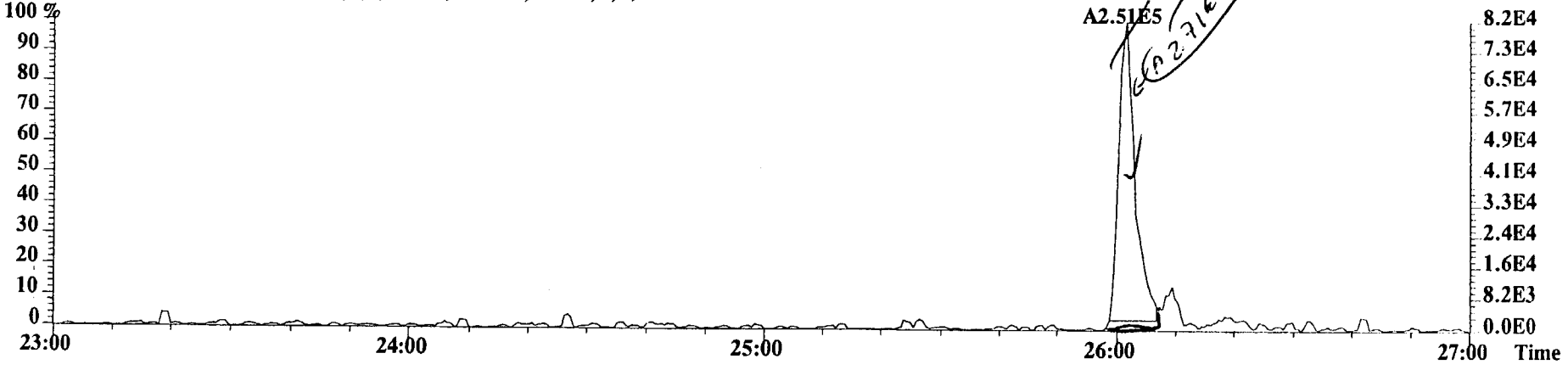
File:02NO98V4 #1-939 Acq: 2-NOV-1998 21:23:33 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-3 :100X DIL. : : : Exp:PAHAIR
202.0782 S:11 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



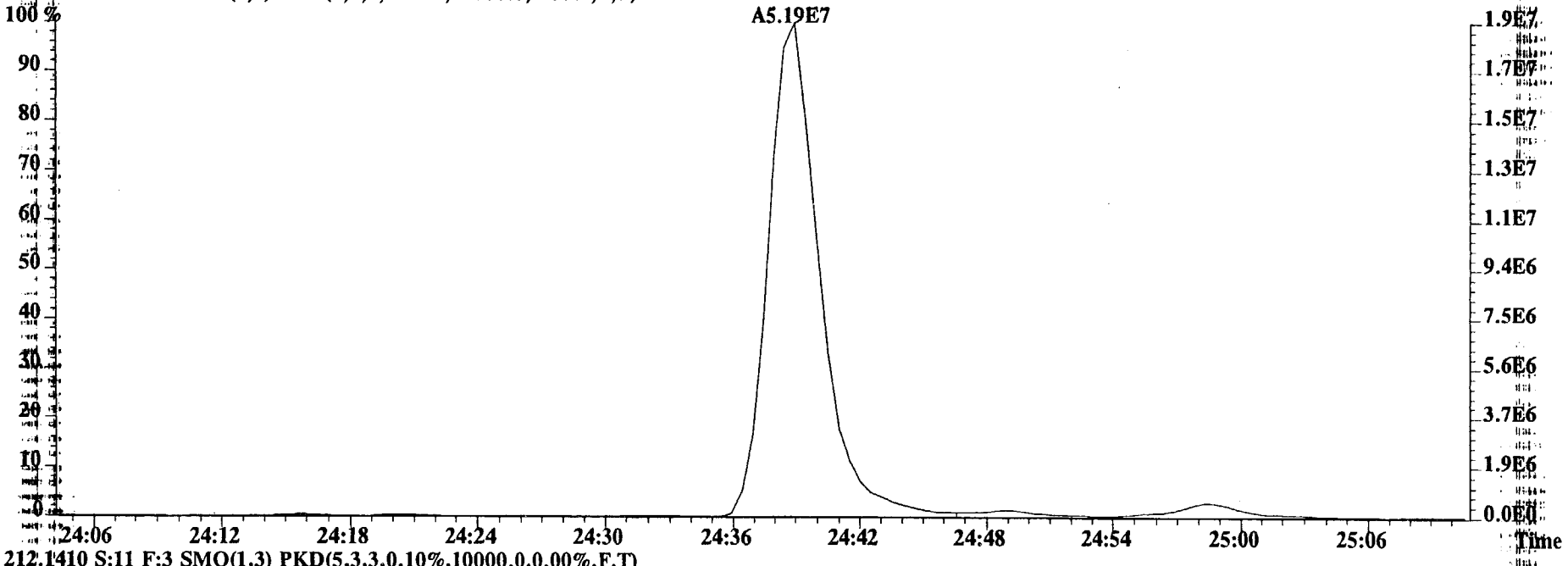
212.1410 S:11 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



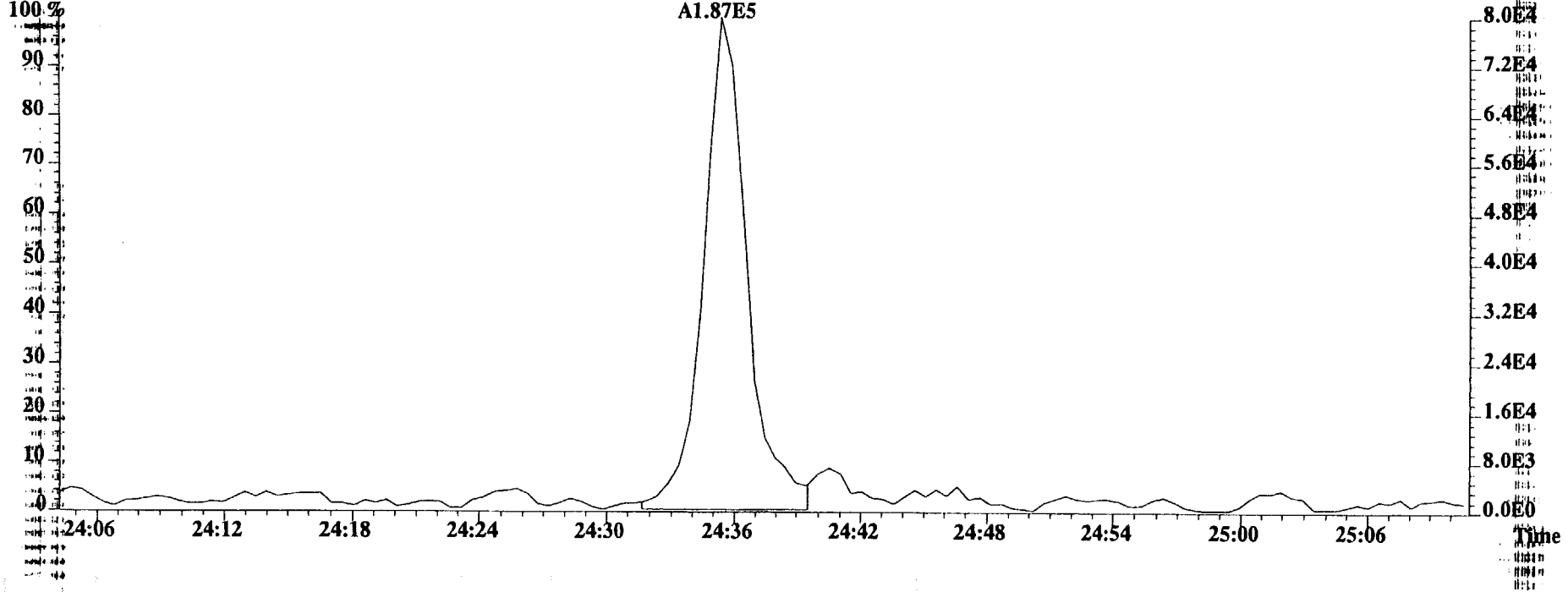
244.1974 S:11 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



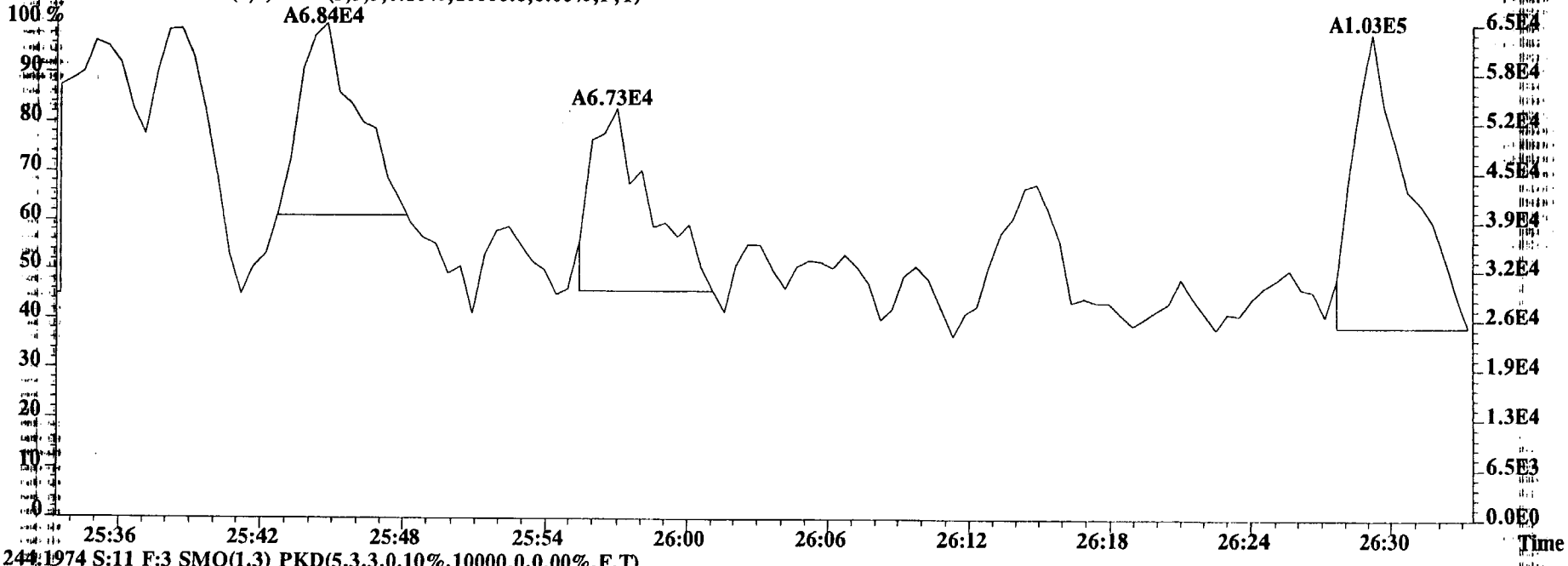
File:02NO98V4 #1-939 Acq: 2-NOV-1998 21:23:33 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-3 :100X DIL. : : : Exp:PAHAIR
202.0782 S:11 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



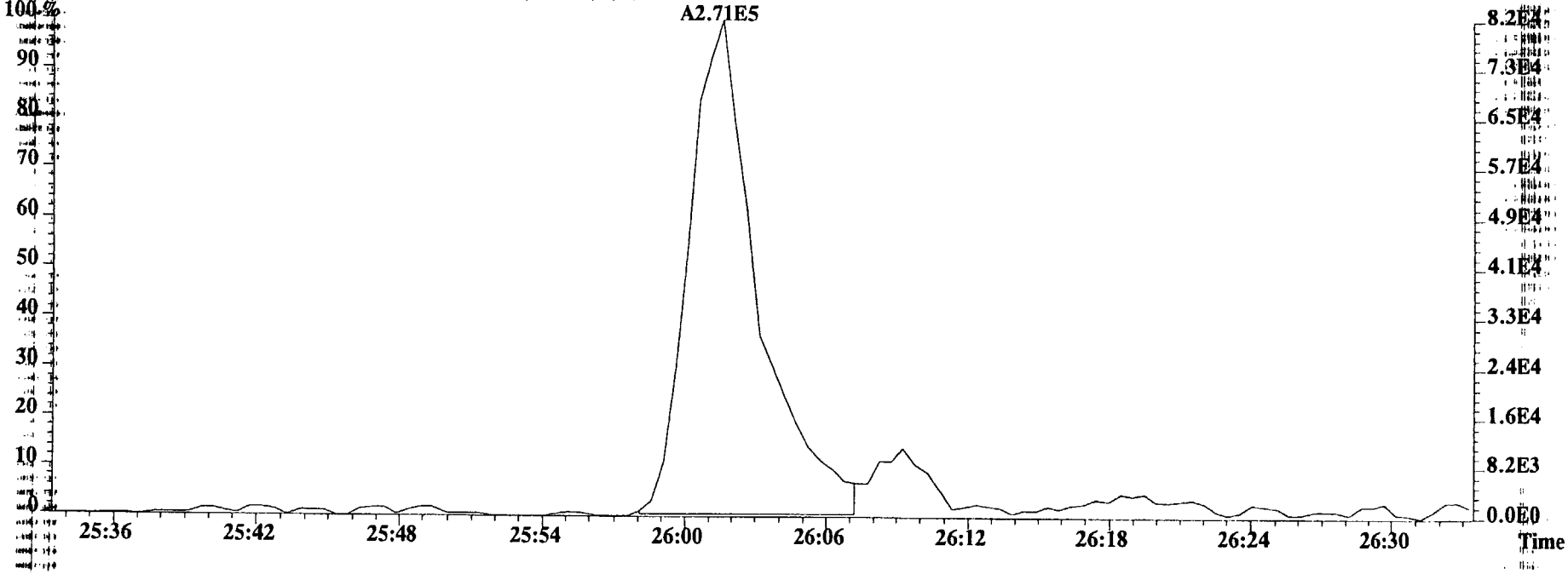
212.1410 S:11 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

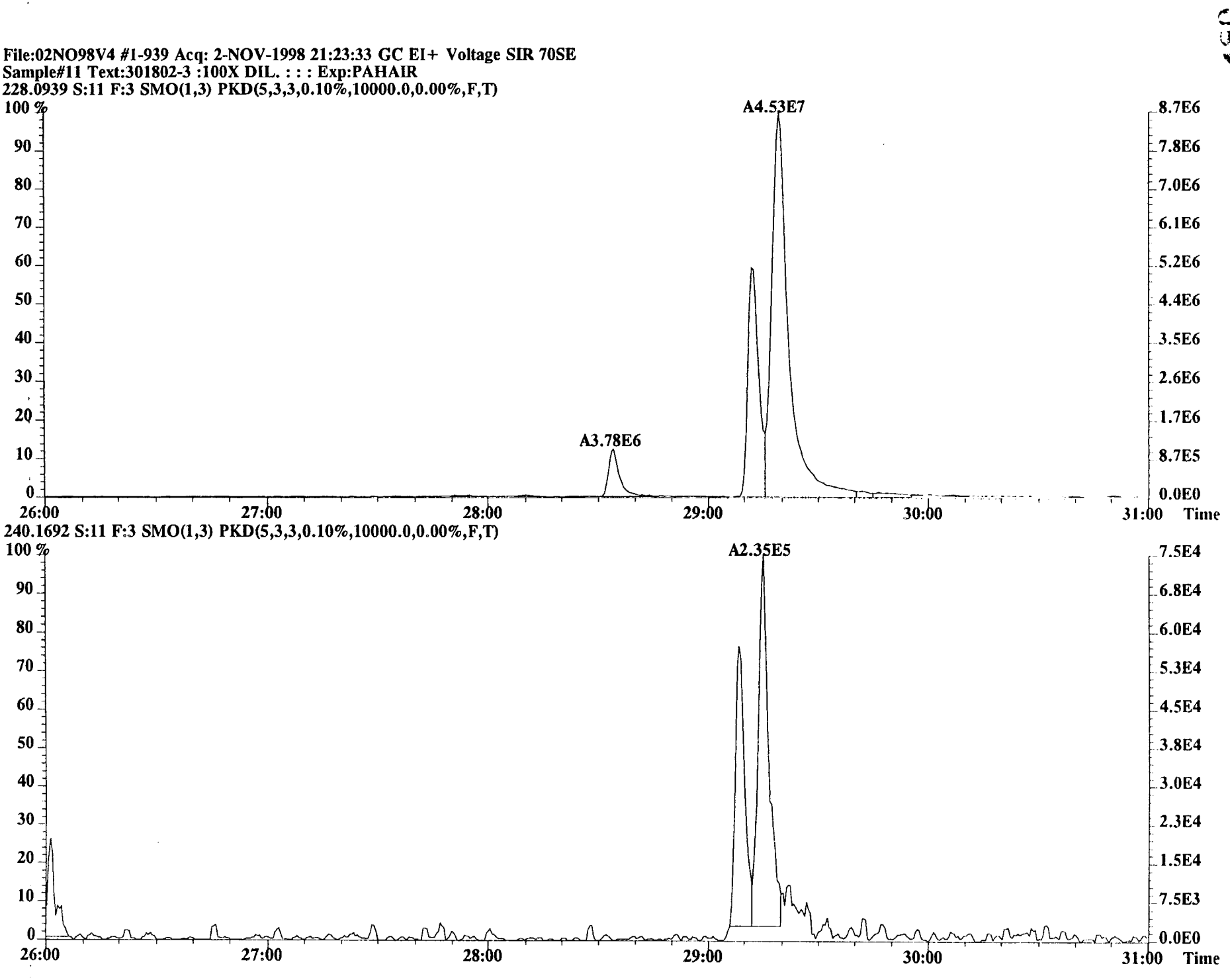


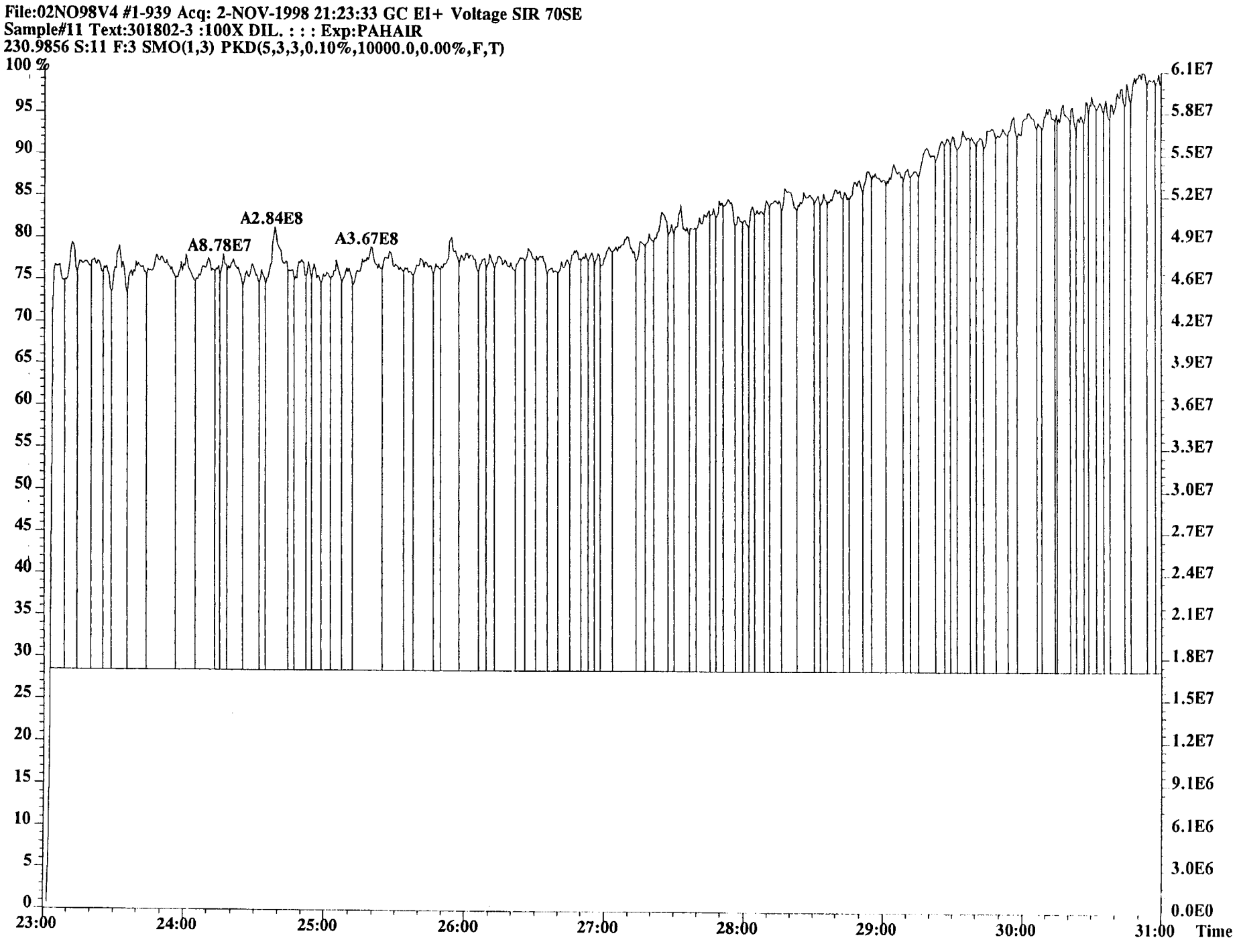
File:02NO98V4 #1-939 Acq: 2-NOV-1998 21:23:33 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-3 :100X DIL. : : : Exp:PAHAIR
202:0782 S:11 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



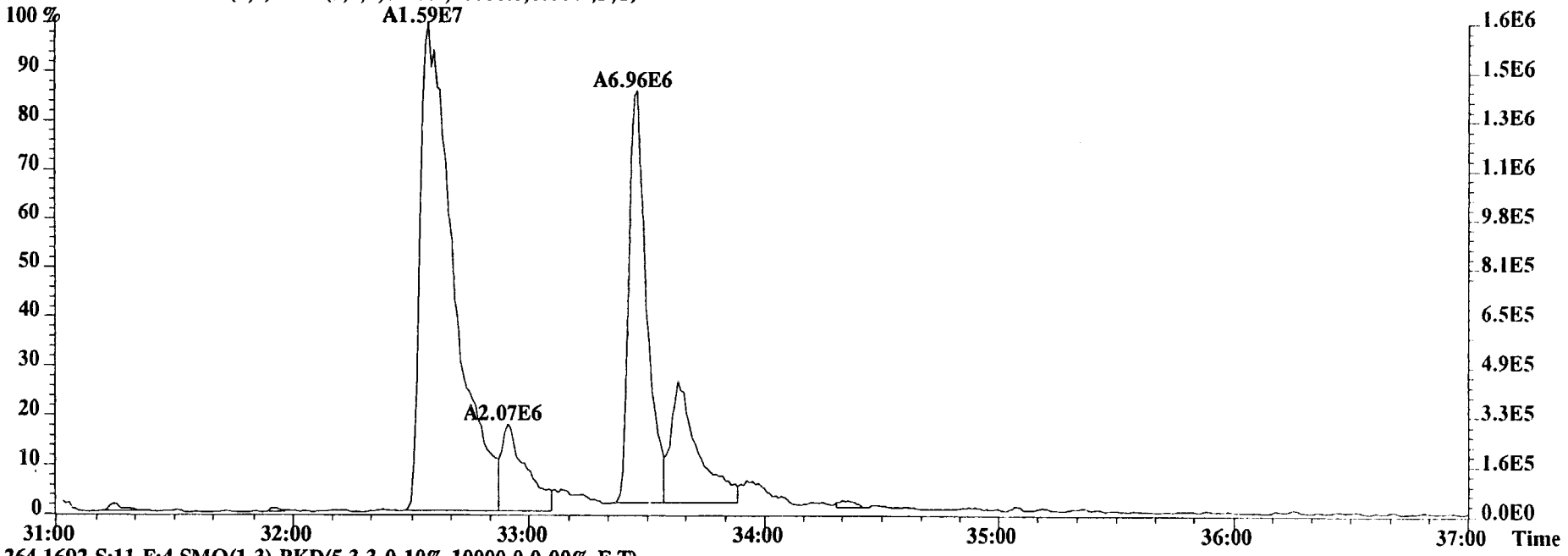
244:1974 S:11 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



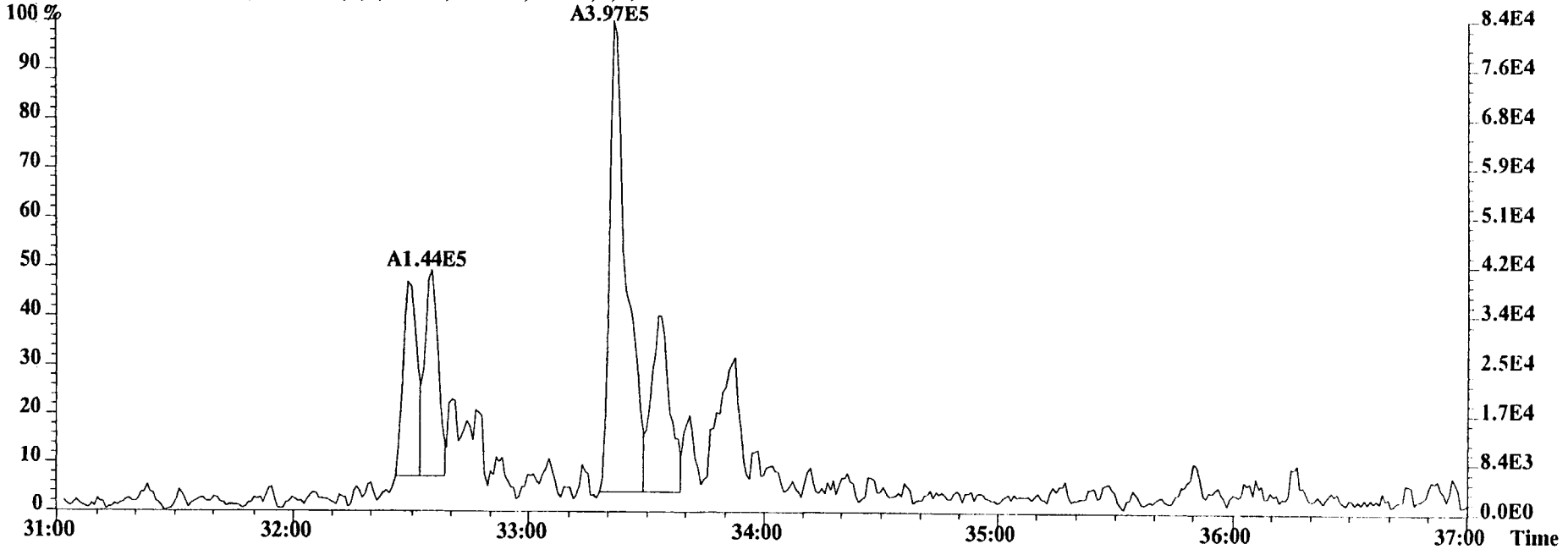

File:02NO98V4 #1-939 Acq: 2-NOV-1998 21:23:33 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-3 :100X DIL. : : : Exp:PAHAIR
228.0939 S:11 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.53E7
A3.78E6
240.1692 S:11 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.35E5
Time


File:02NO98V4 #1-939 Acq: 2-NOV-1998 21:23:33 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-3 :100X DIL. : : : Exp:PAHAIR
230.9856 S:11 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A8.78E7
A2.84E8
A3.67E8
6.1E7
5.8E7
5.5E7
5.2E7
4.9E7
4.6E7
4.2E7
3.9E7
3.6E7
3.3E7
3.0E7
2.7E7
2.4E7
2.1E7
1.8E7
1.5E7
1.2E7
9.1E6
6.1E6
3.0E6
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time

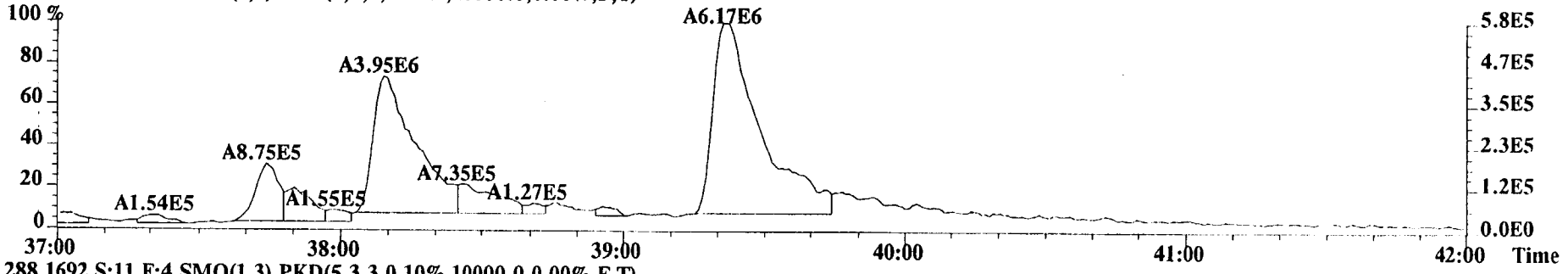
File:02NO98V4 #1-878 Acq: 2-NOV-1998 21:23:33 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-3 :100X DIL. : : : Exp:PAHAIR
252.0939 S:11 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



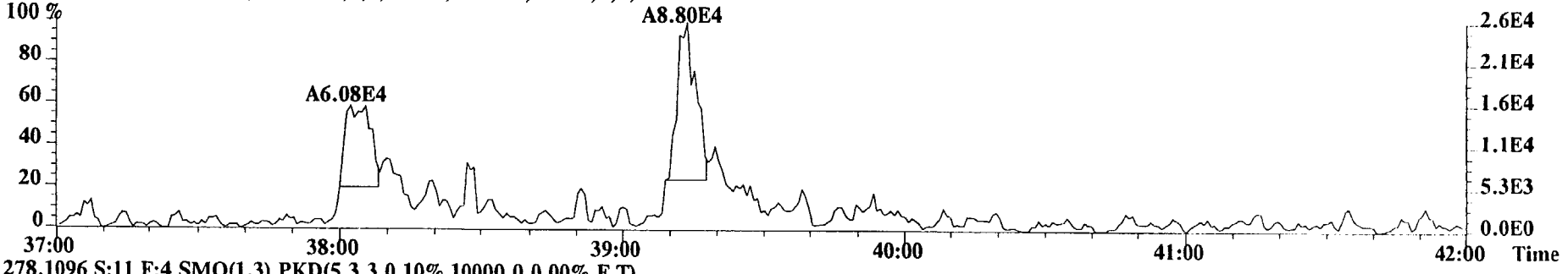
264.1692 S:11 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



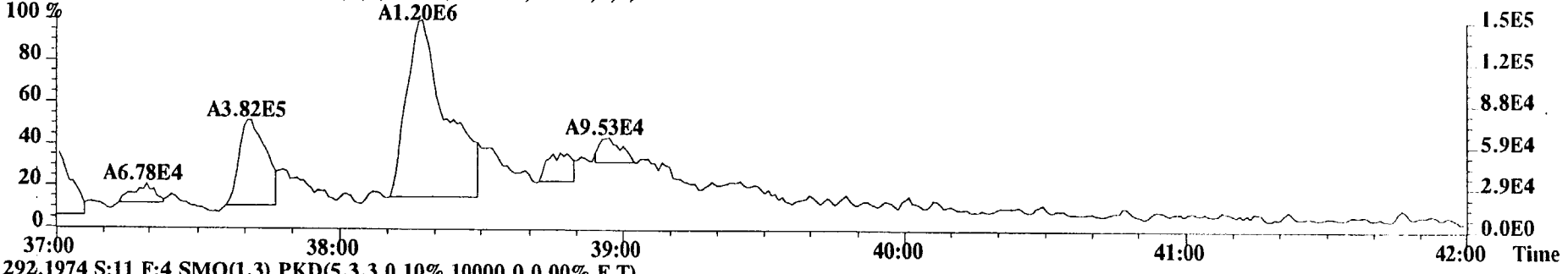
File:02NO98V4 #1-878 Acq: 2-NOV-1998 21:23:33 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-3 :100X DIL. : : : Exp:PAHAIR
276.0939 S:11 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



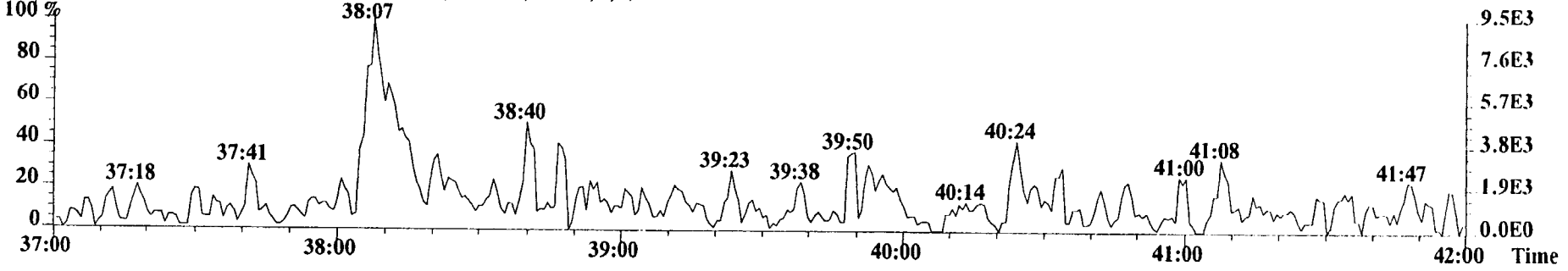
288.1692 S:11 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



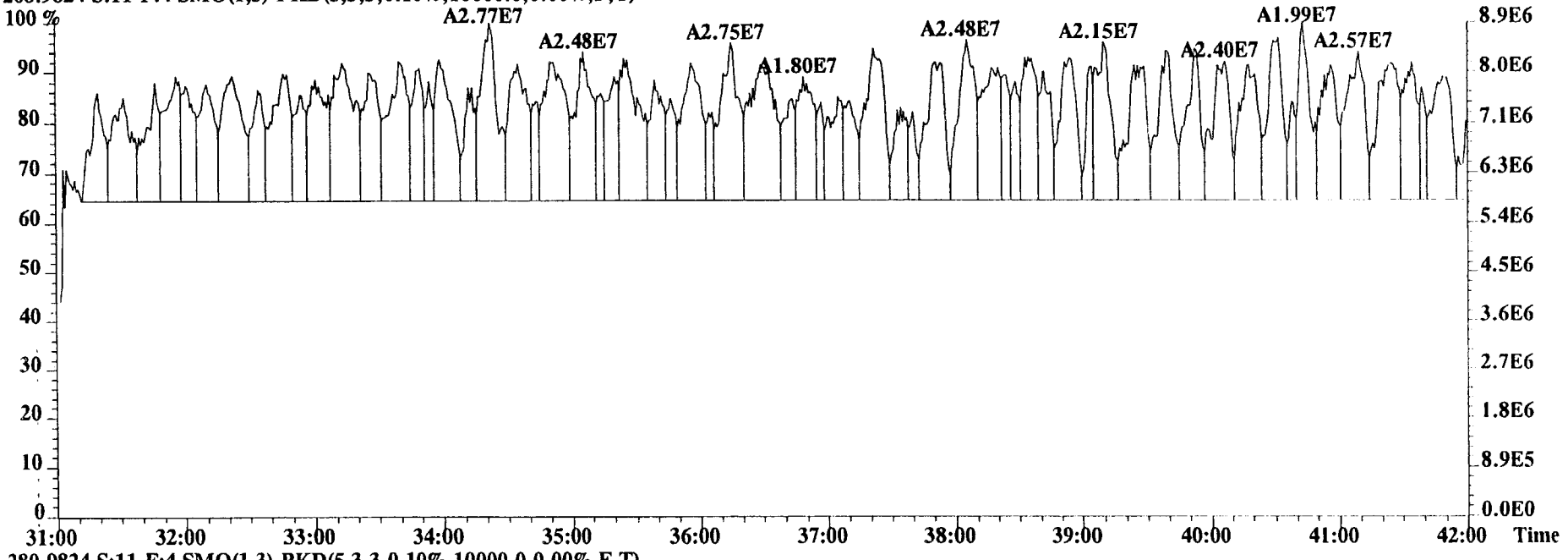
278.1096 S:11 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



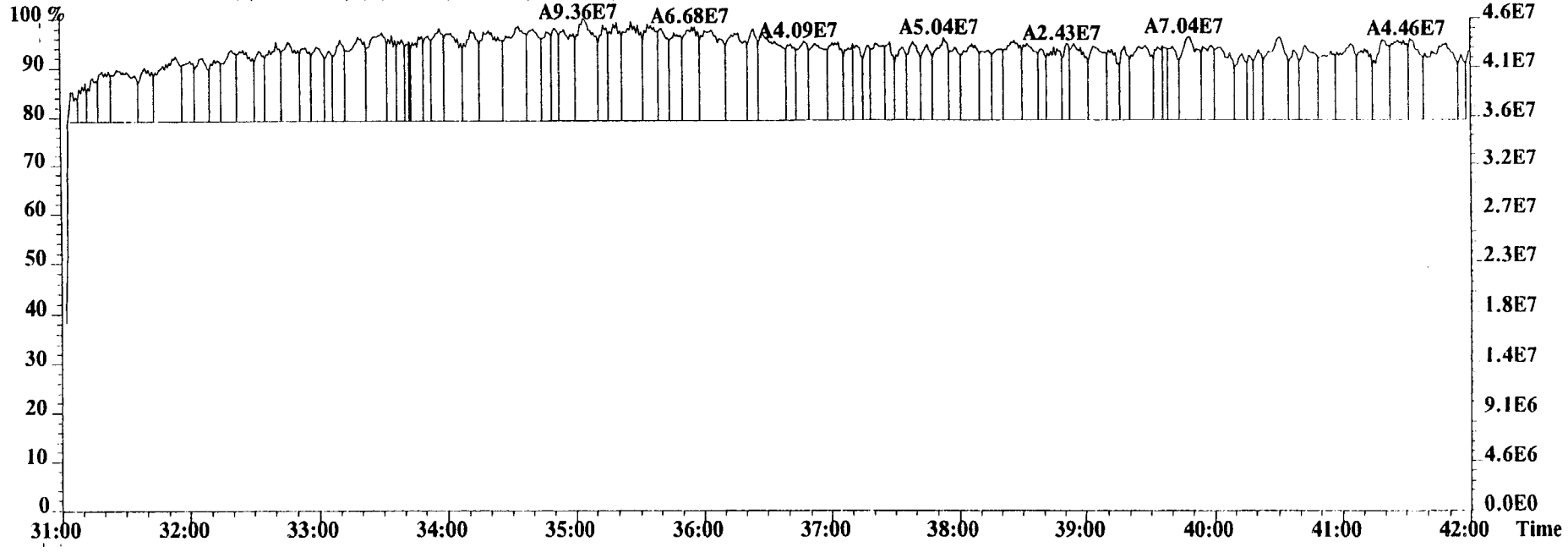
292.1974 S:11 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



File:02NO98V4 #1-878 Acq: 2-NOV-1998 21:23:33 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-3 :100X DIL. : : : Exp:PAHAIR
268.9824 S:11 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



280.9824 S:11 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-0-429-1
Lab ID: 301802-0004-SA
Matrix: AIRTRAIN Sampled: 21 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 30 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	290000	ng/sample	--	BD
2-Methylnaphthalene	55000	ng/sample	--	B
Acenaphthylene	50000	ng/sample	--	
Acenaphthene	7000	ng/sample	--	
Fluorene	21000	ng/sample	--	
Phenanthrene	66000	ng/sample	--	BD
Anthracene	20000	ng/sample	--	
Fluoranthene	32000	ng/sample	--	
Pyrene	16000	ng/sample	--	
Benzo(a)anthracene	290	ng/sample	--	
Chrysene	740	ng/sample	--	
Benzo(b)fluoranthene	200	ng/sample	--	
Benzo(k)fluoranthene	200	ng/sample	--	
Benzo(e)pyrene	130	ng/sample	--	
Benzo(a)pyrene	ND	ng/sample	100	
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
D = Compound quantitated using a secondary dilution.
ND = Not Detected

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-0-429-1
Lab ID: 301802-0004-SA
Matrix: AIRTRAIN Sampled: 21 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 30 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	92	D
Acenaphthylene-d8	90	
Acenaphthene-d10	74	
Fluorene-d10	69	
Phenanthrene-d10	99	D
Fluoranthene-d10	69	
Pyrene-d10	70	
Benzo(a)anthracene-d12	81	
Perylene-d12	60	
Indeno(123-cd)pyrene-d12	81	
Chrysene-d12	79	
Benzo(b)fluoranthene-d12	88	
Benzo(k)fluoranthene-d12	87	
Benzo(a)pyrene-d12	77	
Dibenz(a,h)anthracene-d14	77	
Benzo(g,h,i)perylene-d12	69	

Field Surrogates	% Recovery
13C-Fluorene	124

D = Compound quantitated using a secondary dilution.

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

04-NOV-1998 05:20:20 PM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4 | Results : 300C98V4071.RES | : PAHAIR.TRG
GC Column : DB-5 | Date analyzed : 30-OCT-98
Data file : 300C98V4 | 301802-4 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMP	Rec/ MDL
d10-2-Methylnaphthalene	7457740	1.00	Y	12: 27	Y	1.00	50.00	
d8-Naphthalene	9240880	1.00	Y	10: 12	Y	2.24	27.65	~~85~~ see
Naphthalene	16866340000	1.00	Y	10: 17	Y	1.23	-	SAT'D IC
2-Methylnaphthalene	2860720000	1.00	Y	12: 34	Y	0.56	5.5e+04	B E
d8-Acenaphthylene	8161300	1.00	Y	15: 27	Y	1.21	45.08	90
Acenaphthylene	3825700000	1.00	Y	15: 30	Y	0.94	5.0e+04	E
d10-Acenaphthene	4122640	1.00	Y	16: 1	Y	0.74	37.12	74
Acenaphthene	360320000	1.00	Y	16: 8	Y	1.25	7013.95	E
d10-Anthracene	4943880	1.00	Y	20: 54	Y	1.00	50.00	
d10-Fluorene	4844600	1.00	Y	17: 41	Y	1.42	34.48	69
Fluorene	1184008000	1.00	Y	17: 46	Y	1.16	2.1e+04	E
d10-Phenanthrene	11013880	1.00	Y	20: 45	Y	2.81	39.67	~~79~~ see
Phenanthrene	6958000000	1.00	Y	20: 49	Y	0.89	-	SAT'D IC
Anthracene	1740686000	1.00	Y	20: 58	Y	0.80	2.0e+04	E
d14-Terphenyl	12499040	1.00	Y	26: 0	Y	1.00	50.00	
d10-Fluoranthene	12185280	1.00	Y	24: 35	Y	1.41	34.55	69
Fluoranthene	4313220000	1.00	Y	24: 39	Y	1.11	3.2e+04	E
d10-Pyrene	13191400	1.00	Y	25: 17	Y	1.52	34.76	70
Pyrene	2604420000	1.00	Y	25: 20	Y	1.21	1.6e+04	E
d12-Benzo(a)anthracene	9067480	1.00	Y	29: 9	Y	0.90	40.30	81
Benzo(a)anthracene	31934600	1.00	Y	29: 13	Y	1.20	292.39	
d12-Chrysene	12696540	1.00	Y	29: 15	Y	1.28	39.71	79
Chrysene	102244400	1.00	Y	29: 19	Y	1.08	742.91	
d12-Benzo(e)pyrene	23610600	1.00	Y	33: 23	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	9475040	1.00	Y	32: 30	Y	0.45	44.21	88
Benzo(b)fluoranthene	22600000	1.00	Y	32: 35	Y	1.17	204.34	
d12-Benzo(k)fluoranthene	19441240	1.00	Y	32: 35	Y	0.95	43.43	87
Benzo(k)fluoranthene	45000000	1.00	Y	32: 38	Y	1.16	198.83	
d12-Benzo(a)pyrene	12272020	1.00	Y	33: 35	Y	0.68	38.41	77
Benzo(e)pyrene	25393800	1.00	Y	33: 28	Y	1.64	126.11	
Benzo(a)pyrene	10389980	1.00	Y	33: 39	Y	1.07	<RL=100.00	
d12-Perylene	8936560	1.00	Y	33: 51	Y	0.63	30.03	60
Perylene	* No Peak	0.00	N	33: 56	N	1.71	<RL=100.00	
d12-Indeno(123-cd)pyrene	8485960	1.00	Y	38: 3	Y	0.44	40.43	81
Indeno(123-cd)pyrene	5621240	1.00	Y	38: 10	Y	0.62	<RL=100.00	
d14-Dibenz(ah)anthracene	4440720	1.00	Y	38: 9	Y	0.25	38.26	77
Dibenz(ah)anthracene	798102	1.00	Y	38: 18	Y	1.40	<RL=100.00	
d12-Benzo(ghi)perylene	9383680	1.00	Y	39: 14	Y	0.58	34.28	69
Benzo(ghi)perylene	9286240	1.00	Y	39: 23	Y	1.02	<RL=100.00	
d10-Fluorene	4844600	1.00	Y	17: 41	Y	1.00	50.00	
13C-Fluorene	4864380	1.00	Y	17: 46	Y	0.81	61.98	124

11-4-98
CP

0.5

98V4.RRF
Rec/
MDL

	3728870	3728870
55	4620440	4620440
SAT'D	8433170000	8433170000
B E	1430360000	1430360000
90	4080650	4080650
E	1912850000	1912850000
74	2061320	2061320
E	180160000	180160000
	2471940	2471940
69	2422300	2422300
E	592004000	592004000
79	5506940	5506940
SAT'D	3479000000	3479000000
E	870343000	870343000
	6249520	6249520
69	6092640	6092640
E	2156610000	2156610000
70	6595700	6595700
E	1302210000	1302210000
81	4533740	4533740
	15967300	15967300
79	6348270	6348270
	51122200	51122200
	11805300	11805300
88	4737520	4737520
	11300000	11300000
87	9720620	9720620
	22500000	22500000
77	6136010	6136010
	12696900	12696900
100.00	5194990	5194990
60	4468280	4468280
100.00	0	0
81	4242980	4242980
100.00	2810620	2810620
77	2220360	2220360
100.00	399051	399051
69	4691840	4691840
100.00	4643120	4643120

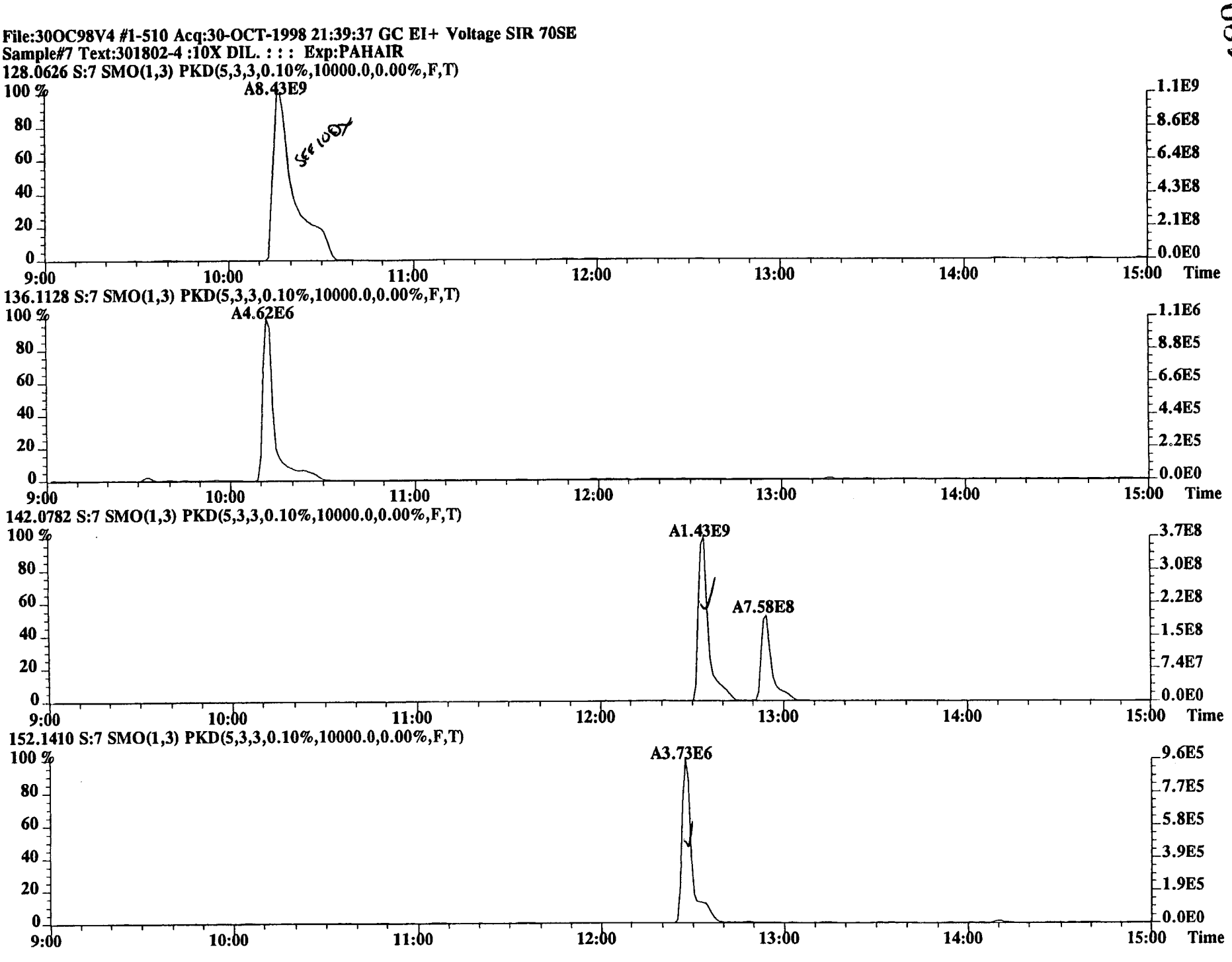
02-NOV-1998 08:45:21 AM Dioxin Furan Unknown RESULTS

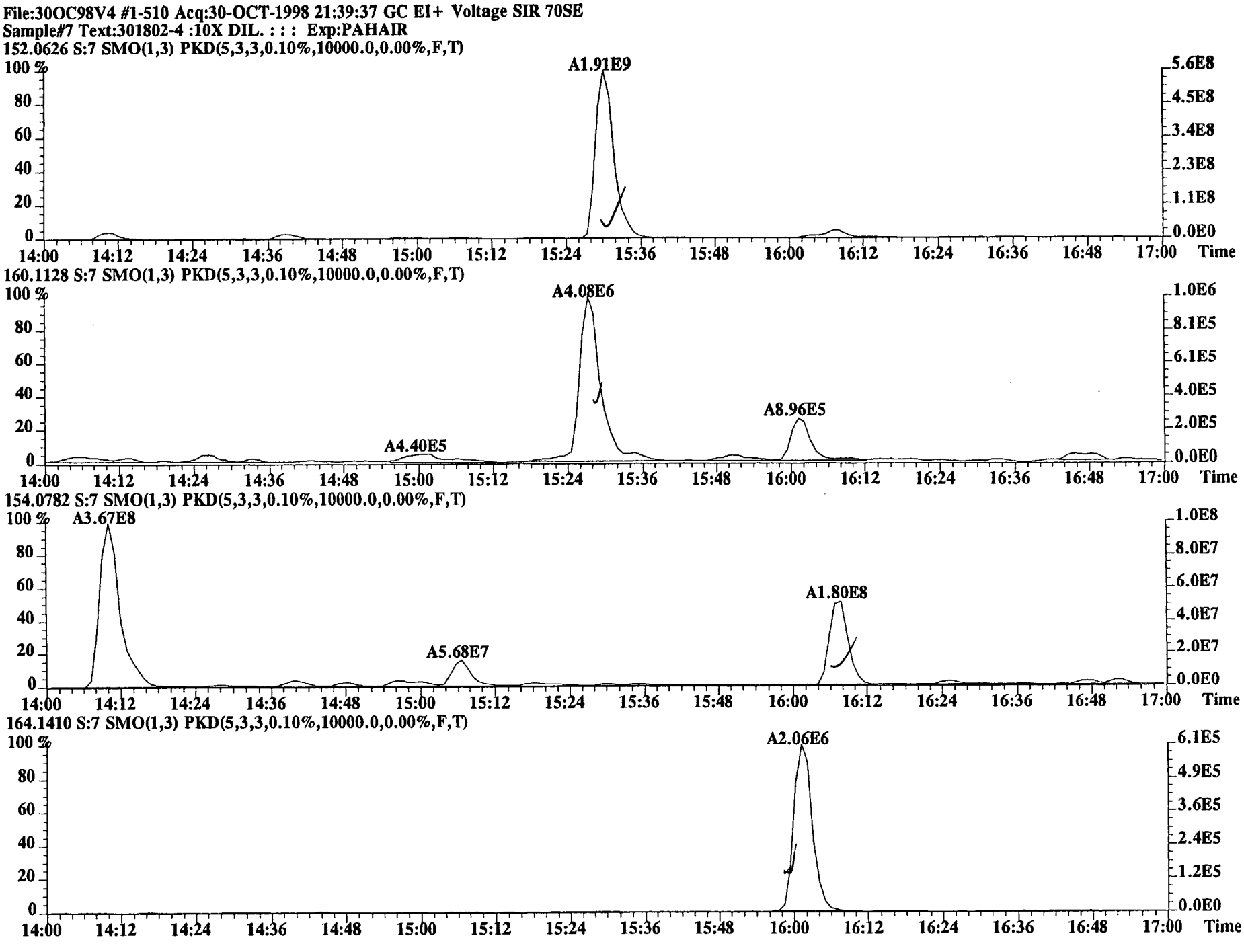
Mass Spec : VG-4
GC Column : DB-5
Data file : 30OC98V4
Weight : 0.5

Results : 30OC98V4071.RES
Date analyzed : 30-OCT-98
301802-4 :10X DIL. : : :

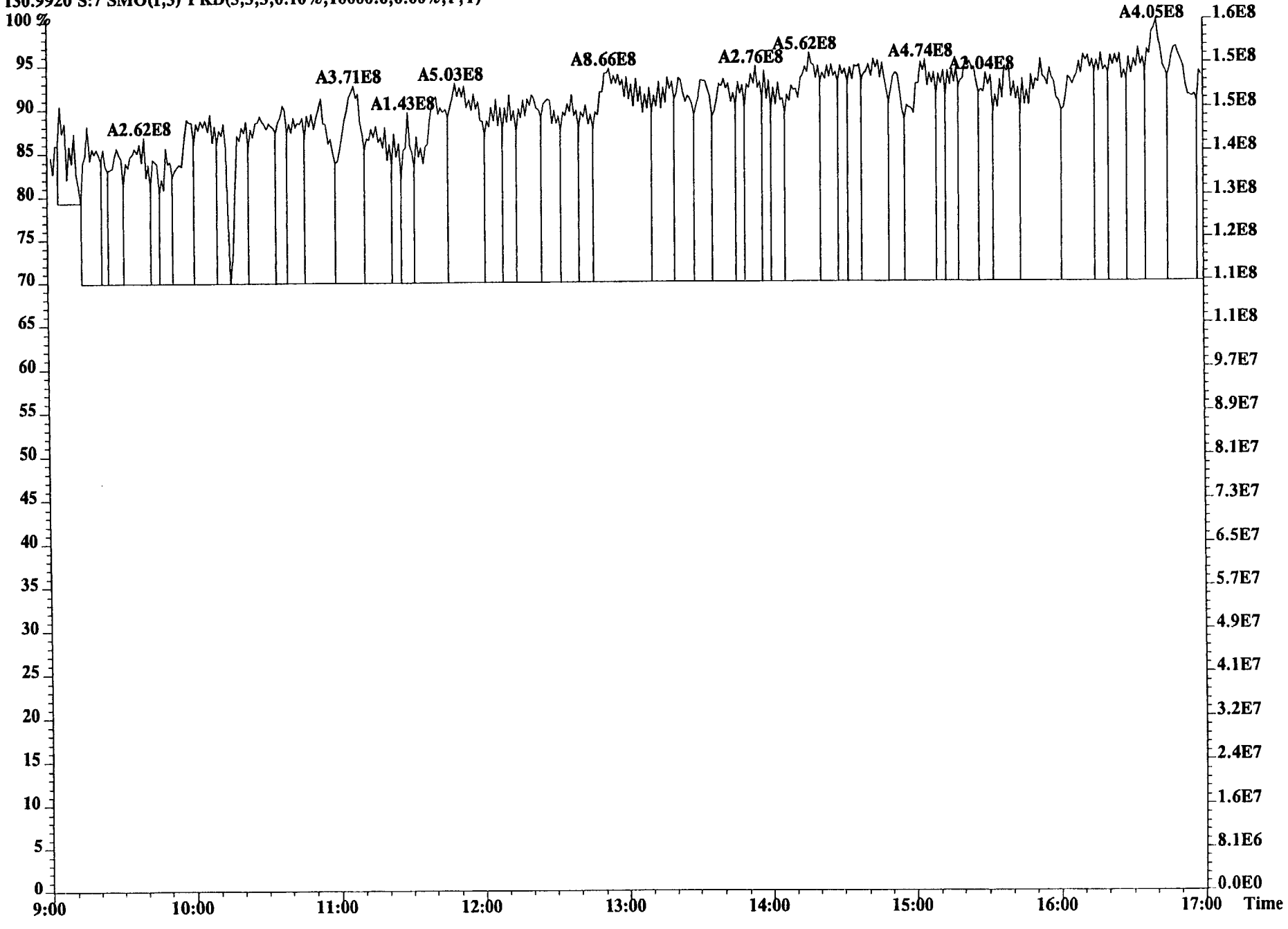
: PAHAIR.TRG
: PAHAIR102998V4.R

Name	Total Response	Isotope Ratio	R. T. mm:ss	Ex	Cal RRF	pg/ SAMP	Rec/ MDL
d10-2-Methylnaphthalene	7457740	1.00 Y	12: 27	Y	1.00	50.00	
d8-Naphthalene	9240880	1.00 Y	10: 12	Y	2.24	27.65	55
Naphthalene	16866340000	1.00 Y	10: 17	Y	1.23	1.5e+05	0.000
2-Methylnaphthalene	2860720000	1.00 Y	12: 34	Y	0.56	5.5e+04	0.000
d8-Acenaphthylene	8161300	1.00 Y	15: 27	Y	1.21	45.08	90
Acenaphthylene	3825700000	1.00 Y	15: 30	Y	0.94	5.0e+04	0.000
d10-Acenaphthene	4122640	1.00 Y	16: 1	Y	0.74	37.12	74
Acenaphthene	360320000	1.00 Y	16: 8	Y	1.25	7013.95	0.000
d10-Anthracene	4943880	1.00 Y	20: 54	Y	1.00	50.00	
d10-Fluorene	4844600	1.00 Y	17: 41	Y	1.42	34.48	69
Fluorene	1184008000	1.00 Y	17: 46	Y	1.16	2.1e+04	0.000
d10-Phenanthrene	11013880	1.00 Y	20: 45	Y	2.81	39.67	79
Phenanthrene	6958000000	1.00 Y	20: 49	Y	0.89	7.1e+04	0.000
Anthracene	1740686000	1.00 Y	20: 58	Y	0.80	2.0e+04	0.000
d14-Terphenyl	12499040	1.00 Y	26: 0	Y	1.00	50.00	
d10-Fluoranthene	12185280	1.00 Y	24: 35	Y	1.41	34.55	69
Fluoranthene	4313220000	1.00 Y	24: 39	Y	1.11	3.2e+04	0.000
d10-Pyrene	13191400	1.00 Y	25: 17	Y	1.52	34.76	70
Pyrene	2604420000	1.00 Y	25: 20	Y	1.21	1.6e+04	0.000
d12-Benzo(a)anthracene	9067480	1.00 Y	29: 9	Y	0.90	40.30	81
Benzo(a)anthracene	31934600	1.00 Y	29: 13	Y	1.20	292.39	0.000
d12-Chrysene	12696540	1.00 Y	29: 15	Y	1.28	39.71	79
Chrysene	102244400	1.00 Y	29: 19	Y	1.08	742.91	0.000
d12-Benzo(e)pyrene	23610600	1.00 Y	33: 23	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	9475040	1.00 Y	32: 30	Y	0.45	44.21	88
Benzo(b)fluoranthene	67298200	1.00 Y	32: 35	Y	1.17	608.49	0.000
d12-Benzo(k)fluoranthene	19441240	1.00 Y	32: 35	Y	0.95	43.43	87
Benzo(k)fluoranthene	67298200	1.00 Y	32: 35	Y	1.16	297.35	0.000
d12-Benzo(a)pyrene	12272020	1.00 Y	33: 35	Y	0.68	38.41	77
Benzo(e)pyrene	25393800	1.00 Y	33: 28	Y	1.64	126.11	0.000
Benzo(a)pyrene	10389980	1.00 Y	33: 39	Y	1.07	78.98	0.000
d12-Perylene	8936560	1.00 Y	33: 51	Y	0.63	30.03	60
Perylene	* No Peak	0.00 N	33: 56	N	1.71	0.00	0.000
d12-Indeno(123-cd)pyrene	8485960	1.00 Y	38: 3	Y	0.44	40.43	81
Indeno(123-cd)pyrene	5621240	1.00 Y	38: 10	Y	0.62	106.68	0.000
d14-Dibenz(ah)anthracene	4440720	1.00 Y	38: 9	Y	0.25	38.26	77
Dibenz(ah)anthracene	798102	1.00 Y	38: 18	Y	1.40	12.81	0.000
d12-Benzo(ghi)perylene	9383680	1.00 Y	39: 14	Y	0.58	34.28	69
Benzo(ghi)perylene	9286240	1.00 Y	39: 23	Y	1.02	97.40	0.000
d10-Fluorene	4844600	1.00 Y	17: 41	Y	1.42	7.22	14
13C-Fluorene	4864380	1.00 Y	17: 46	Y	1.00	100.41	0.000

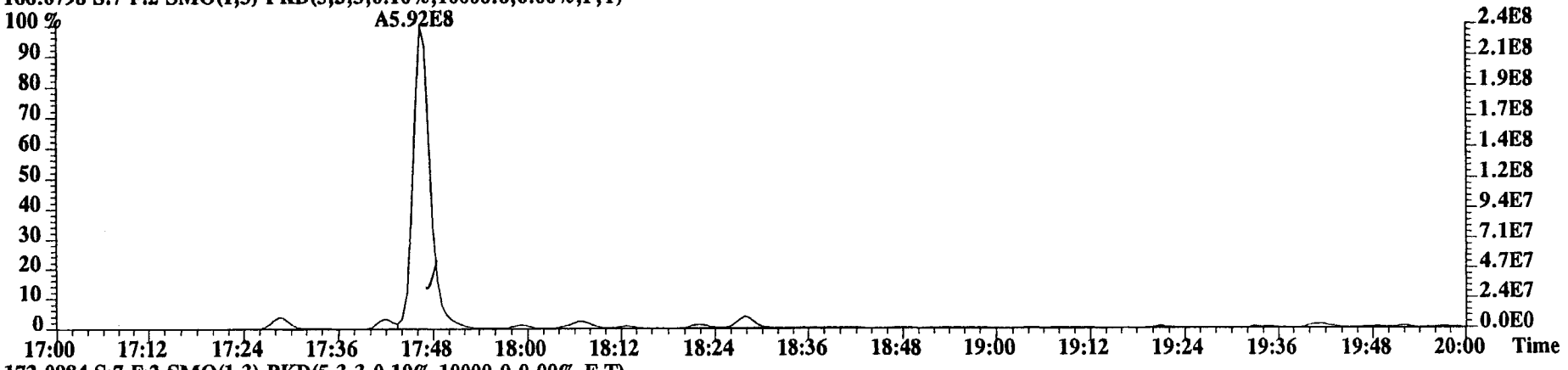

File:30OC98V4 #1-510 Acq:30-OCT-1998 21:39:37 GC EI+ Voltage SIR 70SE
Sample#7 Text:301802-4 :10X DIL. : : : Exp:PAHAIR
128.0626 S:7 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.43E9
136.1128 S:7 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.62E6
142.0782 S:7 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.43E9
A7.58E8
152.1410 S:7 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.73E6
100 %
80
60
40
20
0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
Time
1.1E9
8.6E8
6.4E8
4.3E8
2.1E8
0.0E0
1.1E6
8.8E5
6.6E5
4.4E5
2.2E5
0.0E0
3.7E8
3.0E8
2.2E8
1.5E8
7.4E7
0.0E0
9.6E5
7.7E5
5.8E5
3.9E5
1.9E5
0.0E0


File:30OC98V4 #1-510 Acq:30-OCT-1998 21:39:37 GC EI+ Voltage SIR 70SE
Sample#7 Text:301802-4 :10X DIL. : : : Exp:PAHAIR
152.0626 S:7 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.91E9
160.1128 S:7 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.08E6
A4.40E5
A8.96E5
154.0782 S:7 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.67E8
A5.68E7
A1.80E8
164.1410 S:7 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.06E6
100 %
80
60
40
20
0
14:00
14:12
14:24
14:36
14:48
15:00
15:12
15:24
15:36
15:48
16:00
16:12
16:24
16:36
16:48
17:00
Time
5.6E8
4.5E8
3.4E8
2.3E8
1.1E8
0.0E0
1.0E6
8.1E5
6.1E5
4.0E5
2.0E5
1.0E8
8.0E7
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2.4E5
1.2E5

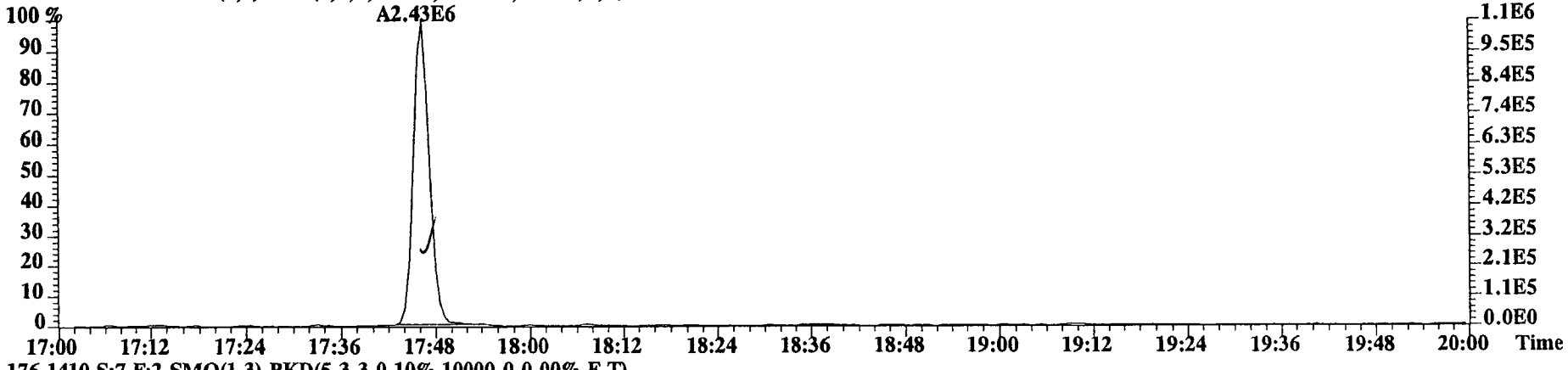
File:30OC98V4 #1-510 Acq:30-OCT-1998 21:39:37 GC EI+ Voltage SIR 70SE
Sample#7 Text:301802-4 :10X DIL. : : : Exp:PAHAIR
130.9920 S:7 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



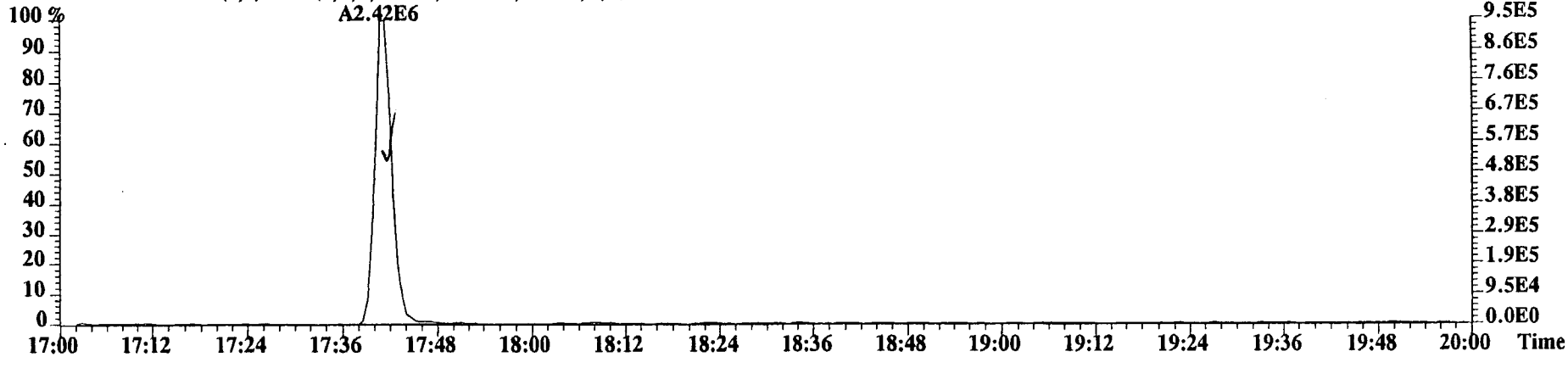
File:30OC98V4 #1-641 Acq:30-OCT-1998 21:39:37 GC EI+ Voltage SIR 70SE
Sample#7 Text:301802-4 :10X DIL. : : : Exp:PAHAIR
166.0798 S:7 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



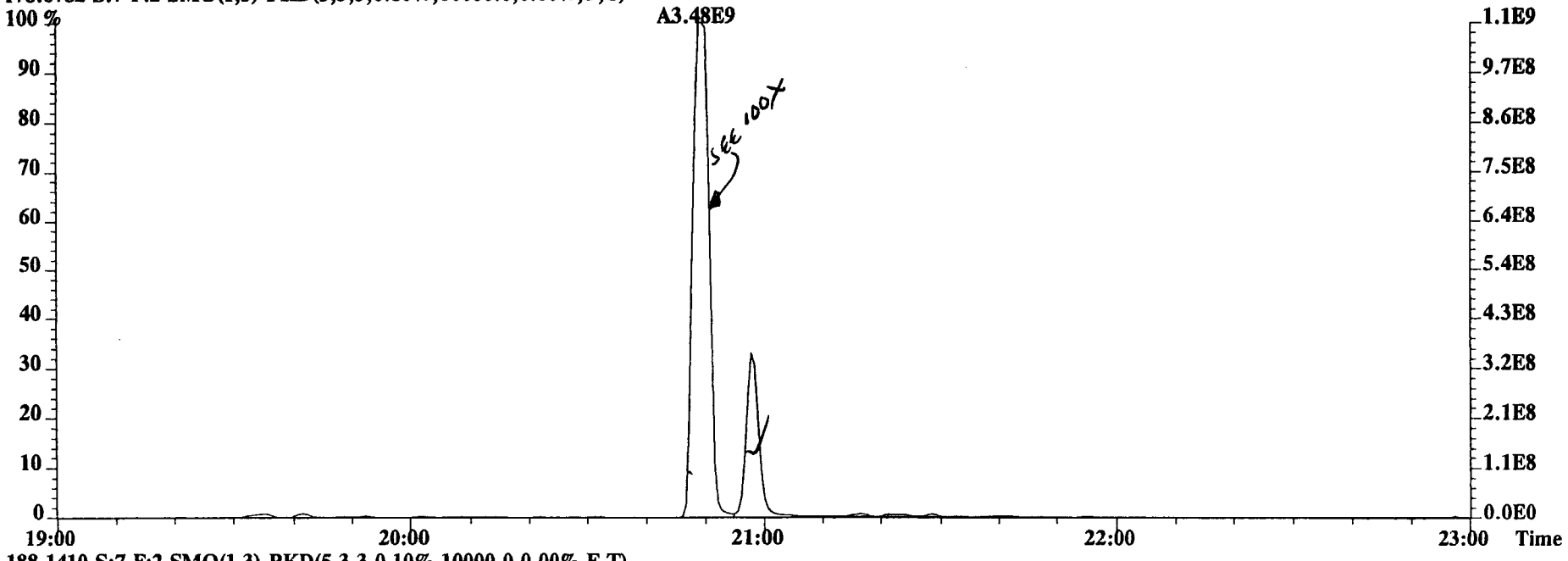
172.0984 S:7 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



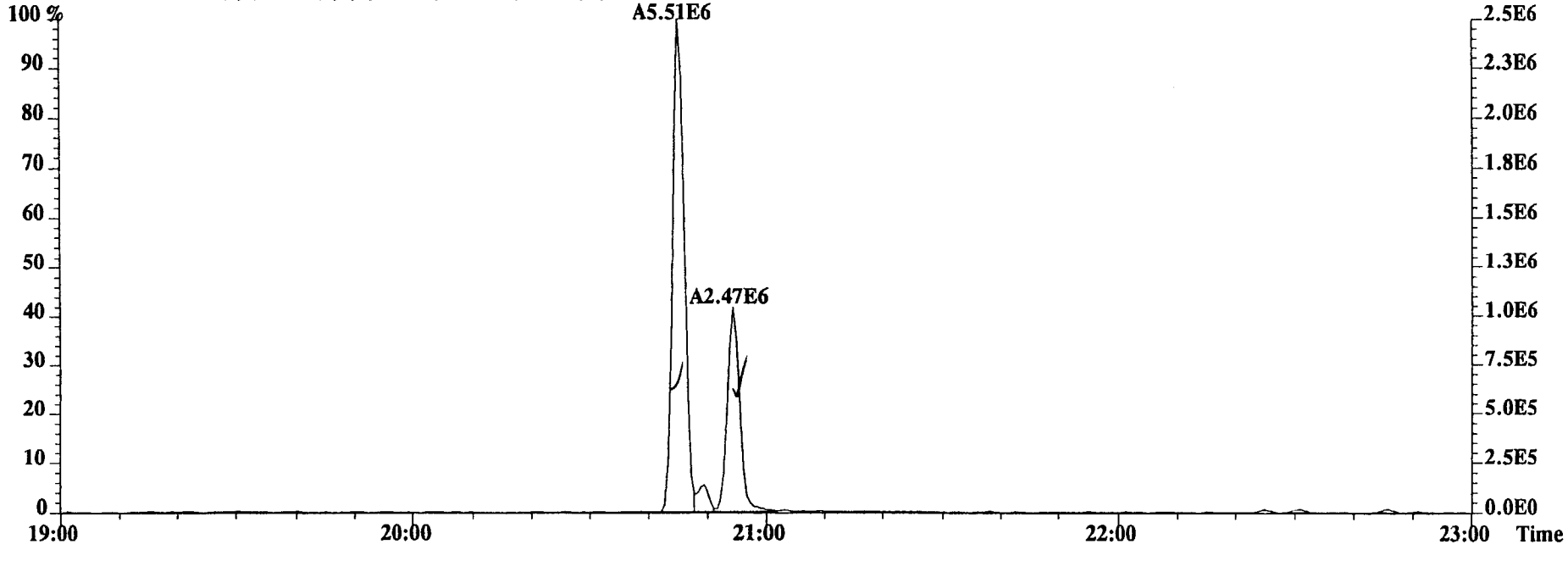
176.1410 S:7 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



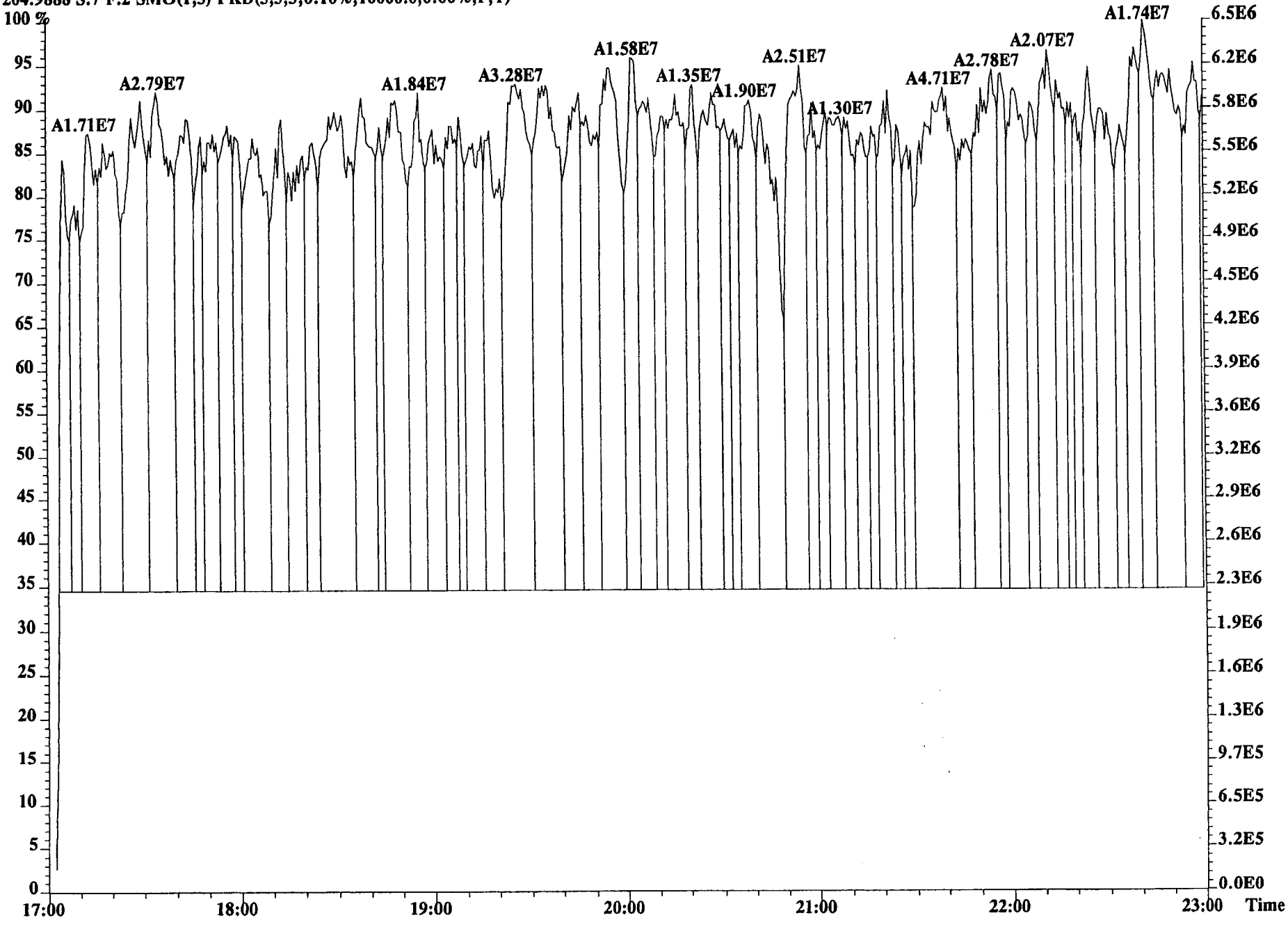
File:30OC98V4 #1-641 Acq:30-OCT-1998 21:39:37 GC EI+ Voltage SIR 70SE
Sample#7 Text:301802-4 :10X DIL. : : : Exp:PAHAIR
178.0782 S:7 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



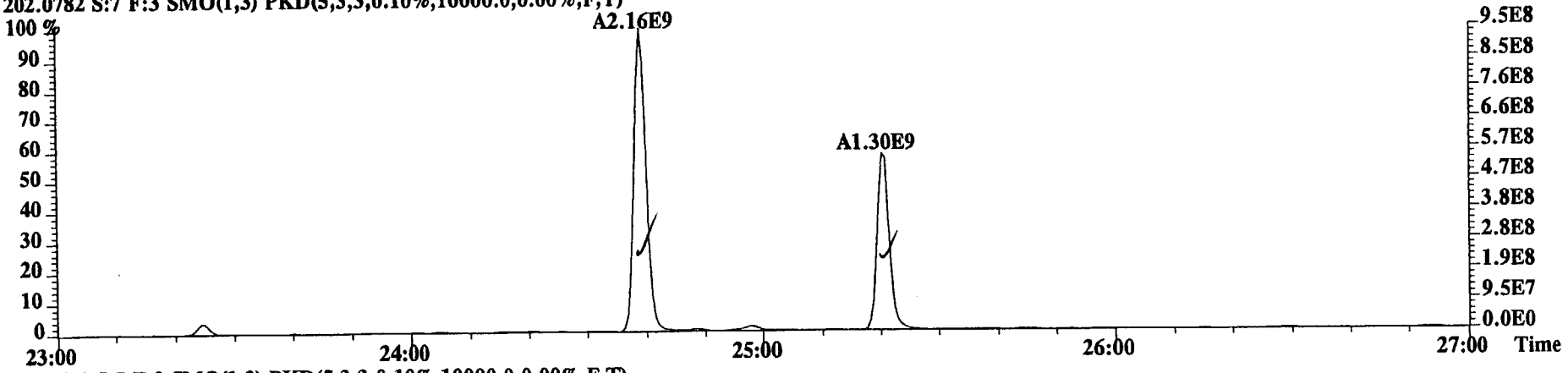
188.1410 S:7 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



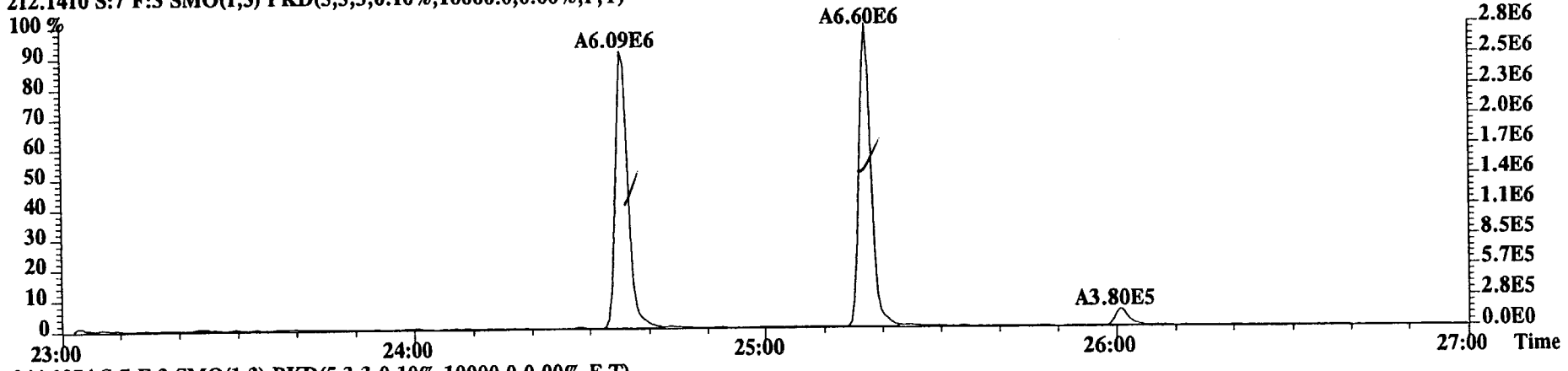
File:30OC98V4 #1-641 Acq:30-OCT-1998 21:39:37 GC EI+ Voltage SIR 70SE
Sample#7 Text:301802-4 :10X DIL. : : : Exp:PAHAIR
204.9888 S:7 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



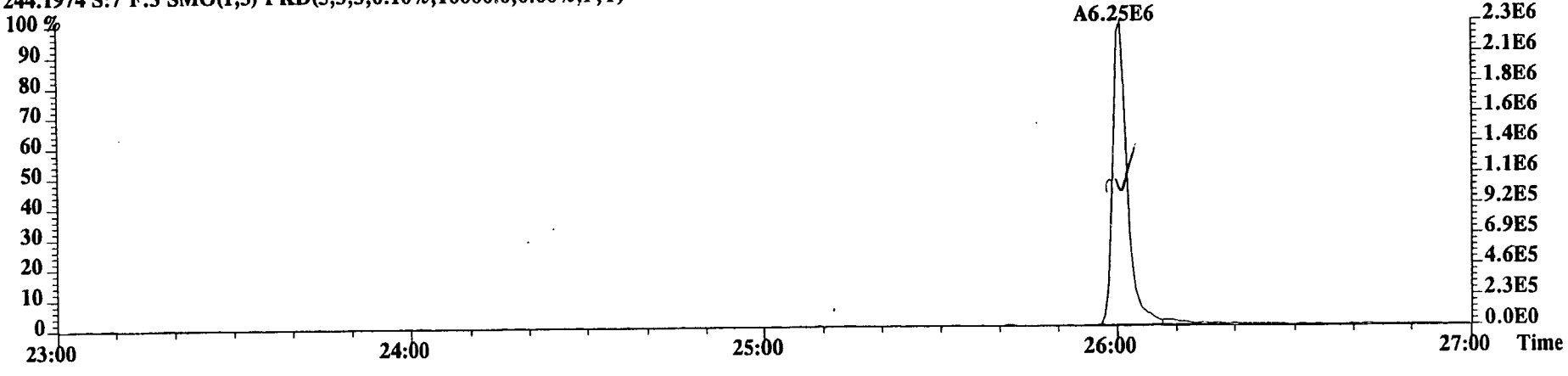
File:30OC98V4 #1-939 Acq:30-OCT-1998 21:39:37 GC EI+ Voltage SIR 70SE
Sample#7 Text:301802-4 :10X DIL. : : : Exp:PAHAIR
202.0782 S:7 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



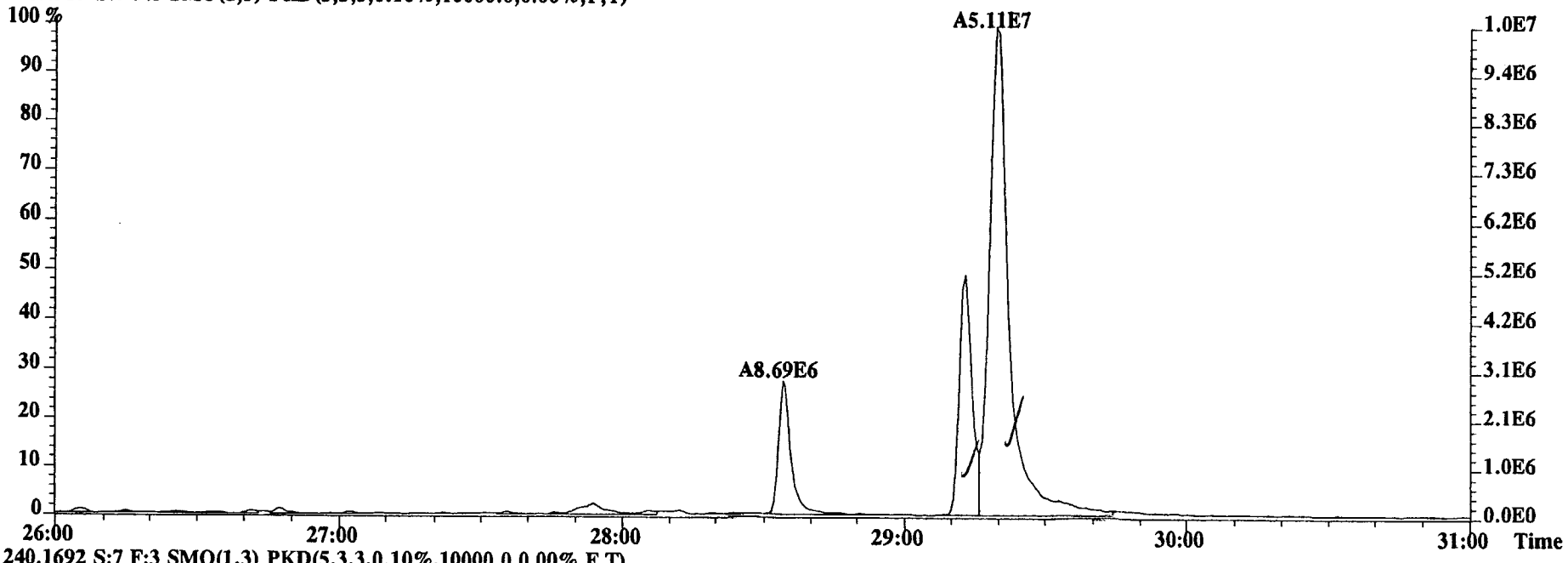
212.1410 S:7 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



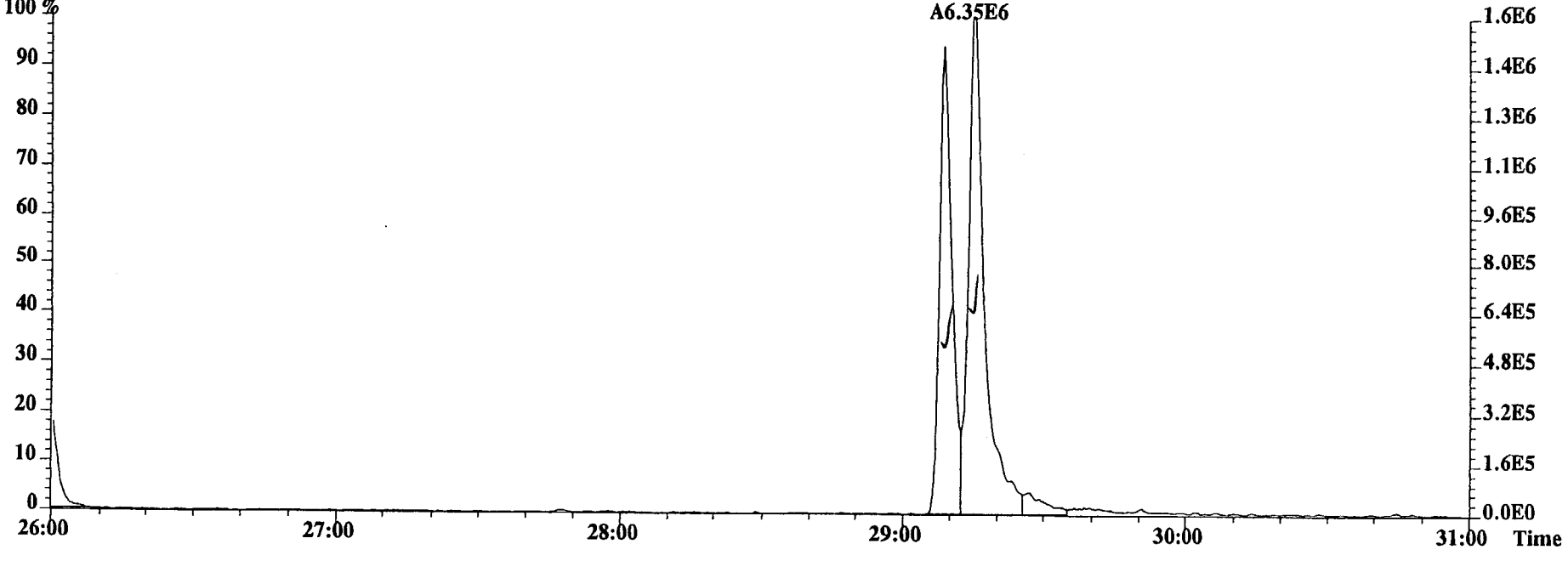
244.1974 S:7 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

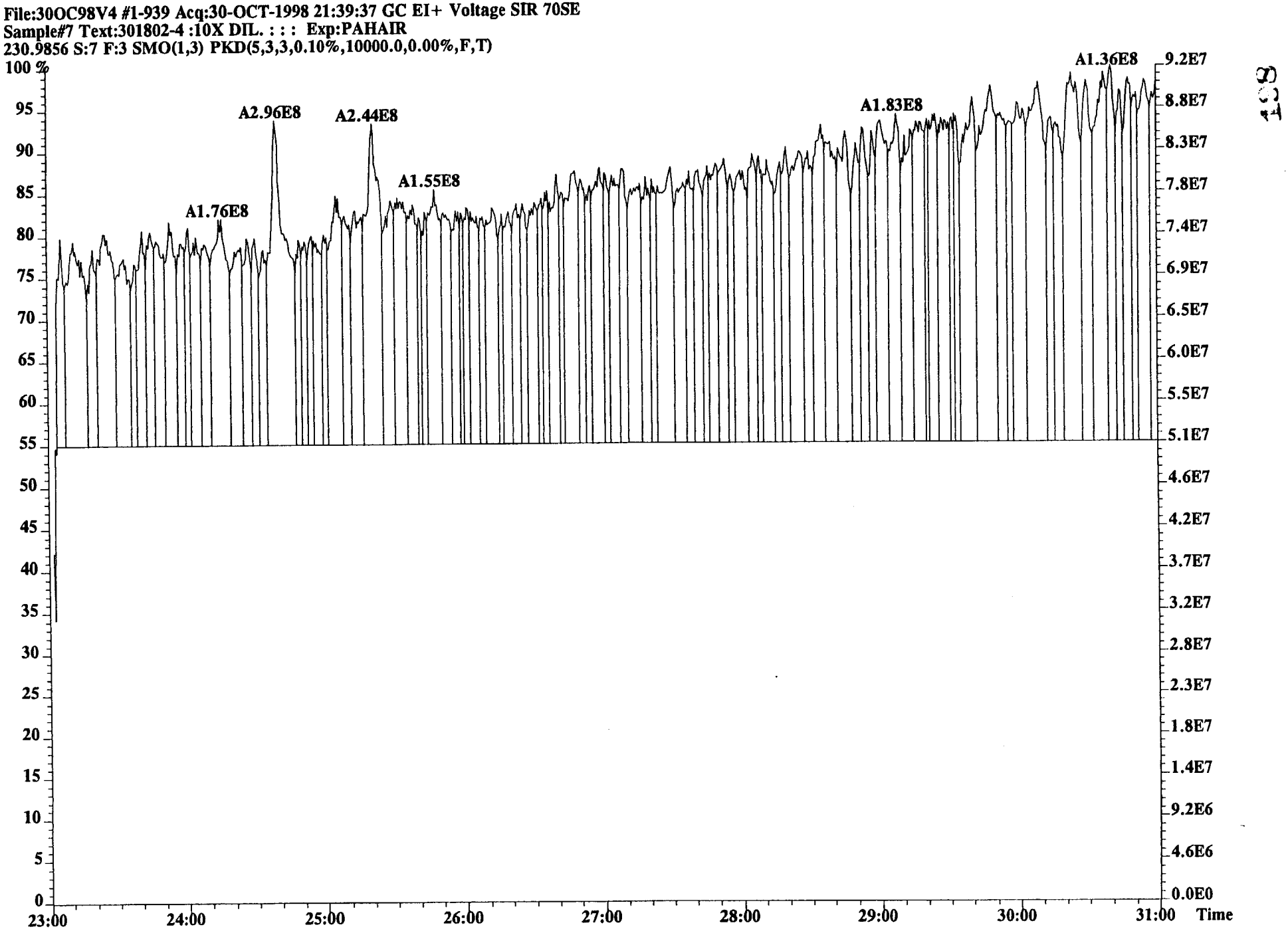


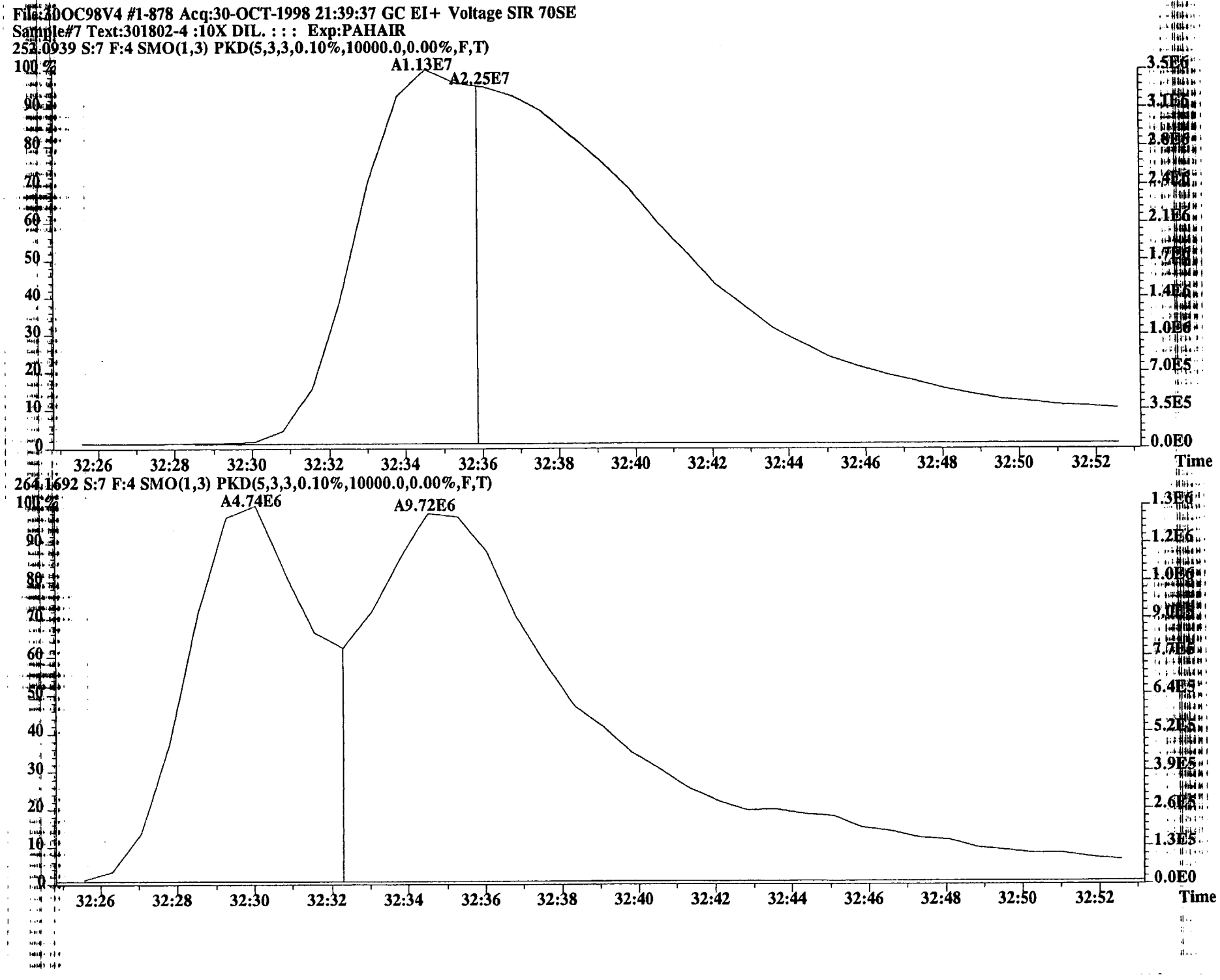
File:30OC98V4 #1-939 Acq:30-OCT-1998 21:39:37 GC EI+ Voltage SIR 70SE
Sample#7 Text:301802-4 :10X DIL. : : : Exp:PAHAIR
228.0939 S:7 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

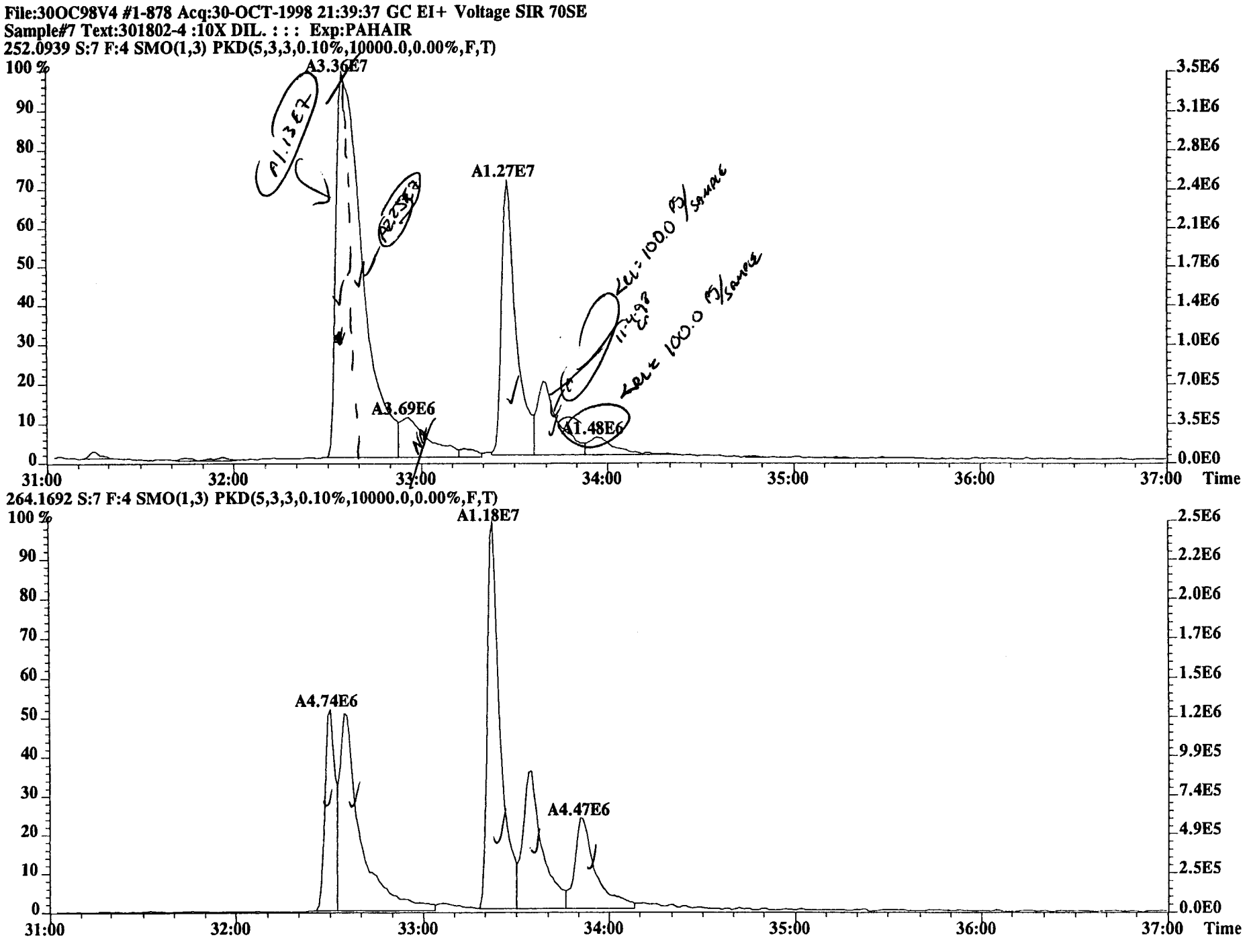


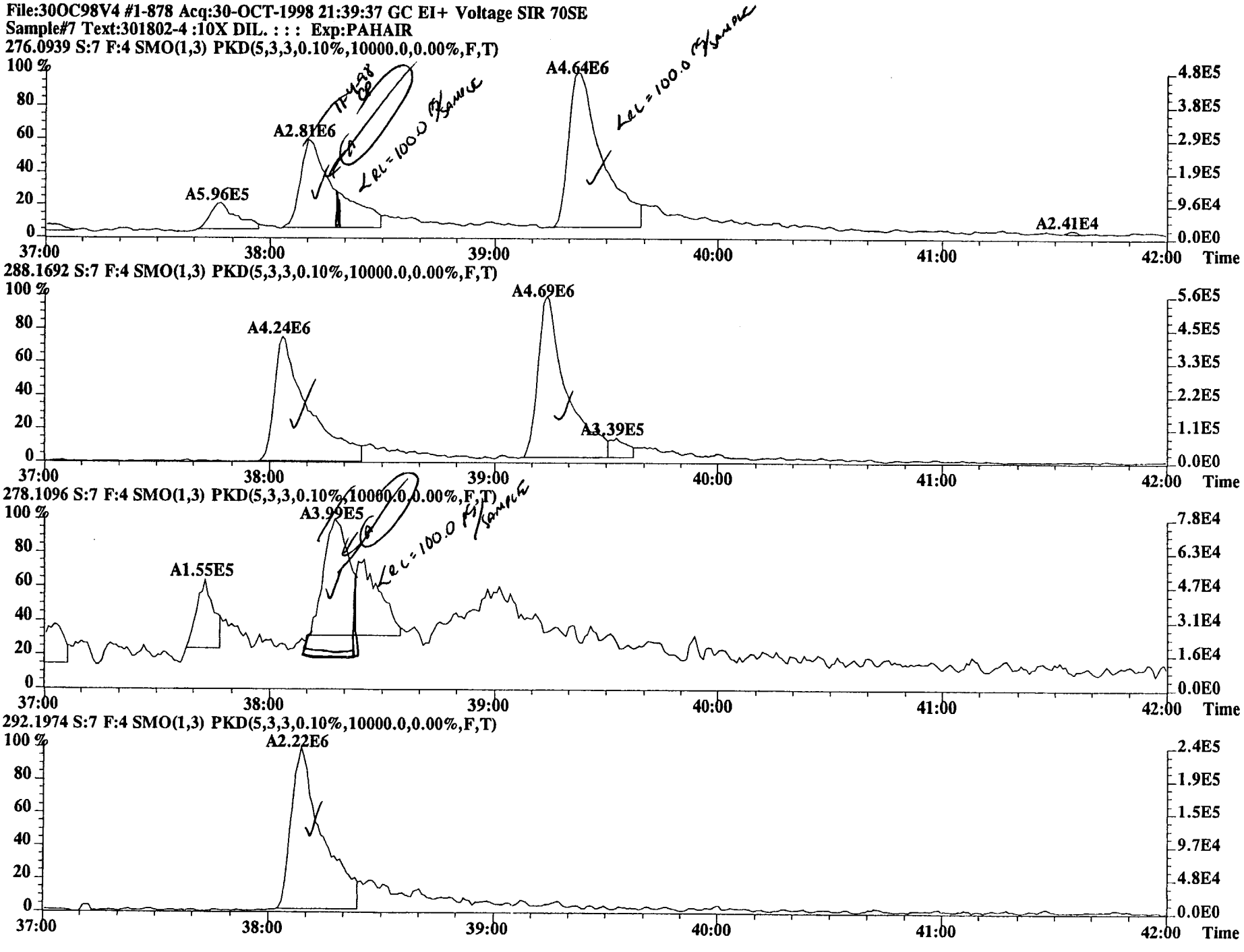
240.1692 S:7 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

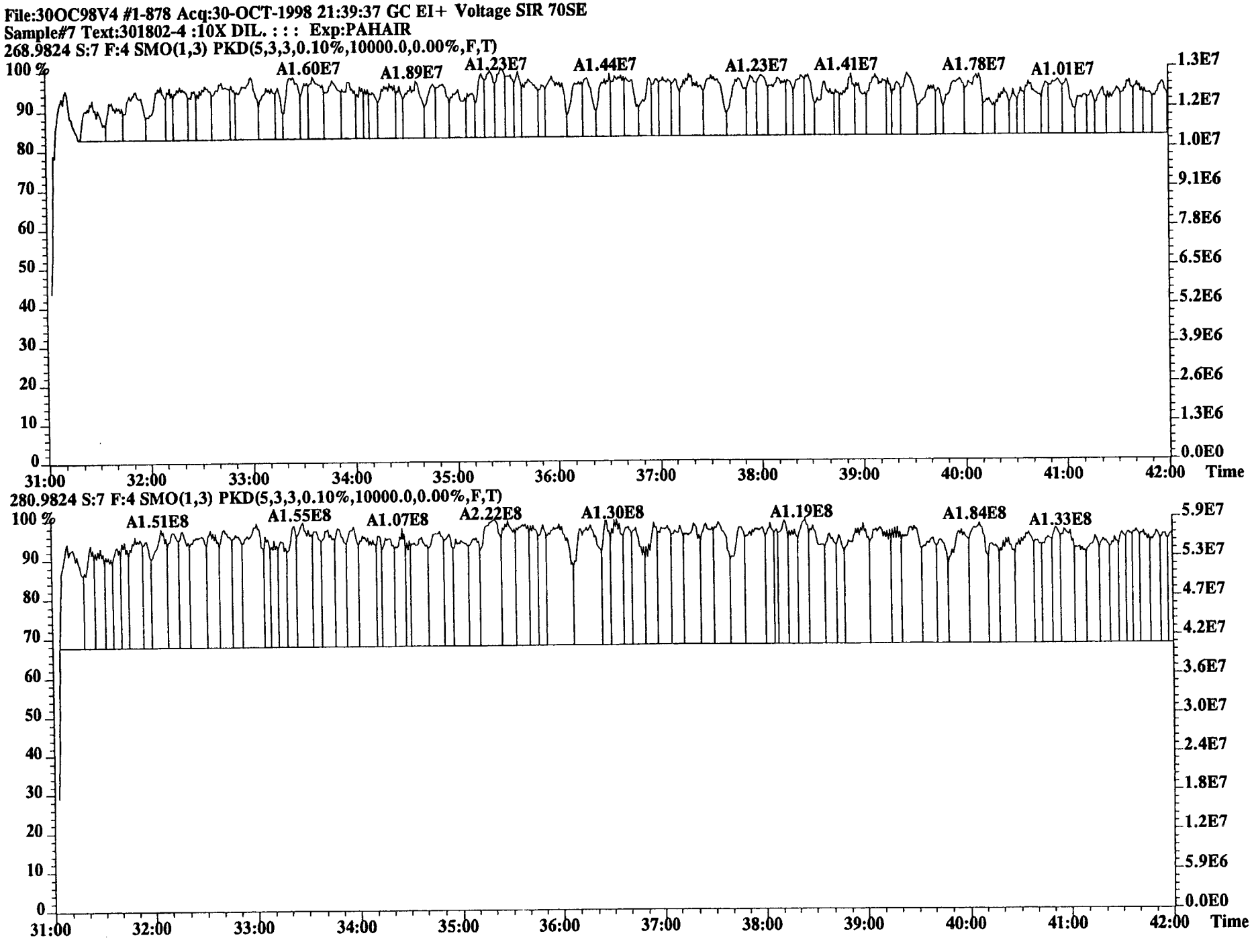



File:30OC98V4 #1-939 Acq:30-OCT-1998 21:39:37 GC EI+ Voltage SIR 70SE
Sample#7 Text:301802-4 :10X DIL. : : : Exp:PAHAIR
230.9856 S:7 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A1.76E8
A2.96E8
A2.44E8
A1.55E8
A1.83E8
A1.36E8
9.2E7
8.8E7
8.3E7
7.8E7
7.4E7
6.9E7
6.5E7
6.0E7
5.5E7
5.1E7
4.6E7
4.2E7
3.7E7
3.2E7
2.8E7
2.3E7
1.8E7
1.4E7
9.2E6
4.6E6
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time


File:30OC98V4 #1-878 Acq:30-OCT-1998 21:39:37 GC EI+ Voltage SIR 70SE
Sample#7 Text:301802-4 :10X DIL. : : : Exp:PAHAIR
252.0939 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.13E7
A2.25E7
264.1692 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.74E6
A9.72E6
100 %
90
80
70
60
50
40
30
20
10
0
3.5E6
3.1E6
2.8E6
2.4E6
2.1E6
1.7E6
1.4E6
1.0E6
7.0E5
3.5E5
0.0E0
1.3E6
1.2E6
1.0E6
9.0E5
7.7E5
6.4E5
5.2E5
3.9E5
2.6E5
1.3E5
0.0E0
32:26
32:28
32:30
32:32
32:34
32:36
32:38
32:40
32:42
32:44
32:46
32:48
32:50
32:52
Time


File:30OC98V4 #1-878 Acq:30-OCT-1998 21:39:37 GC EI+ Voltage SIR 70SE
Sample#7 Text:301802-4 :10X DIL. : : : Exp:PAHAIR
252.0939 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.36E7
A1.27E7
A3.69E6
A1.48E6
264.1692 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.18E7
A4.74E6
A4.47E6
Time


File:30OC98V4 #1-878 Acq:30-OCT-1998 21:39:37 GC EI+ Voltage SIR 70SE
Sample#7 Text:301802-4 :10X DIL. : : : Exp:PAHAIR
276.0939 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A5.96E5
A2.81E6
A4.64E6
A2.41E4
288.1692 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.24E6
A4.69E6
A3.39E5
278.1096 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.55E5
A3.99E5
292.1974 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.22E6
100 %
80
60
40
20
0
37:00
38:00
39:00
40:00
41:00
42:00
Time
4.8E5
3.8E5
2.9E5
1.9E5
9.6E4
0.0E0
5.6E5
4.5E5
3.3E5
2.2E5
1.1E5
7.8E4
6.3E4
4.7E4
3.1E4
1.6E4
2.4E5
1.9E5
1.5E5
9.7E4
4.8E4


File:30OC98V4 #1-878 Acq:30-OCT-1998 21:39:37 GC EI+ Voltage SIR 70SE
Sample#7 Text:301802-4 :10X DIL. : : : Exp:PAHAIR
268.9824 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.60E7
A1.89E7
A1.23E7
A1.44E7
A1.23E7
A1.41E7
A1.78E7
A1.01E7
1.3E7
1.2E7
1.0E7
9.1E6
7.8E6
6.5E6
5.2E6
3.9E6
2.6E6
1.3E6
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time
280.9824 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.51E8
A1.55E8
A1.07E8
A2.22E8
A1.30E8
A1.19E8
A1.84E8
A1.33E8
5.9E7
5.3E7
4.7E7
4.2E7
3.6E7
3.0E7
2.4E7
1.8E7
1.2E7
5.9E6
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time

04-NOV-1998 05:24:48 PM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4 Results : 02NO98V4121.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 02-NOV-98
Data file : 02NO98V4 301802-4 :100X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF		ng/ TRAIN	Rec/ MDL
d10-2-Methylnaphthalene	368292	1.00	Y	12: 28	Y	1.00		50.00	
d8-Naphthalene	758000	1.00	Y	10: 12	Y	2.24		45.93	92
Naphthalene	2696480000	1.00	Y	10: 16	Y	1.23	2.9e+05		B E
d10-Anthracene	252000	1.00	Y	20: 55	Y	1.00		50.00	
d10-Phenanthrene	703560	1.00	Y	20: 45	Y	2.81		49.72	99
Phenanthrene	415930000	1.00	Y	20: 49	Y	0.89	6.6e+04		B E

11-4-98
CP

0.5

98V4.RRF

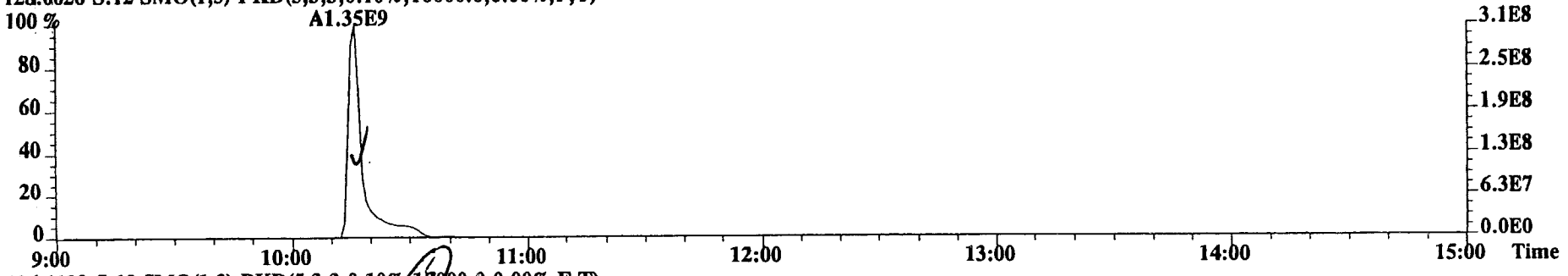
Rec/ MDL			
		184146	184146
	92	379000	379000
B	E	1348240000	1348240000
		126000	126000
	99	351780	351780
B	E	207965000	207965000

03-NOV-1998 08:40:26 AM 429AIR Unknown RESULTS

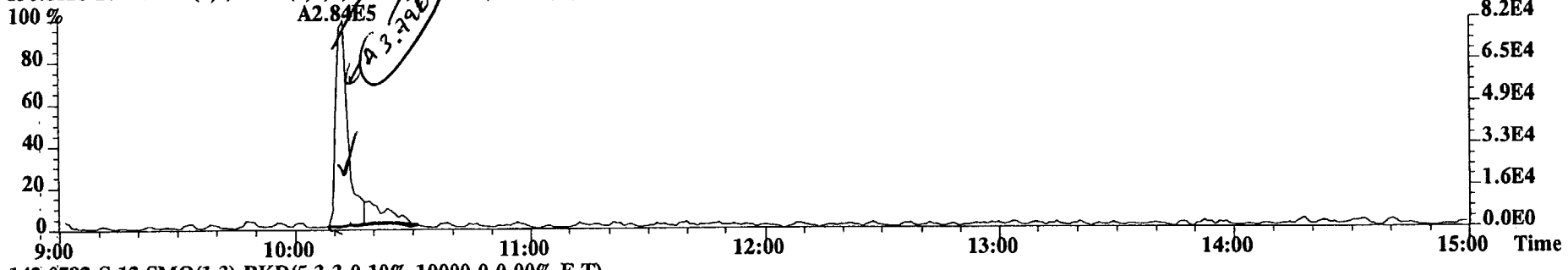
Mass Spec : VG-4 Results : 02NO98V4121.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 02-NOV-98
Data file : 02NO98V4 301802-4 :100X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio	R. T. mm:ss	RRF	ng/ TRAIN	Rec/ MDL
d10-2-Methylnaphthalene	368292	1.00 Y	12: 28 Y	1.00	50.00	
d8-Naphthalene	567694	1.00 Y	10: 12 Y	2.24	34.40	69
Naphthalene	2696480000	1.00 Y	10: 16 Y	1.23	3.9e+05	0.000
2-Methylnaphthalene	227550000	1.00 Y	12: 33 Y	0.56	7.2e+04	0.000
d8-Acenaphthylene	314266	1.00 Y	15: 28 Y	1.21	35.15	70
Acenaphthylene	178146800	1.00 Y	15: 30 Y	0.94	6.0e+04	0.000
d10-Acenaphthene	132801	1.00 Y	16: 1 Y	0.74	24.21	48
Acenaphthene	23286400	1.00 Y	16: 7 Y	1.25	1.4e+04	0.000
d10-Anthracene	208312	1.00 Y	20: 55 Y	1.00	50.00	
d10-Fluorene	171793	1.00 Y	17: 41 Y	1.42	29.02	58
Fluorene	2357760	1.00 Y	17: 46 Y	1.16	1182.61	0.000
d10-Phenanthrene	703560	1.00 Y	20: 45 Y	2.81	60.15	120
Phenanthrene	415930000	1.00 Y	20: 49 Y	0.89	6.6e+04	0.000
Anthracene	* No Peak	0.00 N	20: 59 N	0.80	0.00	0.000
d14-Terphenyl	609830	1.00 Y	26: 2 Y	1.00	50.00	
d10-Fluoranthene	480184	1.00 Y	24: 35 Y	1.41	27.91	56
Fluoranthene	74667600	1.00 Y	24: 39 Y	1.11	1.4e+04	0.000
d10-Pyrene	534432	1.00 Y	25: 17 Y	1.52	28.86	58
Pyrene	47295400	1.00 Y	25: 20 Y	1.21	7343.75	0.000
d12-Benzo(a)anthracene	385960	1.00 Y	29: 11 Y	0.90	35.16	70
Benzo(a)anthracene	906706	1.00 Y	29: 16 Y	1.20	195.04	0.000
d12-Chrysene	632880	1.00 Y	29: 18 Y	1.28	40.57	81
Chrysene	6244520	1.00 Y	29: 23 Y	1.08	910.25	0.000
d12-Benzo(e)pyrene	811912	1.00 Y	33: 25 Y	1.00	50.00	
d12-Benzo(b)fluoranthene	* No Peak	0.00 N	32: 31 N	0.45	0.00	0
Benzo(b)fluoranthene	602824	1.00 Y	32: 39 Y	1.17	*NoINoIs	
d12-Benzo(k)fluoranthene	566782	1.00 Y	32: 38 Y	0.95	36.82	74
Benzo(k)fluoranthene	602824	1.00 Y	32: 39 Y	1.16	91.36	0.000
d12-Benzo(a)pyrene	* No Peak	0.00 N	33: 35 N	0.68	0.00	0
Benzo(e)pyrene	394882	1.00 Y	33: 32 Y	1.64	*NoINoIs	
Benzo(a)pyrene	33591	1.00 Y	33: 40 Y	1.07	*NoINoIs	
d12-Perylene	139080	1.00 Y	33: 53 Y	0.63	13.59	27
Perylene	* No Peak	0.00 N	33: 58 N	1.71	0.00	0.000
d12-Indeno(123-cd)pyrene	* No Peak	0.00 N	38: 4 N	0.44	0.00	0
Indeno(123-cd)pyrene	* No Peak	0.00 N	38: 11 N	0.62	*NoINoIs	
d14-Dibenz(ah)anthracene	* No Peak	0.00 N	38: 8 N	0.25	0.00	0
Dibenz(ah)anthracene	* No Peak	0.00 N	38: 18 N	1.40	*NoINoIs	
d12-Benzo(ghi)perylene	* No Peak	0.00 N	39: 16 N	0.58	0.00	0
Benzo(ghi)perylene	201974	1.00 Y	39: 27 Y	1.02	*NoINoIs	
d10-Fluorene	171793	1.00 Y	17: 41 Y	1.42	7.45	15
13C-Fluorene	98612	1.00 Y	17: 45 Y	1.00	57.40	0.000

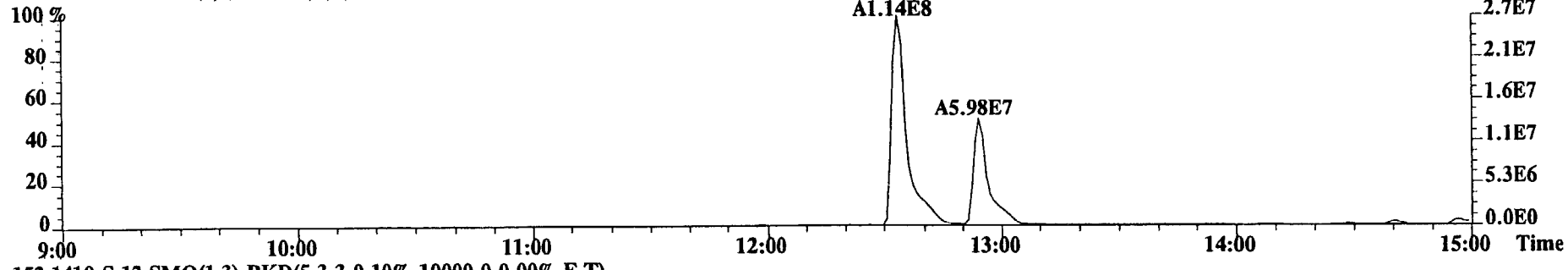
File:02NO98V4 #1-510 Acq: 2-NOV-1998 22:12:35 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-4 :100X DIL. : : : Exp:PAHAIR
128.0626 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



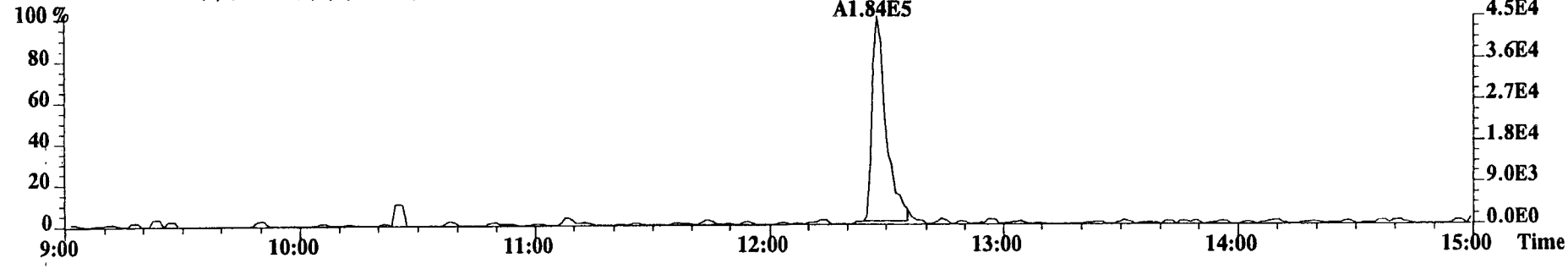
136.1128 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



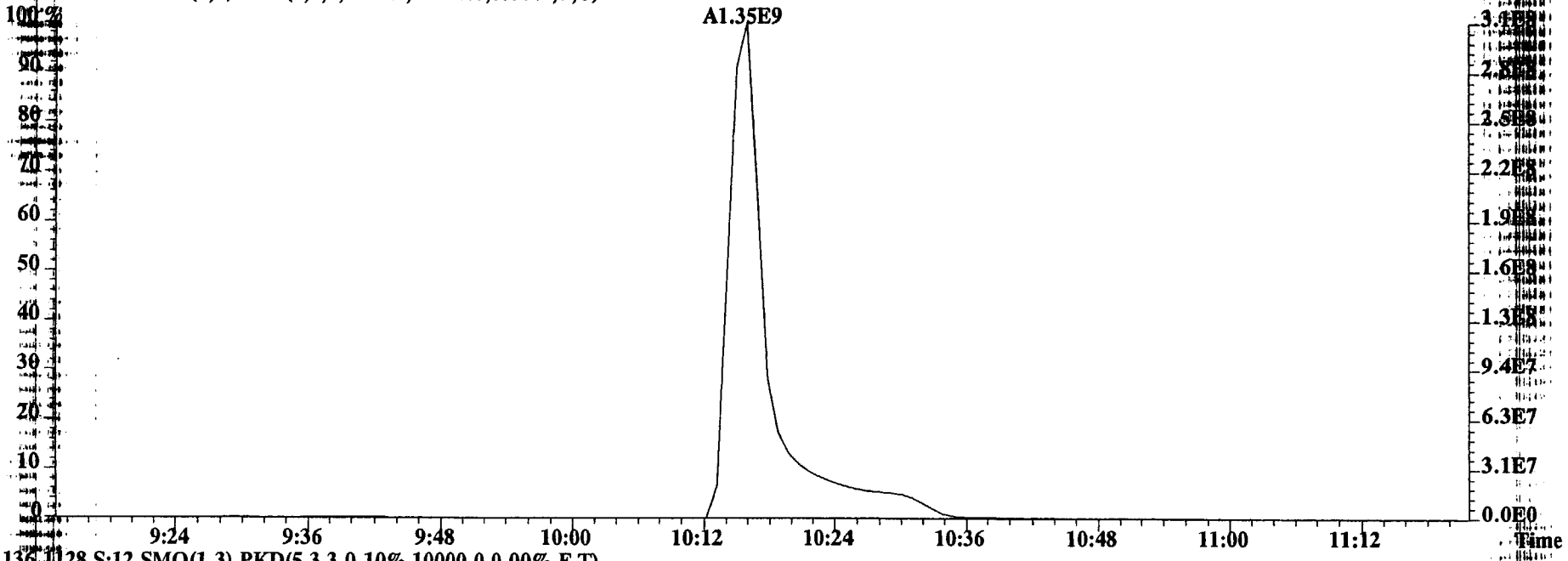
142.0782 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



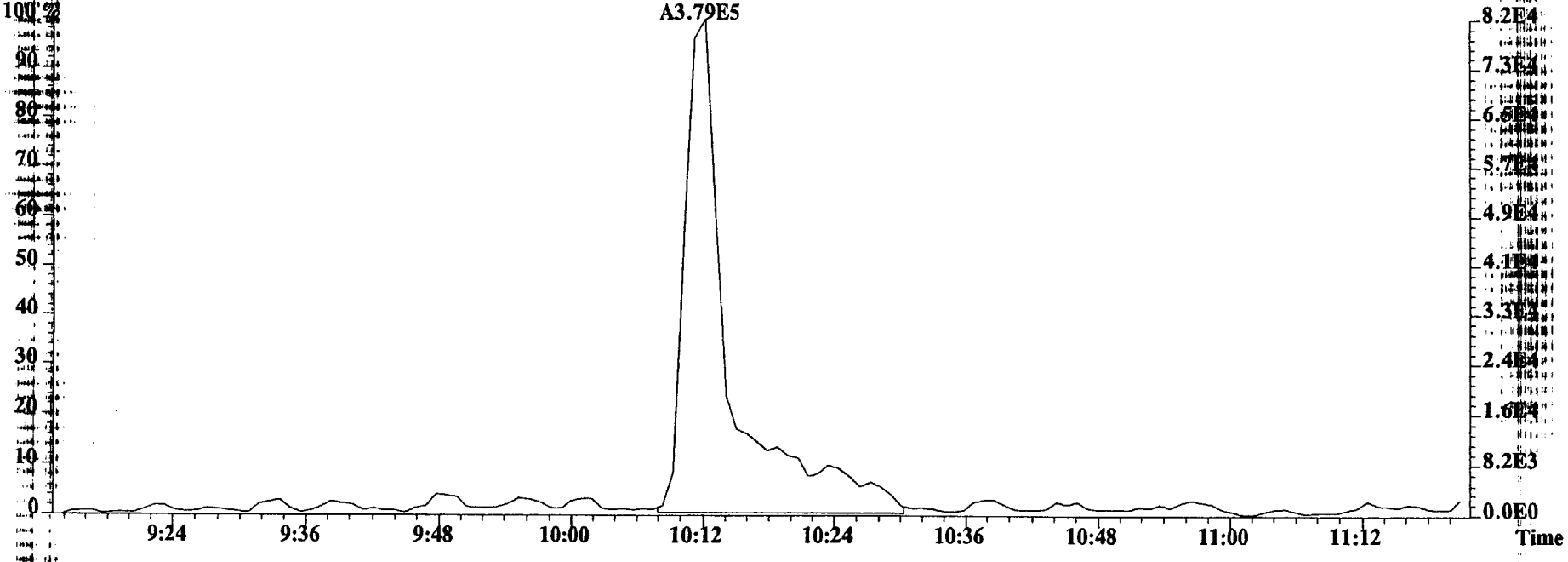
152.1410 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

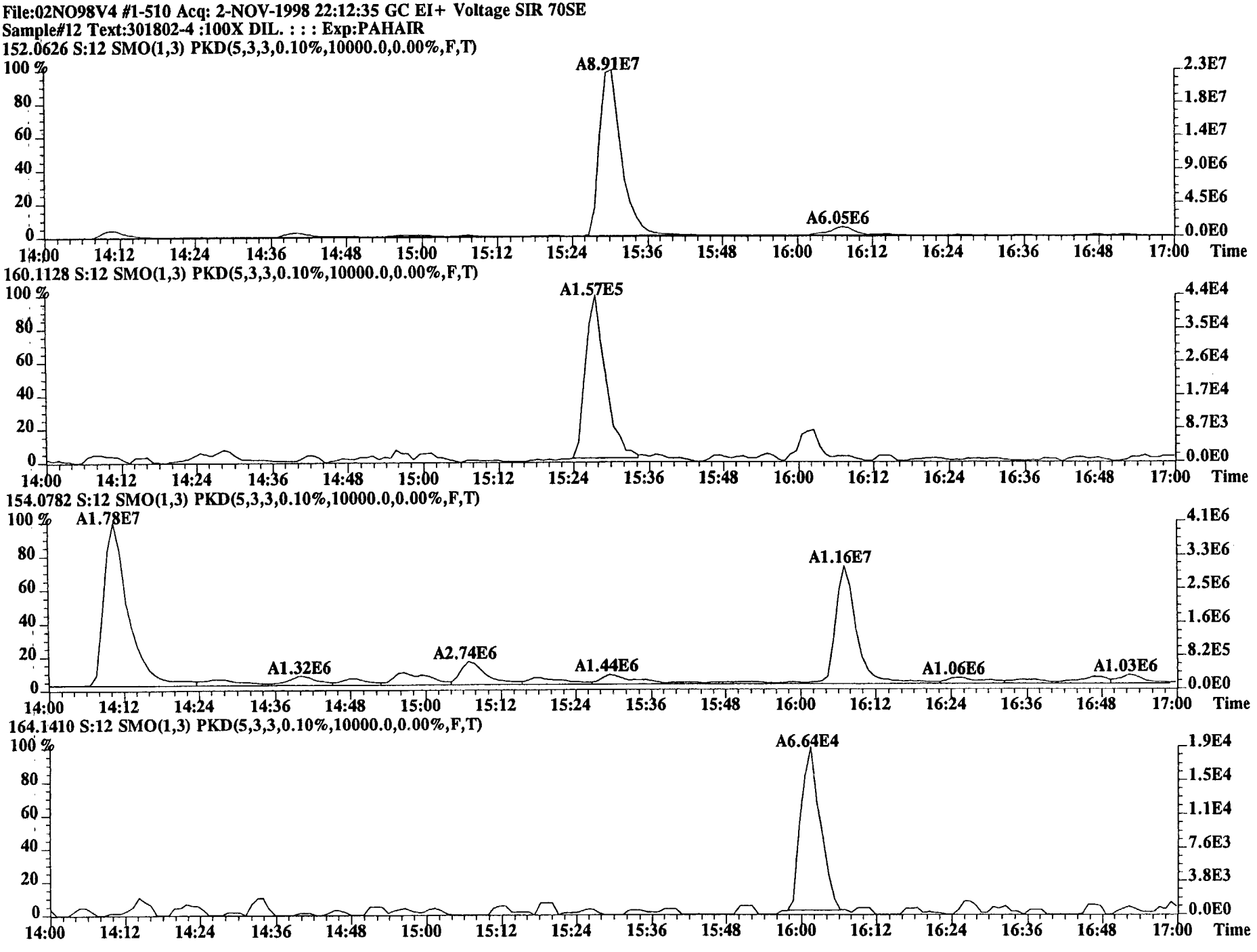


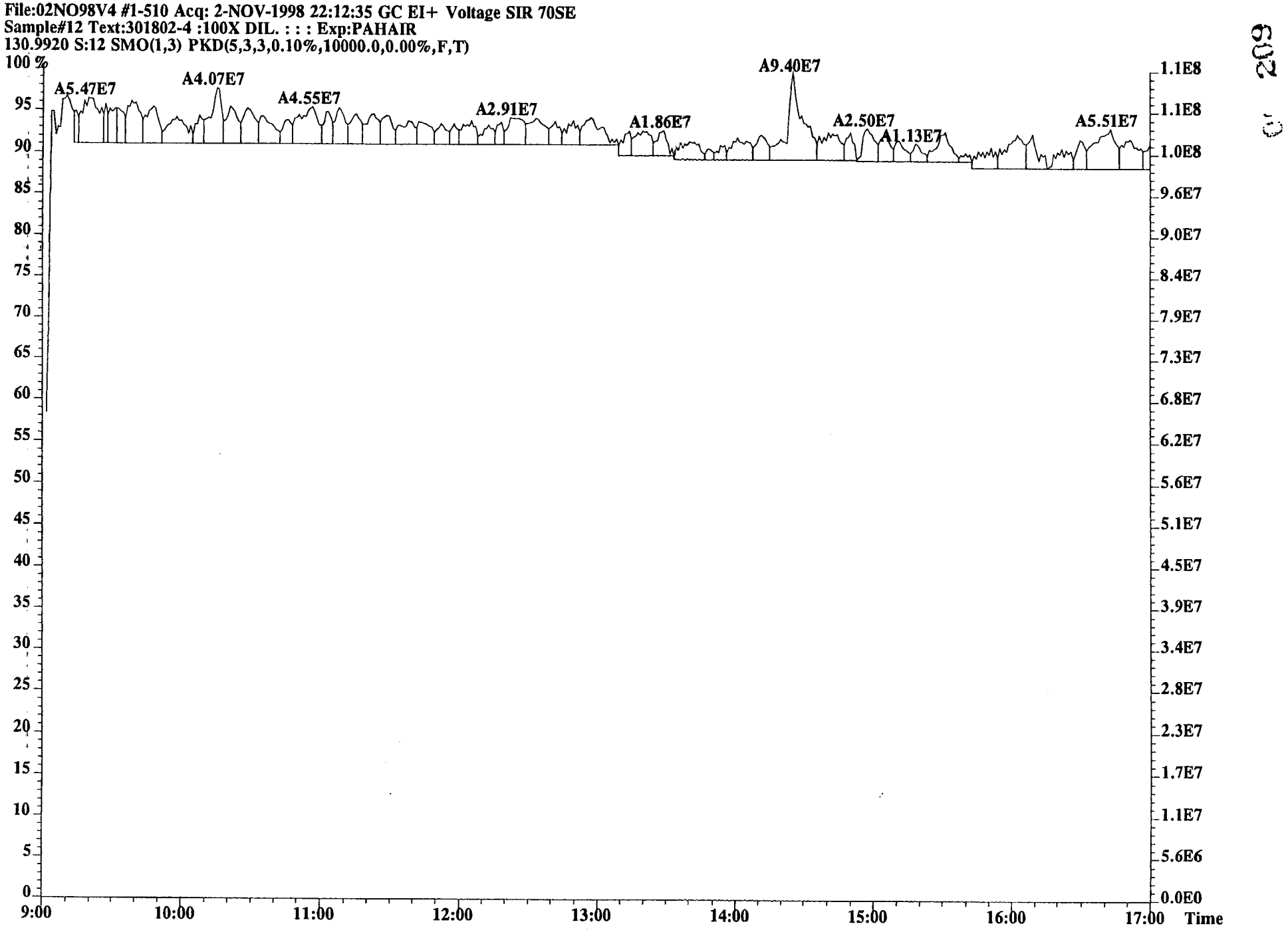
File:02NO98V4 #1-510 Acq: 2-NOV-1998 22:12:35 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-4 :100X DIL. : : : Exp:PAHAIR
128.0626 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

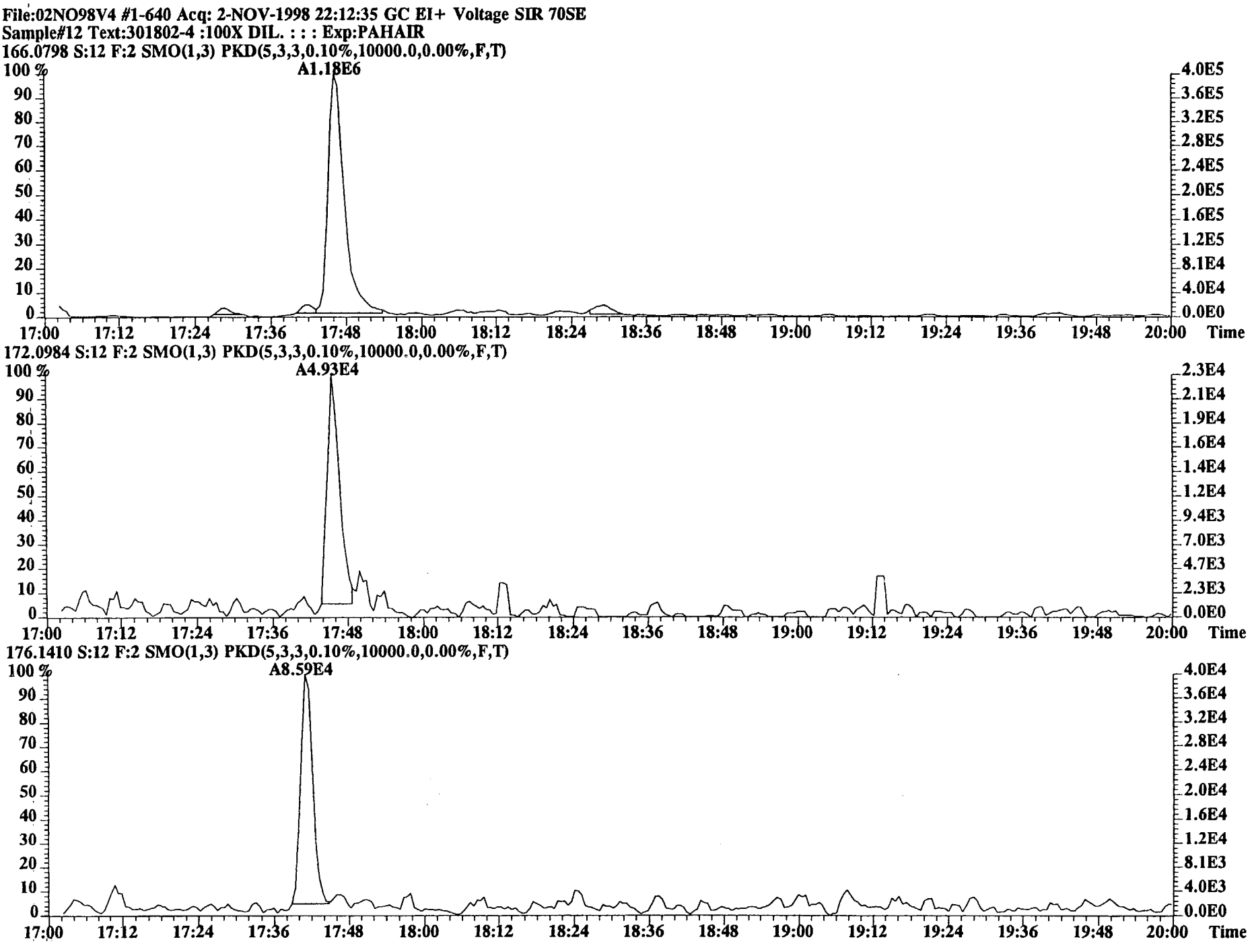


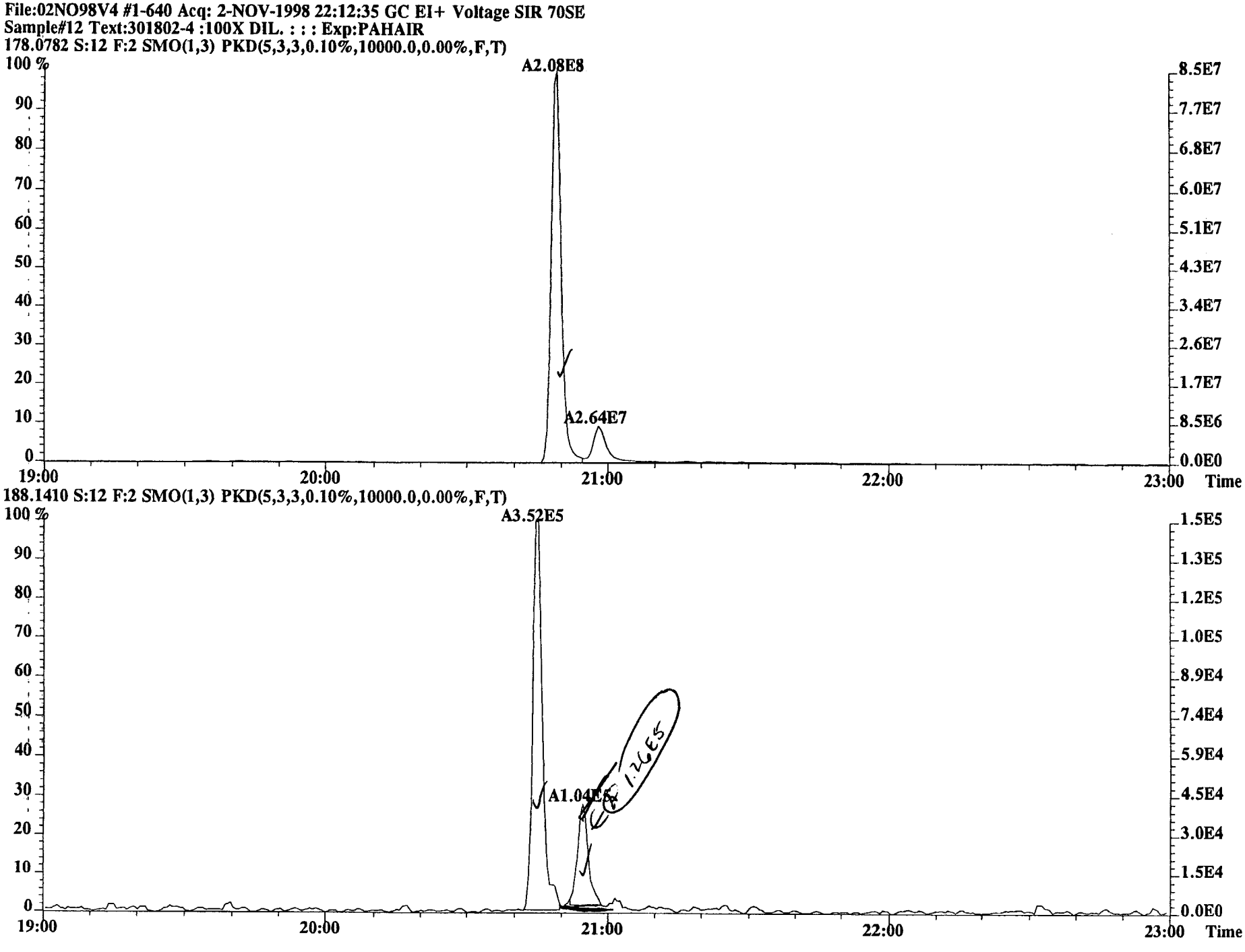
136.1128 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

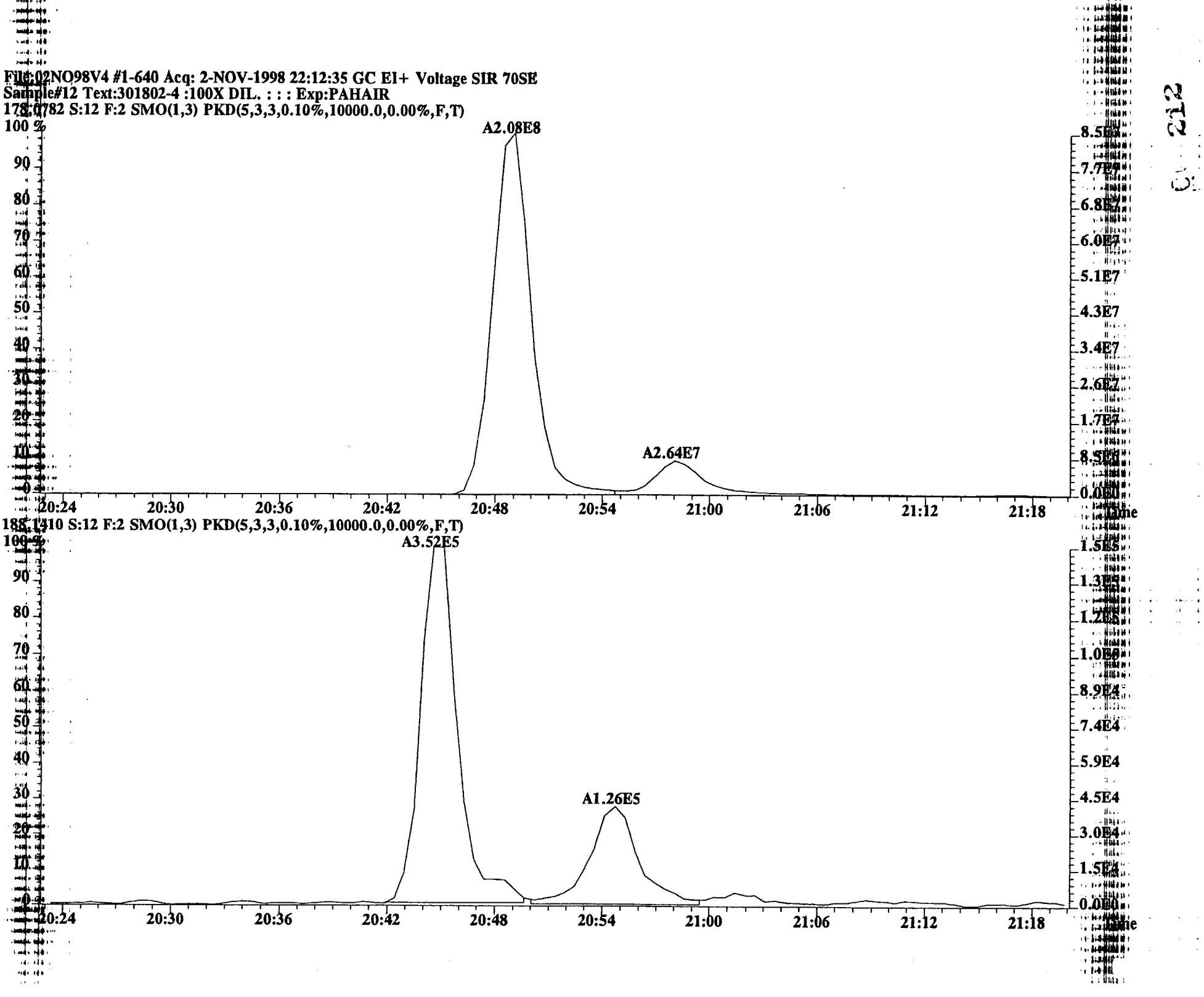



File:02NO98V4 #1-510 Acq: 2-NOV-1998 22:12:35 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-4 :100X DIL. : : : Exp:PAHAIR
152.0626 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.91E7
A6.05E6
160.1128 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.57E5
154.0782 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.78E7
A1.32E6
A2.74E6
A1.44E6
A1.16E7
A1.06E6
A1.03E6
164.1410 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A6.64E4
100 %
80
60
40
20
0
14:00
14:12
14:24
14:36
14:48
15:00
15:12
15:24
15:36
15:48
16:00
16:12
16:24
16:36
16:48
17:00
Time
2.3E7
1.8E7
1.4E7
9.0E6
4.5E6
0.0E0
4.4E4
3.5E4
2.6E4
1.7E4
8.7E3
0.0E0
4.1E6
3.3E6
2.5E6
1.6E6
8.2E5
0.0E0
1.9E4
1.5E4
1.1E4
7.6E3
3.8E3
0.0E0

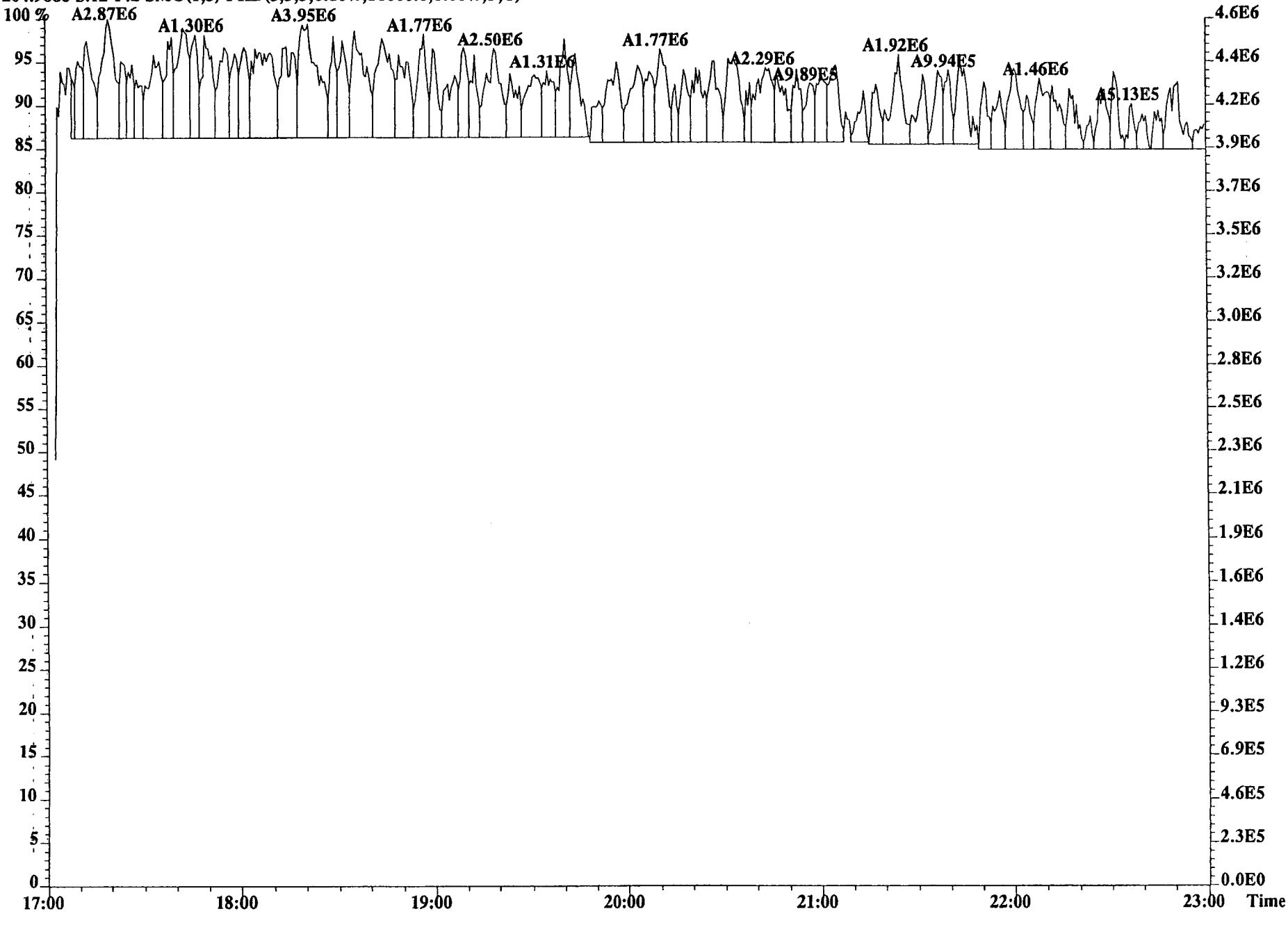

File:02NO98V4 #1-510 Acq: 2-NOV-1998 22:12:35 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-4 :100X DIL. : : : Exp:PAHAIR
130.9920 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A5.47E7
A4.07E7
A4.55E7
A2.91E7
A1.86E7
A9.40E7
A2.50E7
A1.13E7
A5.51E7
1.1E8
1.1E8
1.0E8
9.6E7
9.0E7
8.4E7
7.9E7
7.3E7
6.8E7
6.2E7
5.6E7
5.1E7
4.5E7
3.9E7
3.4E7
2.8E7
2.3E7
1.7E7
1.1E7
5.6E6
0.0E0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
Time


File:02NO98V4 #1-640 Acq: 2-NOV-1998 22:12:35 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-4 :100X DIL. : : : Exp:PAHAIR
166.0798 S:12 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.18E6
172.0984 S:12 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.93E4
176.1410 S:12 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.59E4
100 %
90
80
70
60
50
40
30
20
10
0
4.0E5
3.6E5
3.2E5
2.8E5
2.4E5
2.0E5
1.6E5
1.2E5
8.1E4
4.0E4
0.0E0
2.3E4
2.1E4
1.9E4
1.6E4
1.4E4
1.2E4
9.4E3
7.0E3
4.7E3
2.3E3
0.0E0
4.0E4
3.6E4
3.2E4
2.8E4
2.4E4
2.0E4
1.6E4
1.2E4
8.1E3
4.0E3
0.0E0
17:00
17:12
17:24
17:36
17:48
18:00
18:12
18:24
18:36
18:48
19:00
19:12
19:24
19:36
19:48
20:00
Time

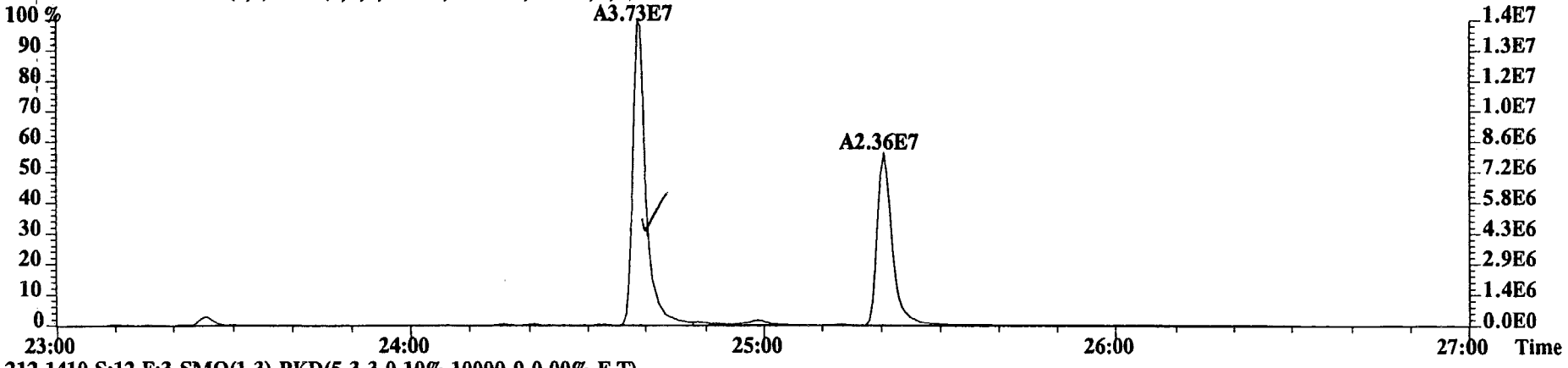

File:02NO98V4 #1-640 Acq: 2-NOV-1998 22:12:35 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-4 :100X DIL. : : : Exp:PAHAIR
178.0782 S:12 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.08E8
A2.64E7
188.1410 S:12 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.52E5
A1.04E5
1.2E5
Time


Fil:02NO98V4 #1-640 Acq: 2-NOV-1998 22:12:35 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-4 :100X DIL. : : : Exp:PAHAIR
178.0782 S:12 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A2.08E8
A2.64E7
8.5E7
7.7E7
6.8E7
6.0E7
5.1E7
4.3E7
3.4E7
2.6E7
1.7E7
8.5E6
0.0E0
20:24
20:30
20:36
20:42
20:48
20:54
21:00
21:06
21:12
21:18
Time
185.1310 S:12 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A3.52E5
A1.26E5
1.5E5
1.3E5
1.2E5
1.0E5
8.9E4
7.4E4
5.9E4
4.5E4
3.0E4
1.5E4
0.0E0
20:24
20:30
20:36
20:42
20:48
20:54
21:00
21:06
21:12
21:18
Time

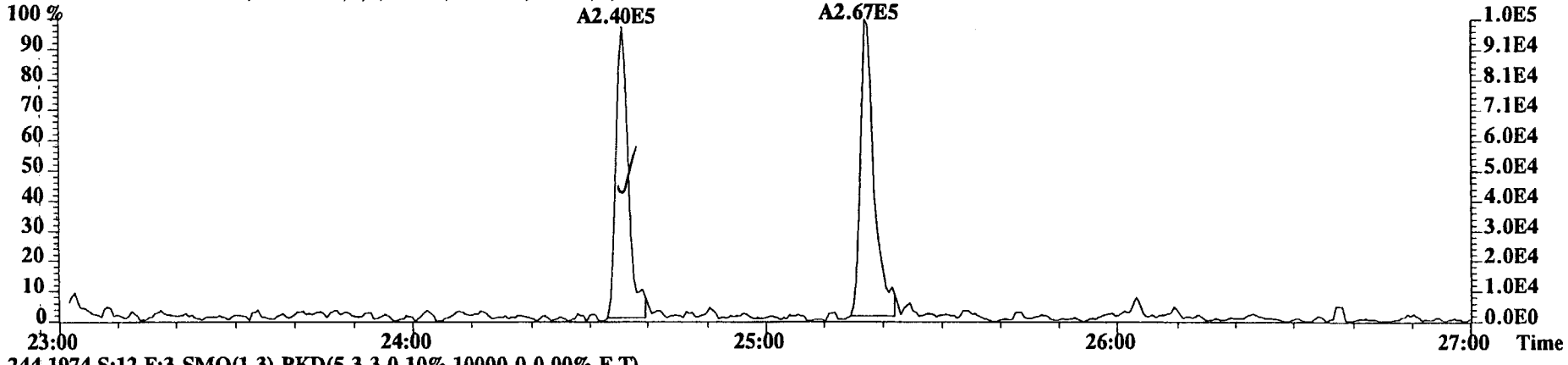
File:02NO98V4 #1-640 Acq: 2-NOV-1998 22:12:35 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-4 :100X DIL. : : : Exp:PAHAIR
204.9888 S:12 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



File:02NO98V4 #1-939 Acq: 2-NOV-1998 22:12:35 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-4 :100X DIL. : : : Exp:PAHAIR
202.0782 S:12 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



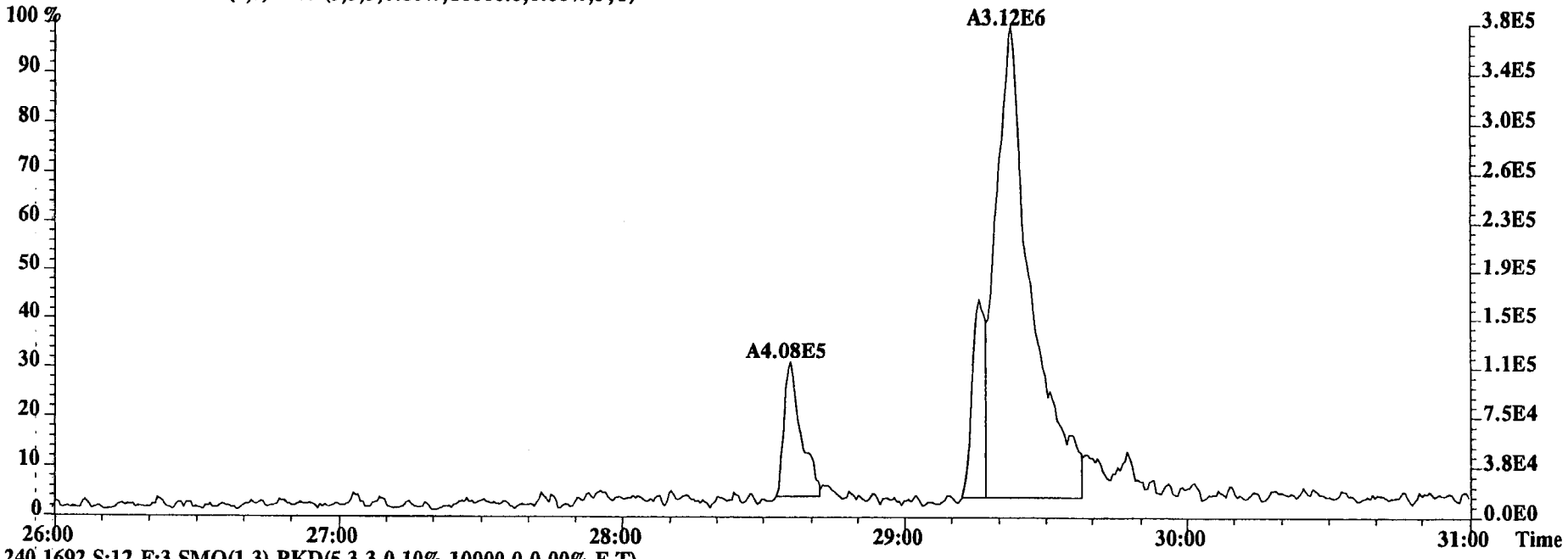
212.1410 S:12 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



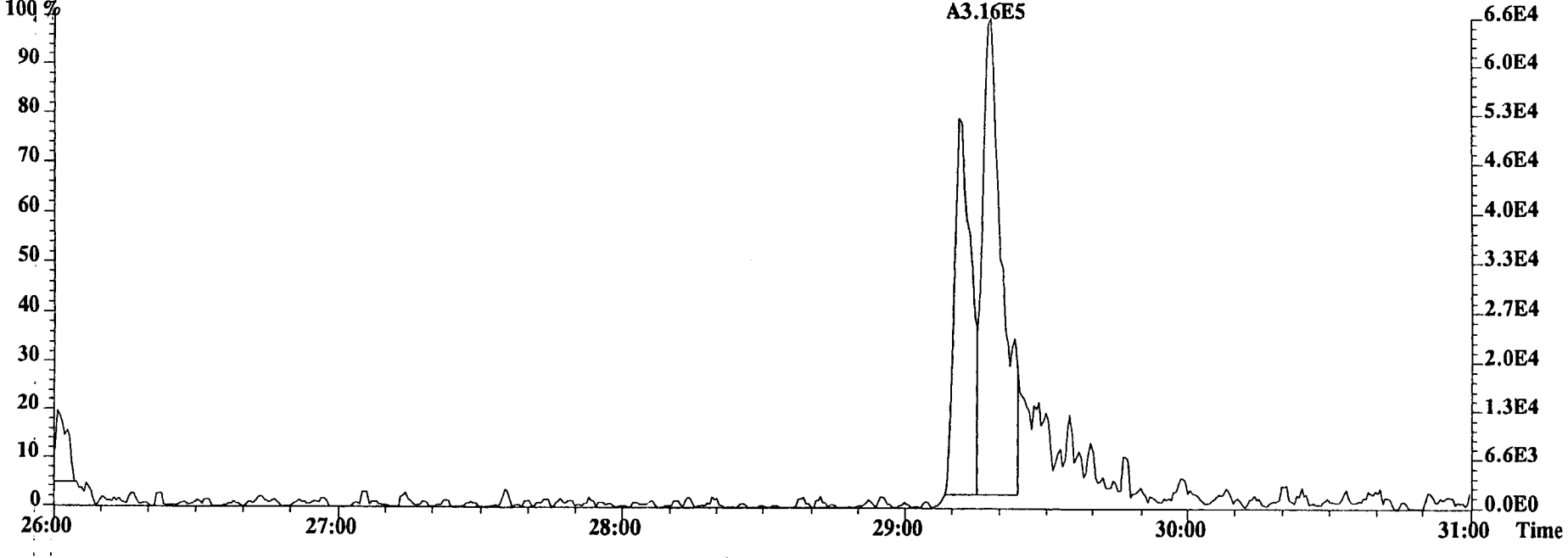
244.1974 S:12 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



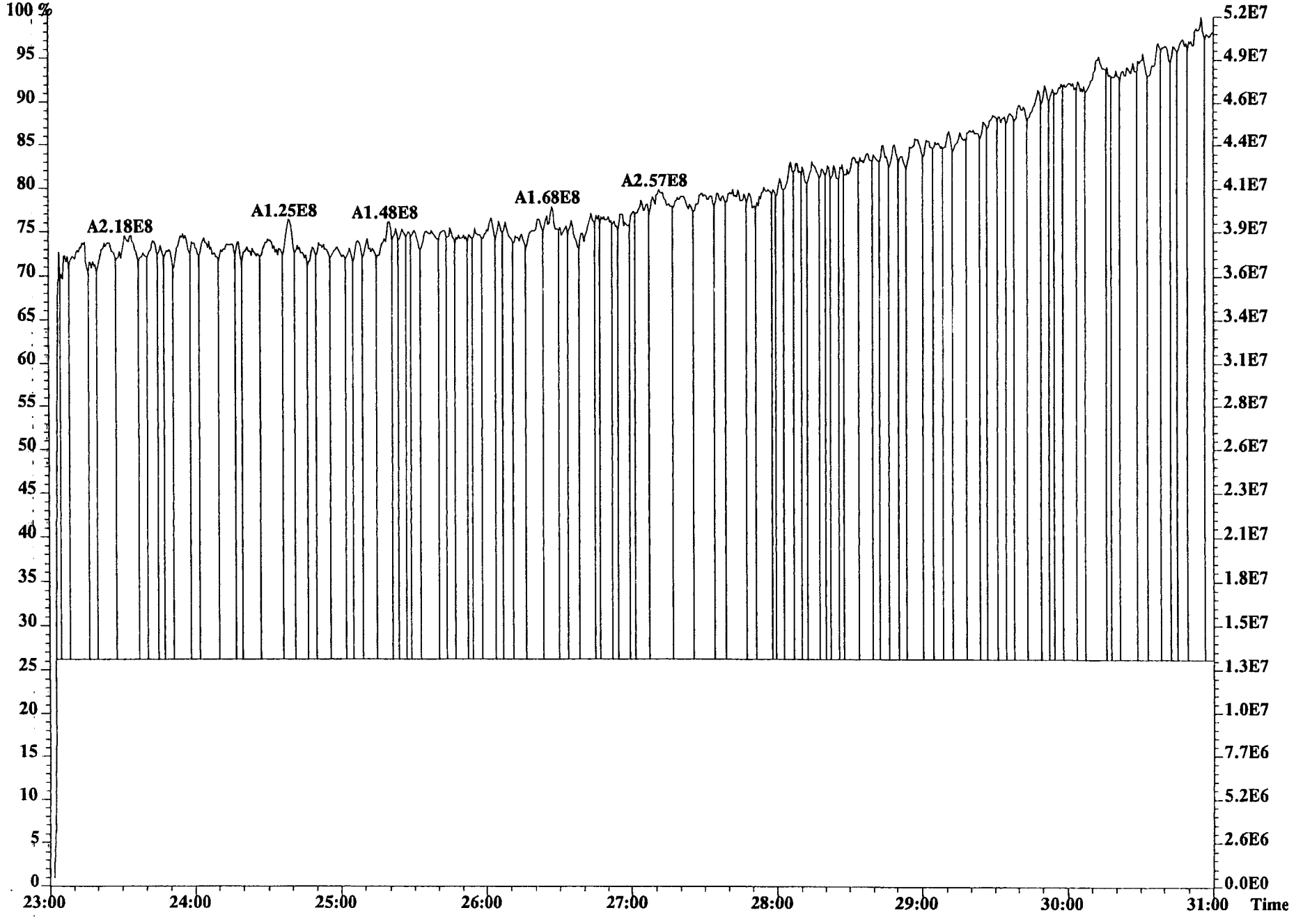
File:02NO98V4 #1-939 Acq: 2-NOV-1998 22:12:35 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-4 :100X DIL. : : : Exp:PAHAIR
228.0939 S:12 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



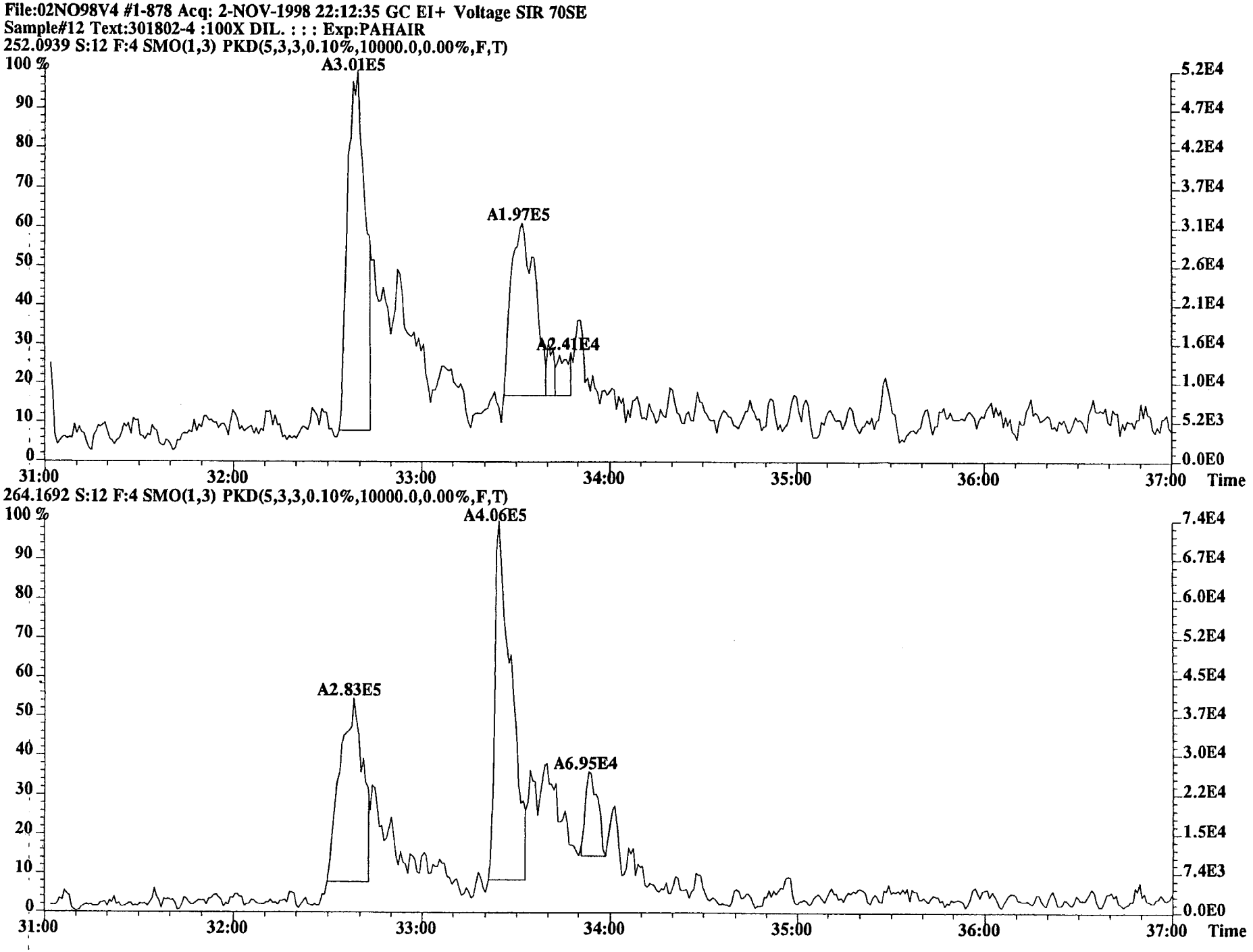
240.1692 S:12 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

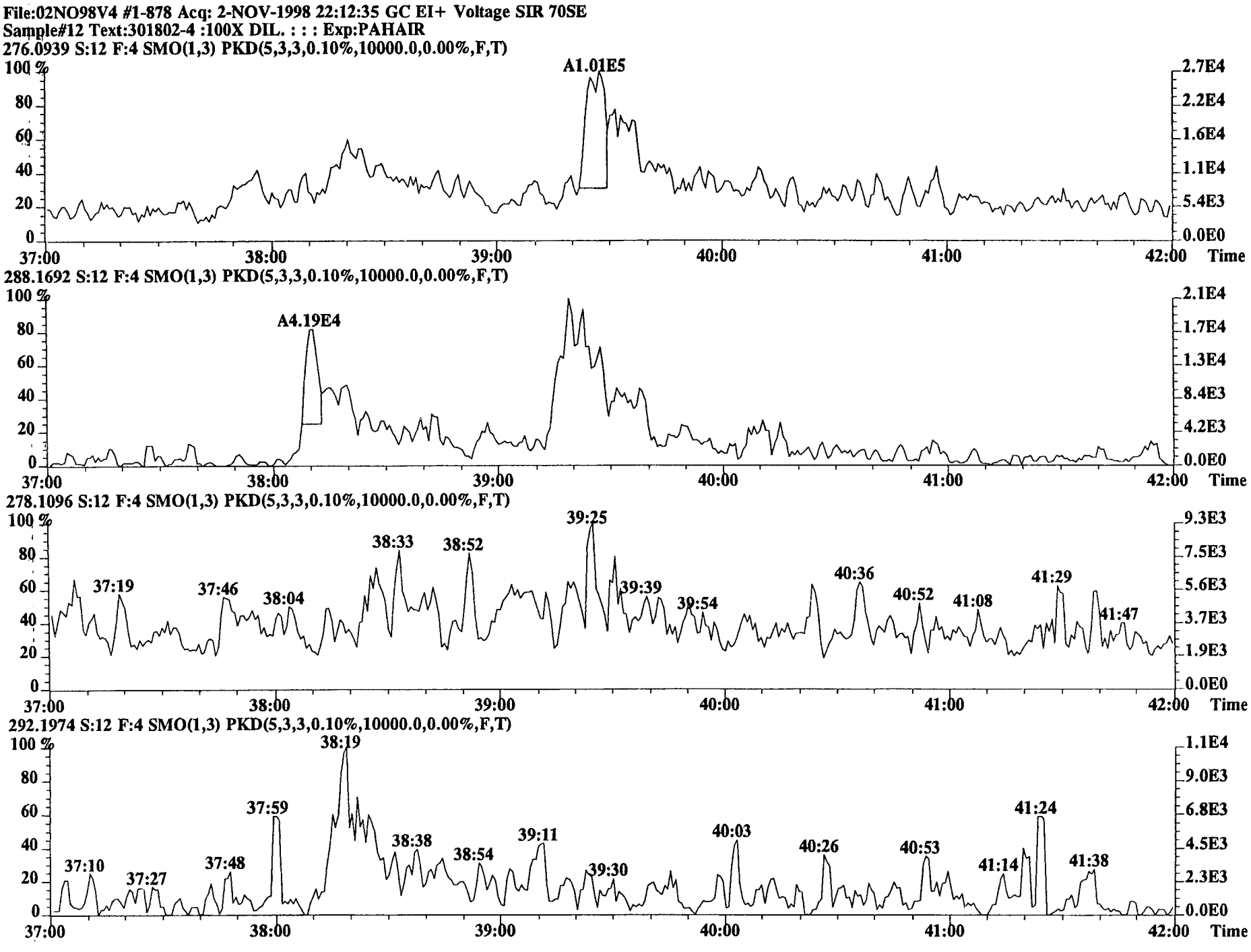


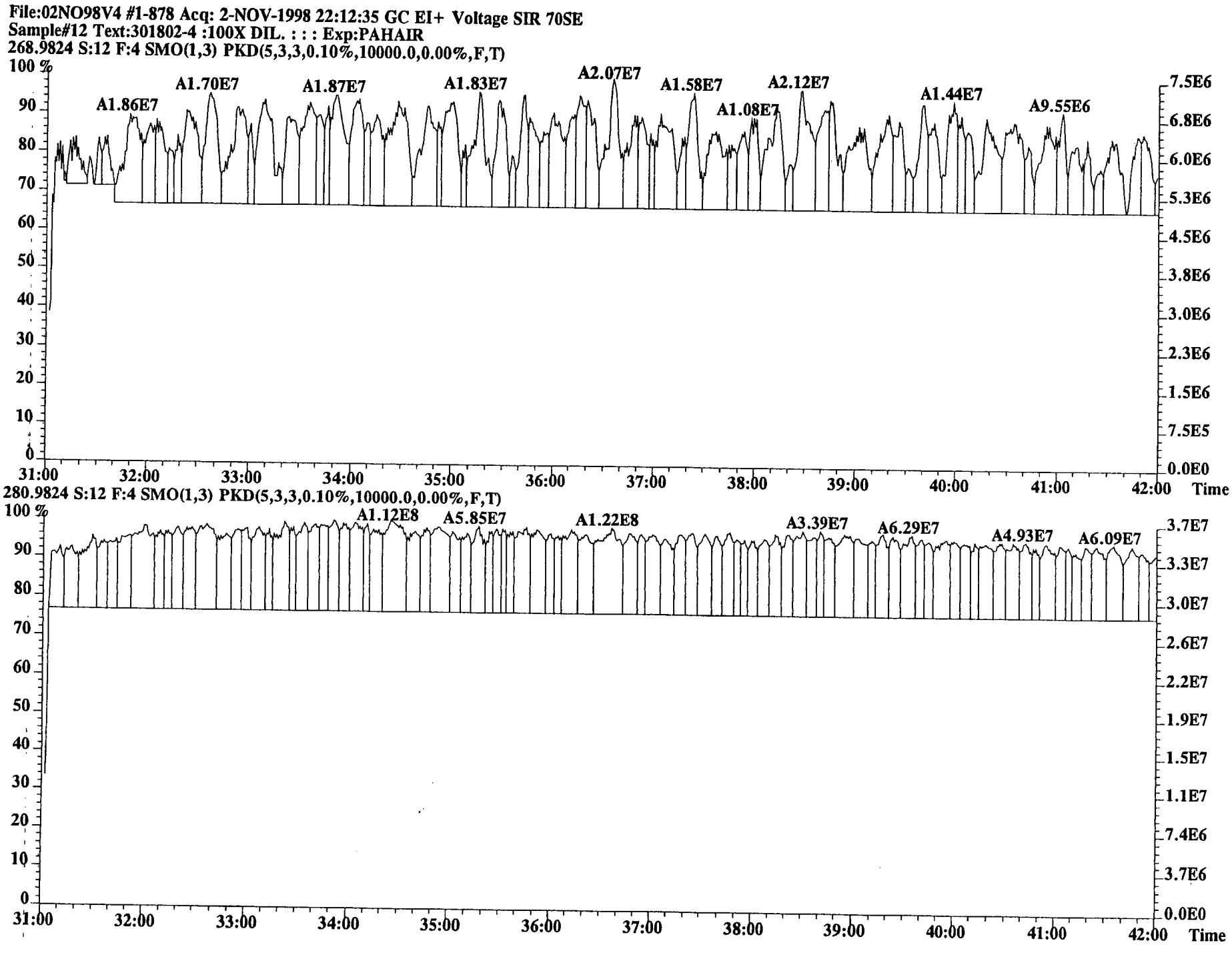
File:02NO98V4 #1-939 Acq: 2-NOV-1998 22:12:35 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-4 :100X DIL. : : : Exp:PAHAIR
230.9856 S:12 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



215


File:02NO98V4 #1-878 Acq: 2-NOV-1998 22:12:35 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-4 :100X DIL. : : : Exp:PAHAIR
252.0939 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A3.01E5
A1.97E5
A2.41E4
5.2E4
4.7E4
4.2E4
3.7E4
3.1E4
2.6E4
2.1E4
1.6E4
1.0E4
5.2E3
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
Time
264.1692 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A4.06E5
A2.83E5
A6.95E4
7.4E4
6.7E4
6.0E4
5.2E4
4.5E4
3.7E4
3.0E4
2.2E4
1.5E4
7.4E3
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
Time


File:02NO98V4 #1-878 Acq: 2-NOV-1998 22:12:35 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-4 :100X DIL. : : : Exp:PAHAIR
276.0939 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.01E5
288.1692 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.19E4
278.1096 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
37:19
37:46
38:04
38:33
38:52
39:25
39:39
39:54
40:36
40:52
41:08
41:29
41:47
292.1974 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
37:10
37:27
37:48
37:59
38:19
38:38
38:54
39:11
39:30
40:03
40:26
40:53
41:14
41:24
41:38
100 %
80
60
40
20
0
37:00
38:00
39:00
40:00
41:00
42:00
Time
2.7E4
2.2E4
1.6E4
1.1E4
5.4E3
0.0E0
2.1E4
1.7E4
1.3E4
8.4E3
4.2E3
9.3E3
7.5E3
5.6E3
3.7E3
1.9E3
1.1E4
9.0E3
6.8E3
4.5E3
2.3E3


File:02NO98V4 #1-878 Acq: 2-NOV-1998 22:12:35 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-4 :100X DIL. : : : Exp:PAHAIR
268.9824 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.86E7
A1.70E7
A1.87E7
A1.83E7
A2.07E7
A1.58E7
A1.08E7
A2.12E7
A1.44E7
A9.55E6
280.9824 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.12E8
A5.85E7
A1.22E8
A3.39E7
A6.29E7
A4.93E7
A6.09E7
Time

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-O-429-2
Lab ID: 301802-0005-SA
Matrix: AIRTRAIN
Authorized: 29 SEP 98
Dilution Factor: 1.0

Sampled: 22 SEP 98
Prepared: 03 OCT 98

Received: 29 SEP 98
Analyzed: 30 OCT 98

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	95000	ng/sample	--	B
2-Methylnaphthalene	24000	ng/sample	--	B
Acenaphthylene	22000	ng/sample	--	
Acenaphthene	2500	ng/sample	--	
Fluorene	7500	ng/sample	--	
Phenanthrene	45000	ng/sample	--	B
Anthracene	3300	ng/sample	--	
Fluoranthene	14000	ng/sample	--	
Pyrene	8100	ng/sample	--	
Benzo(a)anthracene	240	ng/sample	--	
Chrysene	640	ng/sample	--	
Benzo(b)fluoranthene	180	ng/sample	--	
Benzo(k)fluoranthene	160	ng/sample	--	
Benzo(e)pyrene	ND	ng/sample	100	
Benzo(a)pyrene	ND	ng/sample	100	
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
ND = Not Detected

Reported By: Clark Pickell

Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-O-429-2
Lab ID: 301802-0005-SA
Matrix: AIRTRAIN Sampled: 22 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 30 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	46	m
Acenaphthylene-d8	75	
Acenaphthene-d10	72	
Fluorene-d10	75	
Phenanthrene-d10	88	
Fluoranthene-d10	58	
Pyrene-d10	56	
Benzo(a)anthracene-d12	75	
Perylene-d12	58	
Indeno(123-cd)pyrene-d12	73	
Chrysene-d12	80	
Benzo(b)fluoranthene-d12	94	
Benzo(k)fluoranthene-d12	88	
Benzo(a)pyrene-d12	76	
Dibenz(a,h)anthracene-d14	64	
Benzo(g,h,i)perylene-d12	76	

Field Surrogates	% Recovery
13C-Fluorene	112

m = Internal Standard recovery is outside method recovery goal.

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

04-NOV-1998 05:31:10 PM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4
GC Column : DB-5
Data file : 30OC98V4
Weight : 0.5

Results : 30OC98V4081.RES
Date analyzed : 30-OCT-98

: PAHAIR.TRG
: PAHAIR102998V4.R

Name	301802-5 :10X DIL. Total Response	Isotope Ratio		R. T. mm:ss		Ex Cal RRF	pg/ SAMP	Rec/ MDL	
d10-2-Methylnaphthalene	7316240	1.00	Y	12: 27	Y	1.00	50.00		
d8-Naphthalene	7460000	1.00	Y	10: 12	Y	2.24	22.75	46	
Naphthalene	8681940000	1.00	Y	10: 16	Y	1.23	9.5e+04	B	E
2-Methylnaphthalene	1024468000	1.00	Y	12: 34	Y	0.56	2.4e+04	B	E
d8-Acenaphthylene	6663040	1.00	Y	15: 27	Y	1.21	37.52	75	
Acenaphthylene	1401130000	1.00	Y	15: 30	Y	0.94	2.2e+04		E
d10-Acenaphthene	3898840	1.00	Y	16: 1	Y	0.74	35.78	72	
Acenaphthene	121433800	1.00	Y	16: 8	Y	1.25	2499.50		
d10-Anthracene	4982580	1.00	Y	20: 54	Y	1.00	50.00		
d10-Fluorene	5320500	1.00	Y	17: 41	Y	1.42	37.58	75	
Fluorene	465870000	1.00	Y	17: 46	Y	1.16	7545.02		E
d10-Phenanthrene	12360000	1.00	Y	20: 45	Y	2.81	44.18	88	
Phenanthrene	4940660000	1.00	Y	20: 49	Y	0.89	4.5e+04	B	E
Anthracene	324000000	1.00	Y	20: 58	Y	0.80	3275.05		
d14-Terphenyl	16072880	1.00	Y	26: 0	Y	1.00	50.00		
d10-Fluoranthene	13106960	1.00	Y	24: 35	Y	1.41	28.90	58	
Fluoranthene	2079300000	1.00	Y	24: 39	Y	1.11	1.4e+04		E
d10-Pyrene	13659420	1.00	Y	25: 17	Y	1.52	27.99	56	
Pyrene	1340422000	1.00	Y	25: 20	Y	1.21	8143.31		E
d12-Benzo(a)anthracene	10861060	1.00	Y	29: 9	Y	0.90	37.54	75	
Benzo(a)anthracene	31010600	1.00	Y	29: 12	Y	1.20	237.04		
d12-Chrysene	16374560	1.00	Y	29: 15	Y	1.28	39.82	80	
Chrysene	113356000	1.00	Y	29: 20	Y	1.08	638.64		
d12-Benzo(e)pyrene	25048600	1.00	Y	33: 22	Y	1.00	50.00		
d12-Benzo(b)fluoranthene	10713240	1.00	Y	32: 30	Y	0.45	47.12	94	
Benzo(b)fluoranthene	22600000	1.00	Y	32: 35	Y	1.17	180.73		
d12-Benzo(k)fluoranthene	20931000	1.00	Y	32: 35	Y	0.95	44.07	88	
Benzo(k)fluoranthene	38200000	1.00	Y	32: 38	Y	1.16	156.77		
d12-Benzo(a)pyrene	12894700	1.00	Y	33: 34	Y	0.68	38.04	76	
Benzo(e)pyrene	20855800	1.00	Y	33: 28	Y	1.64	<RL=100.00		
Benzo(a)pyrene	6581120	1.00	Y	33: 39	Y	1.07	<RL=100.00		
d12-Perylene	9142680	1.00	Y	33: 51	Y	0.63	28.96	58	
Perylene	* No Peak	0.00	N	33: 55	N	1.71	<RL=100.00		
d12-Indeno(123-cd)pyrene	8143820	1.00	Y	38: 4	Y	0.44	36.57	73	
Indeno(123-cd)pyrene	4029580	1.00	Y	38: 11	Y	0.62	<RL=100.00		
d14-Dibenz(ah)anthracene	3945700	1.00	Y	38: 8	Y	0.25	32.04	64	
Dibenz(ah)anthracene	889532	1.00	Y	38: 18	Y	1.40	<RL=100.00		
d12-Benzo(ghi)perylene	11051780	1.00	Y	39: 14	Y	0.58	38.05	76	
Benzo(ghi)perylene	7159360	1.00	Y	39: 23	Y	1.02	<RL=100.00		
d10-Fluorene	5320500	1.00	Y	17: 41	Y	1.00	50.00		
13C-Fluorene	4818080	1.00	Y	17: 46	Y	0.81	55.90	112	

11-4-98

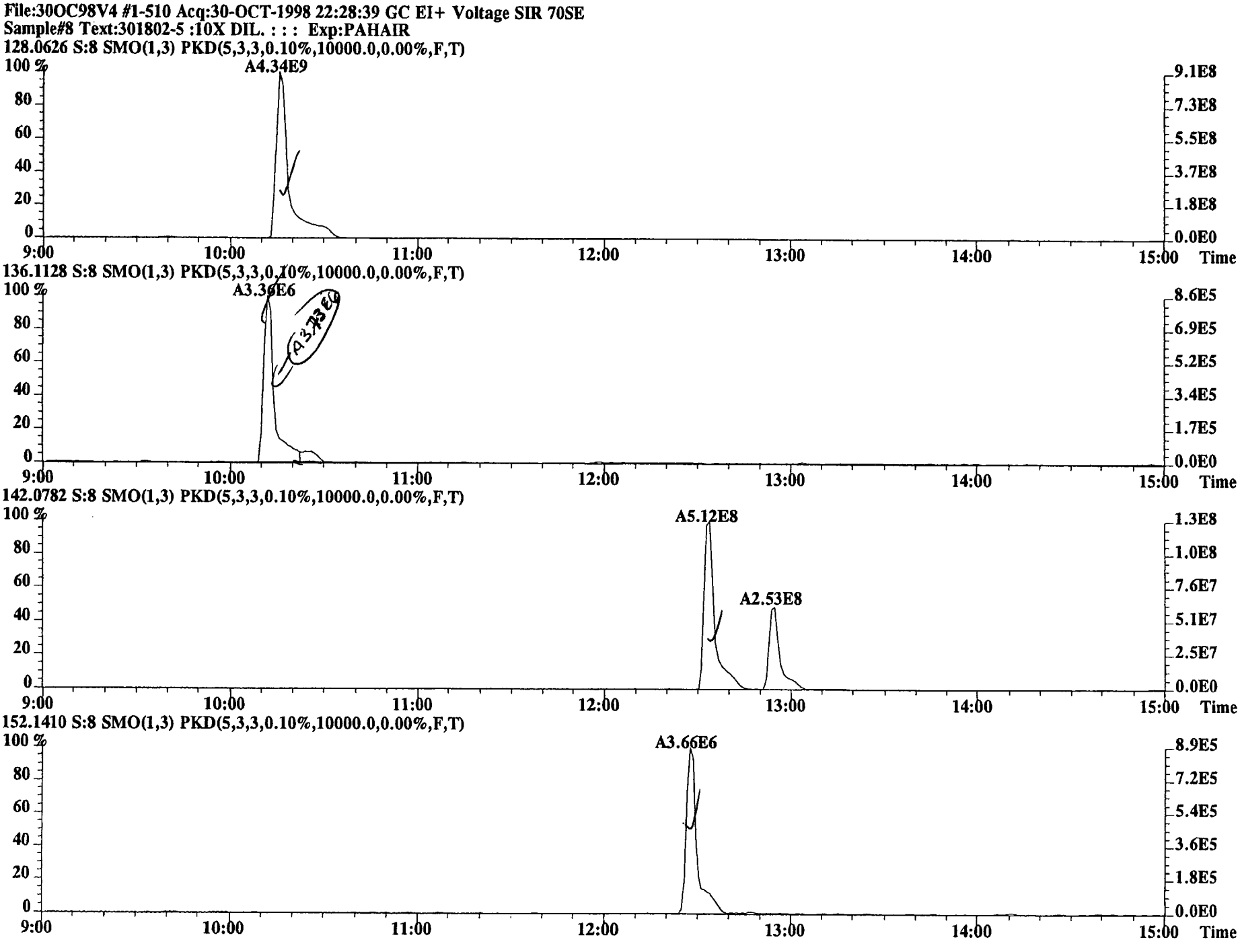
	0.5	
98V4.RRF		
Rec/		
MDL		
	3658120	3658120
46	3730000	3730000
B E	4340970000	4340970000
B E	512234000	512234000
75	3331520	3331520
E	700565000	700565000
72	1949420	1949420
	60716900	60716900
	2491290	2491290
75	2660250	2660250
E	232935000	232935000
88	6180000	6180000
B E	2470330000	2470330000
	162000000	162000000
	8036440	8036440
58	6553480	6553480
E	1039650000	1039650000
56	6829710	6829710
E	670211000	670211000
75	5430530	5430530
	15505300	15505300
80	8187280	8187280
	56678000	56678000
	12524300	12524300
94	5356620	5356620
	11300000	11300000
88	10465500	10465500
	19100000	19100000
76	6447350	6447350
100.00	10427900	10427900
100.00	3290560	3290560
58	4571340	4571340
100.00	0	0
73	4071910	4071910
100.00	2014790	2014790
64	1972850	1972850
100.00	2014790	444766
76	5525890	5525890
100.00	3579680	3579680

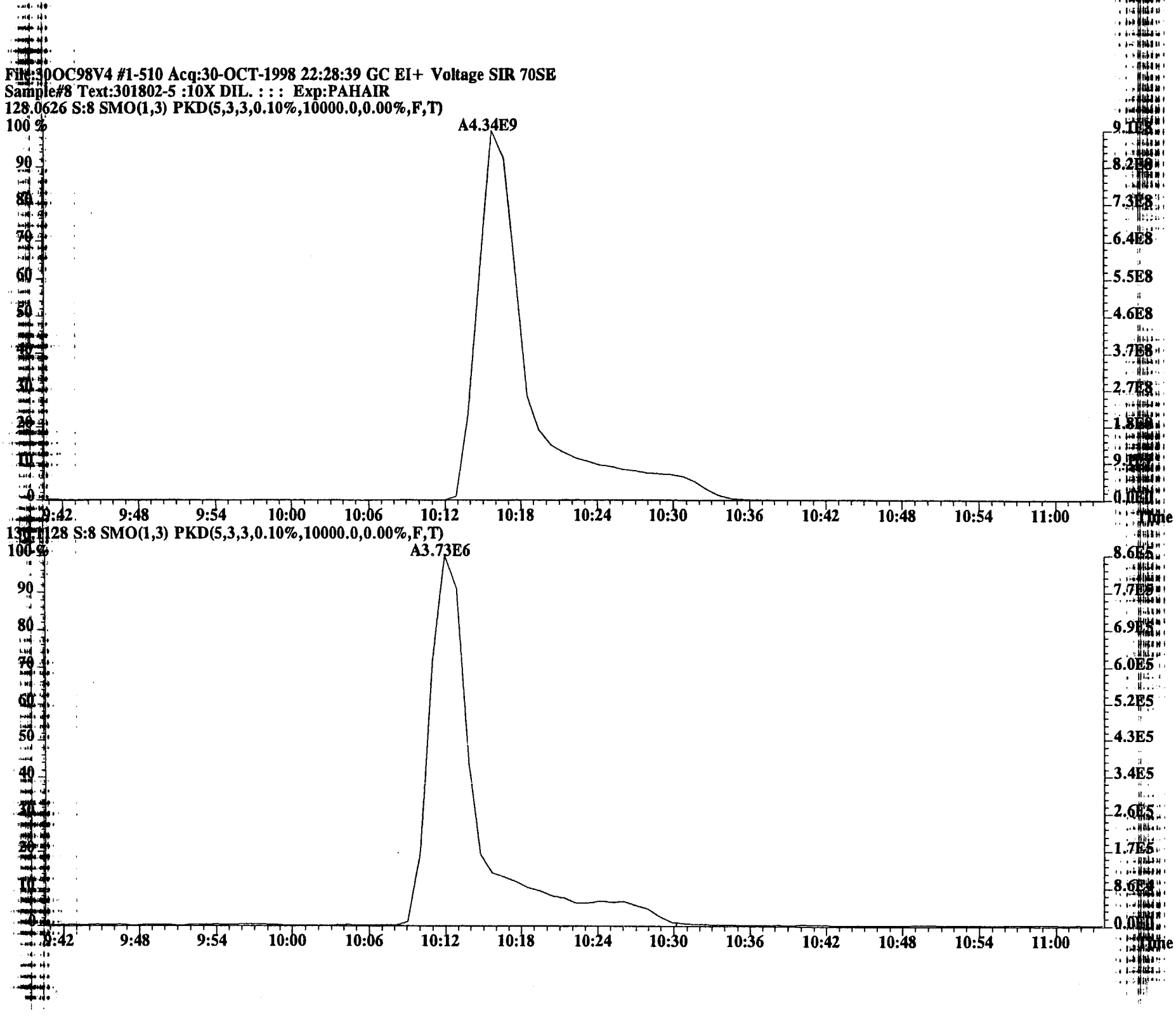
02-NOV-1998 08:48:47 AM Dioxin Furan Unknown RESULTS

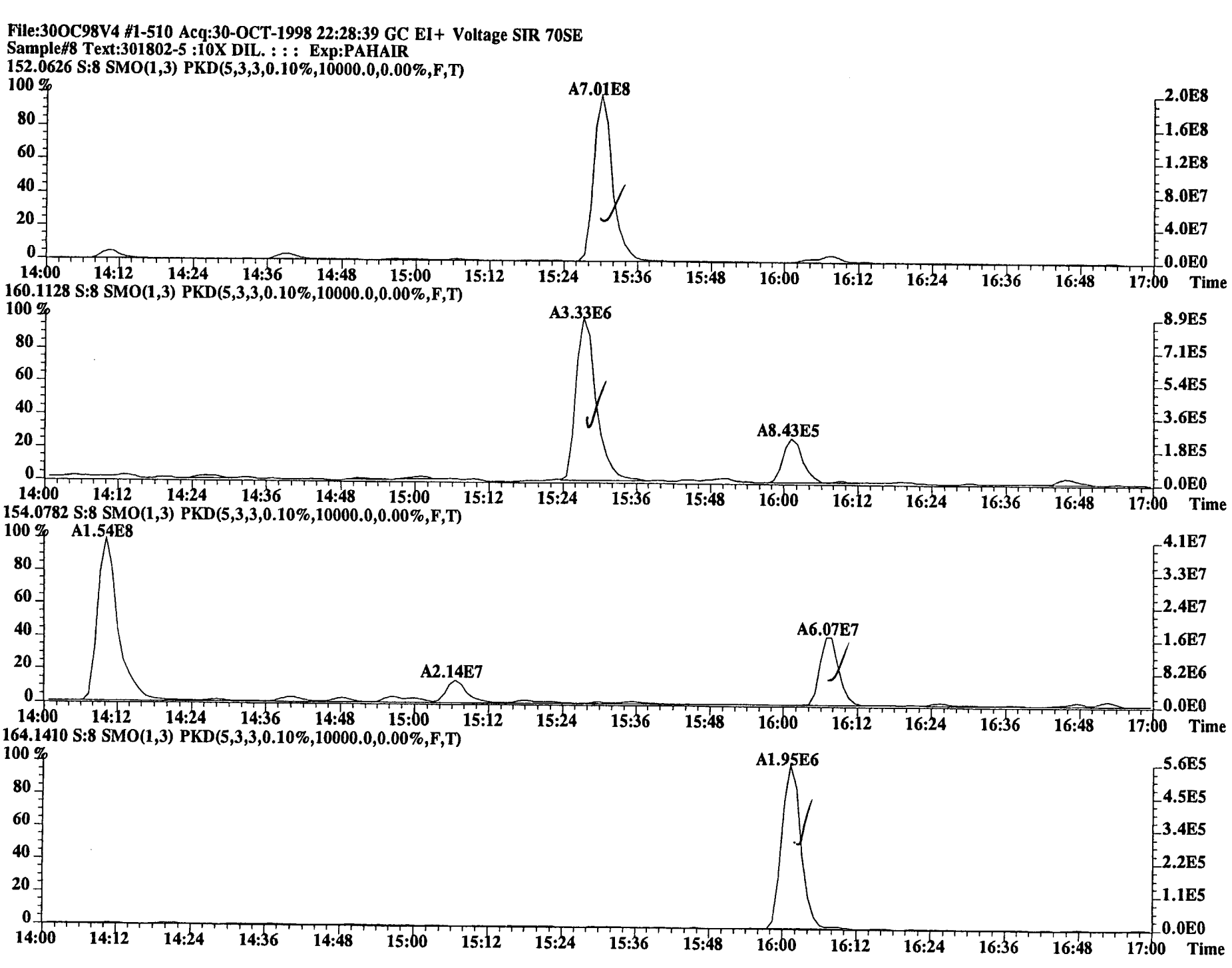
Mass Spec : VG-4
GC Column : DB-5
Data file : 30OC98V4
Weight : 0.5

Results : 30OC98V4081.RES : PAHAIR.TRG
Date analyzed : 30-OCT-98
301802-5 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R

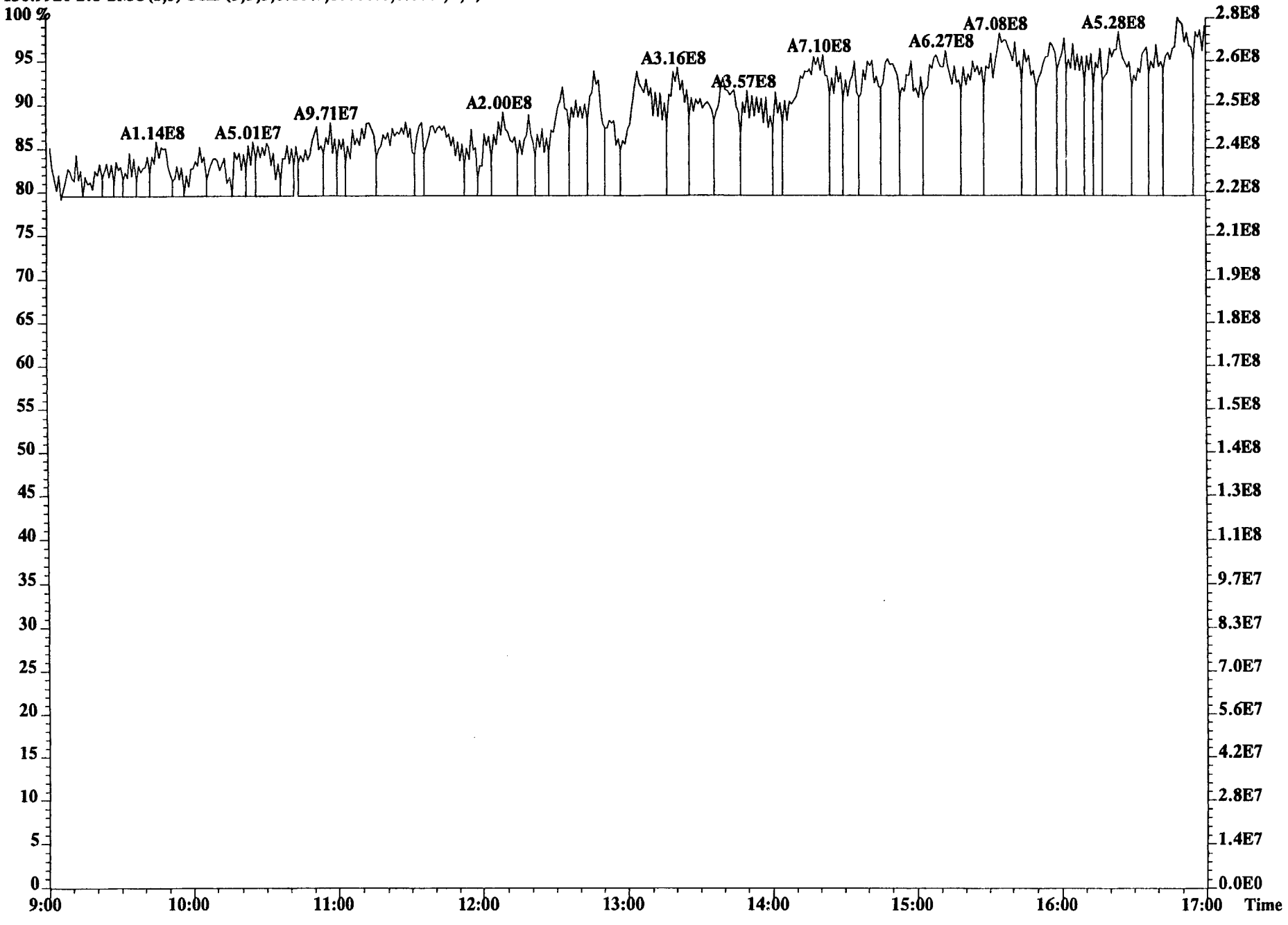
Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMP	Rec/ MDL
d10-2-Methylnaphthalene	7316240	1.00	Y	12: 27	Y	1.00	50.00	
d8-Naphthalene	6713680	1.00	Y	10: 12	Y	2.24	20.48	41
Naphthalene	8681940000	1.00	Y	10: 16	Y	1.23	1.1e+05	0.000
2-Methylnaphthalene	1024468000	1.00	Y	12: 34	Y	0.56	2.7e+04	0.000
d8-Acenaphthylene	6663040	1.00	Y	15: 27	Y	1.21	37.52	75
Acenaphthylene	1401130000	1.00	Y	15: 30	Y	0.94	2.2e+04	0.000
d10-Acenaphthene	3898840	1.00	Y	16: 1	Y	0.74	35.78	72
Acenaphthene	121433800	1.00	Y	16: 8	Y	1.25	2499.50	0.000
d10-Anthracene	4982580	1.00	Y	20: 54	Y	1.00	50.00	
d10-Fluorene	5320500	1.00	Y	17: 41	Y	1.42	37.58	75
Fluorene	465870000	1.00	Y	17: 46	Y	1.16	7545.02	0.000
d10-Phenanthrene	12661800	1.00	Y	20: 45	Y	2.81	45.26	91
Phenanthrene	4940660000	1.00	Y	20: 49	Y	0.89	4.4e+04	0.000
Anthracene	* No Peak	0.00	N	20: 58	N	0.80	0.00	0.000
d14-Terphenyl	16072880	1.00	Y	26: 0	Y	1.00	50.00	
d10-Fluoranthene	13106960	1.00	Y	24: 35	Y	1.41	28.90	58
Fluoranthene	2079300000	1.00	Y	24: 39	Y	1.11	1.4e+04	0.000
d10-Pyrene	13659420	1.00	Y	25: 17	Y	1.52	27.99	56
Pyrene	1340422000	1.00	Y	25: 20	Y	1.21	8143.31	0.000
d12-Benzo(a)anthracene	10861060	1.00	Y	29: 9	Y	0.90	37.54	75
Benzo(a)anthracene	31010600	1.00	Y	29: 12	Y	1.20	237.04	0.000
d12-Chrysene	16374560	1.00	Y	29: 15	Y	1.28	39.82	80
Chrysene	113356000	1.00	Y	29: 20	Y	1.08	638.64	0.000
d12-Benzo(e)pyrene	25048600	1.00	Y	33: 22	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	10713240	1.00	Y	32: 30	Y	0.45	47.12	94
Benzo(b)fluoranthene	60963600	1.00	Y	32: 35	Y	1.17	487.51	0.000
d12-Benzo(k)fluoranthene	20931000	1.00	Y	32: 35	Y	0.95	44.07	88
Benzo(k)fluoranthene	60963600	1.00	Y	32: 35	Y	1.16	250.19	0.000
d12-Benzo(a)pyrene	12894700	1.00	Y	33: 34	Y	0.68	38.04	76
Benzo(e)pyrene	20855800	1.00	Y	33: 28	Y	1.64	98.57	0.000
Benzo(a)pyrene	6581120	1.00	Y	33: 39	Y	1.07	47.61	0.000
d12-Perylene	9142680	1.00	Y	33: 51	Y	0.63	28.96	58
Perylene	* No Peak	0.00	N	33: 55	N	1.71	0.00	0.000
d12-Indeno(123-cd)pyrene	8143820	1.00	Y	38: 4	Y	0.44	36.57	73
Indeno(123-cd)pyrene	4029580	1.00	Y	38: 11	Y	0.62	79.68	0.000
d14-Dibenz(ah)anthracene	3945700	1.00	Y	38: 8	Y	0.25	32.04	64
Dibenz(ah)anthracene	889532	1.00	Y	38: 18	Y	1.40	16.06	0.000
d12-Benzo(ghi)perylene	11051780	1.00	Y	39: 14	Y	0.58	38.05	76
Benzo(ghi)perylene	7159360	1.00	Y	39: 23	Y	1.02	63.76	0.000
d10-Fluorene	5320500	1.00	Y	17: 41	Y	1.42	7.47	15
13C-Fluorene	4818080	1.00	Y	17: 46	Y	1.00	90.56	0.000

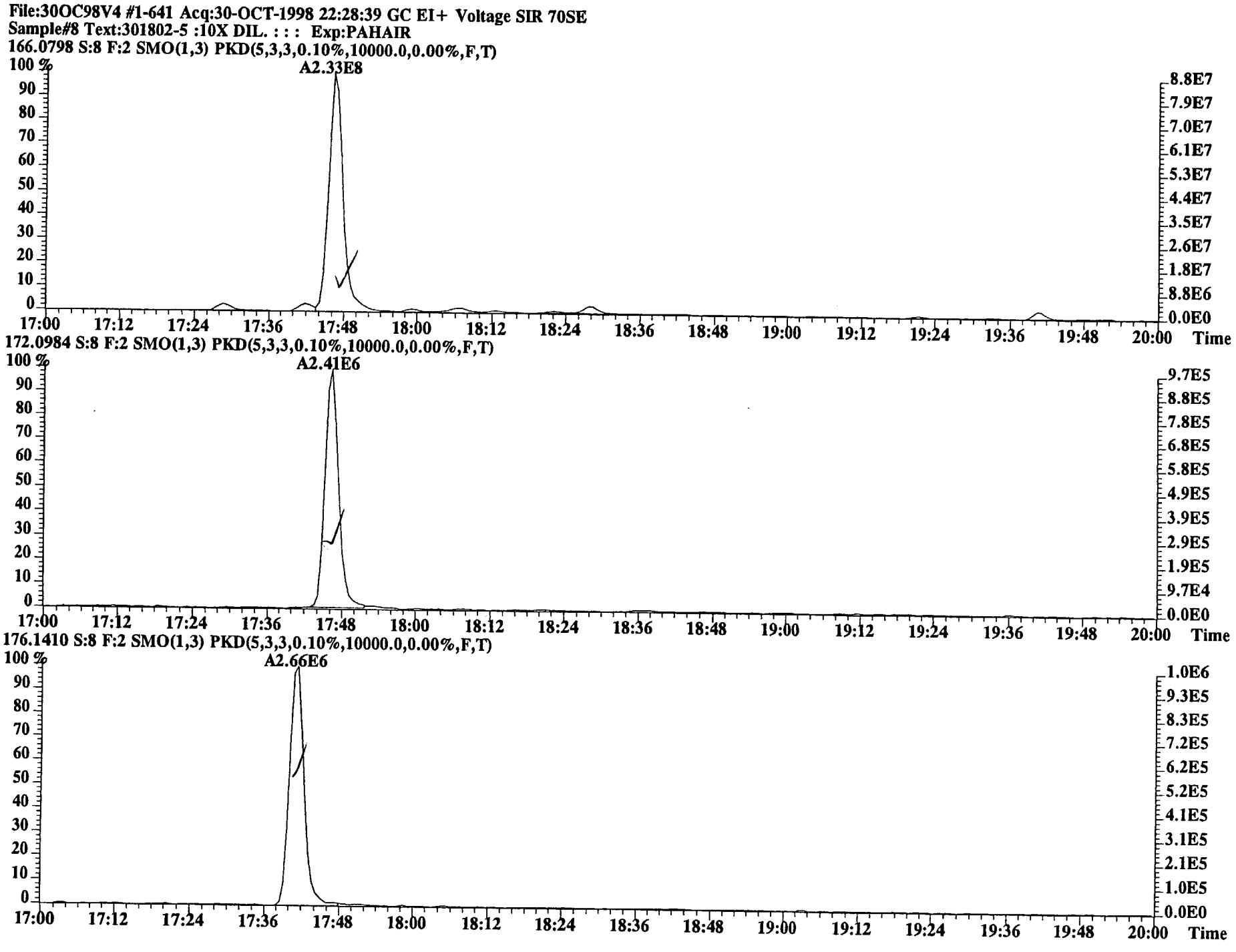

File:30OC98V4 #1-510 Acq:30-OCT-1998 22:28:39 GC EI+ Voltage SIR 70SE
Sample#8 Text:301802-5 :10X DIL. : : : Exp:PAHAIR
128.0626 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.34E9
136.1128 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.36E6
142.0782 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A5.12E8
A2.53E8
152.1410 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.66E6
100 %
80
60
40
20
0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
Time
9.1E8
7.3E8
5.5E8
3.7E8
1.8E8
0.0E0
8.6E5
6.9E5
5.2E5
3.4E5
1.7E5
1.3E8
1.0E8
7.6E7
5.1E7
2.5E7
8.9E5
7.2E5
5.4E5
3.6E5
1.8E5


File:30OC98V4 #1-510 Acq:30-OCT-1998 22:28:39 GC EI+ Voltage SIR 70SE
Sample#8 Text:301802-5 :10X DIL. : : : Exp:PAHAIR
128.0626 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.34E9
9.1E8
8.2E8
7.3E8
6.4E8
5.5E8
4.6E8
3.7E8
2.7E8
1.8E8
9:42
9:48
9:54
10:00
10:06
10:12
10:18
10:24
10:30
10:36
10:42
10:48
10:54
11:00
Time
128 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.73E6
8.6E5
7.7E5
6.9E5
6.0E5
5.2E5
4.3E5
3.4E5
2.6E5
1.7E5
8.6E4
9:42
9:48
9:54
10:00
10:06
10:12
10:18
10:24
10:30
10:36
10:42
10:48
10:54
11:00
Time

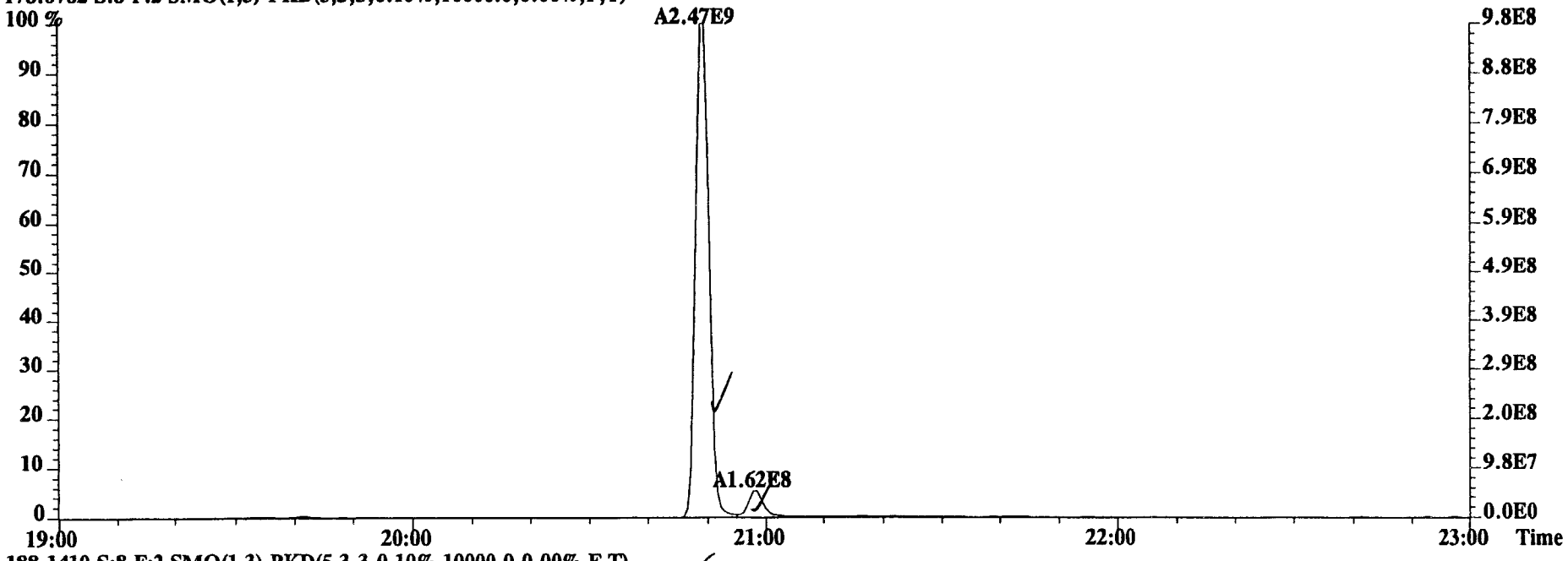

File:30OC98V4 #1-510 Acq:30-OCT-1998 22:28:39 GC EI+ Voltage SIR 70SE
Sample#8 Text:301802-5 :10X DIL. : : : Exp:PAHAIR
152.0626 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.01E8
160.1128 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.33E6
A8.43E5
154.0782 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.54E8
A2.14E7
A6.07E7
164.1410 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.95E6
100 %
80
60
40
20
0
14:00
14:12
14:24
14:36
14:48
15:00
15:12
15:24
15:36
15:48
16:00
16:12
16:24
16:36
16:48
17:00
Time
2.0E8
1.6E8
1.2E8
8.0E7
4.0E7
0.0E0
8.9E5
7.1E5
5.4E5
3.6E5
1.8E5
4.1E7
3.3E7
2.4E7
1.6E7
8.2E6
5.6E5
4.5E5
3.4E5
2.2E5
1.1E5

File:30OC98V4 #1-510 Acq:30-OCT-1998 22:28:39 GC EI+ Voltage SIR 70SE
Sample#8 Text:301802-5 :10X DIL. : : : Exp:PAHAIR
130.9920 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

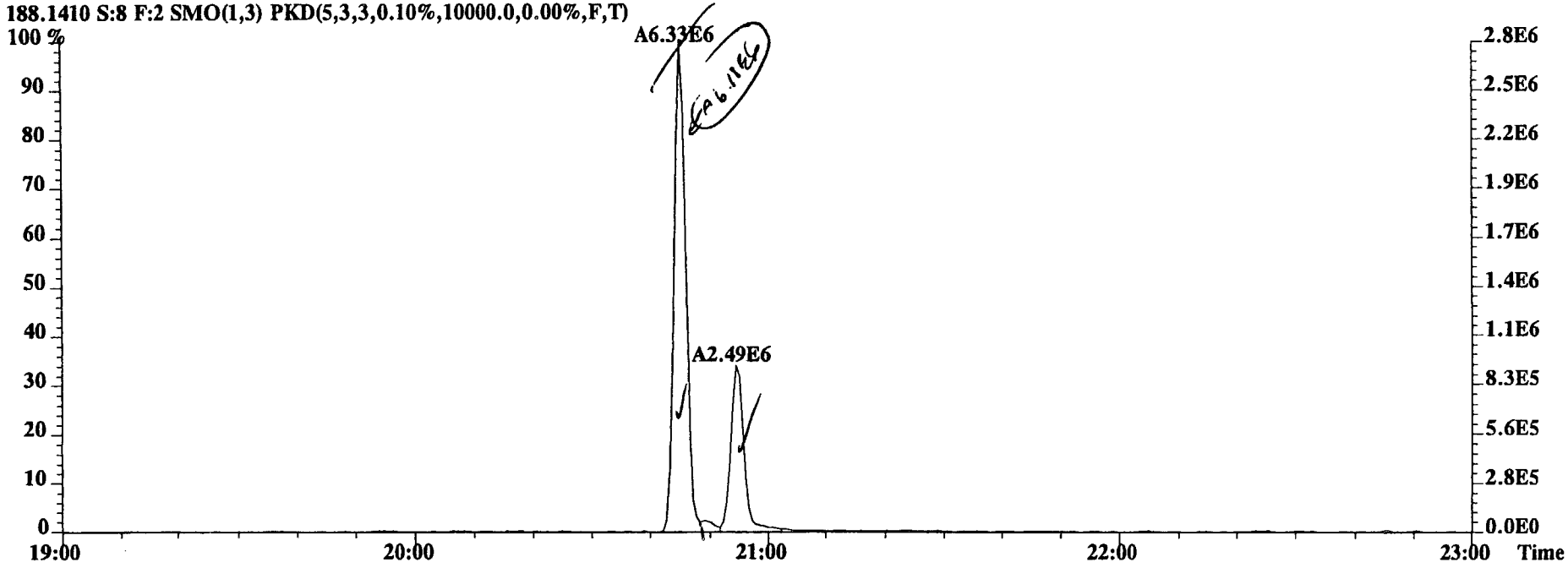


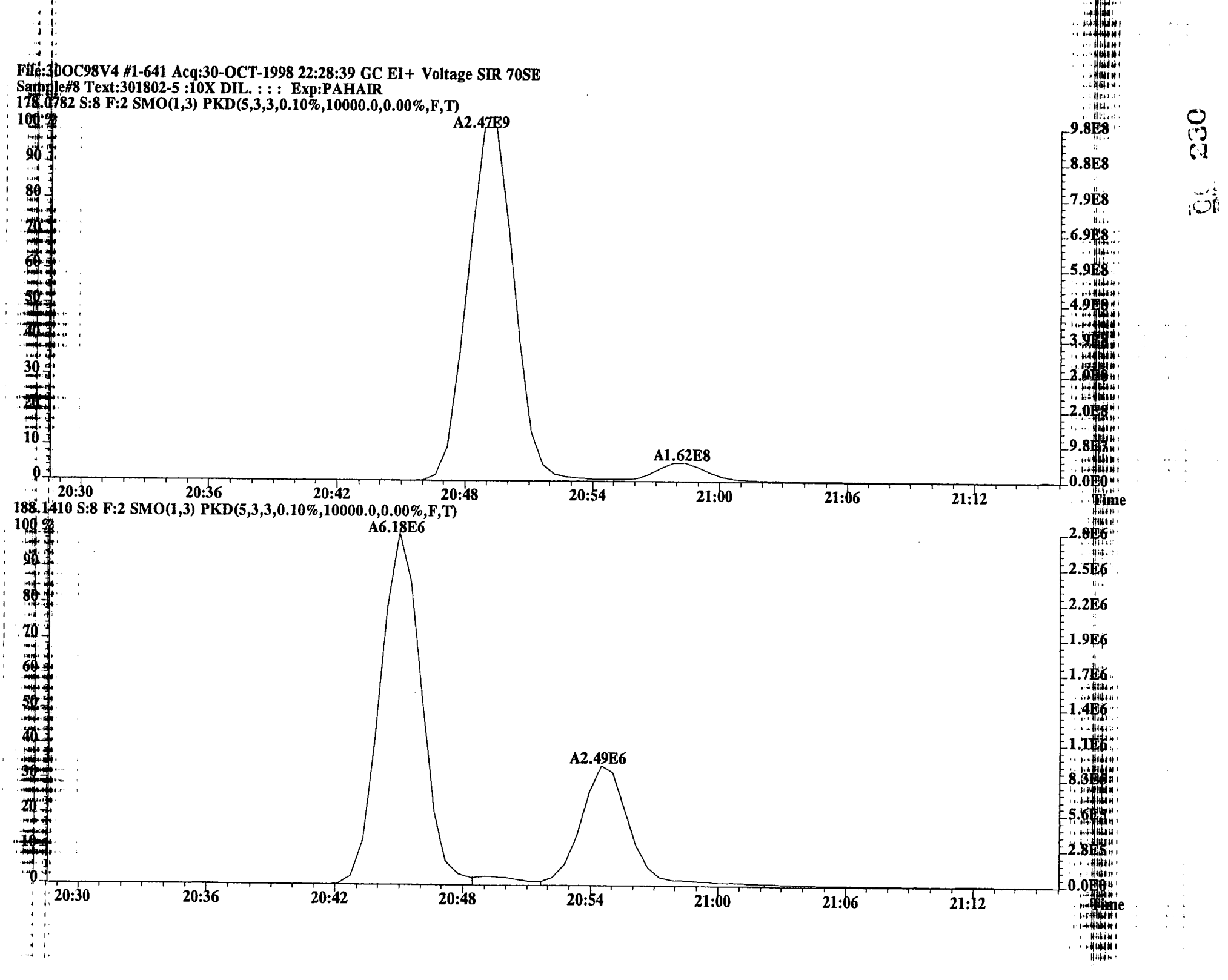

File:30OC98V4 #1-641 Acq:30-OCT-1998 22:28:39 GC EI+ Voltage SIR 70SE
Sample#8 Text:301802-5 :10X DIL. : : : Exp:PAHAIR
166.0798 S:8 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.33E8
172.0984 S:8 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.41E6
176.1410 S:8 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.66E6
100 %
Time
17:00
17:12
17:24
17:36
17:48
18:00
18:12
18:24
18:36
18:48
19:00
19:12
19:24
19:36
19:48
20:00

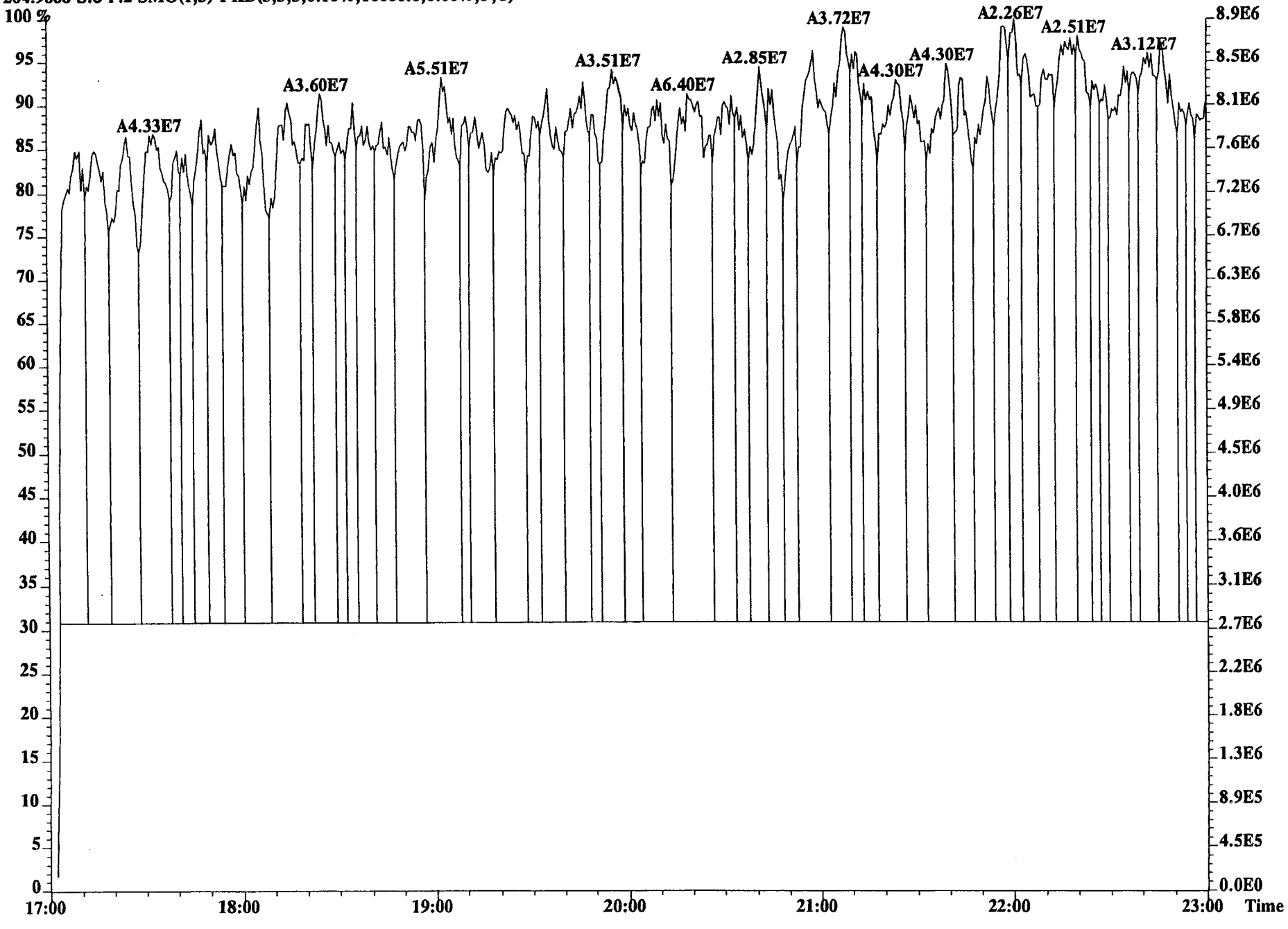
File:30OC98V4 #1-641 Acq:30-OCT-1998 22:28:39 GC EI+ Voltage SIR 70SE
Sample#8 Text:301802-5 :10X DIL. : : : Exp:PAHAIR
178.0782 S:8 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

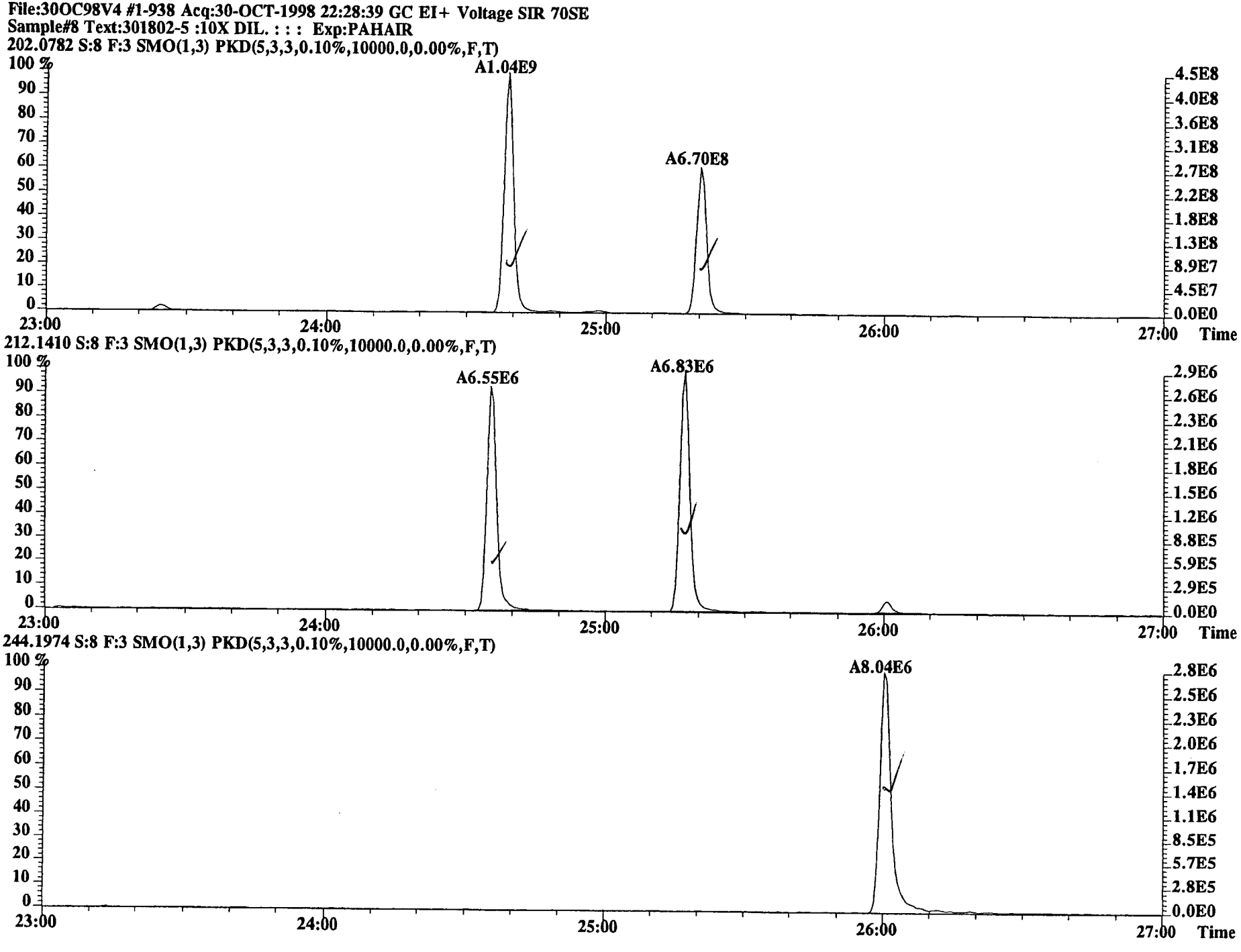


188.1410 S:8 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

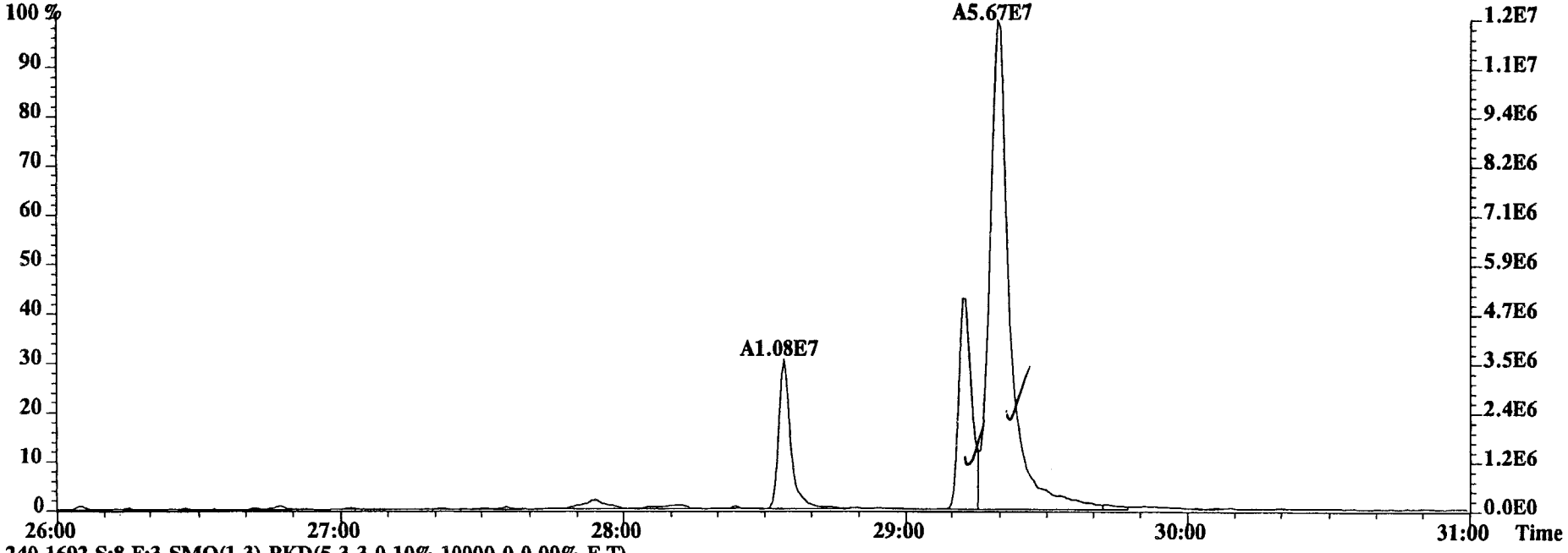



File:30OC98V4 #1-641 Acq:30-OCT-1998 22:28:39 GC EI+ Voltage SIR 70SE
Sample#8 Text:301802-5 :10X DIL. : : : Exp:PAHAIR
178.0782 S:8 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.47E9
A1.62E8
9.8E8
8.8E8
7.9E8
6.9E8
5.9E8
4.9E8
2.0E8
9.8E7
0.0E0
20:30
20:36
20:42
20:48
20:54
21:00
21:06
21:12
Time
188.1410 S:8 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A6.18E6
A2.49E6
2.8E6
2.5E6
2.2E6
1.9E6
1.7E6
1.4E6
0.0E0
20:30
20:36
20:42
20:48
20:54
21:00
21:06
21:12
Time

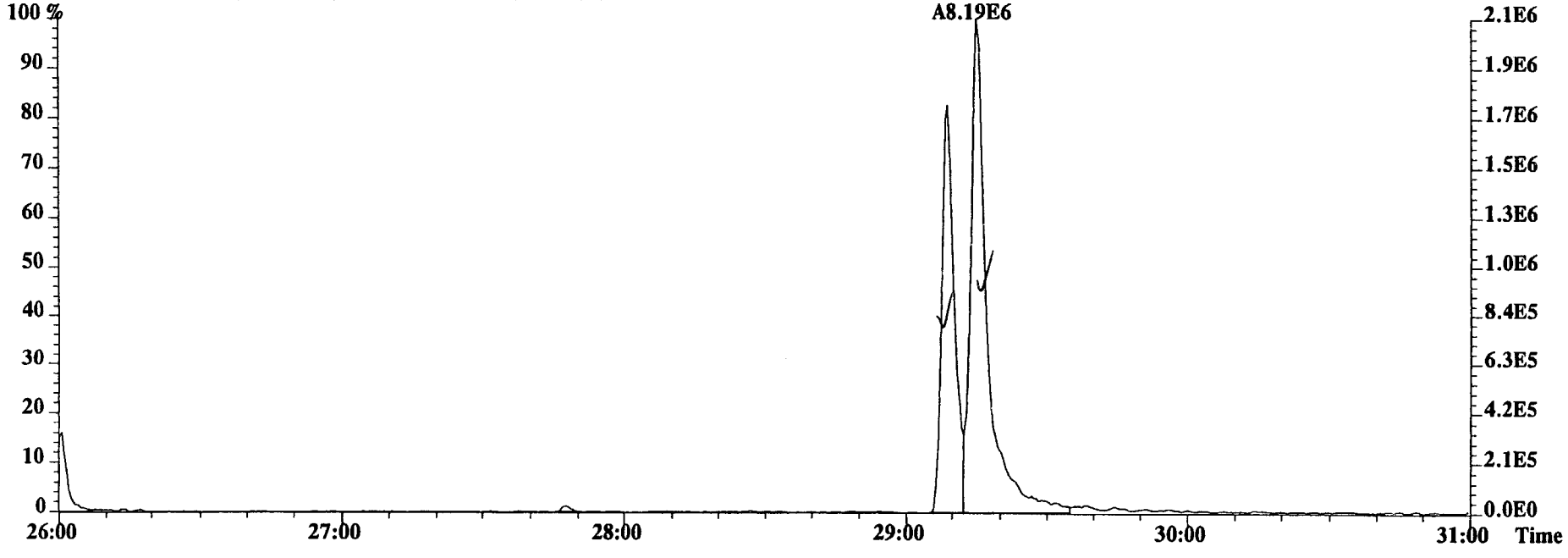

File:30OC98V4 #1-641 Acq:30-OCT-1998 22:28:39 GC EI+ Voltage SIR 70SE
Sample#8 Text:301802-5 :10X DIL. : : : Exp:PAHAIR
204.9888 S:8 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A4.33E7
A3.60E7
A5.51E7
A3.51E7
A6.40E7
A2.85E7
A3.72E7
A4.30E7
A4.30E7
A2.26E7
A2.51E7
A3.12E7
8.9E6
8.5E6
8.1E6
7.6E6
7.2E6
6.7E6
6.3E6
5.8E6
5.4E6
4.9E6
4.5E6
4.0E6
3.6E6
3.1E6
2.7E6
2.2E6
1.8E6
1.3E6
8.9E5
4.5E5
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time


File:30OC98V4 #1-938 Acq:30-OCT-1998 22:28:39 GC EI+ Voltage SIR 70SE
Sample#8 Text:301802-5 :10X DIL. : : : Exp:PAHAIR
202.0782 S:8 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.04E9
A6.70E8
212.1410 S:8 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A6.55E6
A6.83E6
244.1974 S:8 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.04E6
100 %
90
80
70
60
50
40
30
20
10
0
23:00
24:00
25:00
26:00
27:00
Time
4.5E8
4.0E8
3.6E8
3.1E8
2.7E8
2.2E8
1.8E8
1.3E8
8.9E7
4.5E7
0.0E0
2.9E6
2.6E6
2.3E6
2.1E6
1.8E6
1.5E6
1.2E6
8.8E5
5.9E5
2.9E5
0.0E0
2.8E6
2.5E6
2.3E6
2.0E6
1.7E6
1.4E6
1.1E6
8.5E5
5.7E5
2.8E5
0.0E0

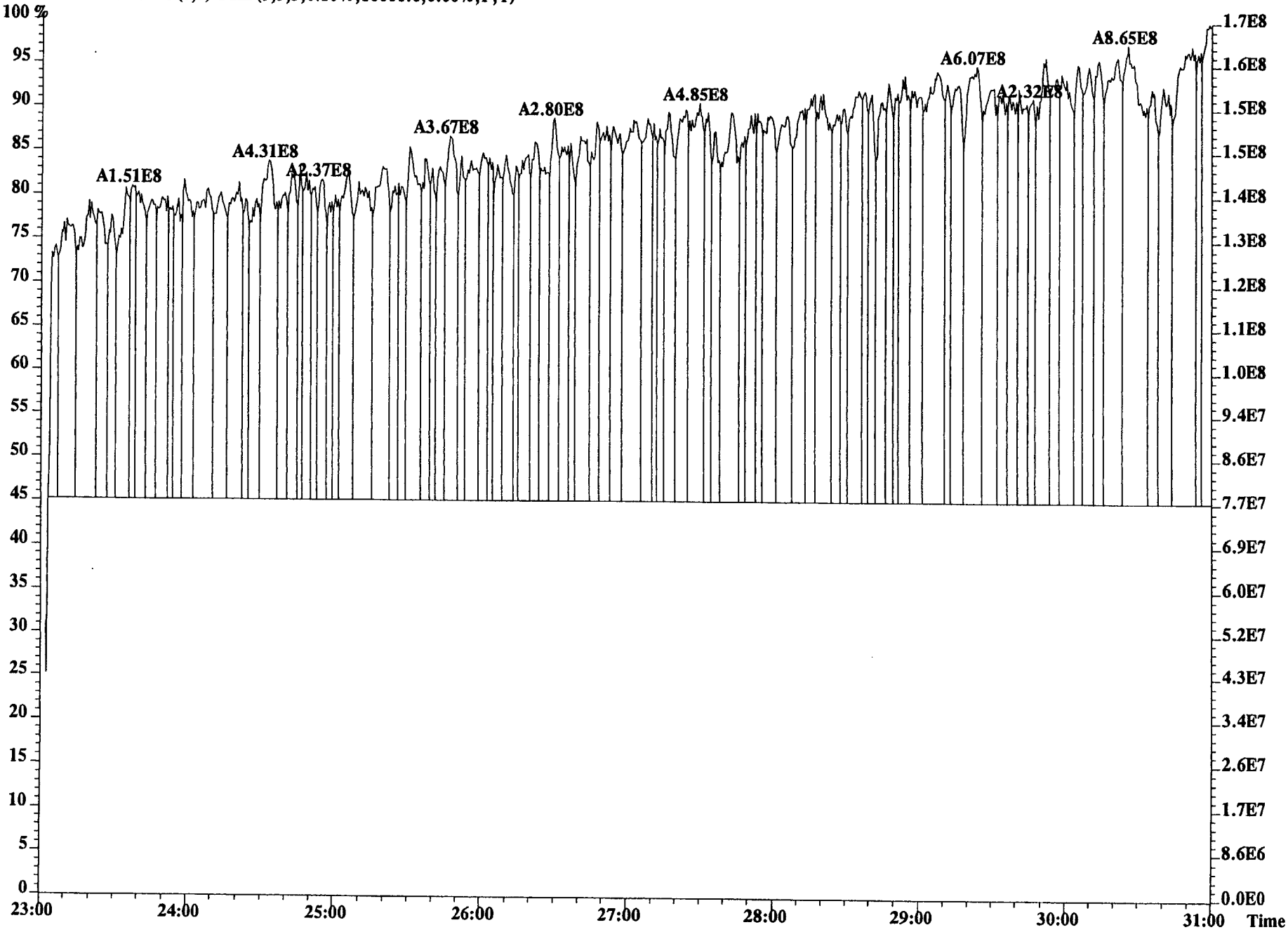
File:30OC98V4 #1-938 Acq:30-OCT-1998 22:28:39 GC EI+ Voltage SIR 70SE
Sample#8 Text:301802-5 :10X DIL. : : : Exp:PAHAIR
228.0939 S:8 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

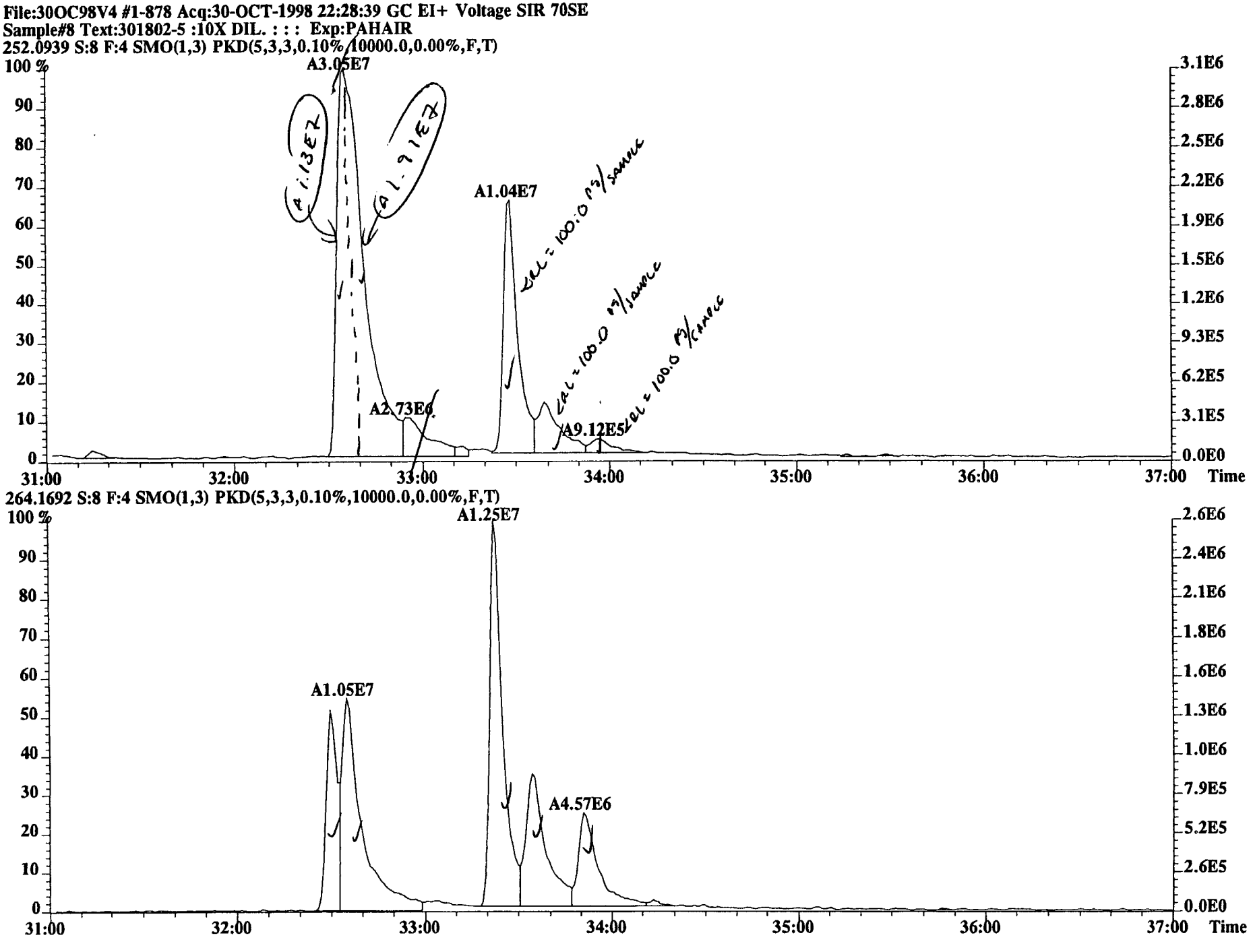


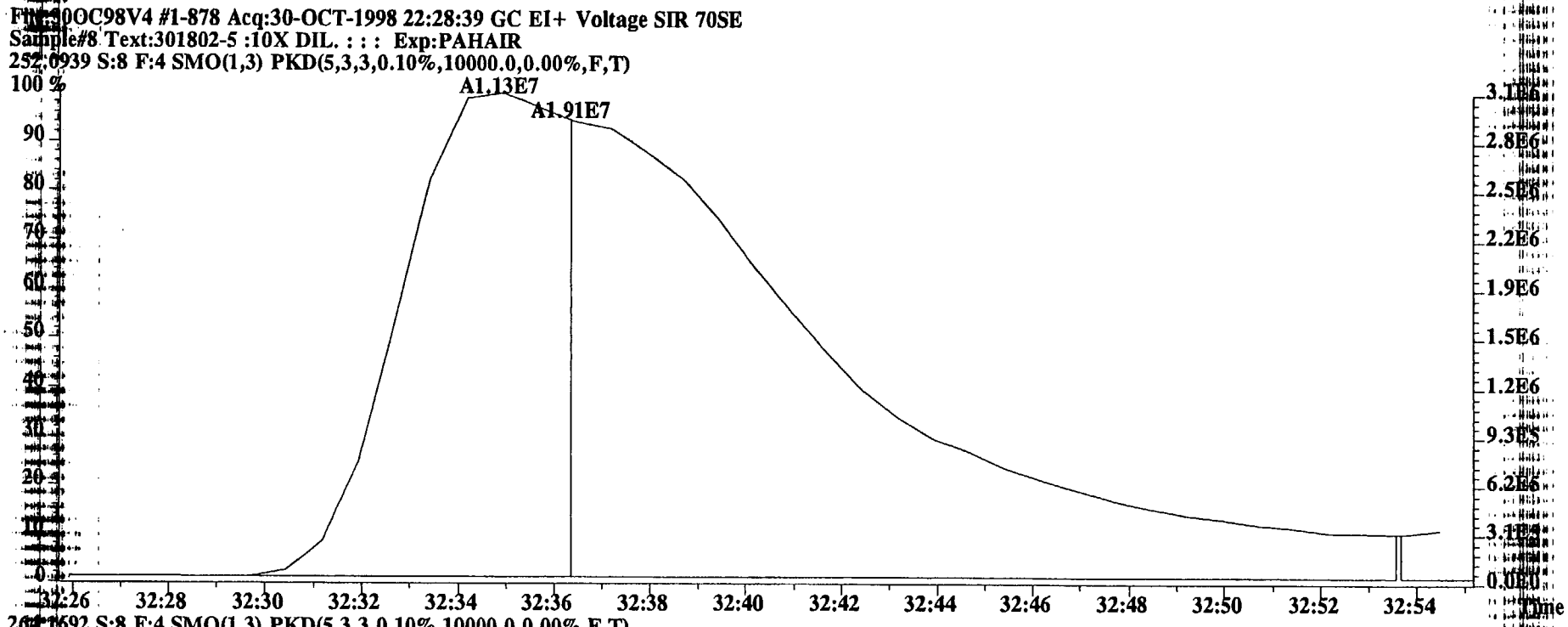
240.1692 S:8 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

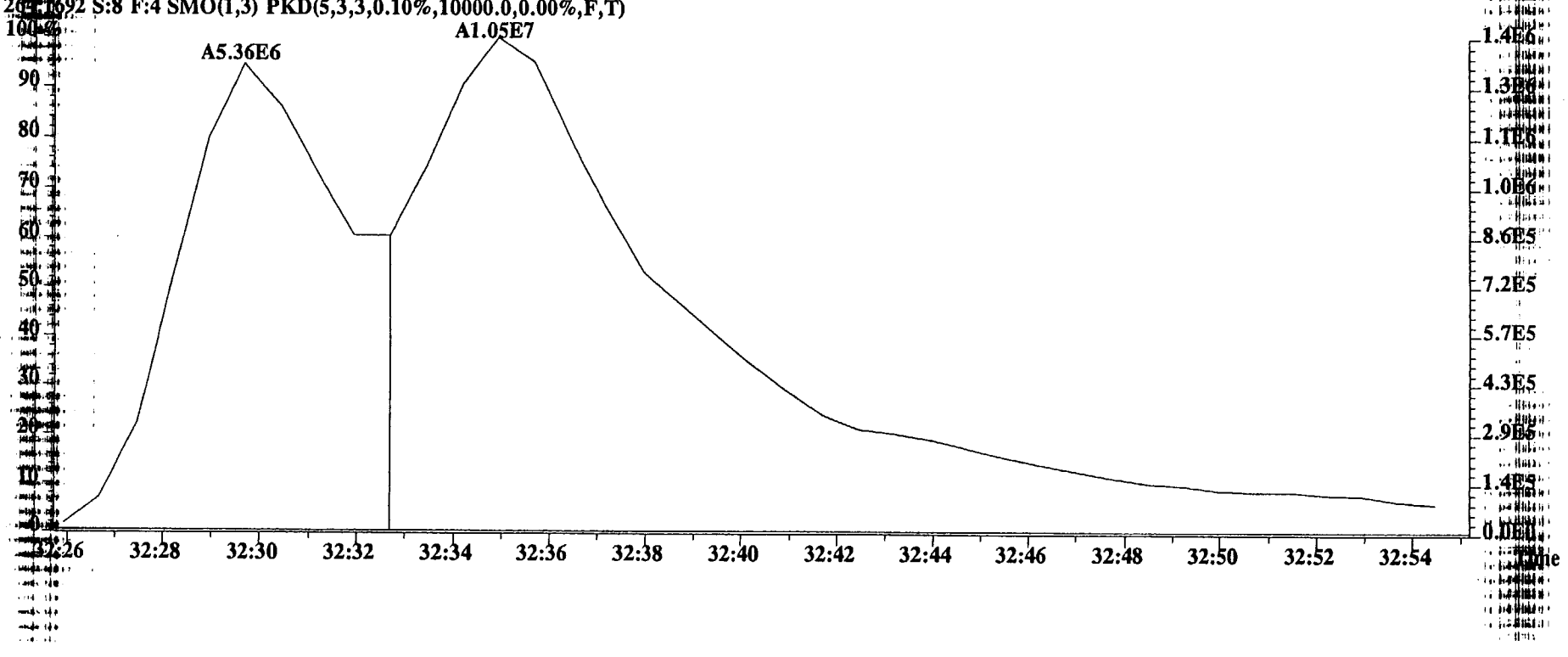


File:30OC98V4 #1-938 Acq:30-OCT-1998 22:28:39 GC EI+ Voltage SIR 70SE
Sample#8 Text:301802-5 :10X DIL. : : : Exp:PAHAIR
230.9856 S:8 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

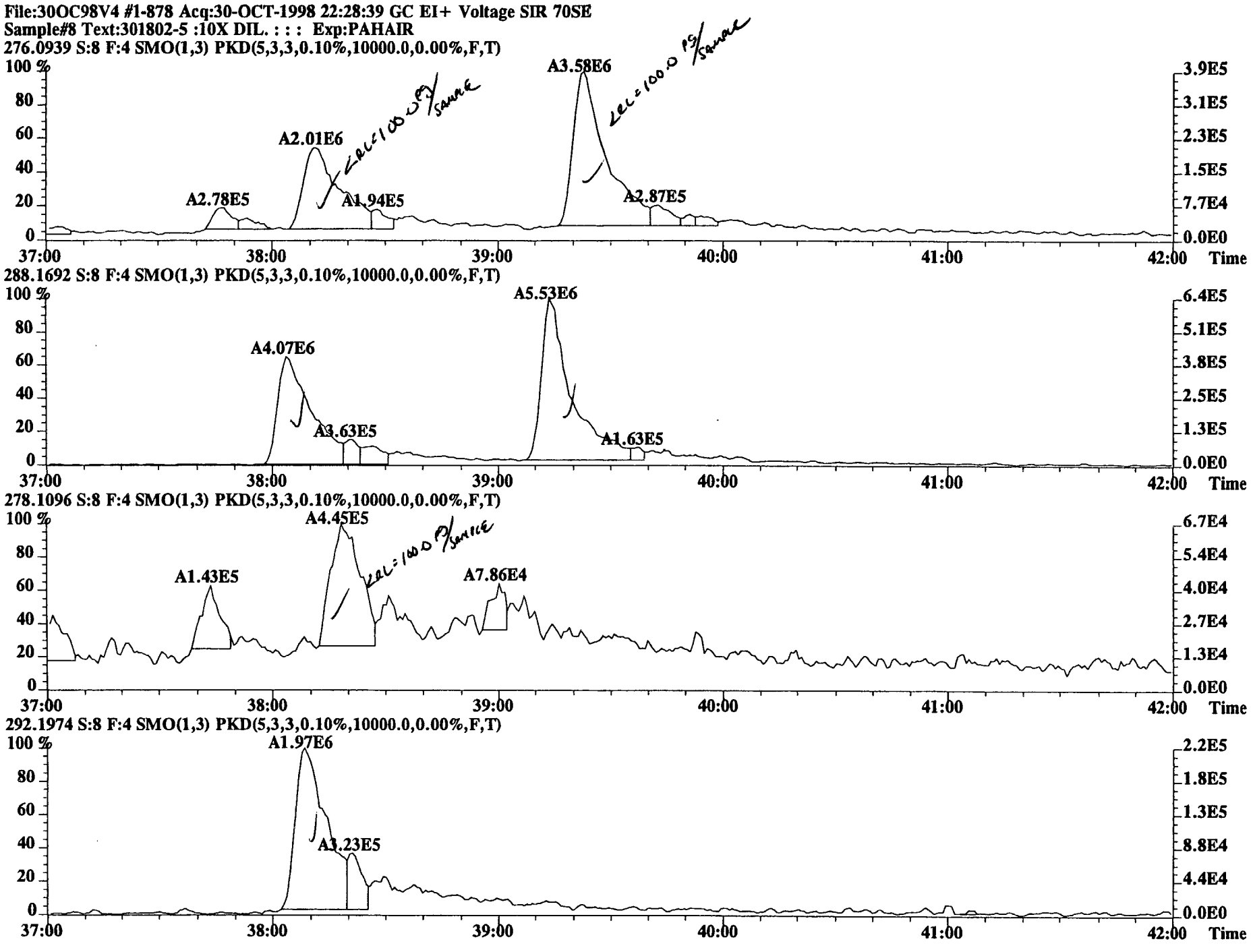


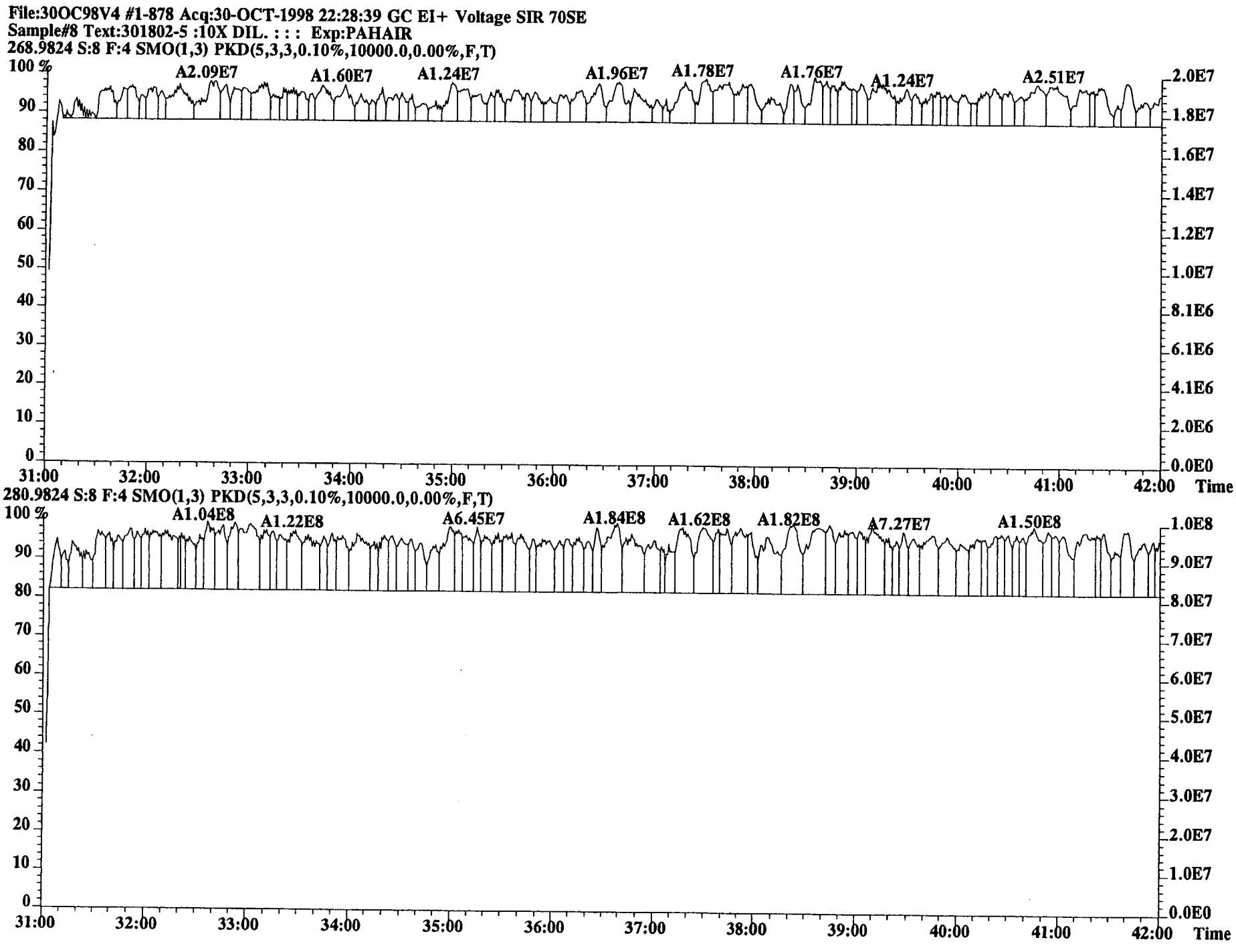

File:30OC98V4 #1-878 Acq:30-OCT-1998 22:28:39 GC EI+ Voltage SIR 70SE
Sample#8 Text:301802-5 :10X DIL. : : : Exp:PAHAIR
252.0939 S:8 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.05E7
A1.13E7
A1.91E7
A1.04E7
A2.73E6
A9.12E5
264.1692 S:8 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.25E7
A1.05E7
A4.57E6
Time


FI300C98V4 #1-878 Acq:30-OCT-1998 22:28:39 GC EI+ Voltage SIR 70SE
Sample#8 Text:301802-5 :10X DIL. : : : Exp:PAHAIR
252.0939 S:8 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.13E7
A1.91E7
100 %
90
80
70
60
50
40
30
20
10
0
32:26
32:28
32:30
32:32
32:34
32:36
32:38
32:40
32:42
32:44
32:46
32:48
32:50
32:52
32:54
Time
3.1E6
2.8E6
2.5E6
2.2E6
1.9E6
1.5E6
1.2E6
9.3E5
6.2E6
3.1E5
0.0E0


276.1692 S:8 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A5.36E6
A1.05E7
100 %
90
80
70
60
50
40
30
20
10
0
32:26
32:28
32:30
32:32
32:34
32:36
32:38
32:40
32:42
32:44
32:46
32:48
32:50
32:52
32:54
Time
1.4E6
1.3E6
1.1E6
1.0E6
8.6E5
7.2E5
5.7E5
4.3E5
2.9E5
1.4E5
0.0E0

236


File:30OC98V4 #1-878 Acq:30-OCT-1998 22:28:39 GC EI+ Voltage SIR 70SE
Sample#8 Text:301802-5 :10X DIL. : : : Exp:PAHAIR
276.0939 S:8 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.78E5
A2.01E6
A1.94E5
A3.58E6
A2.87E5
288.1692 S:8 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.07E6
A3.63E5
A5.53E6
A1.63E5
278.1096 S:8 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.43E5
A4.45E5
A7.86E4
292.1974 S:8 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.97E6
A3.23E5
100 %
80
60
40
20
0
37:00
38:00
39:00
40:00
41:00
42:00
Time
3.9E5
3.1E5
2.3E5
1.5E5
7.7E4
0.0E0
6.4E5
5.1E5
3.8E5
2.5E5
1.3E5
6.7E4
5.4E4
4.0E4
2.7E4
1.3E4
2.2E5
1.8E5
1.3E5
8.8E4
4.4E4


File:30OC98V4 #1-878 Acq:30-OCT-1998 22:28:39 GC EI+ Voltage SIR 70SE
Sample#8 Text:301802-5 :10X DIL. : : : Exp:PAHAIR
268.9824 S:8 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.09E7
A1.60E7
A1.24E7
A1.96E7
A1.78E7
A1.76E7
A1.24E7
A2.51E7
280.9824 S:8 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.04E8
A1.22E8
A6.45E7
A1.84E8
A1.62E8
A1.82E8
A7.27E7
A1.50E8
Time

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-O-429-3
Lab ID: 301802-0006-SA
Matrix: AIRTRAIN Sampled: 23 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 30 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	110000	ng/sample	--	BD
2-Methylnaphthalene	36000	ng/sample	--	B
Acenaphthylene	17000	ng/sample	--	
Acenaphthene	3500	ng/sample	--	
Fluorene	8800	ng/sample	--	
Phenanthrene	27000	ng/sample	--	BD
Anthracene	5100	ng/sample	--	
Fluoranthene	12000	ng/sample	--	
Pyrene	6400	ng/sample	--	
Benzo(a)anthracene	240	ng/sample	--	
Chrysene	690	ng/sample	--	
Benzo(b)fluoranthene	210	ng/sample	--	
Benzo(k)fluoranthene	140	ng/sample	--	
Benzo(e)pyrene	110	ng/sample	--	
Benzo(a)pyrene	ND	ng/sample	100	
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
D = Compound quantitated using a secondary dilution.
ND = Not Detected

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-0-429-3
Lab ID: 301802-0006-SA
Matrix: AIRTRAIN Sampled: 23 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 30 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	65	D
Acenaphthylene-d8	85	
Acenaphthene-d10	82	
Fluorene-d10	75	
Phenanthrene-d10	107	D
Fluoranthene-d10	69	
Pyrene-d10	63	
Benzo(a)anthracene-d12	80	
Perylene-d12	58	
Indeno(123-cd)pyrene-d12	80	
Chrysene-d12	85	
Benzo(b)fluoranthene-d12	88	
Benzo(k)fluoranthene-d12	87	
Benzo(a)pyrene-d12	73	
Dibenz(a,h)anthracene-d14	81	
Benzo(g,h,i)perylene-d12	66	

Field Surrogates	% Recovery
13C-Fluorene	117

D = Compound quantitated using a secondary dilution.

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

04-NOV-1998 05:35:54 PM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4
GC Column : DB-5
Data file : 30OC98V4
Weight : 0.5

Results : 30OC98V4091.RES : PAHAIR.TRG
Date analyzed : 30-OCT-98
301802-6 :10X DIL. : : Ex Cal : PAHAIR102998V4.R

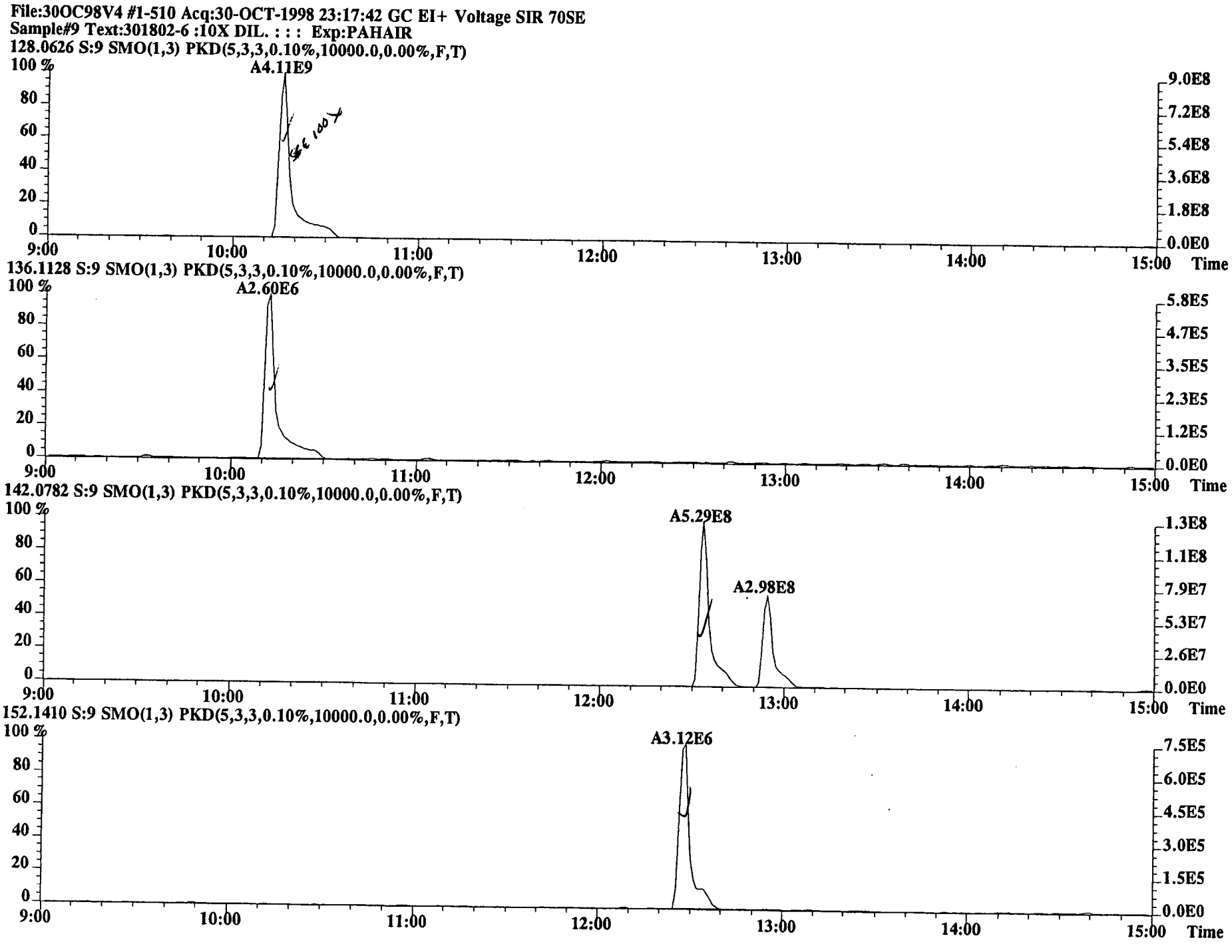
Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMP	Rec/ MDL	
d10-2-Methylnaphthalene	6247200	1.00	Y	12: 28	Y	1.00	50.00		
d8-Naphthalene	5191140	1.00	Y	10: 12	Y	2.24	18.54	37	
Naphthalene	8214020000	1.00	Y	10: 16	Y	1.23	-	SAT'D	
2-Methylnaphthalene	1057434000	1.00	Y	12: 34	Y	0.56	3.6e+04	B E	
d8-Acenaphthylene	6416360	1.00	Y	15: 28	Y	1.21	42.31	85	
Acenaphthylene	1053276000	1.00	Y	15: 30	Y	0.94	1.7e+04	E	
d10-Acenaphthene	3816800	1.00	Y	16: 1	Y	0.74	41.03	82	
Acenaphthene	167765400	1.00	Y	16: 7	Y	1.25	3527.38		
d10-Anthracene	4361140	1.00	Y	20: 55	Y	1.00	50.00		
d10-Fluorene	4675320	1.00	Y	17: 41	Y	1.42	37.72	75	
Fluorene	478978000	1.00	Y	17: 47	Y	1.16	8827.80	E	
d10-Phenanthrene	11780000	1.00	Y	20: 45	Y	2.81	48.10	96	
Phenanthrene	5372860000	1.00	Y	20: 49	Y	0.89	-	SAT'D	
Anthracene	480000000	1.00	Y	20: 59	Y	0.80	5090.82	E	
d14-Terphenyl	13510060	1.00	Y	26: 0	Y	1.00	50.00		
d10-Fluoranthene	13174340	1.00	Y	24: 35	Y	1.41	34.56	69	
Fluoranthene	1730908000	1.00	Y	24: 39	Y	1.11	1.2e+04	E	
d10-Pyrene	12865500	1.00	Y	25: 17	Y	1.52	31.36	63	
Pyrene	984552000	1.00	Y	25: 20	Y	1.21	6350.44	E	
d12-Benzo(a)anthracene	9716100	1.00	Y	29: 8	Y	0.90	39.95	80	
Benzo(a)anthracene	28070400	1.00	Y	29: 13	Y	1.20	239.85		
d12-Chrysene	14713300	1.00	Y	29: 15	Y	1.28	42.57	85	
Chrysene	109988000	1.00	Y	29: 20	Y	1.08	689.63		
d12-Benzo(e)pyrene	25220400	1.00	Y	33: 22	Y	1.00	50.00		
d12-Benzo(b)fluoranthene	10080440	1.00	Y	32: 30	Y	0.45	44.03	88	
Benzo(b)fluoranthene	24200000	1.00	Y	32: 34	Y	1.17	205.67		
d12-Benzo(k)fluoranthene	20916200	1.00	Y	32: 35	Y	0.95	43.74	87	
Benzo(k)fluoranthene	34800000	1.00	Y	32: 38	Y	1.16	142.92		
d12-Benzo(a)pyrene	12479520	1.00	Y	33: 34	Y	0.68	36.56	73	
Benzo(e)pyrene	22107800	1.00	Y	33: 28	Y	1.64	107.97		
Benzo(a)pyrene	7248280	1.00	Y	33: 39	Y	1.07	<RL=100.00		
d12-Perylene	9256060	1.00	Y	33: 51	Y	0.63	29.12	58	
Perylene	* No Peak	0.00	N	33: 55	N	1.71	<RL=100.00		
d12-Indeno(123-cd)pyrene	9019300	1.00	Y	38: 4	Y	0.44	40.22	80	
Indeno(123-cd)pyrene	4096560	1.00	Y	38: 11	Y	0.62	<RL=100.00		
d14-Dibenz(ah)anthracene	5021960	1.00	Y	38: 9	Y	0.25	40.50	81	
Dibenz(ah)anthracene	681544	1.00	Y	38: 16	Y	1.40	<RL=100.00		
d12-Benzo(ghi)perylene	9675900	1.00	Y	39: 14	Y	0.58	33.09	66	
Benzo(ghi)perylene	7685780	1.00	Y	39: 23	Y	1.02	<RL=100.00		
d10-Fluorene	4675320	1.00	Y	17: 41	Y	1.00	50.00		
13C-Fluorene	4440900	1.00	Y	17: 46	Y	0.81	58.63	117	

	0.5
98V4.RRF	
Rec/ MDL	
	3123600 3123600
37	2595570 2595570
SAT'D	4107010000 4107010000
B E	528717000 528717000
85	3208180 3208180
E	526638000 526638000
82	1908400 1908400
	83882700 83882700
	2180570 2180570
75	2337660 2337660
E	239489000 239489000
96	5890000 5890000
SAT'D	2686430000 2686430000
E	240000000 240000000
	6755030 6755030
69	6587170 6587170
E	865454000 865454000
63	6432750 6432750
E	492276000 492276000
80	4858050 4858050
	14035200 14035200
85	7356650 7356650
	54994000 54994000
	12610200 12610200
88	5040220 5040220
	12100000 12100000
87	10458100 10458100
	17400000 17400000
73	6239760 6239760
	11053900 11053900
100.00	3624140 3624140
58	4628030 4628030
100.00	0 0
80	4509650 4509650
100.00	2048280 2048280
81	2510980 2510980
100.00	340772 340772
66	4837950 4837950
100.00	3842890 3842890

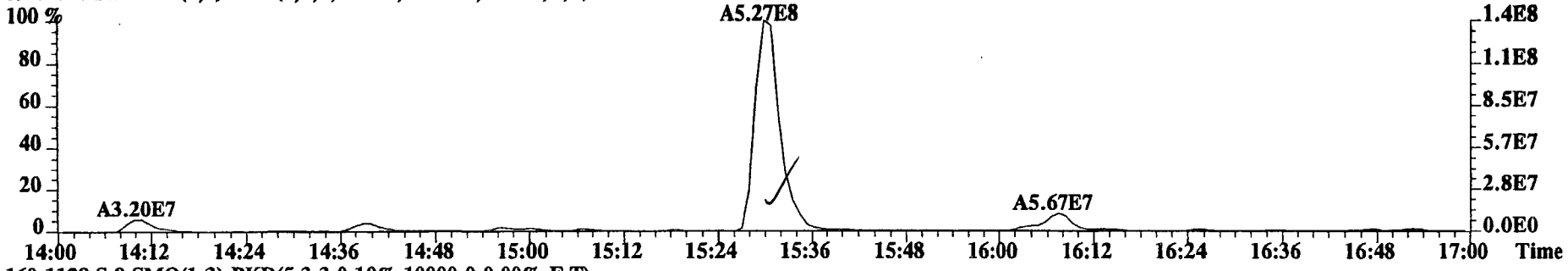
02-NOV-1998 08:52:06 AM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4 Results : 30OC98V4091.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 30-OCT-98
Data file : 30OC98V4 301802-6 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

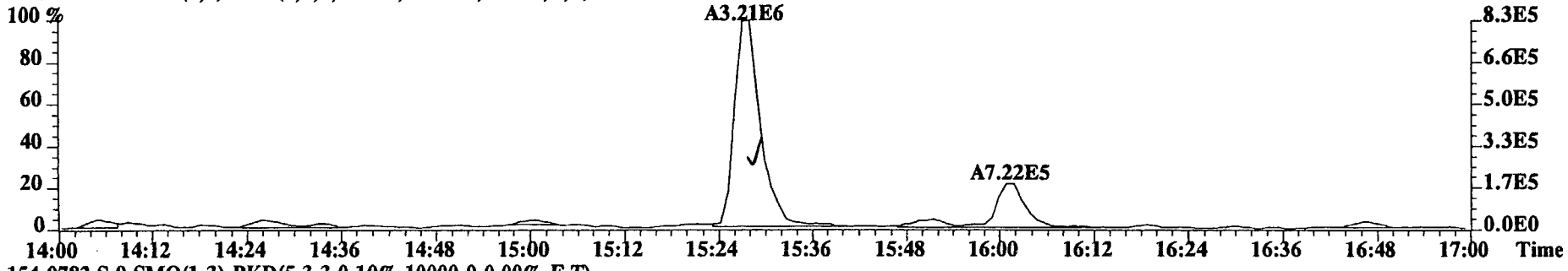
Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMP	Rec/ MDL
d10-2-Methylnaphthalene	6247200	1.00	Y	12: 28	Y	1.00	50.00	
d8-Naphthalene	5191140	1.00	Y	10: 12	Y	2.24	18.54	37
Naphthalene	8214020000	1.00	Y	10: 16	Y	1.23	1.3e+05	0.000
2-Methylnaphthalene	1057434000	1.00	Y	12: 34	Y	0.56	3.6e+04	0.000
d8-Acenaphthylene	6416360	1.00	Y	15: 28	Y	1.21	42.31	85
Acenaphthylene	1053276000	1.00	Y	15: 30	Y	0.94	1.7e+04	0.000
d10-Acenaphthene	3816800	1.00	Y	16: 1	Y	0.74	41.03	82
Acenaphthene	167765400	1.00	Y	16: 7	Y	1.25	3527.38	0.000
d10-Anthracene	4361140	1.00	Y	20: 55	Y	1.00	50.00	
d10-Fluorene	4675320	1.00	Y	17: 41	Y	1.42	37.72	75
Fluorene	478978000	1.00	Y	17: 47	Y	1.16	8827.80	0.000
d10-Phenanthrene	11988160	1.00	Y	20: 45	Y	2.81	48.95	98
Phenanthrene	5372860000	1.00	Y	20: 49	Y	0.89	5.0e+04	0.000
Anthracene	* No Peak	0.00	N	20: 59	N	0.80	0.00	0.000
d14-Terphenyl	13510060	1.00	Y	26: 0	Y	1.00	50.00	
d10-Fluoranthene	13174340	1.00	Y	24: 35	Y	1.41	34.56	69
Fluoranthene	1730908000	1.00	Y	24: 39	Y	1.11	1.2e+04	0.000
d10-Pyrene	12865500	1.00	Y	25: 17	Y	1.52	31.36	63
Pyrene	984552000	1.00	Y	25: 20	Y	1.21	6350.44	0.000
d12-Benzo(a)anthracene	9716100	1.00	Y	29: 8	Y	0.90	39.95	80
Benzo(a)anthracene	28070400	1.00	Y	29: 13	Y	1.20	239.85	0.000
d12-Chrysene	14713300	1.00	Y	29: 15	Y	1.28	42.57	85
Chrysene	109988000	1.00	Y	29: 20	Y	1.08	689.63	0.000
d12-Benzo(e)pyrene	25220400	1.00	Y	33: 22	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	10080440	1.00	Y	32: 30	Y	0.45	44.03	88
Benzo(b)fluoranthene	58691800	1.00	Y	32: 34	Y	1.17	498.81	0.000
d12-Benzo(k)fluoranthene	20916200	1.00	Y	32: 35	Y	0.95	43.74	87
Benzo(k)fluoranthene	58691800	1.00	Y	32: 34	Y	1.16	241.04	0.000
d12-Benzo(a)pyrene	12479520	1.00	Y	33: 34	Y	0.68	36.56	73
Benzo(e)pyrene	22107800	1.00	Y	33: 28	Y	1.64	107.97	0.000
Benzo(a)pyrene	7248280	1.00	Y	33: 39	Y	1.07	54.18	0.000
d12-Perylene	9256060	1.00	Y	33: 51	Y	0.63	29.12	58
Perylene	* No Peak	0.00	N	33: 55	N	1.71	0.00	0.000
d12-Indeno(123-cd)pyrene	9019300	1.00	Y	38: 4	Y	0.44	40.22	80
Indeno(123-cd)pyrene	4096560	1.00	Y	38: 11	Y	0.62	73.15	0.000
d14-Dibenz(ah)anthracene	5021960	1.00	Y	38: 9	Y	0.25	40.50	81
Dibenz(ah)anthracene	681544	1.00	Y	38: 16	Y	1.40	9.67	0.000
d12-Benzo(ghi)perylene	9675900	1.00	Y	39: 14	Y	0.58	33.09	66
Benzo(ghi)perylene	7685780	1.00	Y	39: 23	Y	1.02	78.18	0.000
d10-Fluorene	4675320	1.00	Y	17: 41	Y	1.42	6.52	13
13C-Fluorene	4440900	1.00	Y	17: 46	Y	1.00	94.99	0.000


File:30OC98V4 #1-510 Acq:30-OCT-1998 23:17:42 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-6 :10X DIL. : : : Exp:PAHAIR
128.0626 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.11E9
136.1128 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.60E6
142.0782 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A5.29E8
A2.98E8
152.1410 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.12E6
100 %
80
60
40
20
0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
Time
9.0E8
7.2E8
5.4E8
3.6E8
1.8E8
0.0E0
5.8E5
4.7E5
3.5E5
2.3E5
1.2E5
1.3E8
1.1E8
7.9E7
5.3E7
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3.0E5
1.5E5

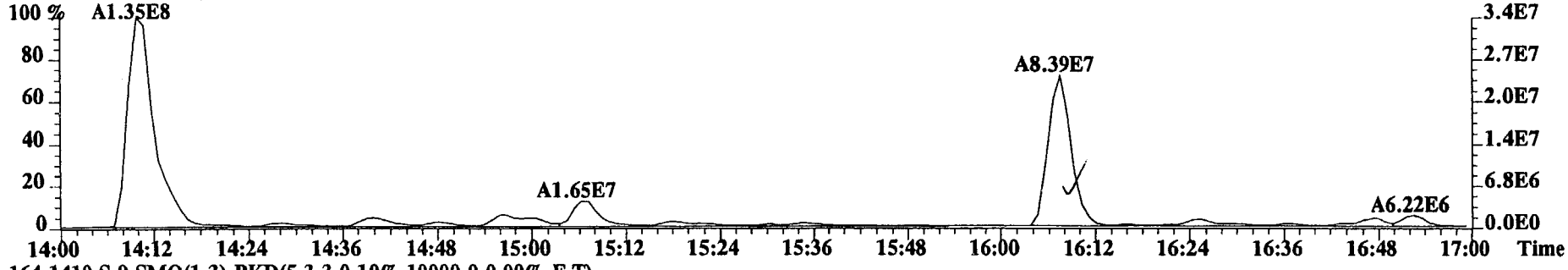
File:30OC98V4 #1-510 Acq:30-OCT-1998 23:17:42 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-6 :10X DIL. : : : Exp:PAHAIR
152.0626 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



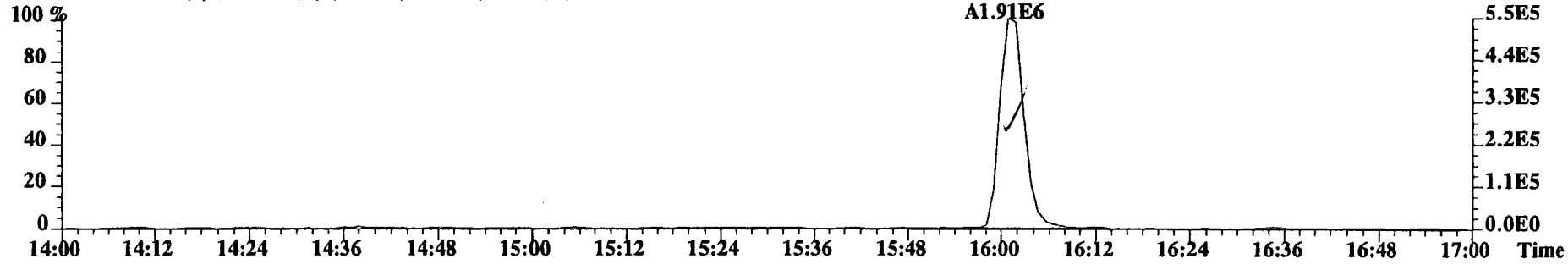
160.1128 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



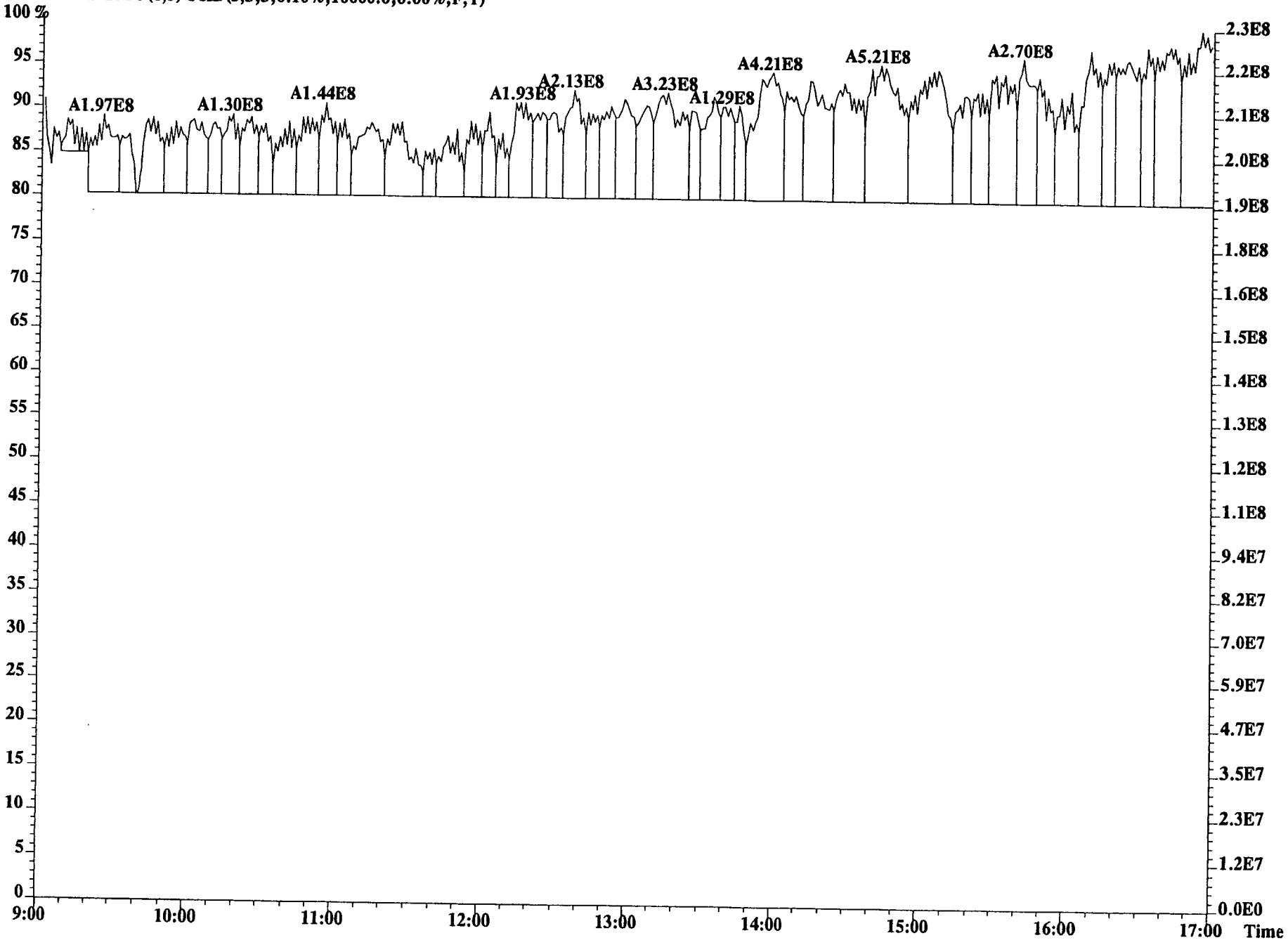
154.0782 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

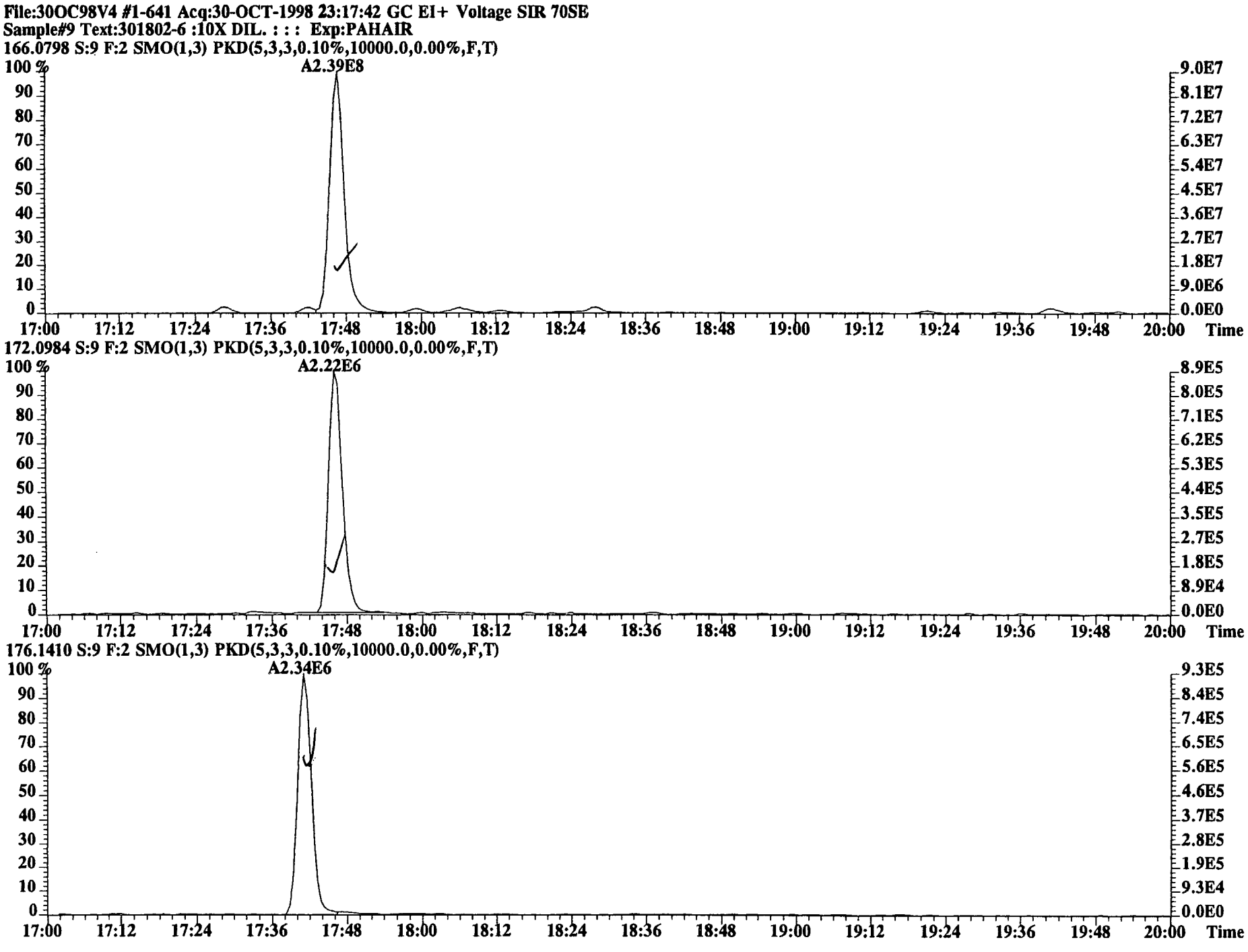


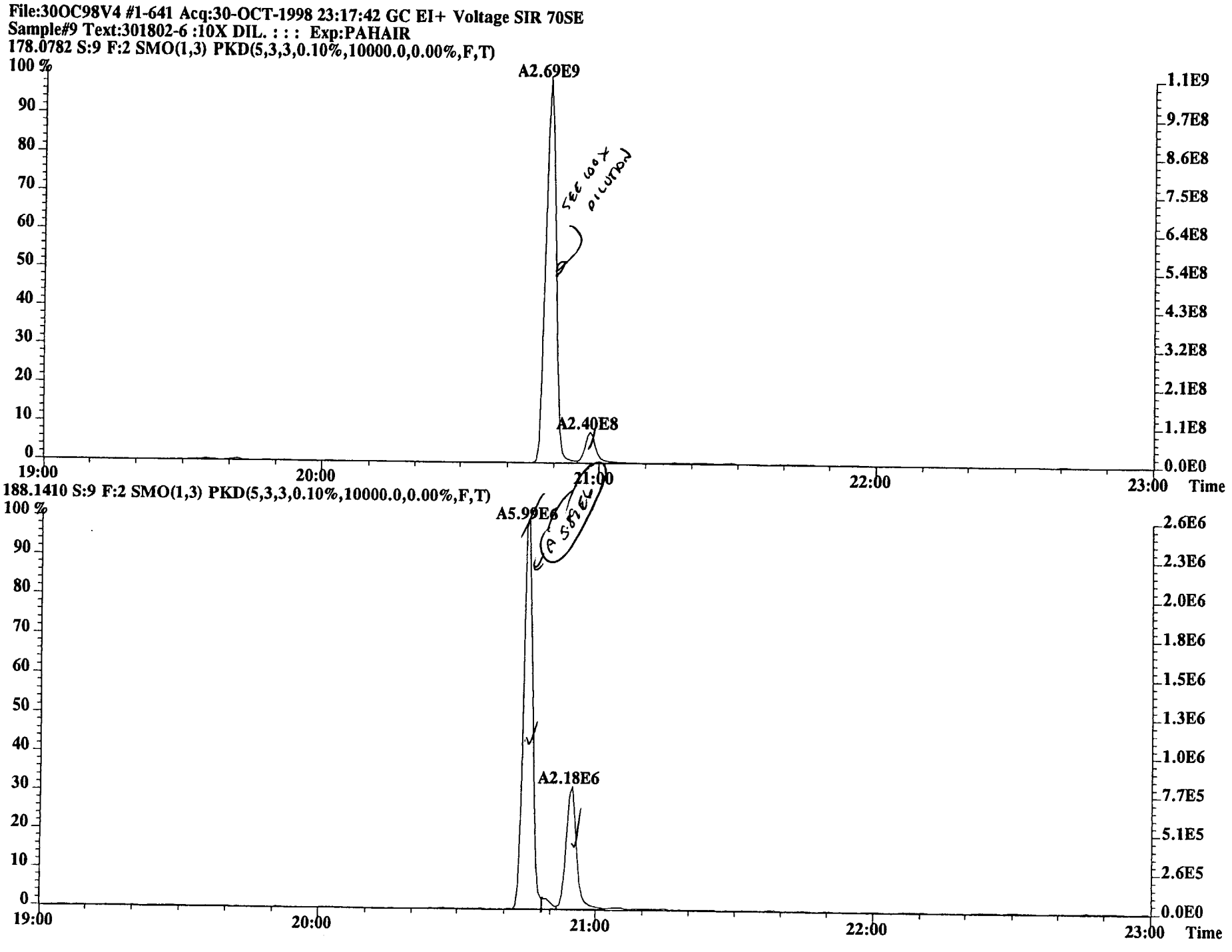
164.1410 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

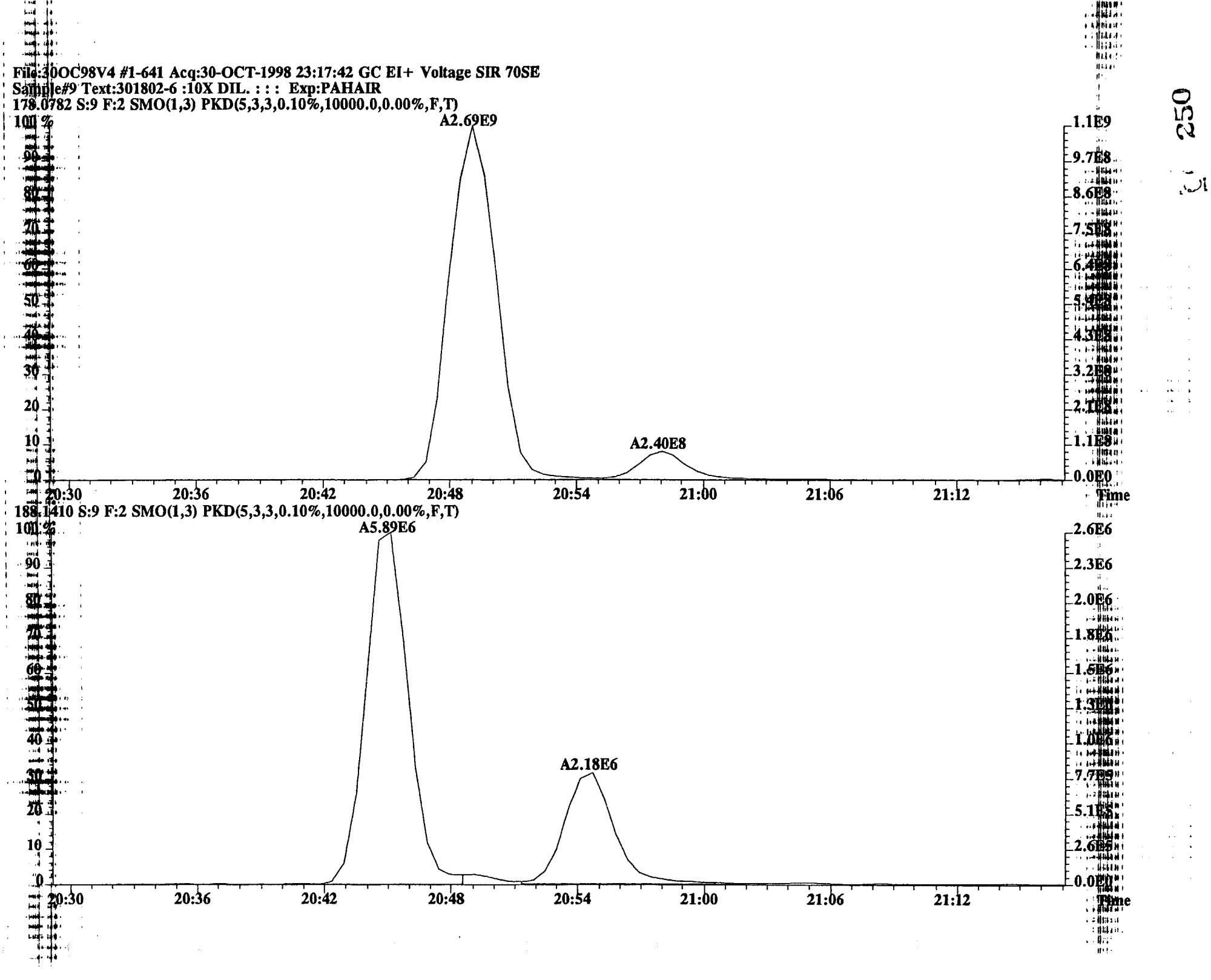


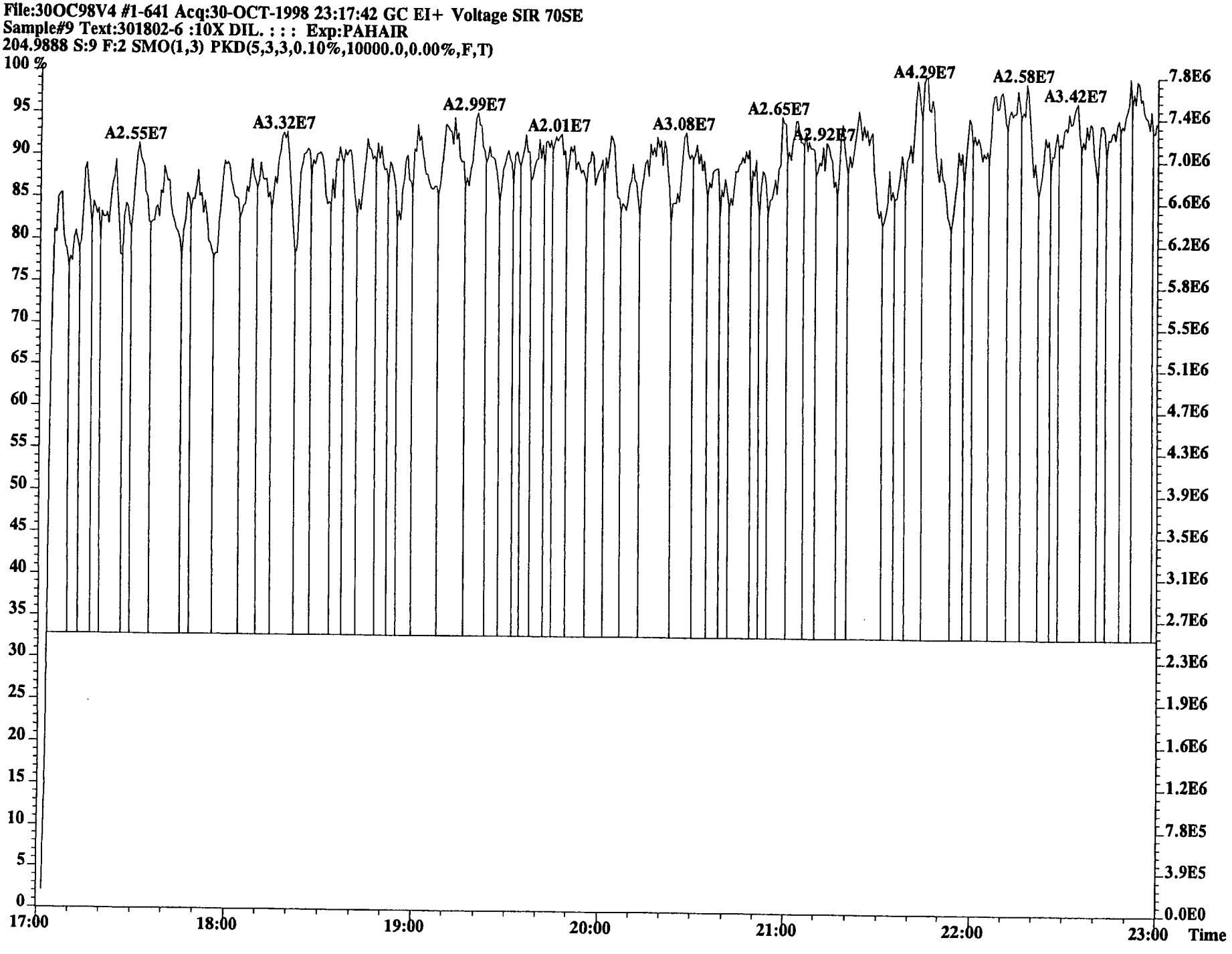
File:30OC98V4 #1-510 Acq:30-OCT-1998 23:17:42 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-6 :10X DIL. : : : Exp:PAHAIR
130.9920 S:9 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



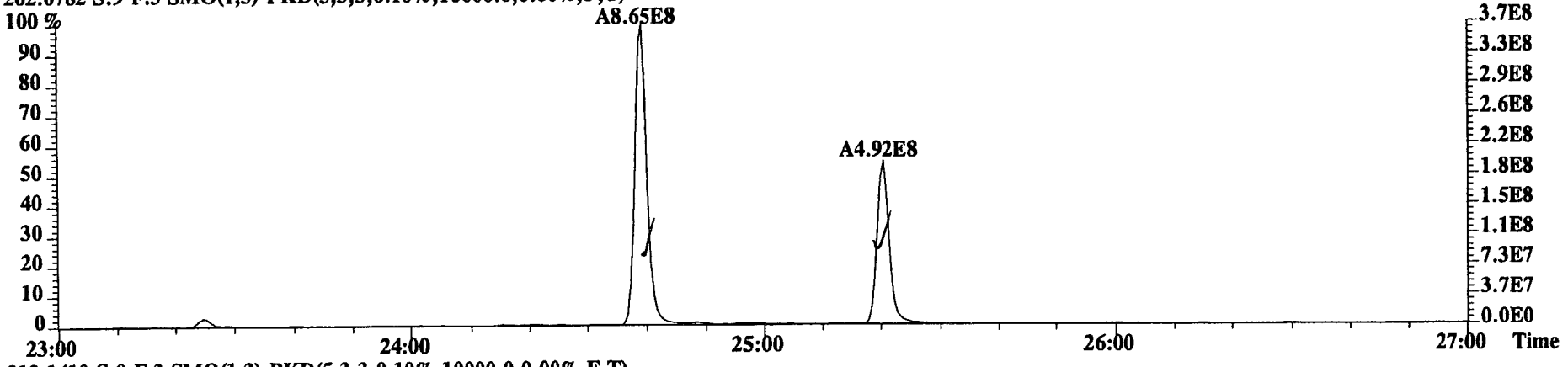

File:30OC98V4 #1-641 Acq:30-OCT-1998 23:17:42 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-6 :10X DIL. : : : Exp:PAHAIR
166.0798 S:9 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.39E8
172.0984 S:9 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.22E6
176.1410 S:9 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.34E6
100 %
90
80
70
60
50
40
30
20
10
0
9.0E7
8.1E7
7.2E7
6.3E7
5.4E7
4.5E7
3.6E7
2.7E7
1.8E7
9.0E6
0.0E0
8.9E5
8.0E5
7.1E5
6.2E5
5.3E5
4.4E5
3.5E5
2.7E5
1.8E5
8.9E4
0.0E0
9.3E5
8.4E5
7.4E5
6.5E5
5.6E5
4.6E5
3.7E5
2.8E5
1.9E5
9.3E4
0.0E0
17:00
17:12
17:24
17:36
17:48
18:00
18:12
18:24
18:36
18:48
19:00
19:12
19:24
19:36
19:48
20:00
Time


File:30OC98V4 #1-641 Acq:30-OCT-1998 23:17:42 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-6 :10X DIL. : : : Exp:PAHAIR
178.0782 S:9 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A2.69E9
SEE 100X DILUTION
A2.40E8
1.1E9
9.7E8
8.6E8
7.5E8
6.4E8
5.4E8
4.3E8
3.2E8
2.1E8
1.1E8
0.0E0
19:00
20:00
21:00
22:00
23:00
Time
188.1410 S:9 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A5.99E6
A SHOE
A2.18E6
2.6E6
2.3E6
2.0E6
1.8E6
1.5E6
1.3E6
1.0E6
7.7E5
5.1E5
2.6E5
0.0E0
19:00
20:00
21:00
22:00
23:00
Time

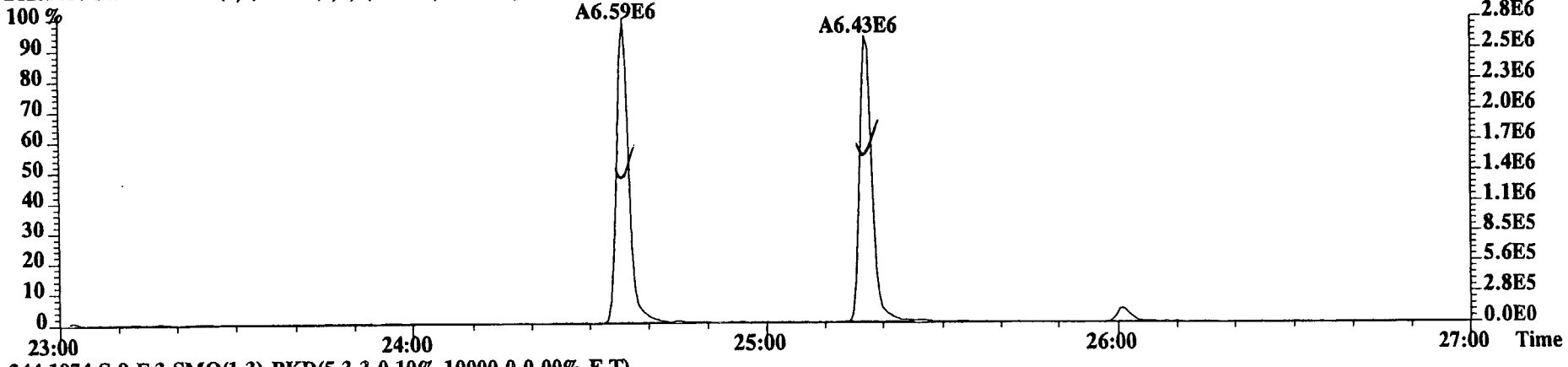

File:30OC98V4 #1-641 Acq:30-OCT-1998 23:17:42 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-6 :10X DIL. : : : Exp:PAHAIR
178.0782 S:9 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.69E9
A2.40E8
188.1410 S:9 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A5.89E6
A2.18E6
20:30
20:36
20:42
20:48
20:54
21:00
21:06
21:12
Time


File:30OC98V4 #1-641 Acq:30-OCT-1998 23:17:42 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-6 :10X DIL. : : : Exp:PAHAIR
204.9888 S:9 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A2.55E7
A3.32E7
A2.99E7
A2.01E7
A3.08E7
A2.65E7
A2.92E7
A4.29E7
A2.58E7
A3.42E7
7.8E6
7.4E6
7.0E6
6.6E6
6.2E6
5.8E6
5.5E6
5.1E6
4.7E6
4.3E6
3.9E6
3.5E6
3.1E6
2.7E6
2.3E6
1.9E6
1.6E6
1.2E6
7.8E5
3.9E5
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

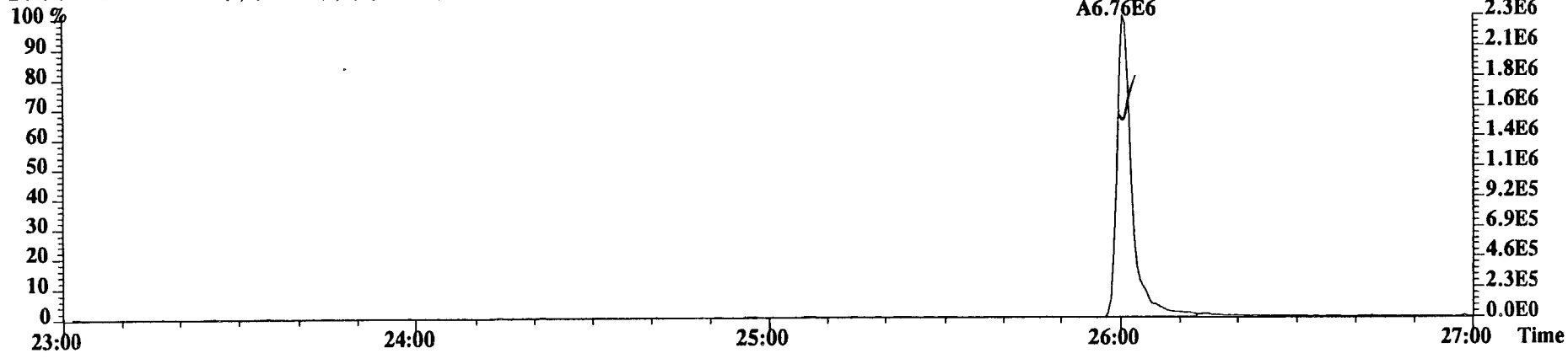
File:30OC98V4 #1-939 Acq:30-OCT-1998 23:17:42 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-6 :10X DIL. : : : Exp:PAHAIR
202.0782 S:9 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



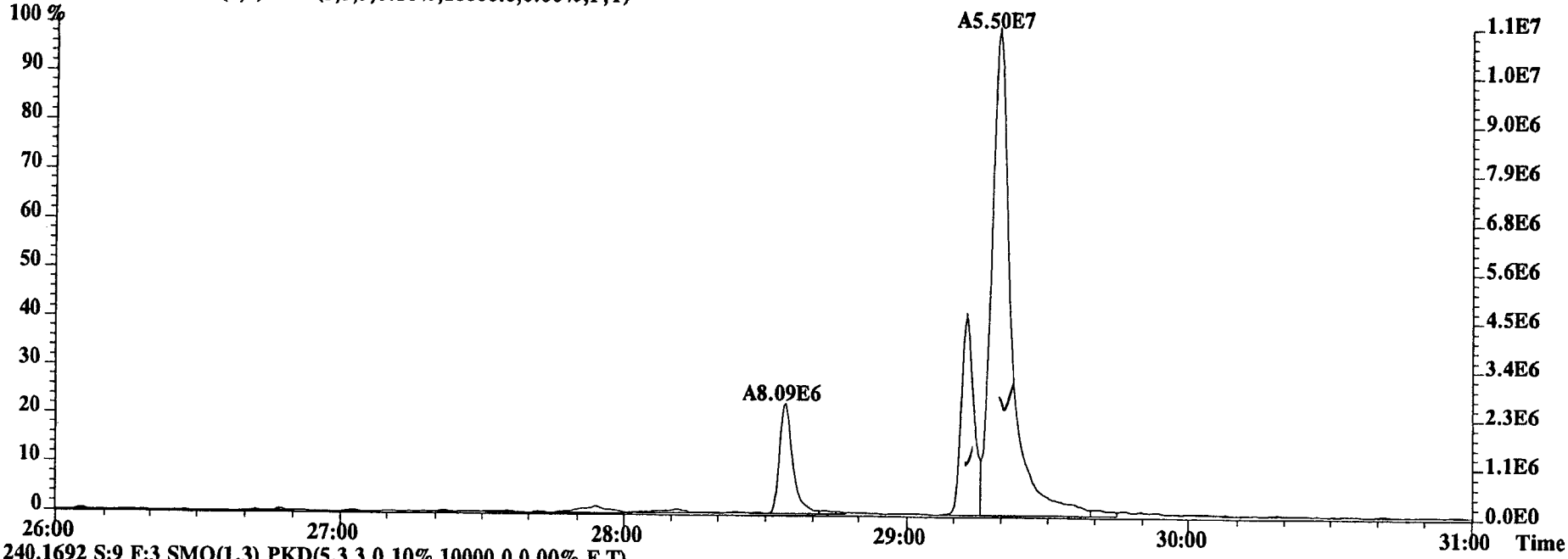
212.1410 S:9 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



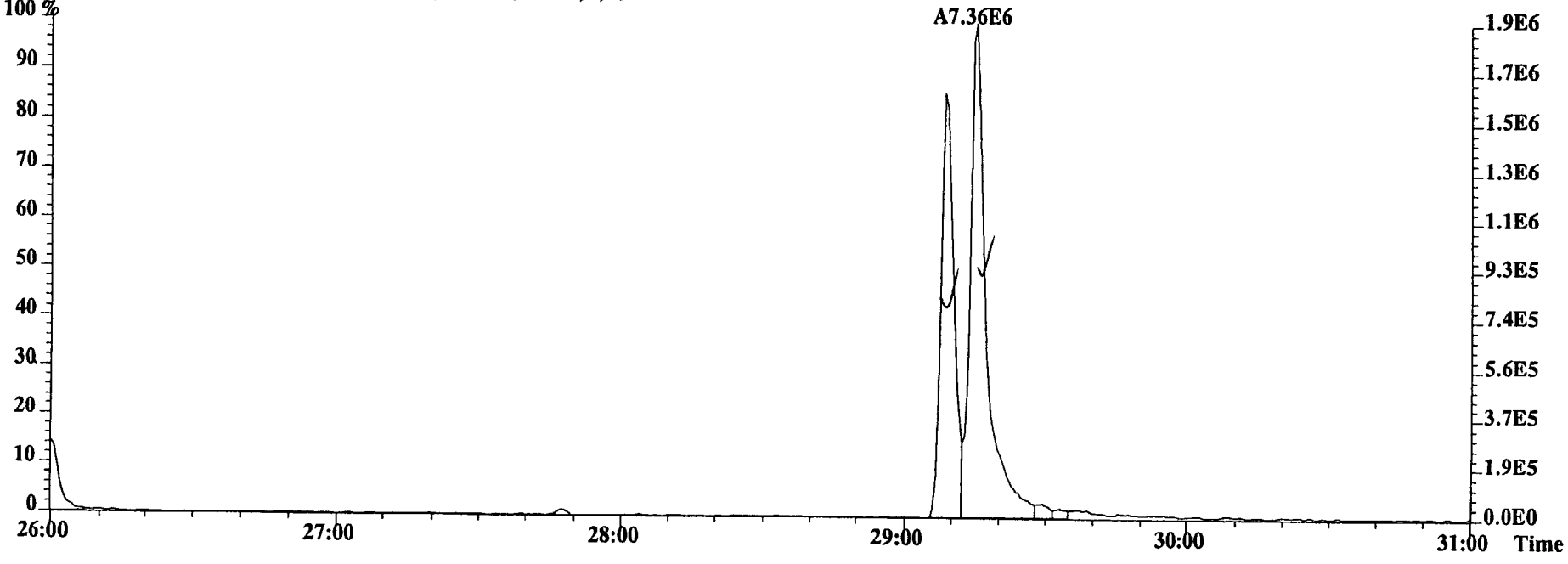
244.1974 S:9 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



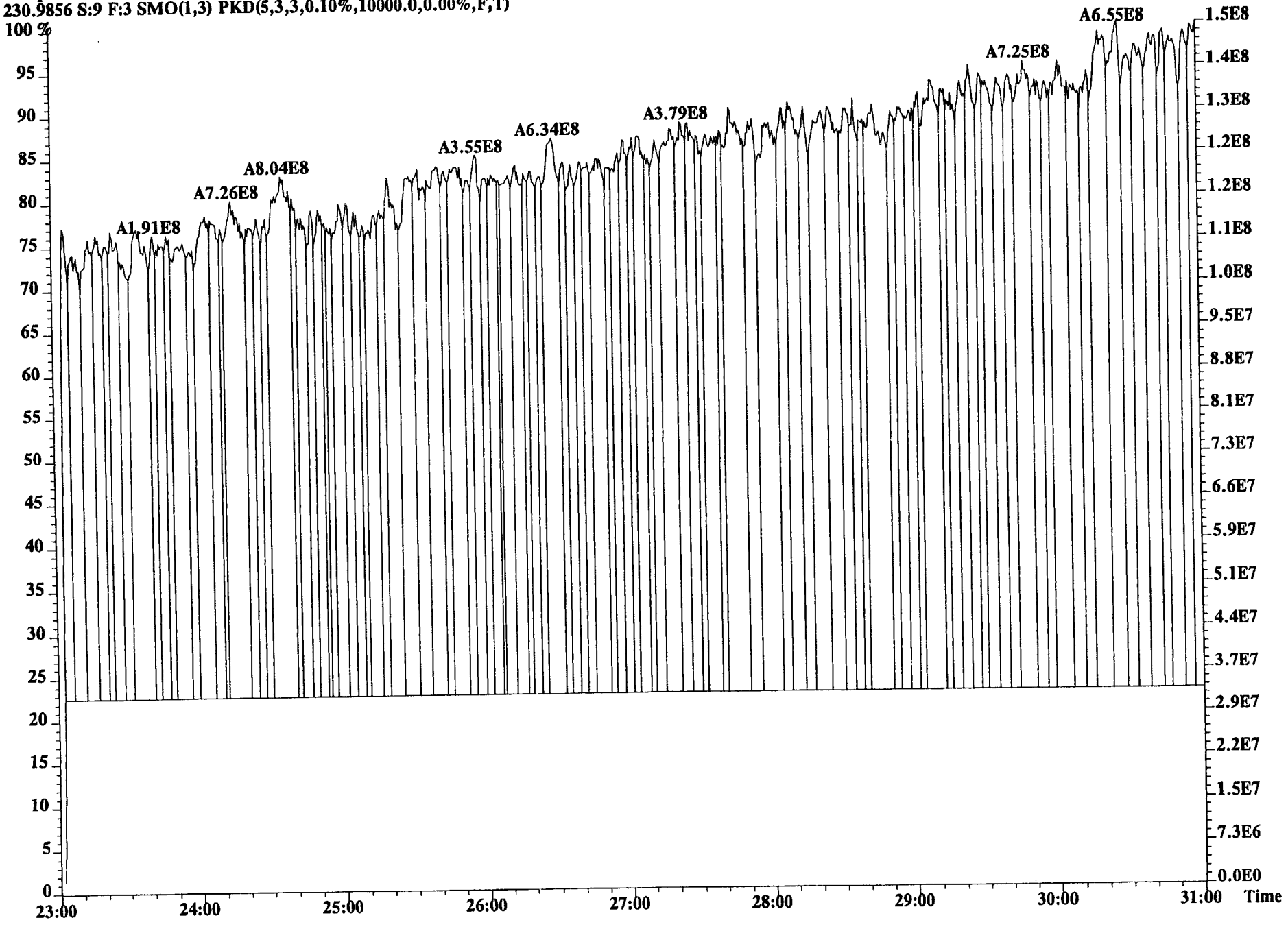
File:30OC98V4 #1-939 Acq:30-OCT-1998 23:17:42 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-6 :10X DIL. : : : Exp:PAHAIR
228.0939 S:9 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

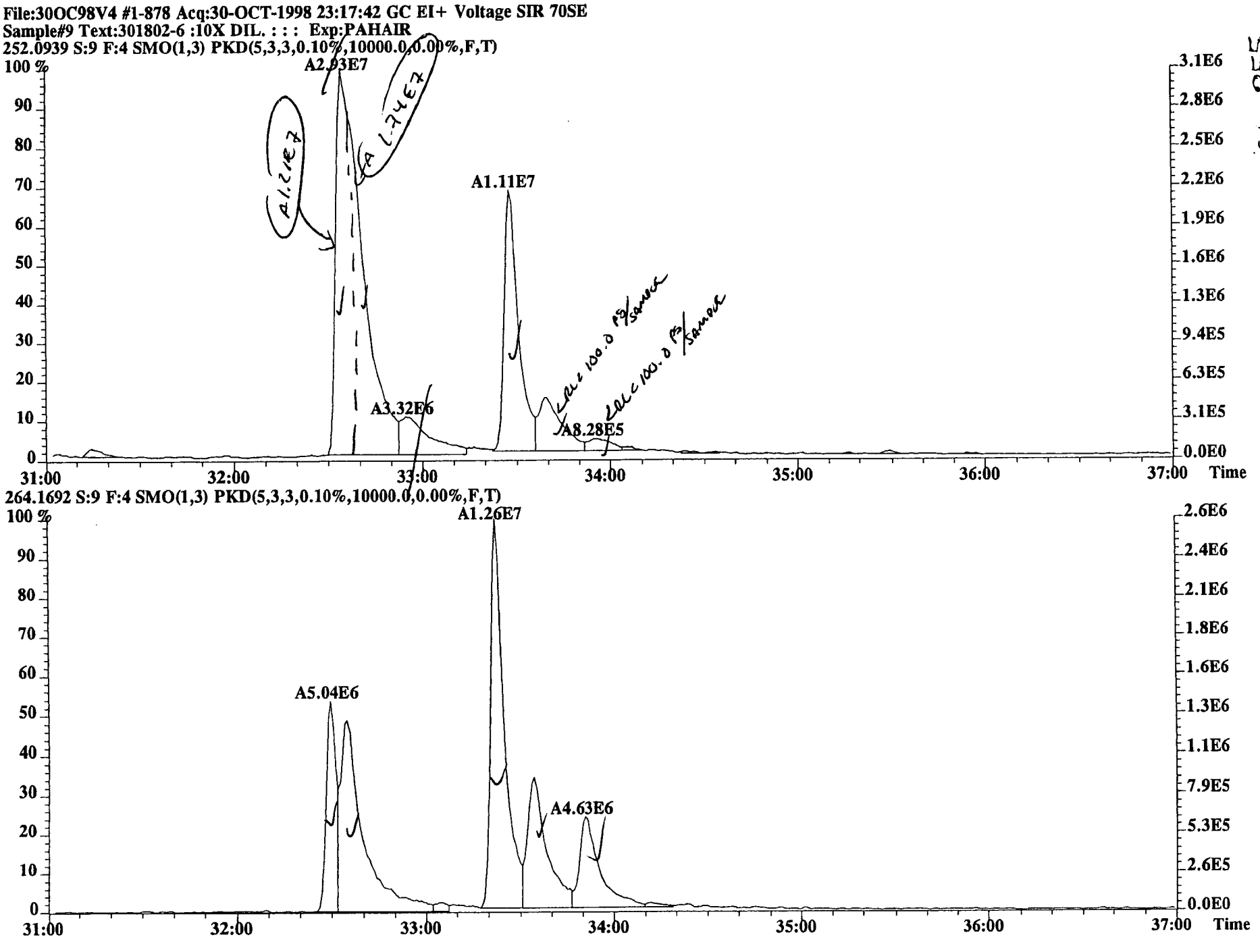


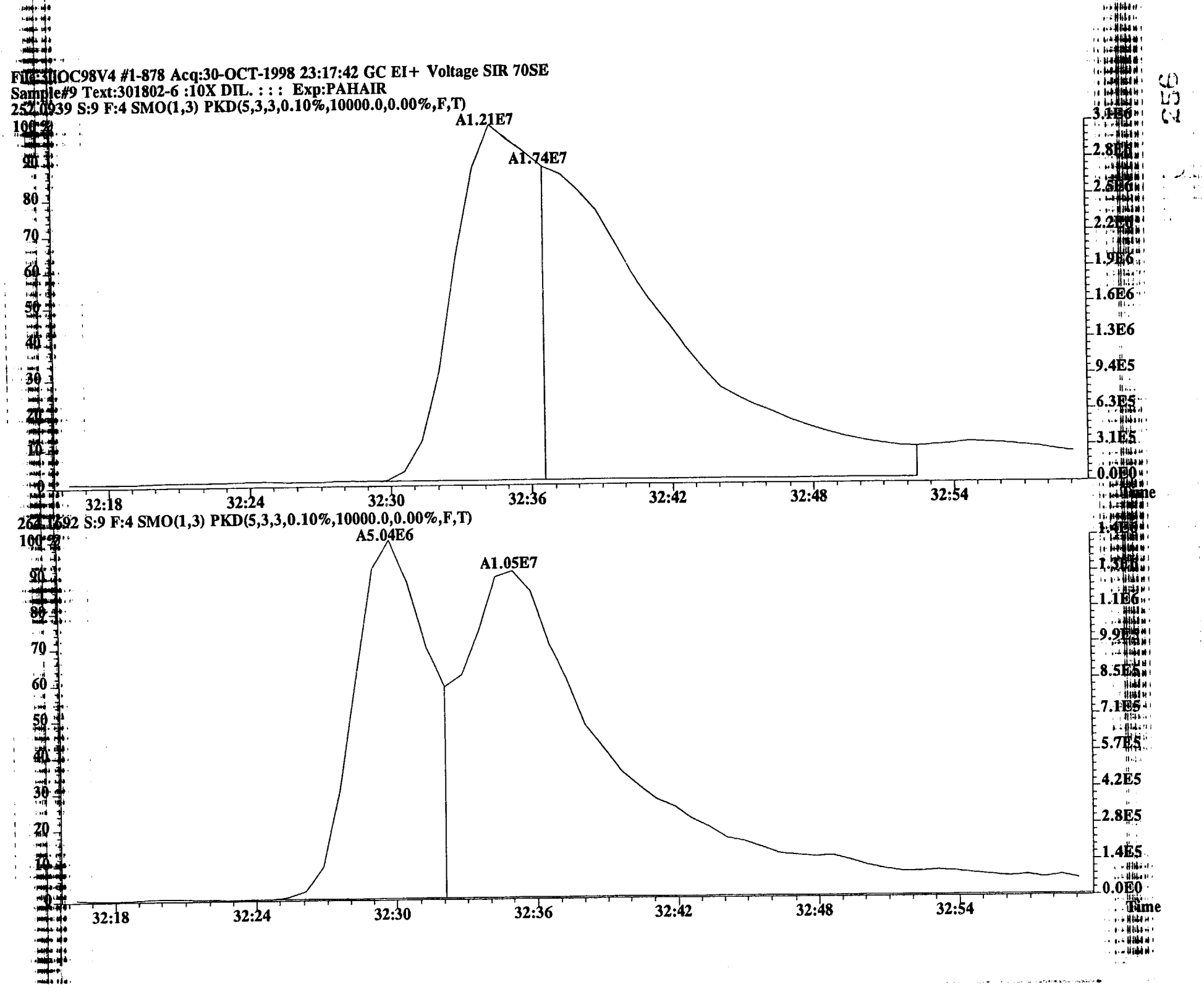
240.1692 S:9 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

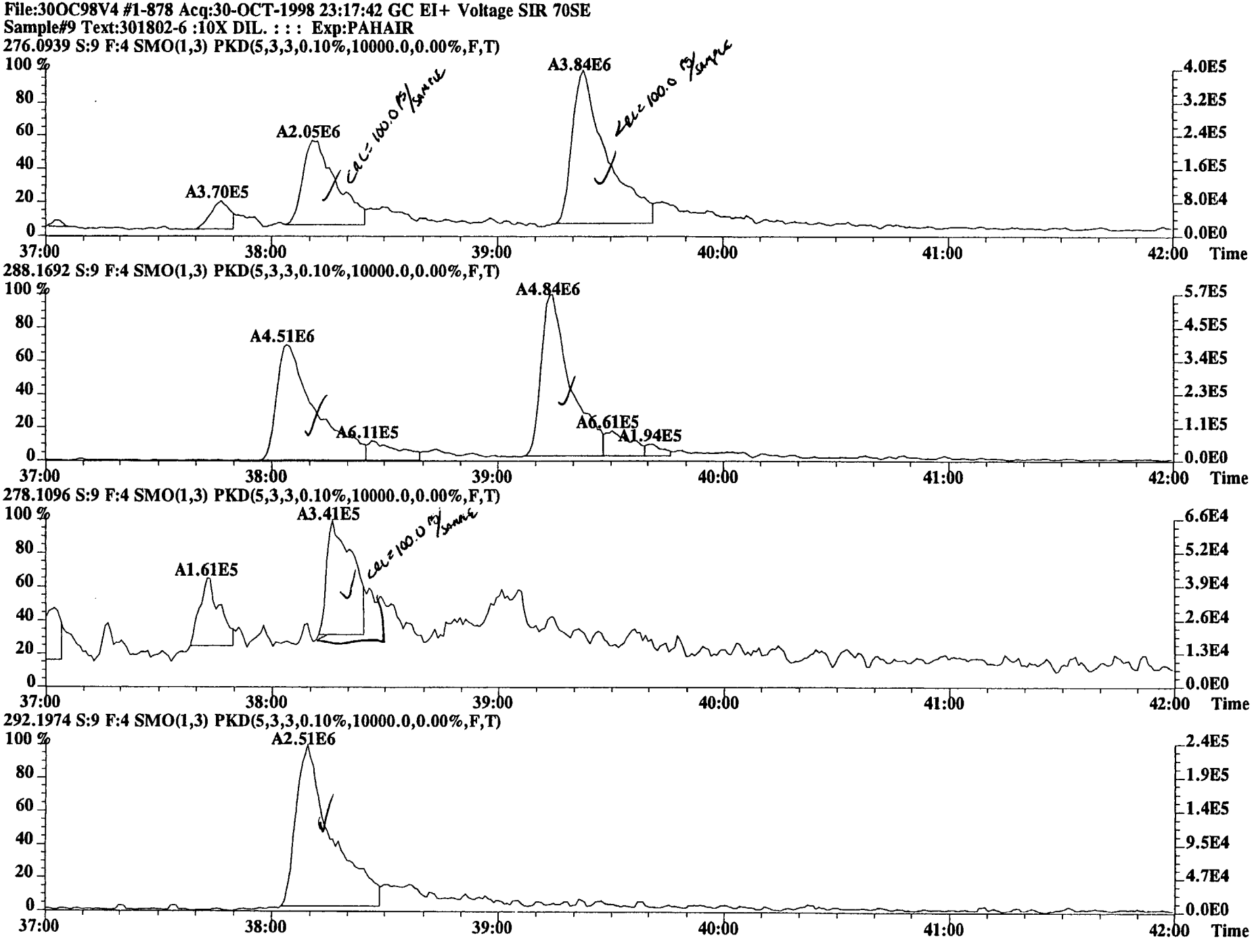


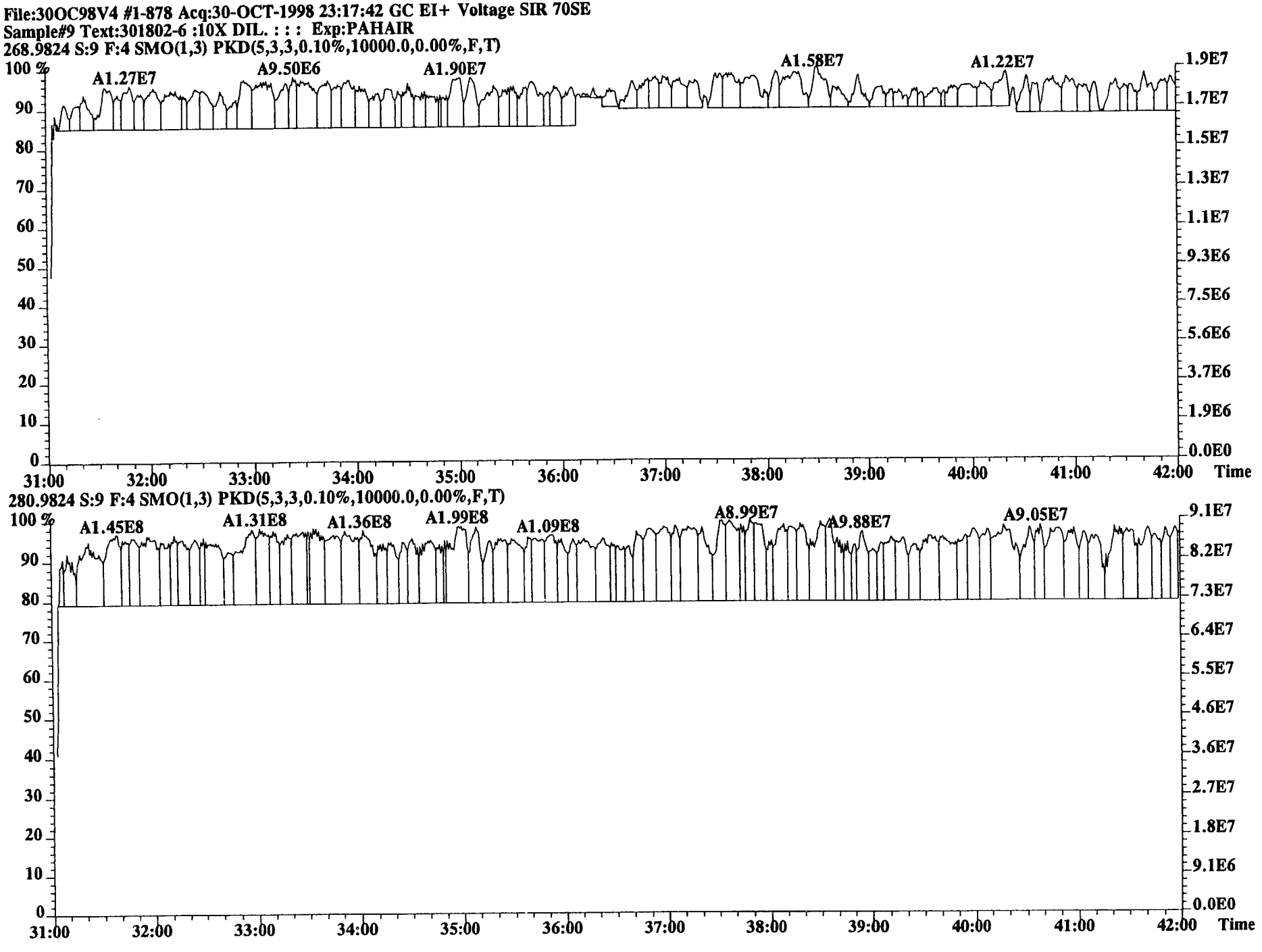
File:30OC98V4 #1-939 Acq:30-OCT-1998 23:17:42 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-6 :10X DIL. : : : Exp:PAHAIR
230.9856 S:9 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)




File:30OC98V4 #1-878 Acq:30-OCT-1998 23:17:42 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-6 :10X DIL. : : : Exp:PAHAIR
252.0939 S:9 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.03E7
A1.11E7
A3.32E6
A8.28E5
264.1692 S:9 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.26E7
A5.04E6
A4.63E6
Time


File:HOC98V4 #1-878 Acq:30-OCT-1998 23:17:42 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-6 :10X DIL. : : : Exp:PAHAIR
252.0939 S:9 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.21E7
A1.74E7
100
80
70
60
50
40
30
20
10
0
3.1E6
2.8E6
2.5E6
2.2E6
1.9E6
1.6E6
1.3E6
9.4E5
6.3E5
3.1E5
0.0E0
32:18
32:24
32:30
32:36
32:42
32:48
32:54
Time
252.1692 S:9 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A5.04E6
A1.05E7
100
90
70
60
50
40
30
20
10
1.4E6
1.1E6
9.9E5
8.5E5
7.1E5
5.7E5
4.2E5
2.8E5
1.4E5
0.0E0
32:18
32:24
32:30
32:36
32:42
32:48
32:54
Time


File:30OC98V4 #1-878 Acq:30-OCT-1998 23:17:42 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-6 :10X DIL. : : : Exp:PAHAIR
276.0939 S:9 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.70E5
A2.05E6
A3.84E6
288.1692 S:9 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.51E6
A6.11E5
A4.84E6
A6.61E5
A1.94E5
278.1096 S:9 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.61E5
A3.41E5
292.1974 S:9 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.51E6
100 %
80
60
40
20
0
37:00
38:00
39:00
40:00
41:00
42:00
Time
4.0E5
3.2E5
2.4E5
1.6E5
8.0E4
0.0E0
5.7E5
4.5E5
3.4E5
2.3E5
1.1E5
6.6E4
5.2E4
3.9E4
2.6E4
1.3E4
2.4E5
1.9E5
1.4E5
9.5E4
4.7E4


File:30OC98V4 #1-878 Acq:30-OCT-1998 23:17:42 GC EI+ Voltage SIR 70SE
Sample#9 Text:301802-6 :10X DIL. : : : Exp:PAHAIR
268.9824 S:9 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.27E7
A9.50E6
A1.90E7
A1.58E7
A1.22E7
1.9E7
1.7E7
1.5E7
1.3E7
1.1E7
9.3E6
7.5E6
5.6E6
3.7E6
1.9E6
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time
280.9824 S:9 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.45E8
A1.31E8
A1.36E8
A1.99E8
A1.09E8
A8.99E7
A9.88E7
A9.05E7
9.1E7
8.2E7
7.3E7
6.4E7
5.5E7
4.6E7
3.6E7
2.7E7
1.8E7
9.1E6
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time

04-NOV-1998 05:38:56 PM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4 Results : 02NO98V4131.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 02-NOV-98
Data file : 02NO98V4 301802-6 :100X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	ng/ TRAIN	Rec/ MDL	
d10-2-Methylnaphthalene	348000	1.00	Y	12: 29	Y	1.00	50.00		
d8-Naphthalene	510000	1.00	Y	10: 12	Y	2.24	32.70	65	
Naphthalene	688320000	1.00	Y	10: 16	Y	1.23	1.1e+05	B	E
d10-Anthracene	208000	1.00	Y	20: 55	Y	1.00	50.00		
d10-Phenanthrene	622354	1.00	Y	20: 45	Y	2.81	53.29	107	
Phenanthrene	153056200	1.00	Y	20: 49	Y	0.89	2.7e+04	B	E

11-4-98
CC

0.5

98V4.RRF

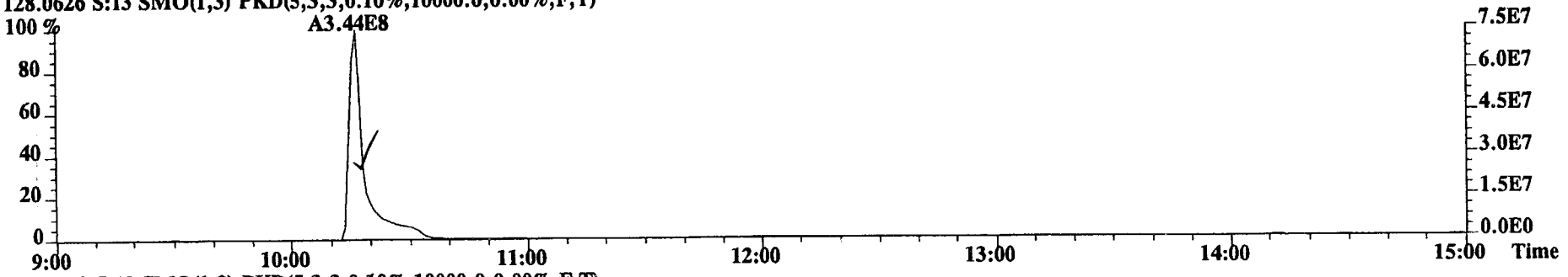
Rec/ MDL			
		174000	174000
	65	255000	255000
	B E	344160000	344160000
		104000	104000
	107	311177	311177
	B E	76528100	76528100

03-NOV-1998 08:43:44 AM 429AIR Unknown RESULTS

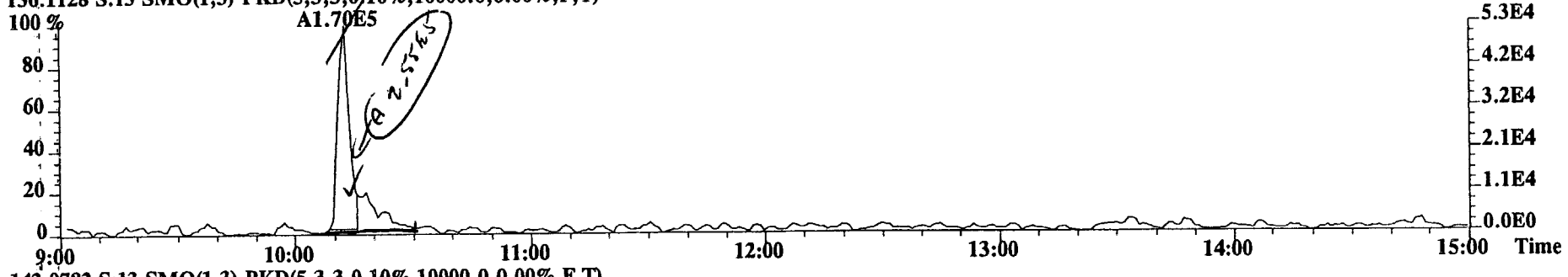
Mass Spec : VG-4 Results : 02NO98V4131.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 02-NOV-98
Data file : 02NO98V4 301802-6 :100X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	ng/ TRAIN	Rec/ MDL
d10-2-Methylnaphthalene	313082	1.00	Y	12: 29	Y	1.00	50.00	
d8-Naphthalene	339338	1.00	Y	10: 12	Y	2.24	24.19	48
Naphthalene	688320000	1.00	Y	10: 16	Y	1.23	1.7e+05	0.000
2-Methylnaphthalene	84088400	1.00	Y	12: 33	Y	0.56	4.4e+04	0.000
d8-Acenaphthylene	250974	1.00	Y	15: 28	Y	1.21	33.02	66
Acenaphthylene	45451200	1.00	Y	15: 30	Y	0.94	1.9e+04	0.000
d10-Acenaphthene	163597	1.00	Y	16: 2	Y	0.74	35.09	70
Acenaphthene	9944880	1.00	Y	16: 7	Y	1.25	4878.37	0.000
d10-Anthracene	185990	1.00	Y	20: 55	Y	1.00	50.00	
d10-Fluorene	87891	1.00	Y	17: 41	Y	1.42	16.63	33
Fluorene	727086	1.00	Y	17: 47	Y	1.16	712.84	0.000
d10-Phenanthrene	622354	1.00	Y	20: 45	Y	2.81	59.59	119
Phenanthrene	153056200	1.00	Y	20: 49	Y	0.89	2.7e+04	0.000
Anthracene	* No Peak	0.00	N	20: 59	N	0.80	0.00	0.000
d14-Terphenyl	516988	1.00	Y	26: 2	Y	1.00	50.00	
d10-Fluoranthene	337802	1.00	Y	24: 36	Y	1.41	23.16	46
Fluoranthene	24047000	1.00	Y	24: 39	Y	1.11	6403.00	0.000
d10-Pyrene	392988	1.00	Y	25: 18	Y	1.52	25.03	50
Pyrene	13061900	1.00	Y	25: 21	Y	1.21	2758.16	0.000
d12-Benzo(a)anthracene	275340	1.00	Y	29: 12	Y	0.90	29.59	59
Benzo(a)anthracene	* No Peak	0.00	N	29: 14	N	1.20	0.00	0.000
d12-Chrysene	295068	1.00	Y	29: 18	Y	1.28	22.31	45
Chrysene	6311320	1.00	Y	29: 22	Y	1.08	1973.25	0.000
d12-Benzo(e)pyrene	842284	1.00	Y	33: 25	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	135660	1.00	Y	32: 33	Y	0.45	17.74	35
Benzo(b)fluoranthene	289624	1.00	Y	32: 39	Y	1.17	182.90	0.000
d12-Benzo(k)fluoranthene	578002	1.00	Y	32: 40	Y	0.95	36.19	72
Benzo(k)fluoranthene	289624	1.00	Y	32: 39	Y	1.16	43.04	0.000
d12-Benzo(a)pyrene	122647	1.00	Y	33: 40	Y	0.68	10.76	22
Benzo(e)pyrene	264256	1.00	Y	33: 31	Y	1.64	131.31	0.000
Benzo(a)pyrene	* No Peak	0.00	N	33: 41	N	1.07	0.00	0.000
d12-Perylene	43231	1.00	Y	33: 55	Y	0.63	4.07	8
Perylene	* No Peak	0.00	N	33: 58	N	1.71	0.00	0.000
d12-Indeno(123-cd)pyrene	* No Peak	0.00	N	38: 4	N	0.44	0.00	0
Indeno(123-cd)pyrene	* No Peak	0.00	N	38: 11	N	0.62	*NoINoIs	
d14-Dibenz(ah)anthracene	* No Peak	0.00	N	38: 8	N	0.25	0.00	0
Dibenz(ah)anthracene	* No Peak	0.00	N	38: 18	N	1.40	*NoINoIs	
d12-Benzo(ghi)perylene	114185	1.00	Y	39: 17	Y	0.58	11.69	23
Benzo(ghi)perylene	126093	1.00	Y	39: 26	Y	1.02	108.69	0.000
d10-Fluorene	87891	1.00	Y	17: 41	Y	1.42	3.67	7
13C-Fluorene	* No Peak	0.00	N	17: 49	N	1.00	0.00	0.000

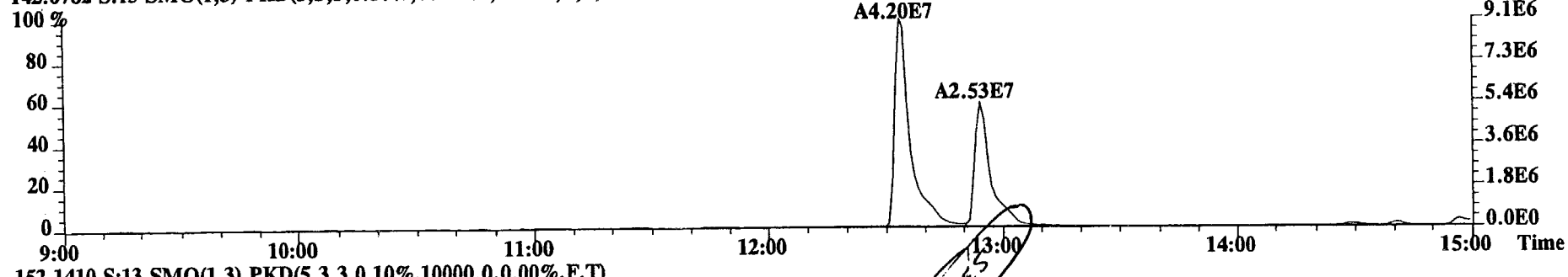
File:02NO98V4 #1-510 Acq: 2-NOV-1998 23:01:38 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-6 :100X DIL. : : : Exp:PAHAIR
128.0626 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



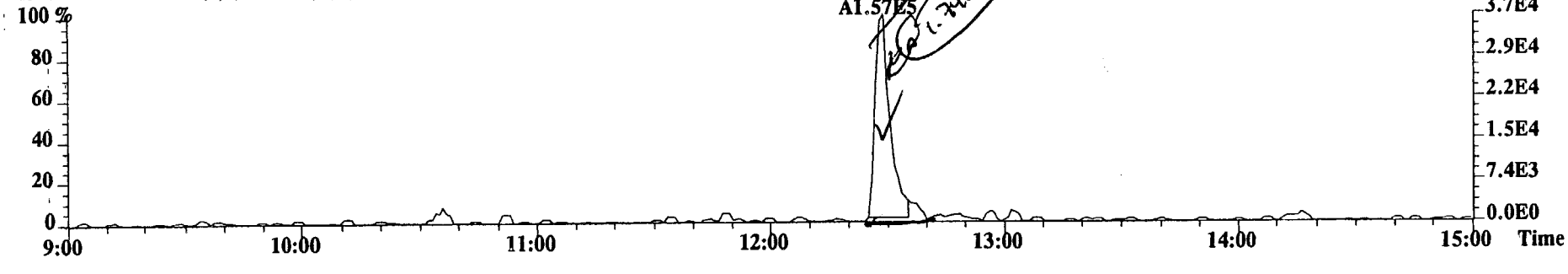
136.1128 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



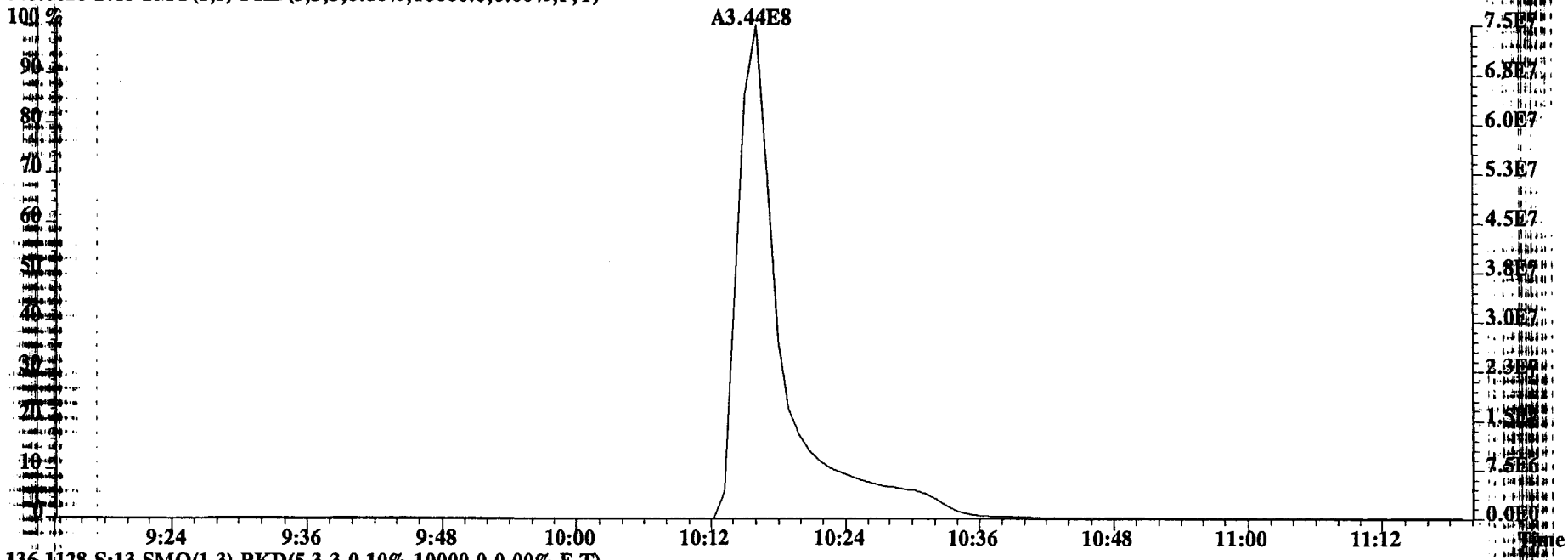
142.0782 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



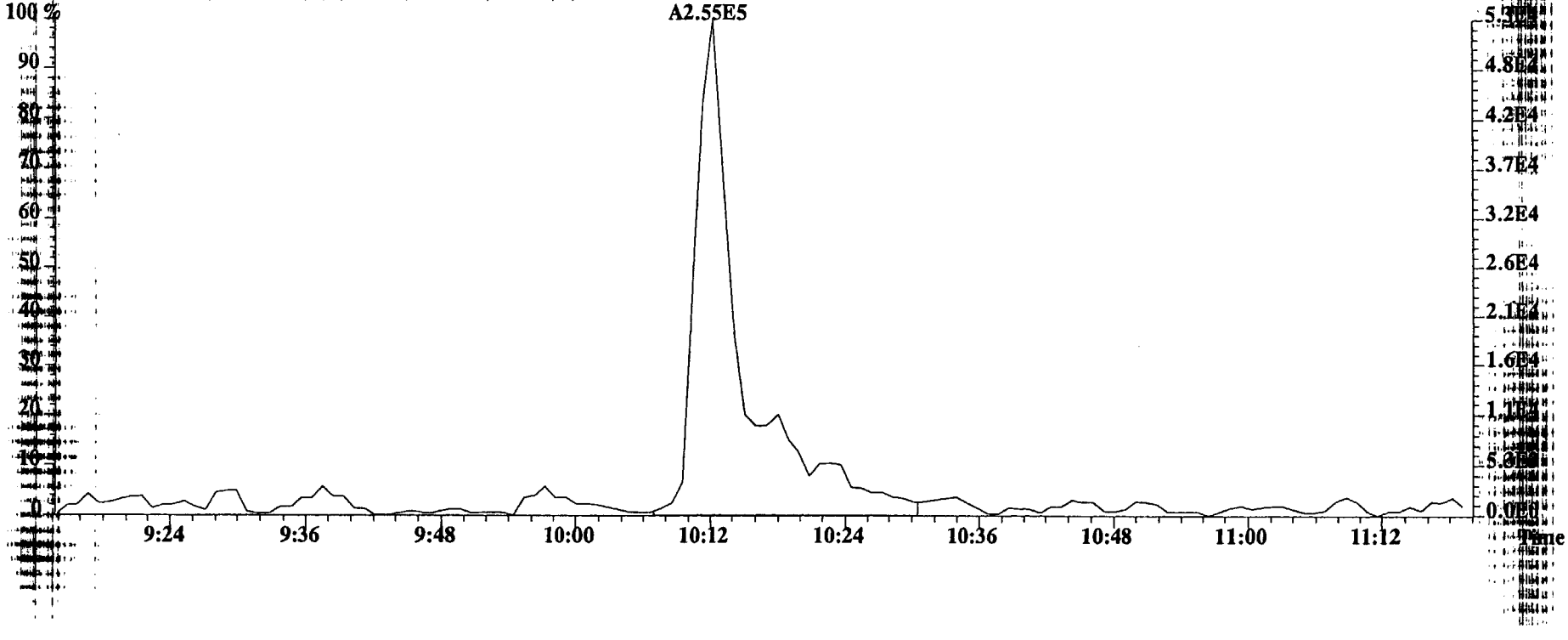
152.1410 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



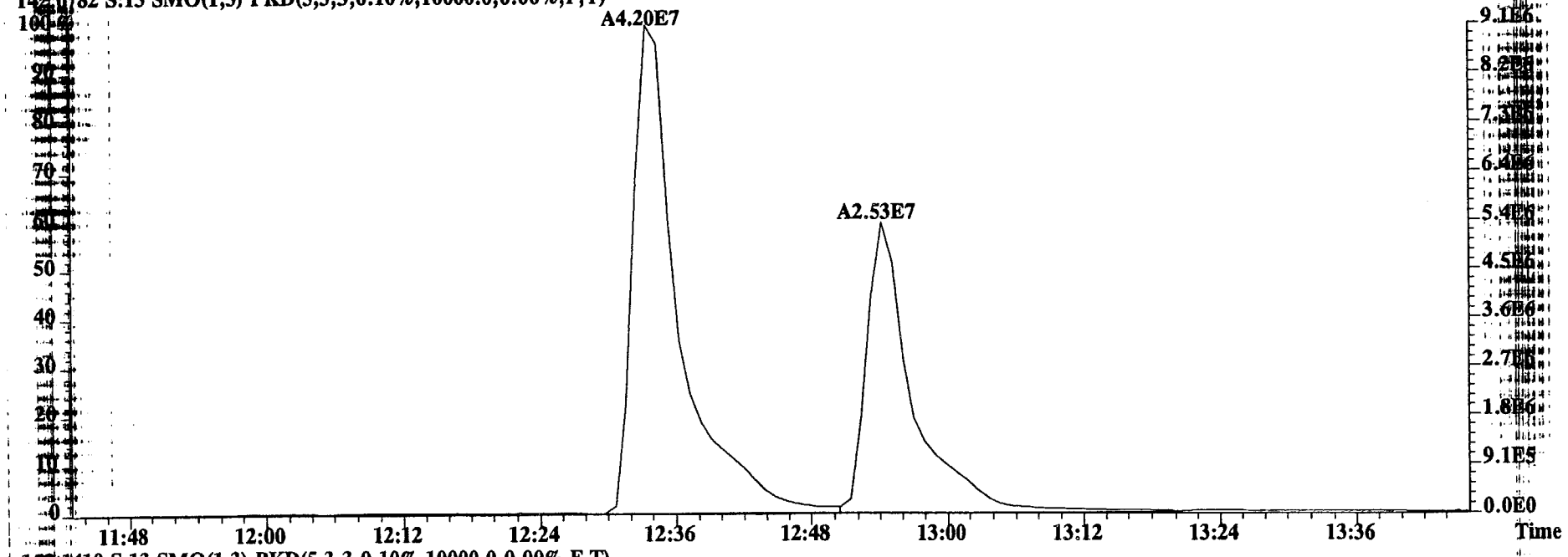
File:02NO98V4 #1-510 Acq: 2-NOV-1998 23:01:38 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-6 :100X DIL. : : : Exp:PAHAIR
128.0626 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



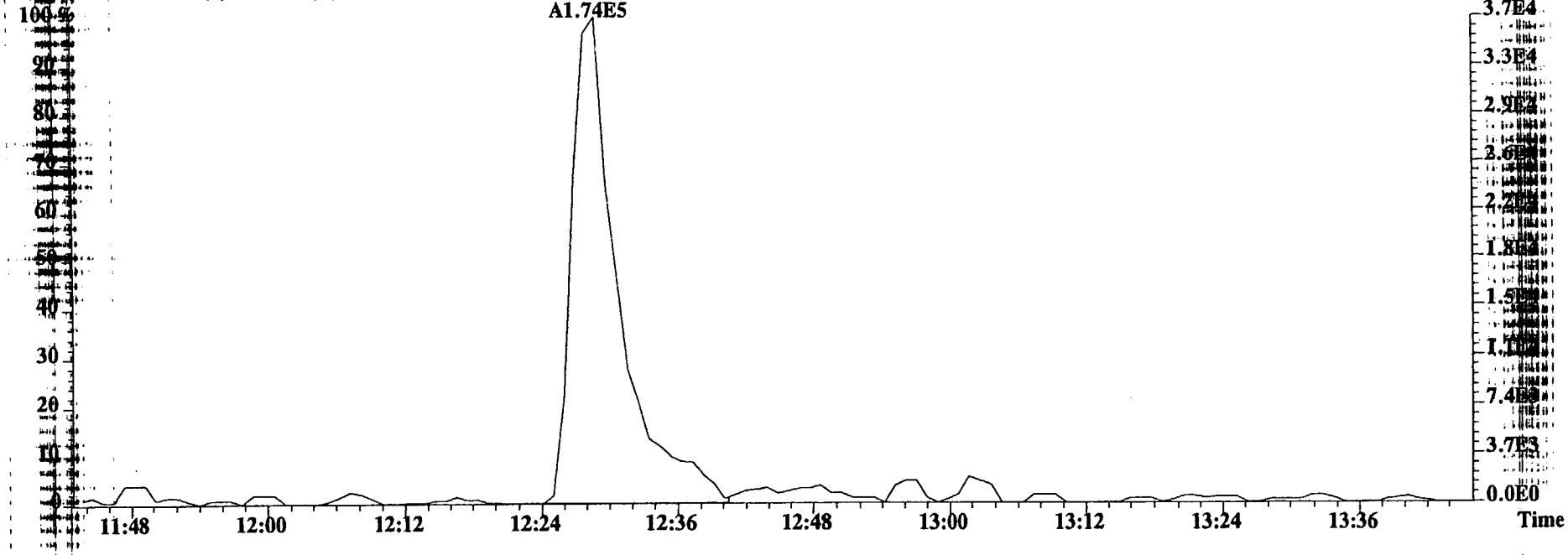
136.1128 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

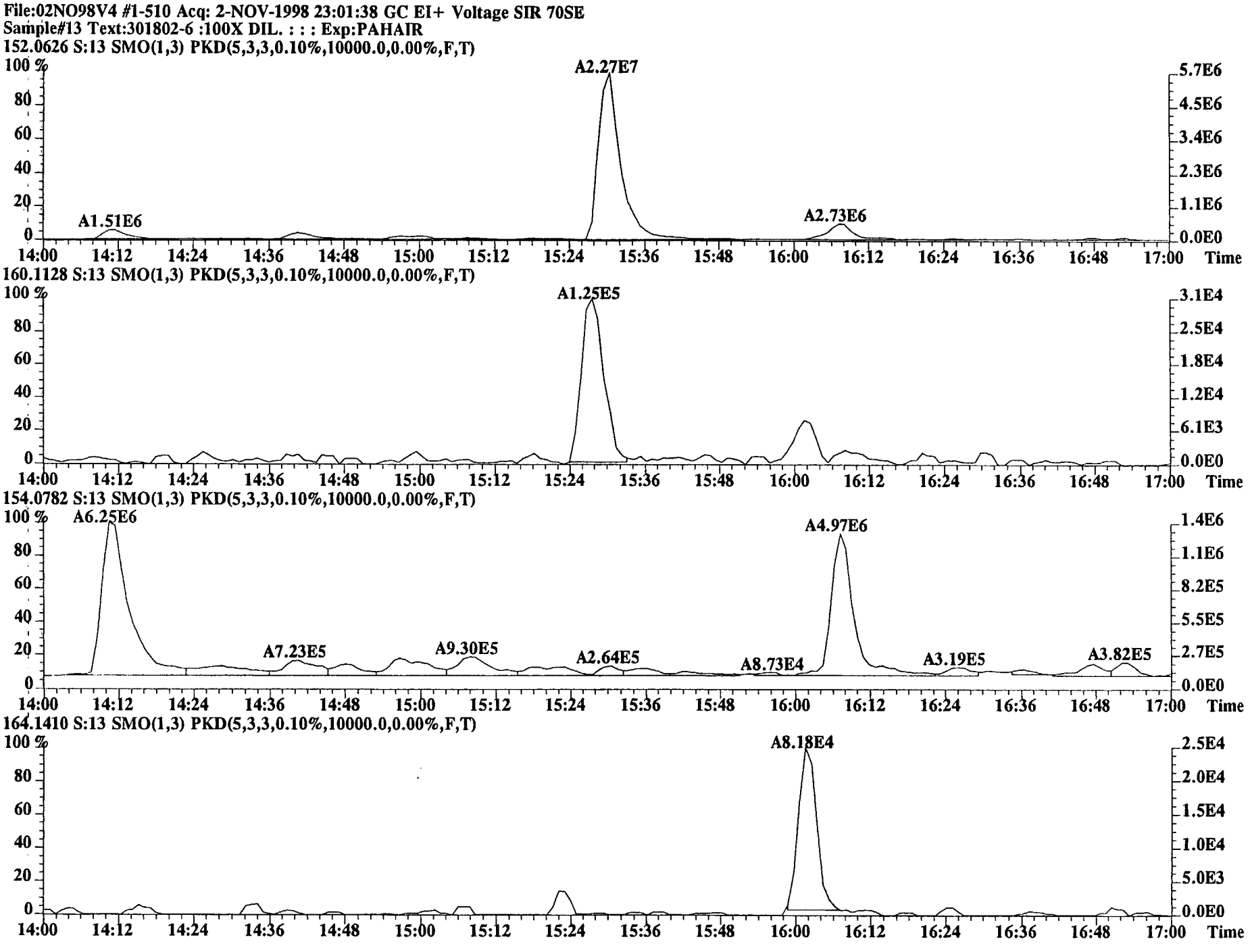


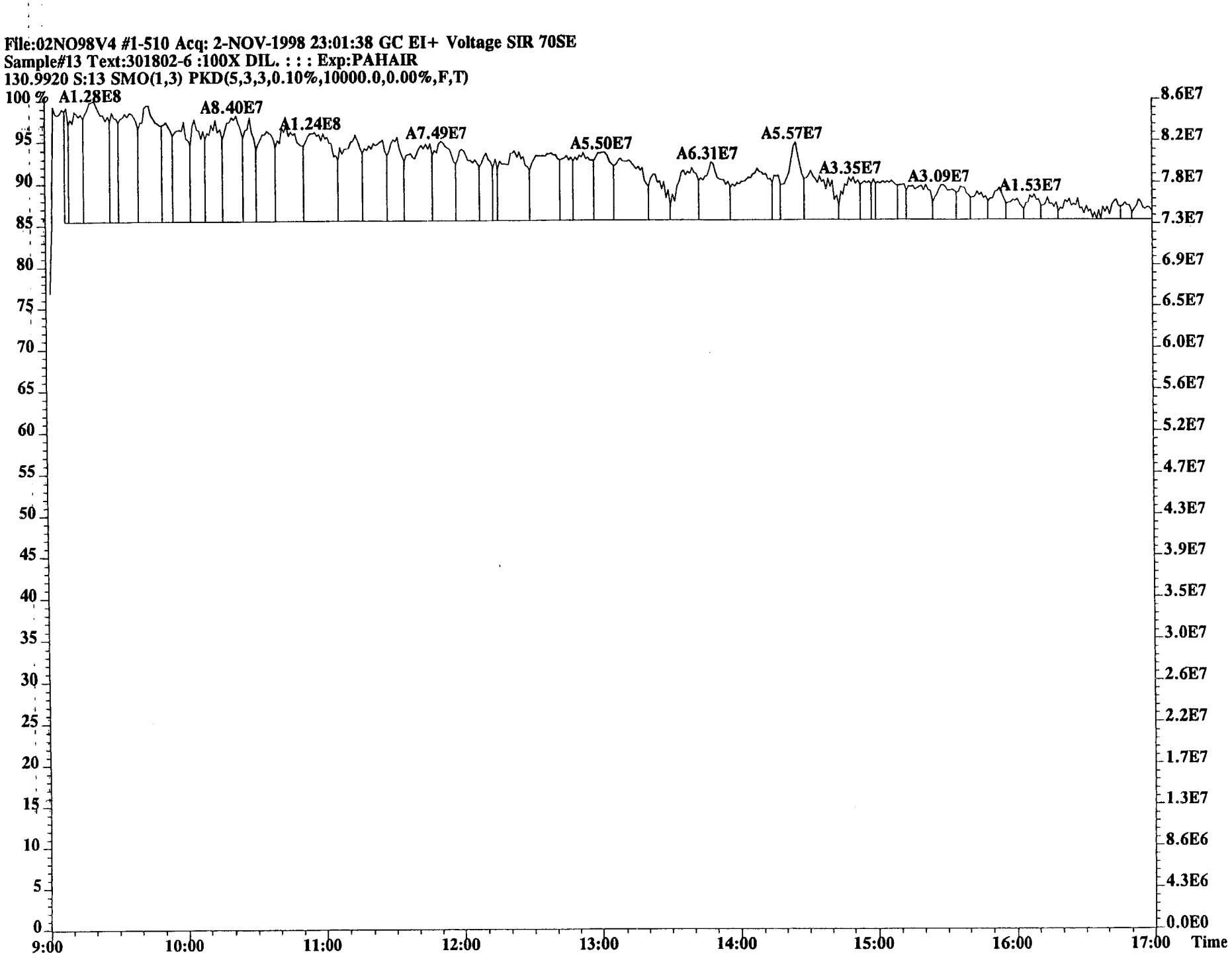
File:02NO98V4 #1-510 Acq: 2-NOV-1998 23:01:38 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-6 :100X DIL. : : : Exp:PAHAIR
142.0782 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



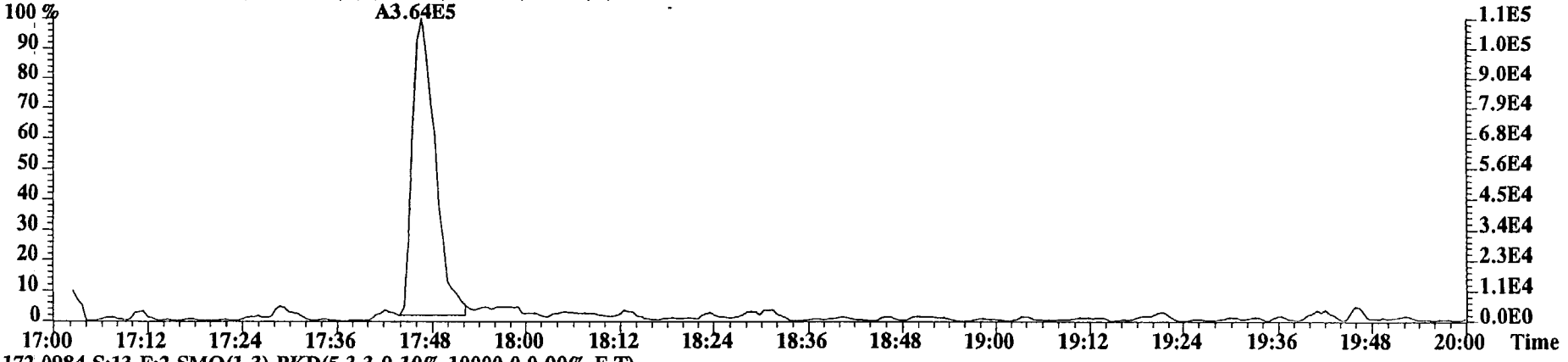
152.1410 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



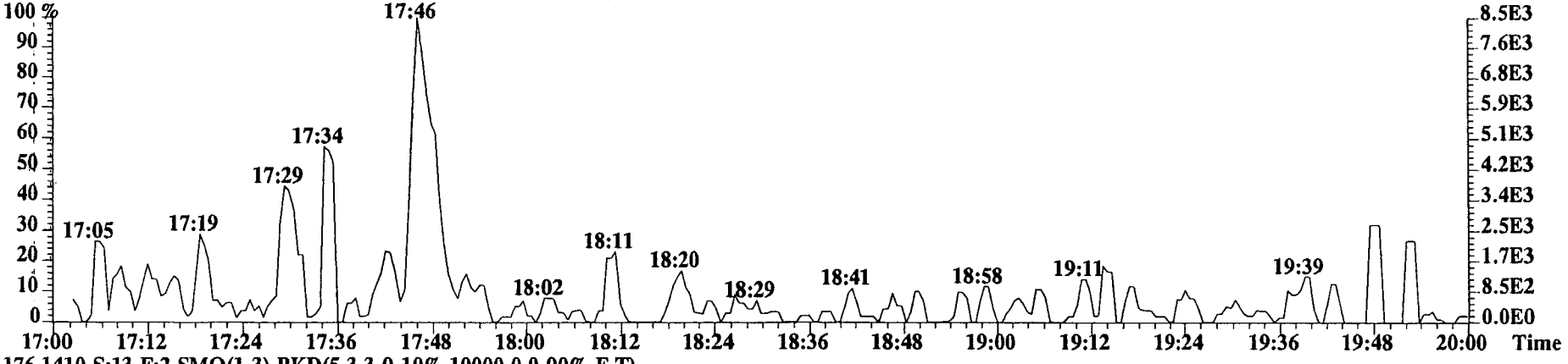

File:02NO98V4 #1-510 Acq: 2-NOV-1998 23:01:38 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-6 :100X DIL. : : : Exp:PAHAIR
152.0626 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.27E7
A1.51E6
A2.73E6
160.1128 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.25E5
154.0782 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A6.25E6
A4.97E6
A7.23E5
A9.30E5
A2.64E5
A8.73E4
A3.19E5
A3.82E5
164.1410 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.18E4
100 %
80
60
40
20
0
14:00
14:12
14:24
14:36
14:48
15:00
15:12
15:24
15:36
15:48
16:00
16:12
16:24
16:36
16:48
17:00
Time
5.7E6
4.5E6
3.4E6
2.3E6
1.1E6
0.0E0
3.1E4
2.5E4
1.8E4
1.2E4
6.1E3
1.4E6
1.1E6
8.2E5
5.5E5
2.7E5
2.5E4
2.0E4
1.5E4
1.0E4
5.0E3


File:02NO98V4 #1-510 Acq: 2-NOV-1998 23:01:38 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-6 :100X DIL. : : : Exp:PAHAIR
130.9920 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 % A1.28E8
A8.40E7
A1.24E8
A7.49E7
A5.50E7
A6.31E7
A5.57E7
A3.35E7
A3.09E7
A1.53E7
8.6E7
8.2E7
7.8E7
7.3E7
6.9E7
6.5E7
6.0E7
5.6E7
5.2E7
4.7E7
4.3E7
3.9E7
3.5E7
3.0E7
2.6E7
2.2E7
1.7E7
1.3E7
8.6E6
4.3E6
0.0E0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
Time

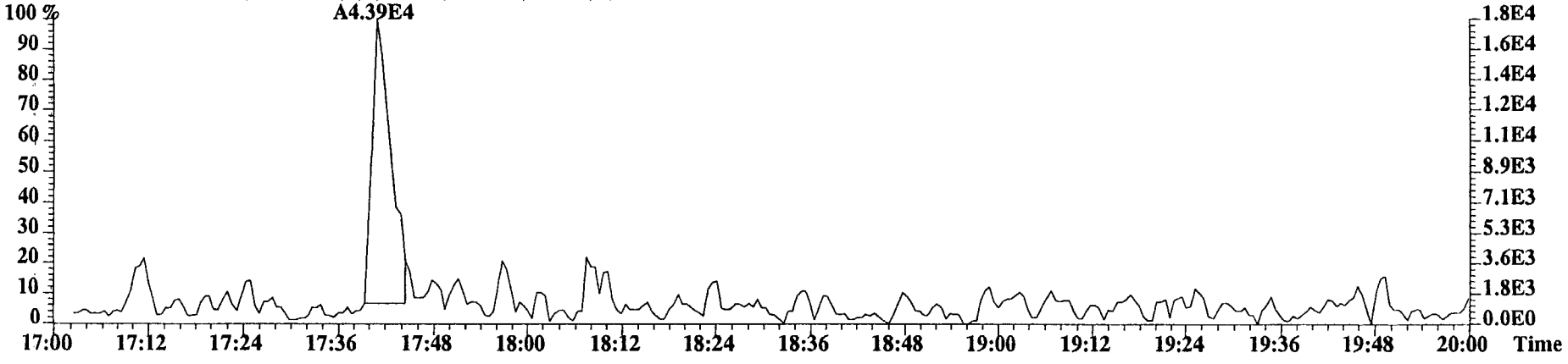
File:02NO98V4 #1-640 Acq: 2-NOV-1998 23:01:38 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-6 :100X DIL. : : : Exp:PAHAIR
166.0798 S:13 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

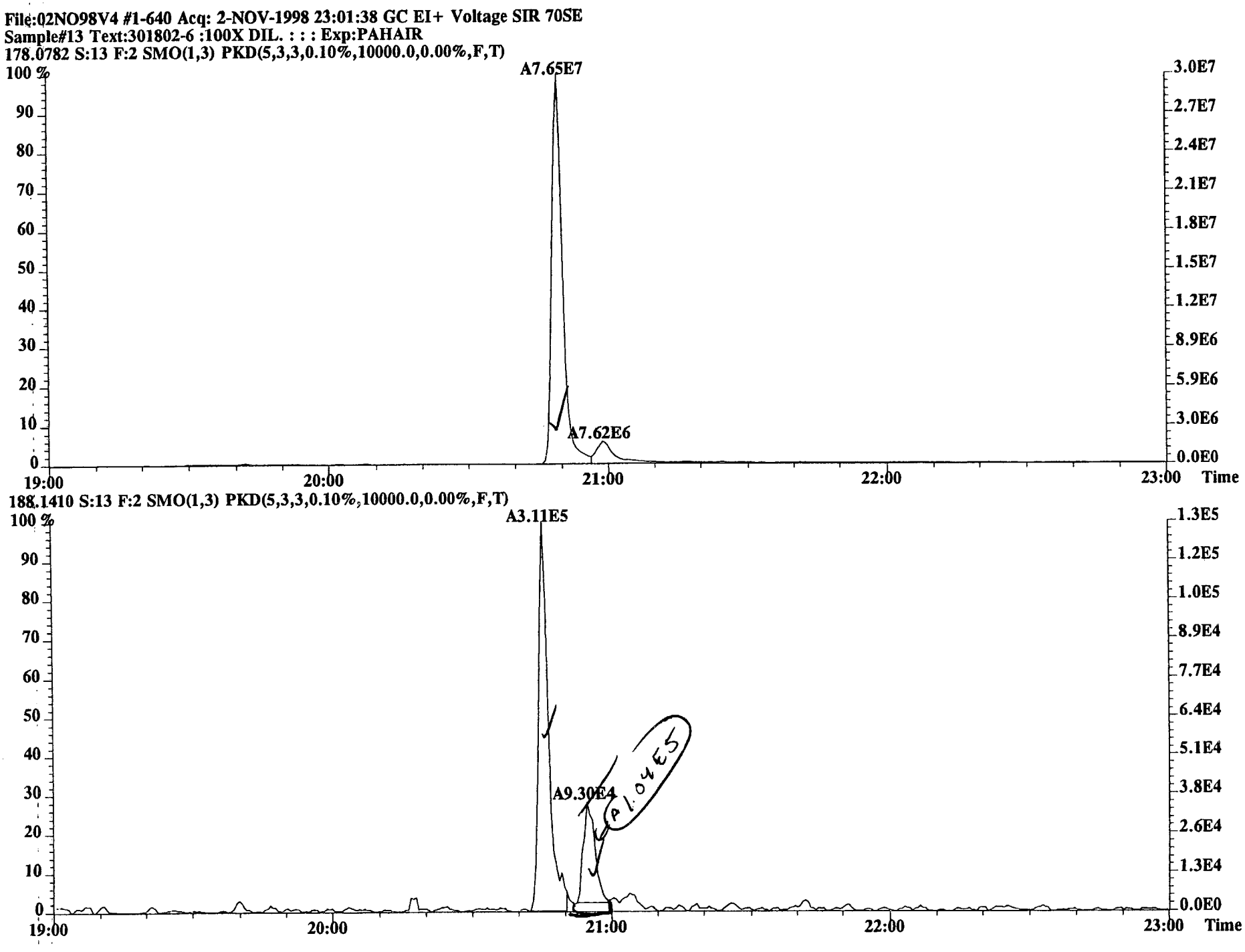


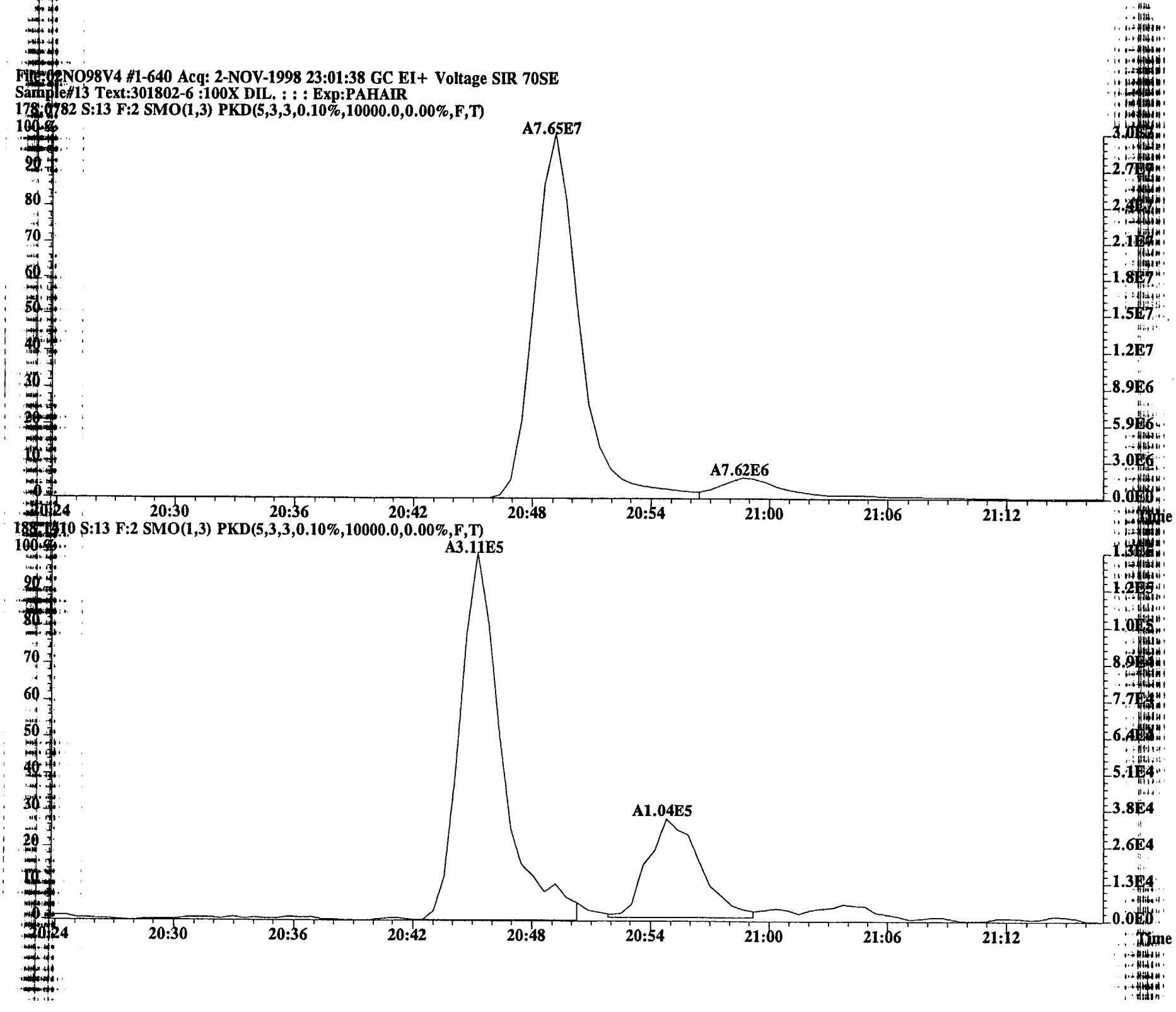
172.0984 S:13 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

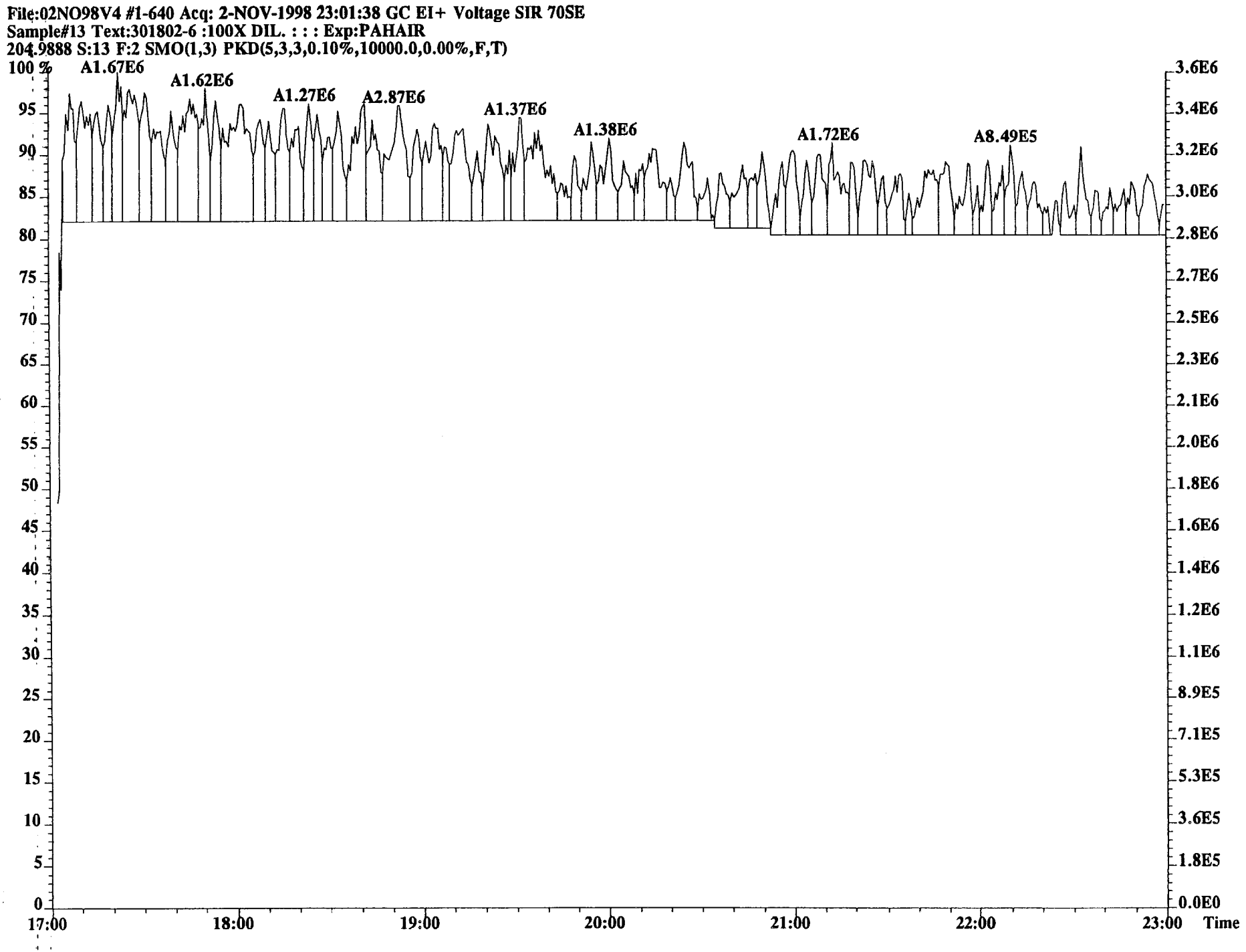


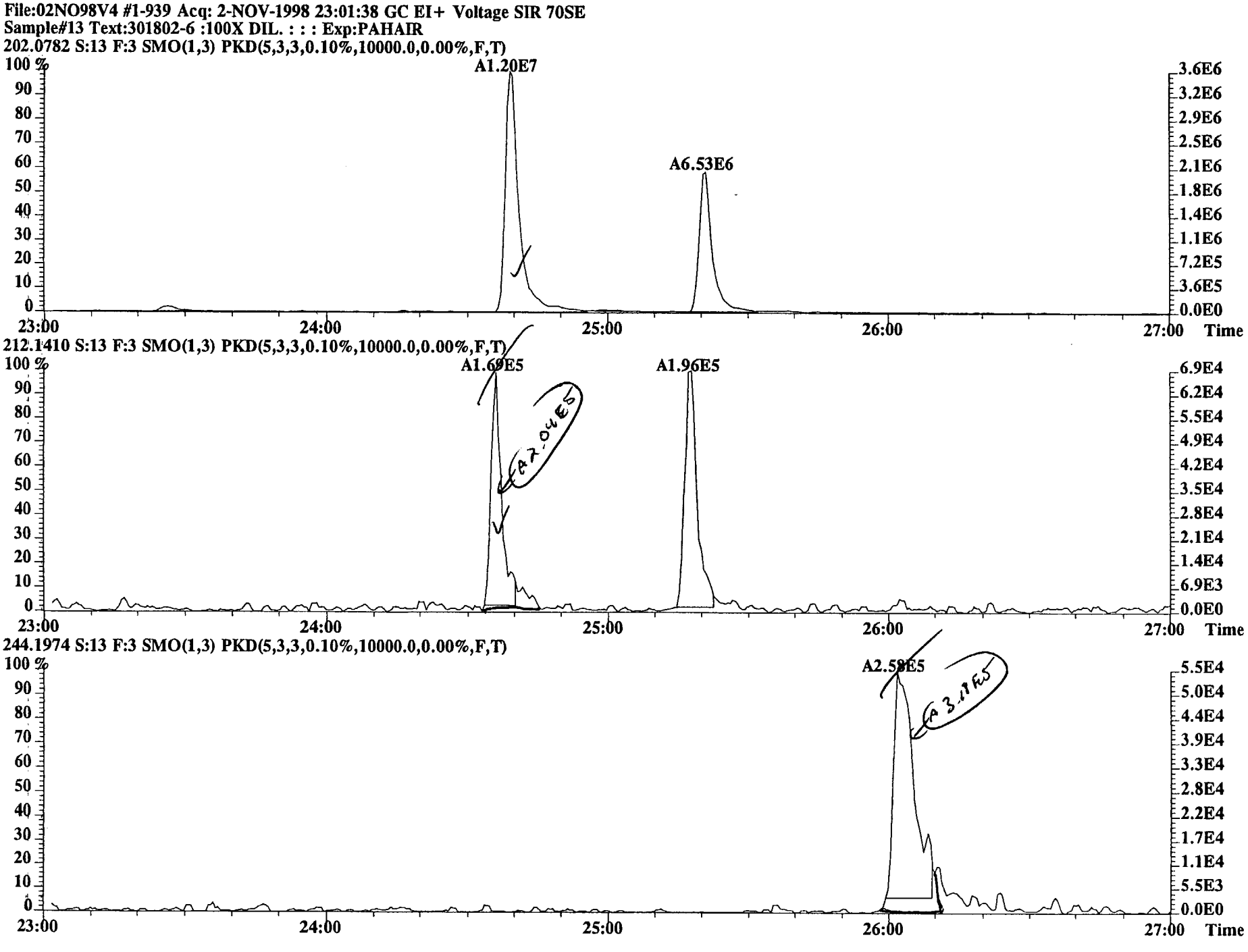
176.1410 S:13 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

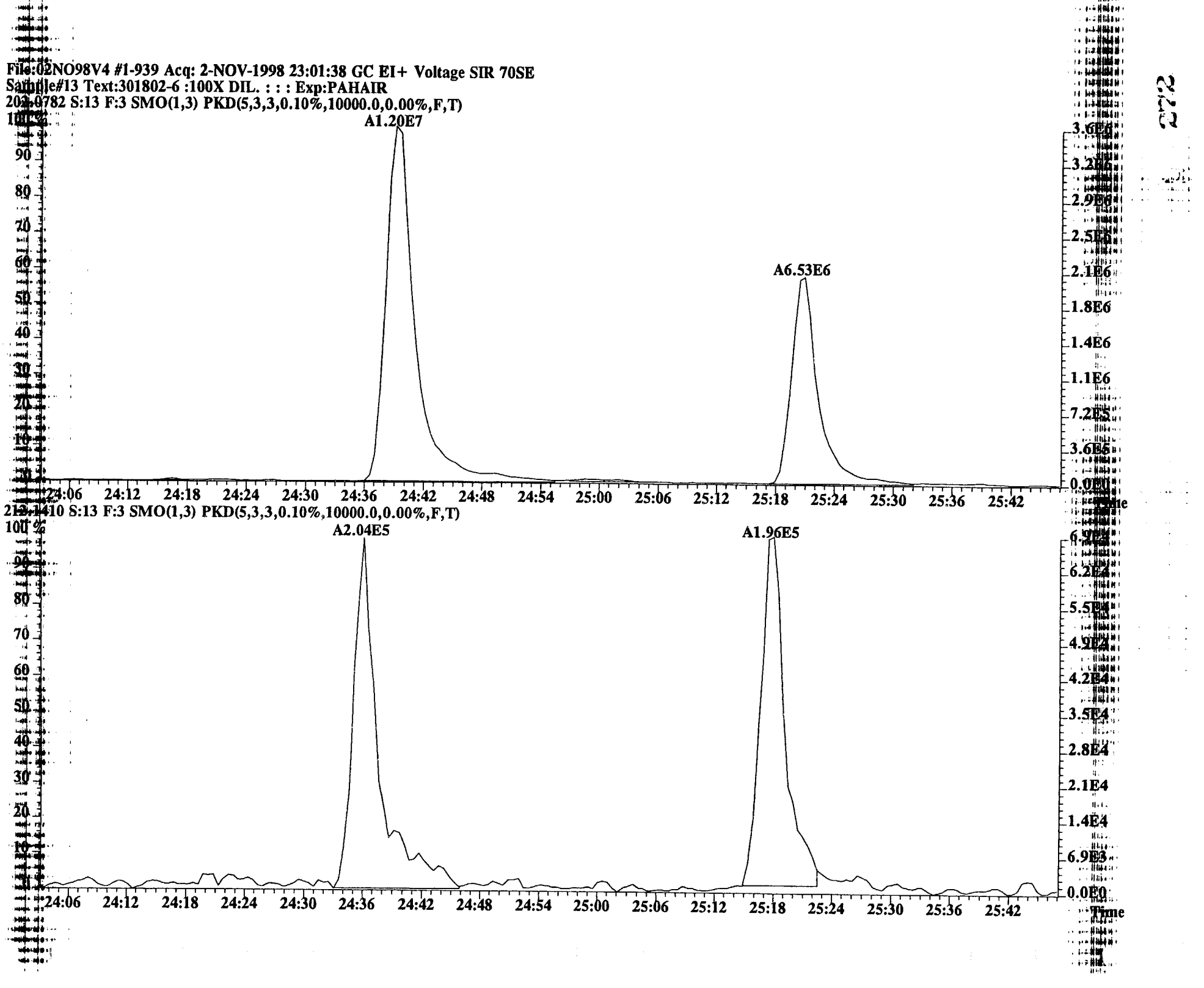



File:02NO98V4 #1-640 Acq: 2-NOV-1998 23:01:38 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-6 :100X DIL. : : : Exp:PAHAIR
178.0782 S:13 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.65E7
A7.62E6
188.1410 S:13 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.11E5
A9.30E4
P1.04E5
100 %
90
80
70
60
50
40
30
20
10
0
3.0E7
2.7E7
2.4E7
2.1E7
1.8E7
1.5E7
1.2E7
8.9E6
5.9E6
3.0E6
0.0E0
1.3E5
1.2E5
1.0E5
8.9E4
7.7E4
6.4E4
5.1E4
3.8E4
2.6E4
1.3E4
0.0E0
19:00
20:00
21:00
22:00
23:00
Time

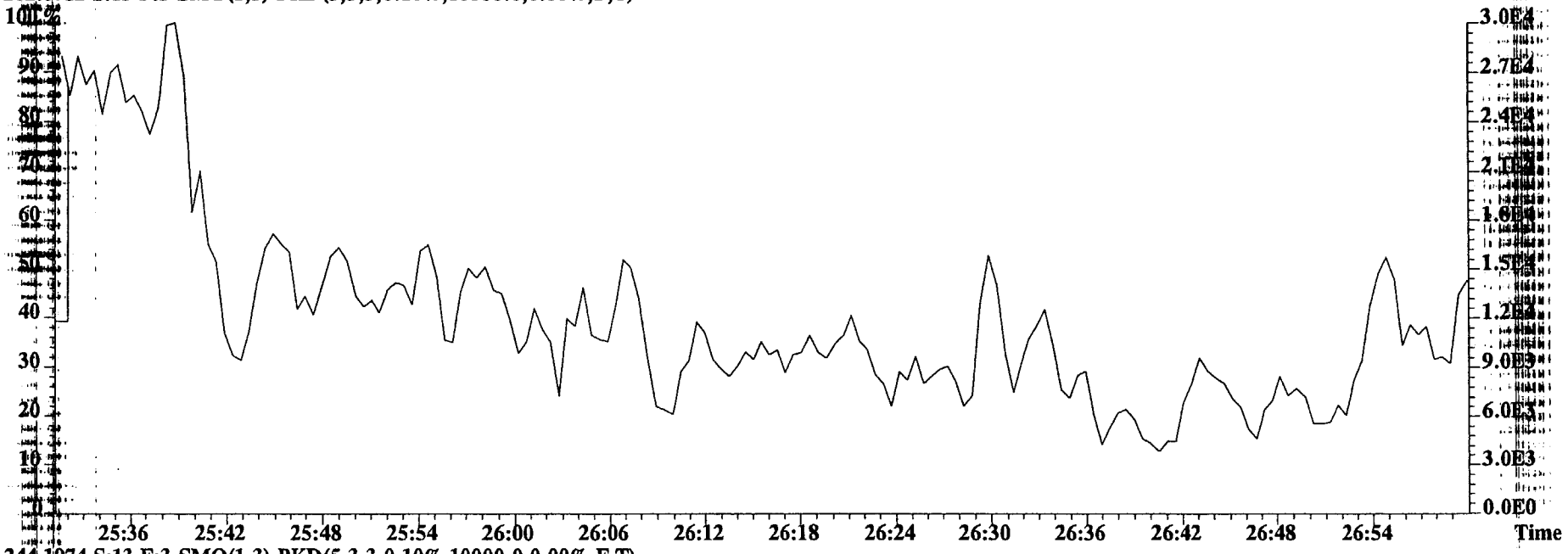

File:02NO98V4 #1-640 Acq: 2-NOV-1998 23:01:38 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-6 :100X DIL. : : : Exp:PAHAIR
178.0782 S:13 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.65E7
A7.62E6
20:24
20:30
20:36
20:42
20:48
20:54
21:00
21:06
21:12
Time
188.1010 S:13 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.11E5
A1.04E5
Time


File:02NO98V4 #1-640 Acq: 2-NOV-1998 23:01:38 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-6 :100X DIL. : : : Exp:PAHAIR
204.9888 S:13 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.67E6
A1.62E6
A1.27E6
A2.87E6
A1.37E6
A1.38E6
A1.72E6
A8.49E5
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
3.6E6
3.4E6
3.2E6
3.0E6
2.8E6
2.7E6
2.5E6
2.3E6
2.1E6
2.0E6
1.8E6
1.6E6
1.4E6
1.2E6
1.1E6
8.9E5
7.1E5
5.3E5
3.6E5
1.8E5
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

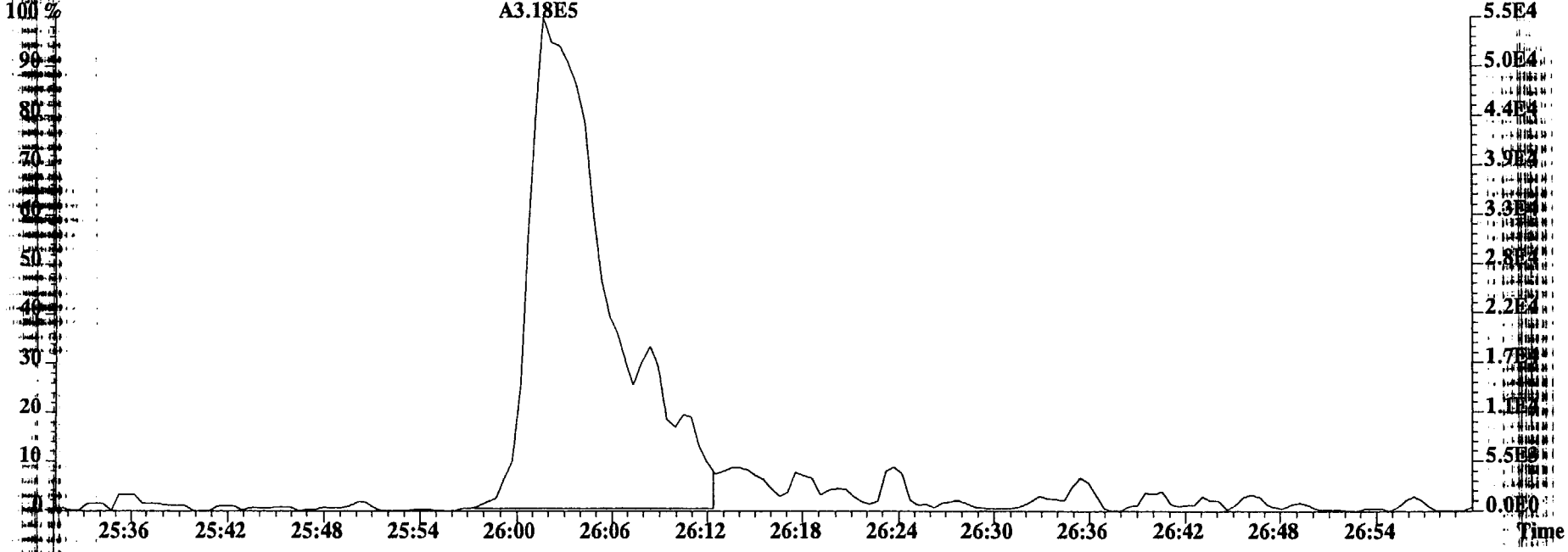

File:02NO98V4 #1-939 Acq: 2-NOV-1998 23:01:38 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-6 :100X DIL. : : : Exp:PAHAIR
202.0782 S:13 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.20E7
A6.53E6
212.1410 S:13 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.69E5
A1.96E5
A2.04E5
244.1974 S:13 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.58E5
A3.17E5
100 %
23:00
24:00
25:00
26:00
27:00
Time

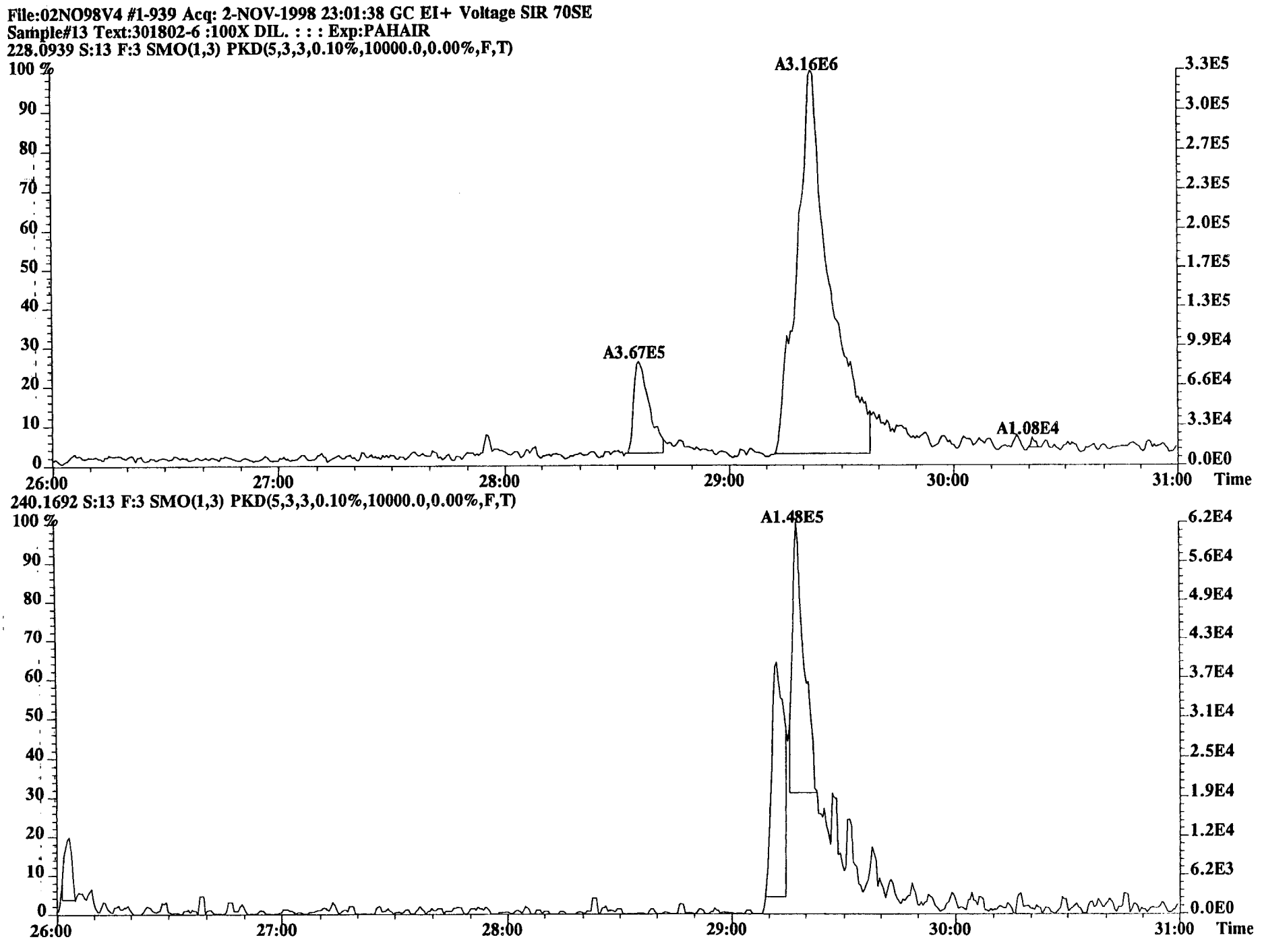

File:02NO98V4 #1-939 Acq: 2-NOV-1998 23:01:38 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-6 :100X DIL. : : : Exp:PAHAIR
202.0782 S:13 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.20E7
A6.53E6
24:06 24:12 24:18 24:24 24:30 24:36 24:42 24:48 24:54 25:00 25:06 25:12 25:18 25:24 25:30 25:36 25:42
Time
212.1410 S:13 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.04E5
A1.96E5
24:06 24:12 24:18 24:24 24:30 24:36 24:42 24:48 24:54 25:00 25:06 25:12 25:18 25:24 25:30 25:36 25:42
Time

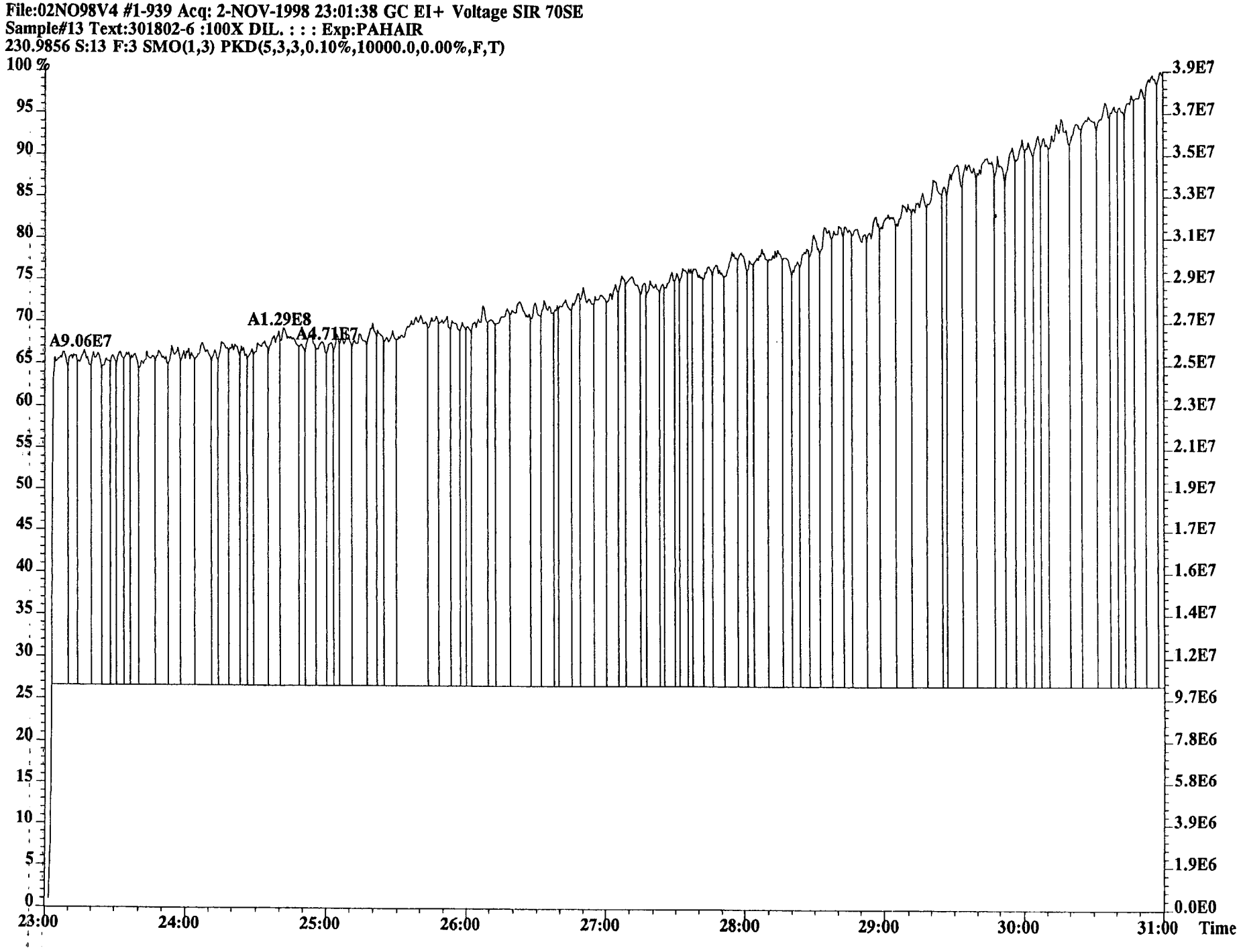
File:02NO98V4 #1-939 Acq: 2-NOV-1998 23:01:38 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-6 :100X DIL. : : : Exp:PAHAIR
202.0782 S:13 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

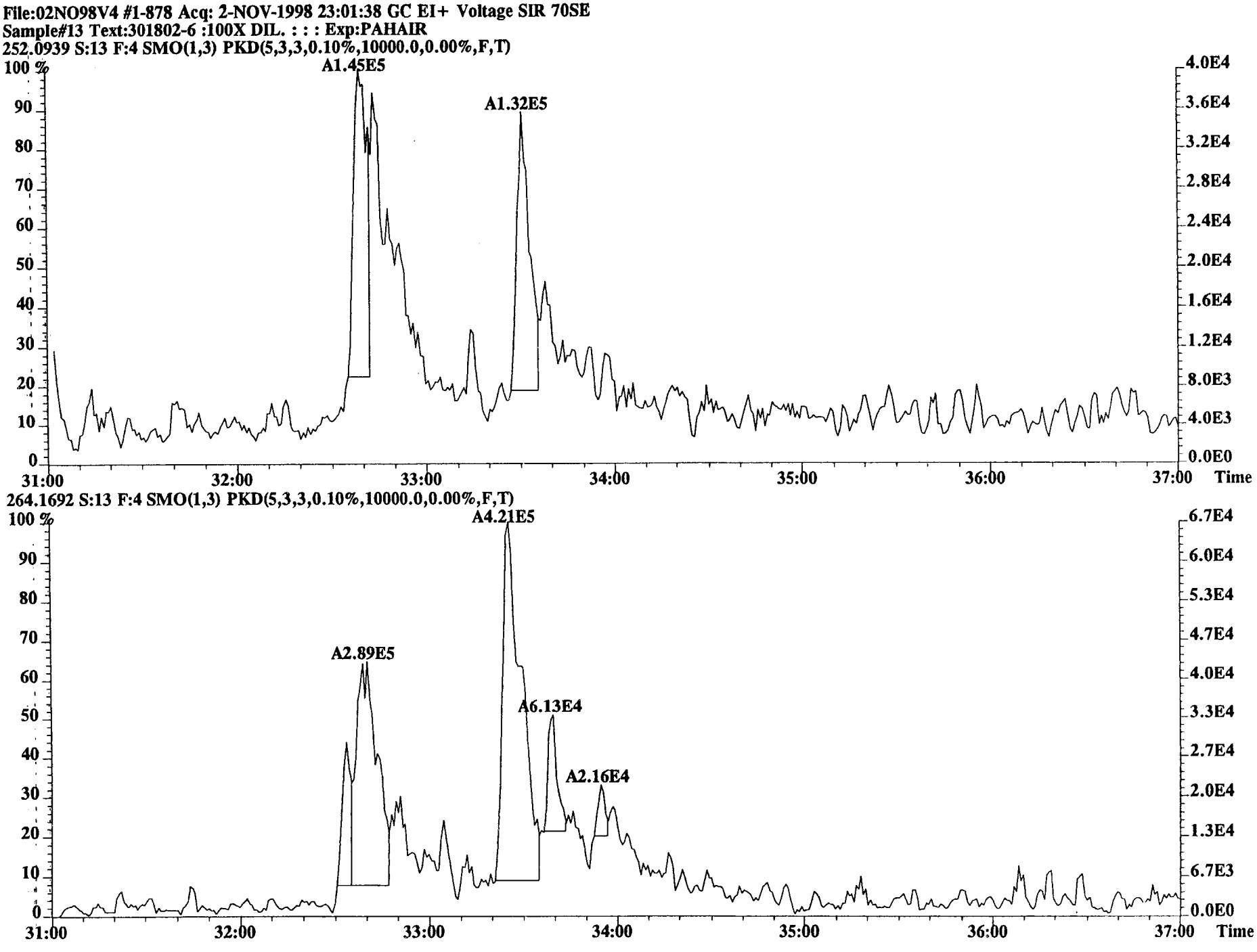


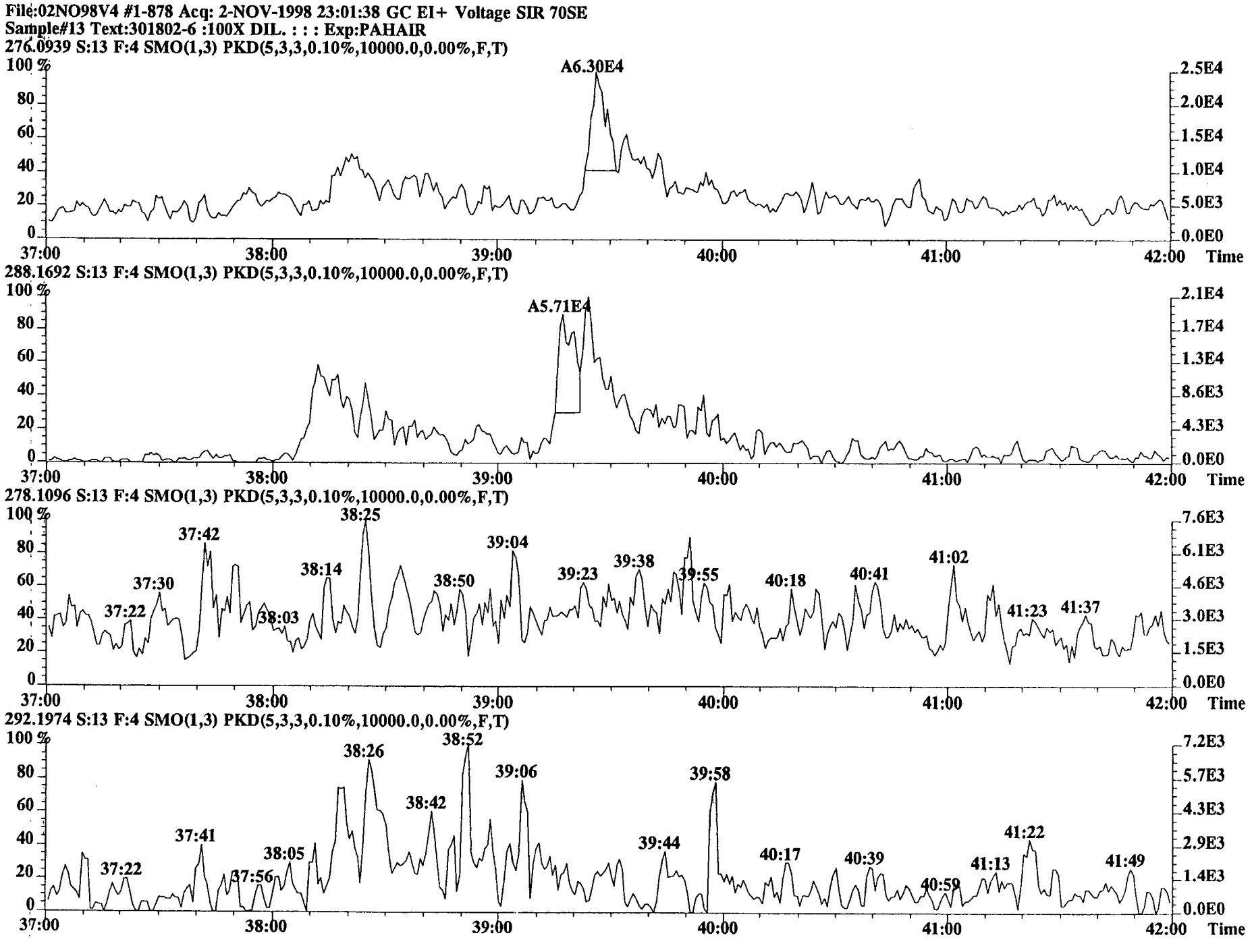
244.1974 S:13 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



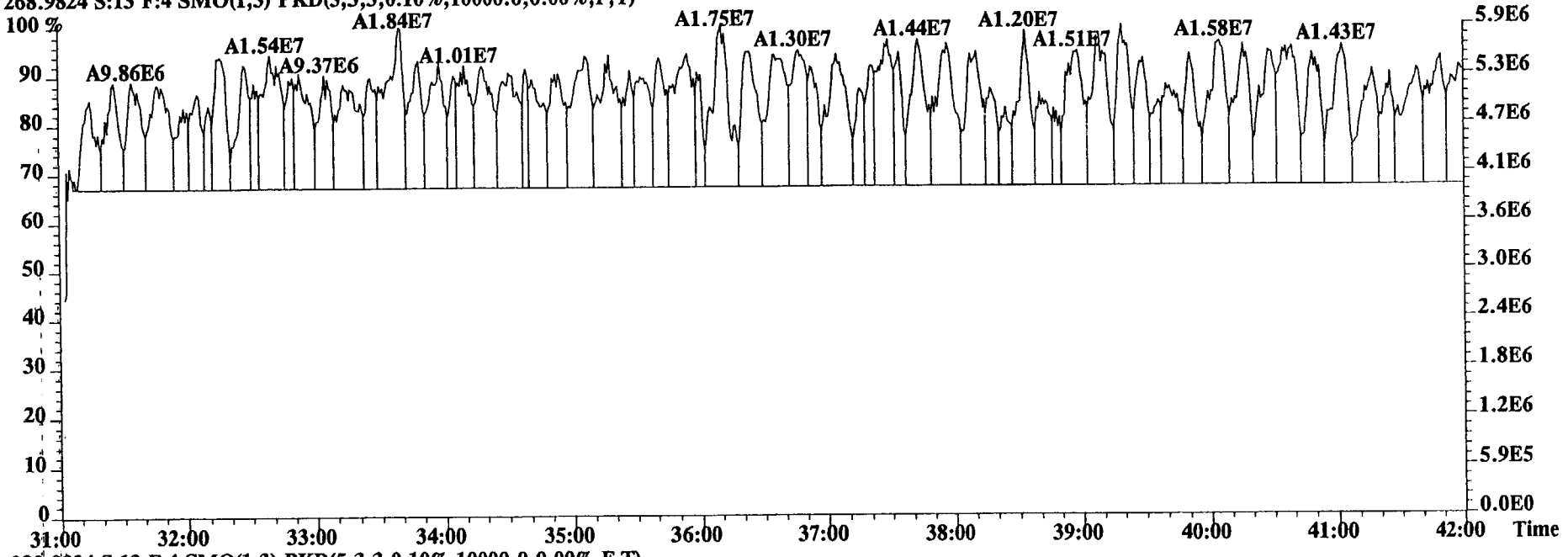

File:02NO98V4 #1-939 Acq: 2-NOV-1998 23:01:38 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-6 :100X DIL. : : : Exp:PAHAIR
228.0939 S:13 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A3.16E6
A3.67E5
A1.08E4
3.3E5
3.0E5
2.7E5
2.3E5
2.0E5
1.7E5
1.3E5
9.9E4
6.6E4
3.3E4
0.0E0
26:00
27:00
28:00
29:00
30:00
31:00
Time
240.1692 S:13 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.48E5
6.2E4
5.6E4
4.9E4
4.3E4
3.7E4
3.1E4
2.5E4
1.9E4
1.2E4
6.2E3
0.0E0
26:00
27:00
28:00
29:00
30:00
31:00
Time


File:02NO98V4 #1-939 Acq: 2-NOV-1998 23:01:38 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-6 :100X DIL. : : : Exp:PAHAIR
230.9856 S:13 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A9.06E7
A1.29E8
A4.71E7
3.9E7
3.7E7
3.5E7
3.3E7
3.1E7
2.9E7
2.7E7
2.5E7
2.3E7
2.1E7
1.9E7
1.7E7
1.6E7
1.4E7
1.2E7
9.7E6
7.8E6
5.8E6
3.9E6
1.9E6
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time

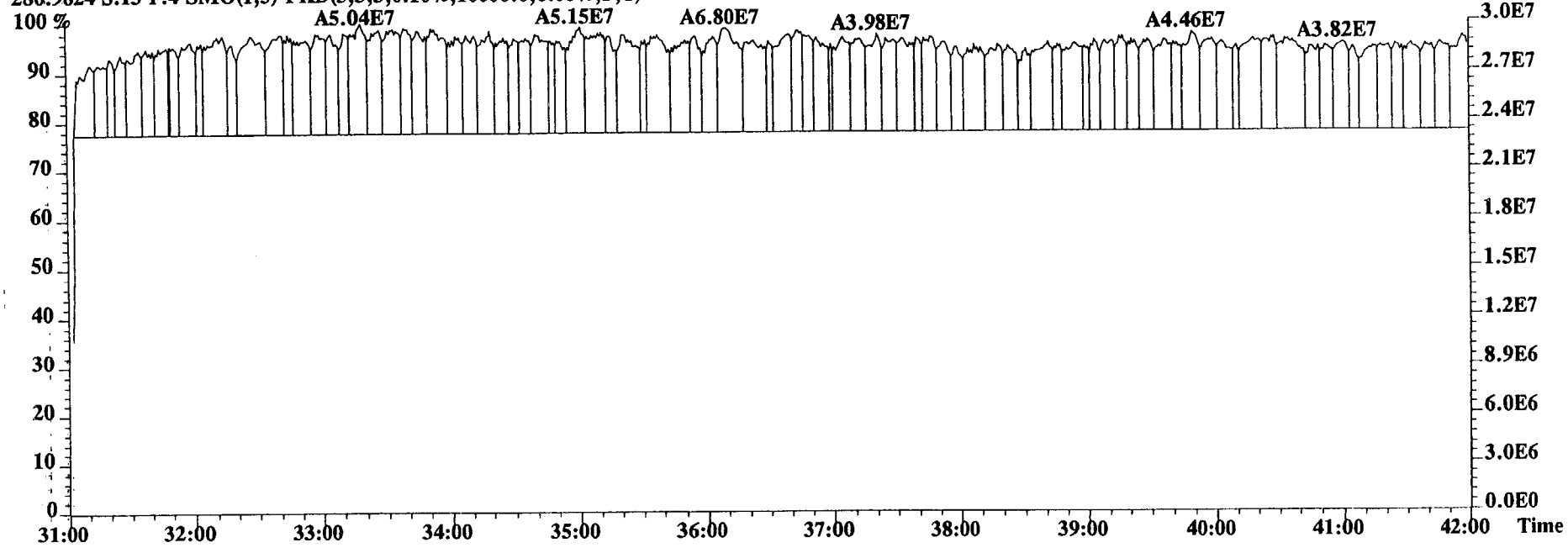

File:02NO98V4 #1-878 Acq: 2-NOV-1998 23:01:38 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-6 :100X DIL. : : : Exp:PAHAIR
252.0939 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.45E5
A1.32E5
4.0E4
3.6E4
3.2E4
2.8E4
2.4E4
2.0E4
1.6E4
1.2E4
8.0E3
4.0E3
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
Time
264.1692 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A4.21E5
A2.89E5
A6.13E4
A2.16E4
6.7E4
6.0E4
5.3E4
4.7E4
4.0E4
3.3E4
2.7E4
2.0E4
1.3E4
6.7E3
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
Time


File:02NO98V4 #1-878 Acq: 2-NOV-1998 23:01:38 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-6 :100X DIL. : : : Exp:PAHAIR
276.0939 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A6.30E4
288.1692 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A5.71E4
278.1096 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
37:22
37:30
37:42
38:03
38:14
38:25
38:50
39:04
39:23
39:38
39:55
40:18
40:41
41:02
41:23
41:37
292.1974 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
37:22
37:41
37:56
38:05
38:26
38:42
38:52
39:06
39:44
39:58
40:17
40:39
40:59
41:13
41:22
41:49
100 %
80
60
40
20
0
37:00
38:00
39:00
40:00
41:00
42:00
Time
2.5E4
2.0E4
1.5E4
1.0E4
5.0E3
0.0E0
2.1E4
1.7E4
1.3E4
8.6E3
4.3E3
0.0E0
7.6E3
6.1E3
4.6E3
3.0E3
1.5E3
0.0E0
7.2E3
5.7E3
4.3E3
2.9E3
1.4E3
0.0E0

File:02NO98V4 #1-878 Acq: 2-NOV-1998 23:01:38 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-6 :100X DIL. : : : Exp:PAHAIR
268.9824 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



280.9824 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-U-429-1
Lab ID: 301802-0007-SA
Matrix: AIRTRAIN Sampled: 24 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	100000	ng/sample	--	B
2-Methylnaphthalene	2900	ng/sample	--	B
Acenaphthylene	16000	ng/sample	--	F
Acenaphthene	280	ng/sample	--	
Fluorene	930	ng/sample	--	
Phenanthrene	11000	ng/sample	--	B
Anthracene	310	ng/sample	--	
Fluoranthene	5400	ng/sample	--	
Pyrene	2700	ng/sample	--	
Benzo(a)anthracene	160	ng/sample	--	
Chrysene	380	ng/sample	--	
Benzo(b)fluoranthene	270	ng/sample	--	
Benzo(k)fluoranthene	ND	ng/sample	100	
Benzo(e)pyrene	290	ng/sample	--	F
Benzo(a)pyrene	230	ng/sample	--	F
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
F = Reported value estimated due to an interference.
ND = Not Detected

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-U-429-1
Lab ID: 301802-0007-SA
Matrix: AIRTRAIN Sampled: 24 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	46	m
Acenaphthylene-d8	5.0	m
Acenaphthene-d10	50	
Fluorene-d10	81	
Phenanthrene-d10	94	
Fluoranthene-d10	70	
Pyrene-d10	57	
Benzo(a)anthracene-d12	52	
Perylene-d12	14	m
Indeno(123-cd)pyrene-d12	70	
Chrysene-d12	80	
Benzo(b)fluoranthene-d12	79	
Benzo(k)fluoranthene-d12	80	
Benzo(a)pyrene-d12	18	m
Dibenz(a,h)anthracene-d14	77	
Benzo(g,h,i)perylene-d12	58	

Field Surrogates	% Recovery
13C-Fluorene	119

m = Internal Standard recovery is outside method recovery goal.

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

04-NOV-1998 06:44:19 PM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4 Results : 30OC98V4101.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 30-OCT-98
Data file : 30OC98V4 301802-7 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMP	Rec/ MDL	
d10-2-Methylnaphthalene	4546720	1.00	Y	12: 28	Y	1.00	50.00		
d8-Naphthalene	4660000	1.00	Y	10: 12	Y	2.24	22.87	46	m
Naphthalene	5827860000	1.00	Y	10: 16	Y	1.23	1.0e+05	B E	
2-Methylnaphthalene	75979200	1.00	Y	12: 34	Y	0.56	2908.66	B	
d8-Acenaphthylene	302000	1.00	Y	15: 37	Y	1.21	2.74	5	m
Acenaphthylene	46600000	1.00	Y	15: 44	Y	0.94	1.6e+04	E F	
d10-Acenaphthene	1682194	1.00	Y	16: 2	Y	0.74	24.84	50	
Acenaphthene	5780000	1.00	Y	16: 8	Y	1.25	275.74		
d10-Anthracene	2875560	1.00	Y	20: 55	Y	1.00	50.00		
d10-Fluorene	3313300	1.00	Y	17: 41	Y	1.42	40.55	81	
Fluorene	35925800	1.00	Y	17: 46	Y	1.16	934.32		
d10-Phenanthrene	7550260	1.00	Y	20: 45	Y	2.81	46.76	94	
Phenanthrene	754314000	1.00	Y	20: 50	Y	0.89	1.1e+04	B E	
Anthracene	18660000	1.00	Y	20: 59	Y	0.80	308.77		
d14-Terphenyl	9995400	1.00	Y	26: 1	Y	1.00	50.00		
d10-Fluoranthene	9883440	1.00	Y	24: 35	Y	1.41	35.05	70	
Fluoranthene	591552000	1.00	Y	24: 39	Y	1.11	5383.56	E	
d10-Pyrene	8622380	1.00	Y	25: 17	Y	1.52	28.41	57	
Pyrene	278108000	1.00	Y	25: 20	Y	1.21	2676.57		
d12-Benzo(a)anthracene	4643320	1.00	Y	29: 9	Y	0.90	25.81	52	
Benzo(a)anthracene	8743480	1.00	Y	29: 15	Y	1.20	156.33		
d12-Chrysene	10185540	1.00	Y	29: 16	Y	1.28	39.83	80	
Chrysene	31389200	1.00	Y	29: 20	Y	1.08	284.30		
d12-Benzo(e)pyrene	17720000	1.00	Y	33: 23	Y	1.00	50.00		
d12-Benzo(b)fluoranthene	6376500	1.00	Y	32: 30	Y	0.45	39.64	79	
Benzo(b)fluoranthene	19920000	1.00	Y	32: 35	Y	1.17	267.63		
d12-Benzo(k)fluoranthene	13367320	1.00	Y	32: 36	Y	0.95	39.78	80	
Benzo(k)fluoranthene	13920000	1.00	Y	32: 38	Y	1.16	<RL=100.00		
d12-Benzo(a)pyrene	2160000	1.00	Y	33: 33	Y	0.68	9.01	18	r
Benzo(e)pyrene	10177060	1.00	Y	33: 28	Y	1.64	287.15	F	
Benzo(a)pyrene	5220300	1.00	Y	33: 35	Y	1.07	225.45	F	
d12-Perylene	1562000	1.00	Y	33: 50	Y	0.63	6.99	14	r
Perylene	1180000	1.00	Y	33: 56	N	1.71	<RL=100.00		
d12-Indeno(123-cd)pyrene	5480000	1.00	Y	38: 5	Y	0.44	34.78	70	
Indeno(123-cd)pyrene	1662000	1.00	Y	38: 12	Y	0.62	<RL=100.00		
d14-Dibenz(ah)anthracene	3340000	1.00	Y	38: 9	Y	0.25	38.34	77	
Dibenz(ah)anthracene	* No Peak	0.00	N	38: 16	N	1.40	<RL=100.00		
d12-Benzo(ghi)perylene	5940000	1.00	Y	39: 14	Y	0.58	28.91	58	
Benzo(ghi)perylene	3300000	1.00	Y	39: 24	Y	1.02	<RL=100.00		
d10-Fluorene	3313300	1.00	Y	17: 41	Y	1.00	50.00		
13C-Fluorene	3194800	1.00	Y	17: 46	Y	0.81	59.52	119	

251 11-4-98

0.5

98V4.RRF

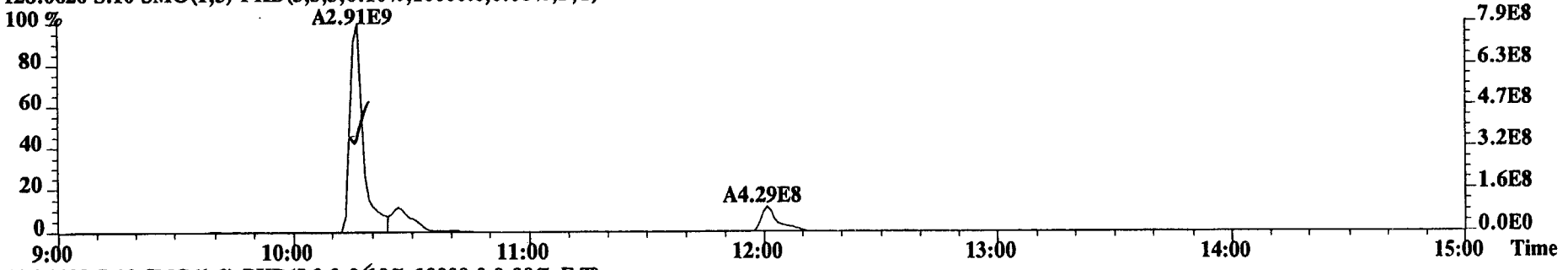
Rec/ MDL		
	2273360	2273360
46	2330000	2330000
B E	2913930000	2913930000
B	37989600	37989600
5	151000	151000
E	23300000	23300000
50	841097	841097
	2890000	2890000
	1437780	1437780
81	1656650	1656650
	17962900	17962900
94	3775130	3775130
B E	377157000	377157000
	9330000	9330000
	4997700	4997700
70	4941720	4941720
E	295776000	295776000
57	4311190	4311190
	139054000	139054000
52	2321660	2321660
	4371740	4371740
80	5092770	5092770
	15694600	15694600
	8860000	8860000
79	3188250	3188250
	9960000	9960000
80	6683660	6683660
100.00	6960000	6960000
18	1080000	1080000
	5088530	5088530
	2610150	2610150
14	781000	781000
100.00	590000	590000
70	2740000	2740000
100.00	831000	831000
77	1670000	1670000
100.00	0	0
58	2970000	2970000
100.00	1650000	1650000

02-NOV-1998 08:55:42 AM Dioxin Furan Unknown RESULTS

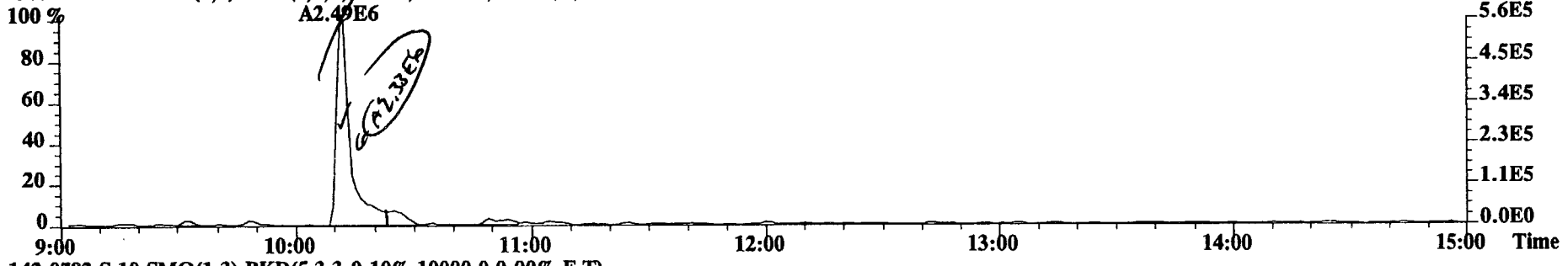
Mass Spec : VG-4 | Results : 30OC98V4101.RES | : PAHAIR.TRG
GC Column : DB-5 | Date analyzed : 30-OCT-98
Data file : 30OC98V4 | 301802-7 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMP	Rec/ MDL
d10-2-Methylnaphthalene	4546720	1.00	Y	12: 28	Y	1.00	50.00	
d8-Naphthalene	4981700	1.00	Y	10: 12	Y	2.24	24.45	49
Naphthalene	5827860000	1.00	Y	10: 16	Y	1.23	9.5e+04	0.000
2-Methylnaphthalene	75979200	1.00	Y	12: 34	Y	0.56	2720.83	0.000
d8-Acenaphthylene	* No Peak	0.00	N	15: 28	N	1.21	0.00	0
Acenaphthylene	46691600	1.00	Y	15: 31	Y	0.94	*NoINoIs	
d10-Acenaphthene	1682194	1.00	Y	16: 2	Y	0.74	24.84	50
Acenaphthene	* No Peak	0.00	N	16: 8	N	1.25	0.00	0.000
d10-Anthracene	2875560	1.00	Y	20: 55	Y	1.00	50.00	
d10-Fluorene	3313300	1.00	Y	17: 41	Y	1.42	40.55	81
Fluorene	35925800	1.00	Y	17: 46	Y	1.16	934.32	0.000
d10-Phenanthrene	7550260	1.00	Y	20: 45	Y	2.81	46.76	94
Phenanthrene	754314000	1.00	Y	20: 50	Y	0.89	1.1e+04	0.000
Anthracene	* No Peak	0.00	N	20: 59	N	0.80	0.00	0.000
d14-Terphenyl	9995400	1.00	Y	26: 1	Y	1.00	50.00	
d10-Fluoranthene	9883440	1.00	Y	24: 35	Y	1.41	35.05	70
Fluoranthene	591552000	1.00	Y	24: 39	Y	1.11	5383.56	0.000
d10-Pyrene	8622380	1.00	Y	25: 17	Y	1.52	28.41	57
Pyrene	278108000	1.00	Y	25: 20	Y	1.21	2676.57	0.000
d12-Benzo(a)anthracene	4643320	1.00	Y	29: 9	Y	0.90	25.81	52
Benzo(a)anthracene	8743480	1.00	Y	29: 15	Y	1.20	156.33	0.000
d12-Chrysene	10185540	1.00	Y	29: 16	Y	1.28	39.83	80
Chrysene	31389200	1.00	Y	29: 20	Y	1.08	284.30	0.000
d12-Benzo(e)pyrene	19667360	1.00	Y	33: 23	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	6376500	1.00	Y	32: 30	Y	0.45	35.72	71
Benzo(b)fluoranthene	34053400	1.00	Y	32: 35	Y	1.17	457.52	0.000
d12-Benzo(k)fluoranthene	13367320	1.00	Y	32: 36	Y	0.95	35.85	72
Benzo(k)fluoranthene	34053400	1.00	Y	32: 35	Y	1.16	218.83	0.000
d12-Benzo(a)pyrene	* No Peak	0.00	N	33: 33	N	0.68	0.00	0
Benzo(e)pyrene	10177060	1.00	Y	33: 28	Y	1.64	*NoINoIs	
Benzo(a)pyrene	5220300	1.00	Y	33: 35	Y	1.07	*NoINoIs	
d12-Perylene	* No Peak	0.00	N	33: 50	N	0.63	0.00	0
Perylene	* No Peak	0.00	N	33: 56	N	1.71	*NoINoIs	
d12-Indeno(123-cd)pyrene	3641700	1.00	Y	38: 5	Y	0.44	20.83	42
Indeno(123-cd)pyrene	1622574	1.00	Y	38: 12	Y	0.62	71.75	0.000
d14-Dibenz(ah)anthracene	1901412	1.00	Y	38: 9	Y	0.25	19.66	39
Dibenz(ah)anthracene	* No Peak	0.00	N	38: 16	N	1.40	0.00	0.000
d12-Benzo(ghi)perylene	3873040	1.00	Y	39: 14	Y	0.58	16.98	34
Benzo(ghi)perylene	2971060	1.00	Y	39: 24	Y	1.02	75.50	0.000
d10-Fluorene	3313300	1.00	Y	17: 41	Y	1.42	5.93	12
13C-Fluorene	3194800	1.00	Y	17: 46	Y	1.00	96.42	0.000

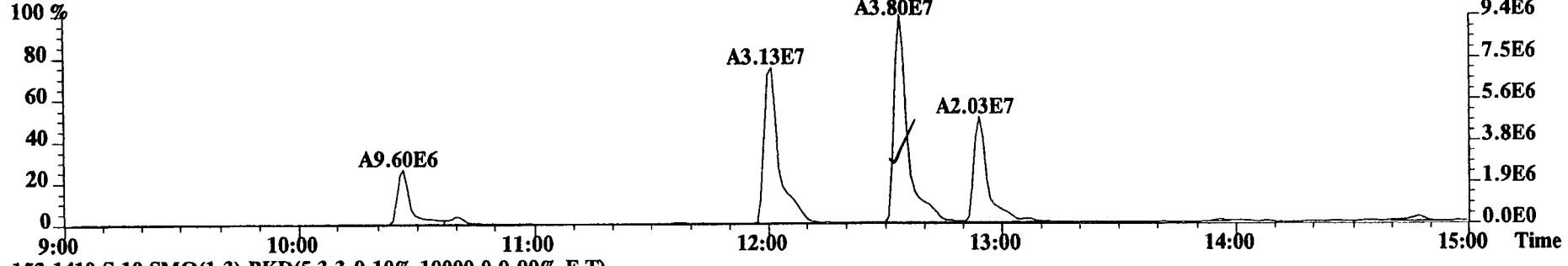
File:30OC98V4 #1-509 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
128.0626 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



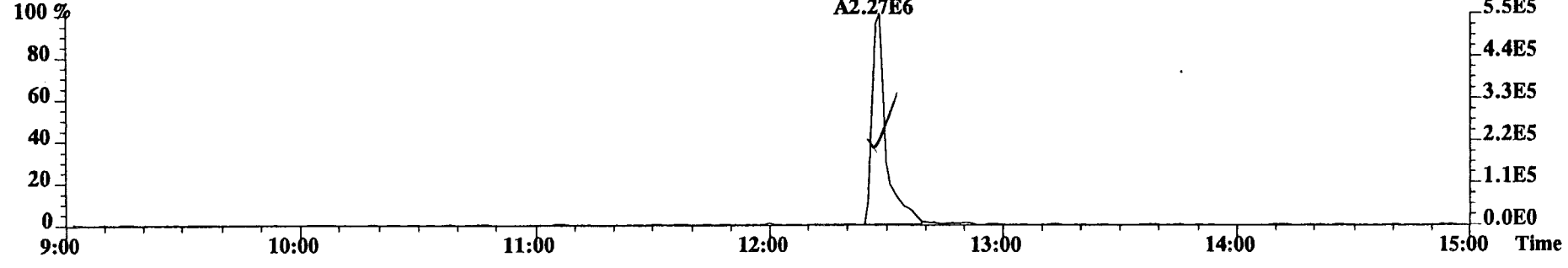
136.1128 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

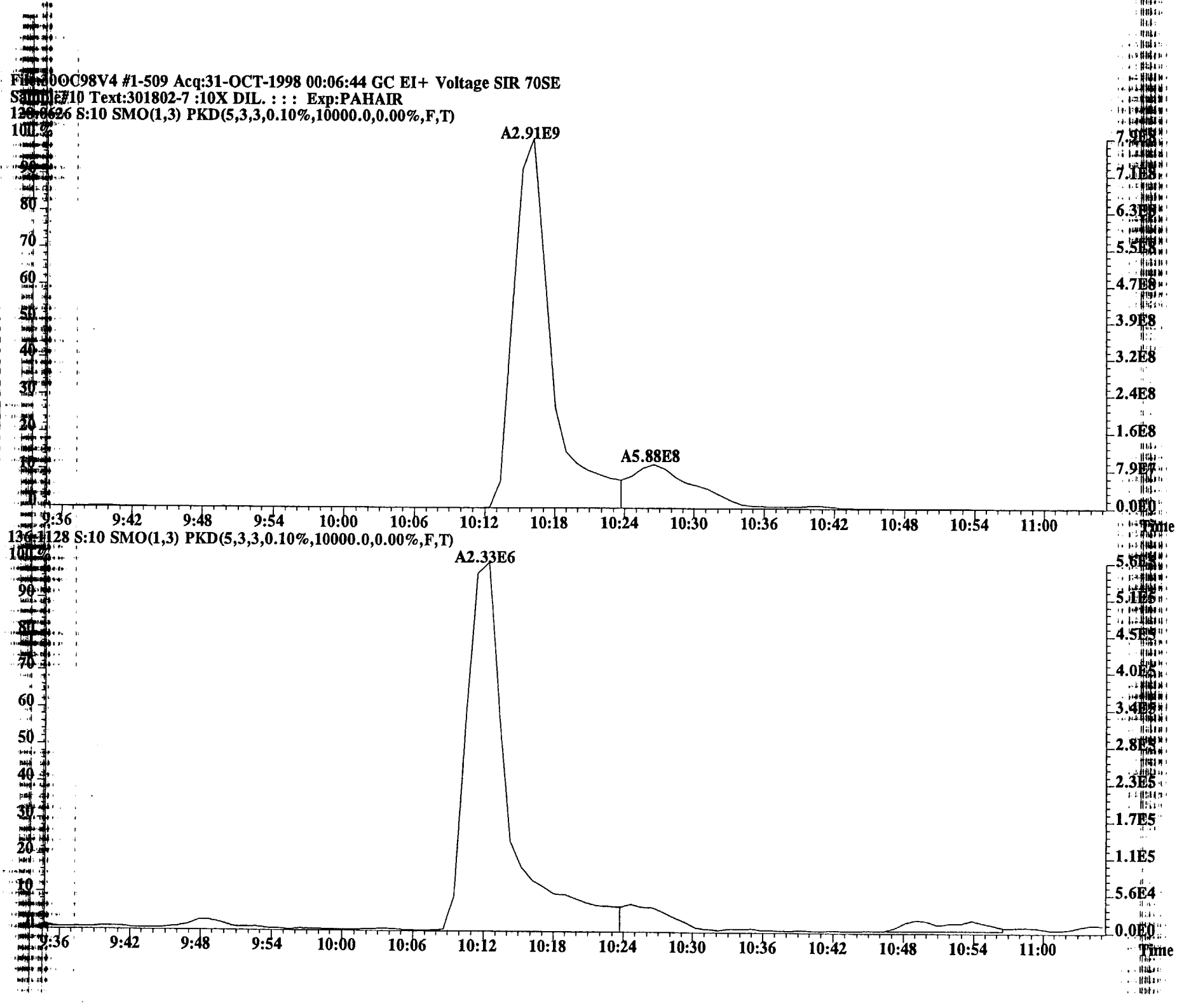


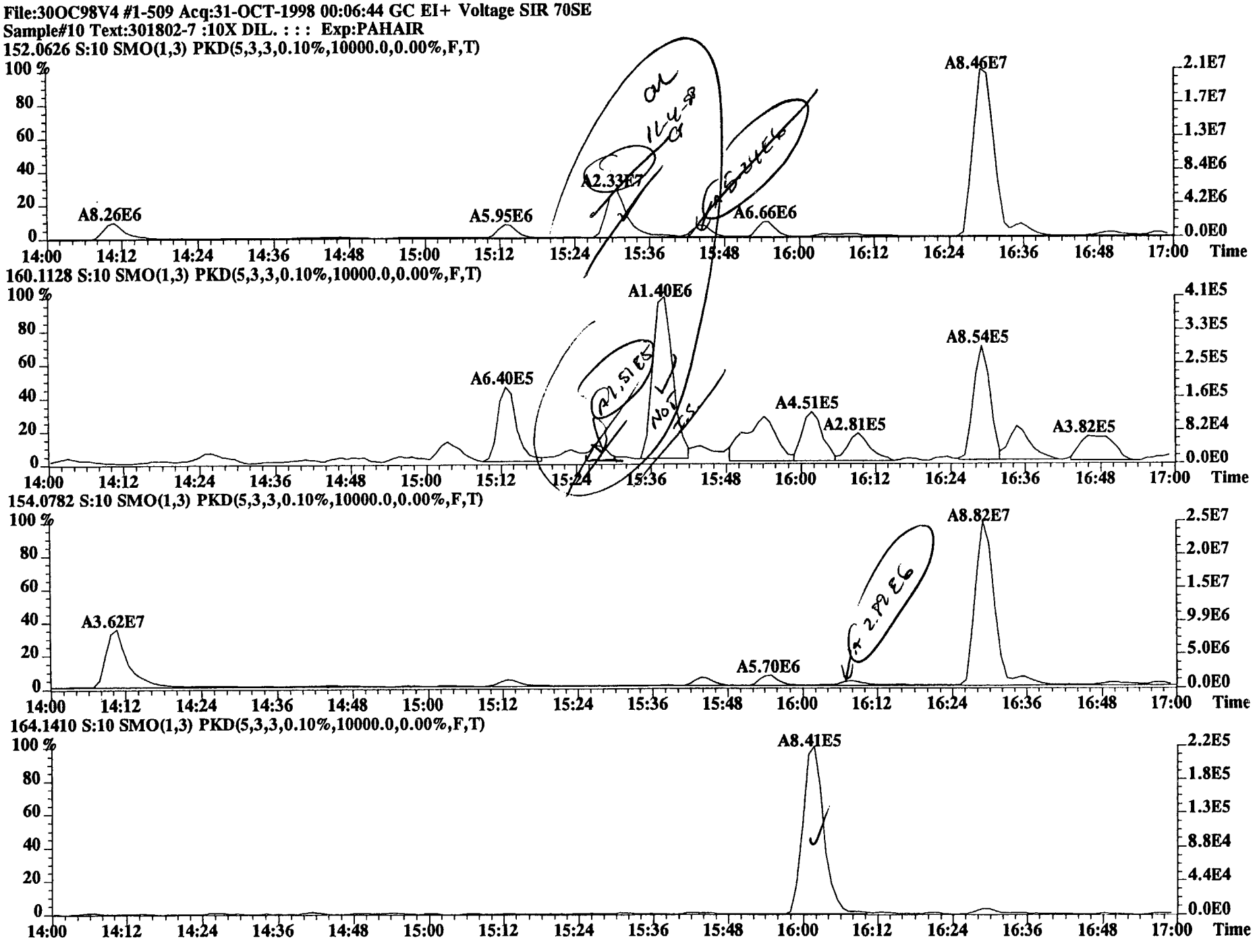
142.0782 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

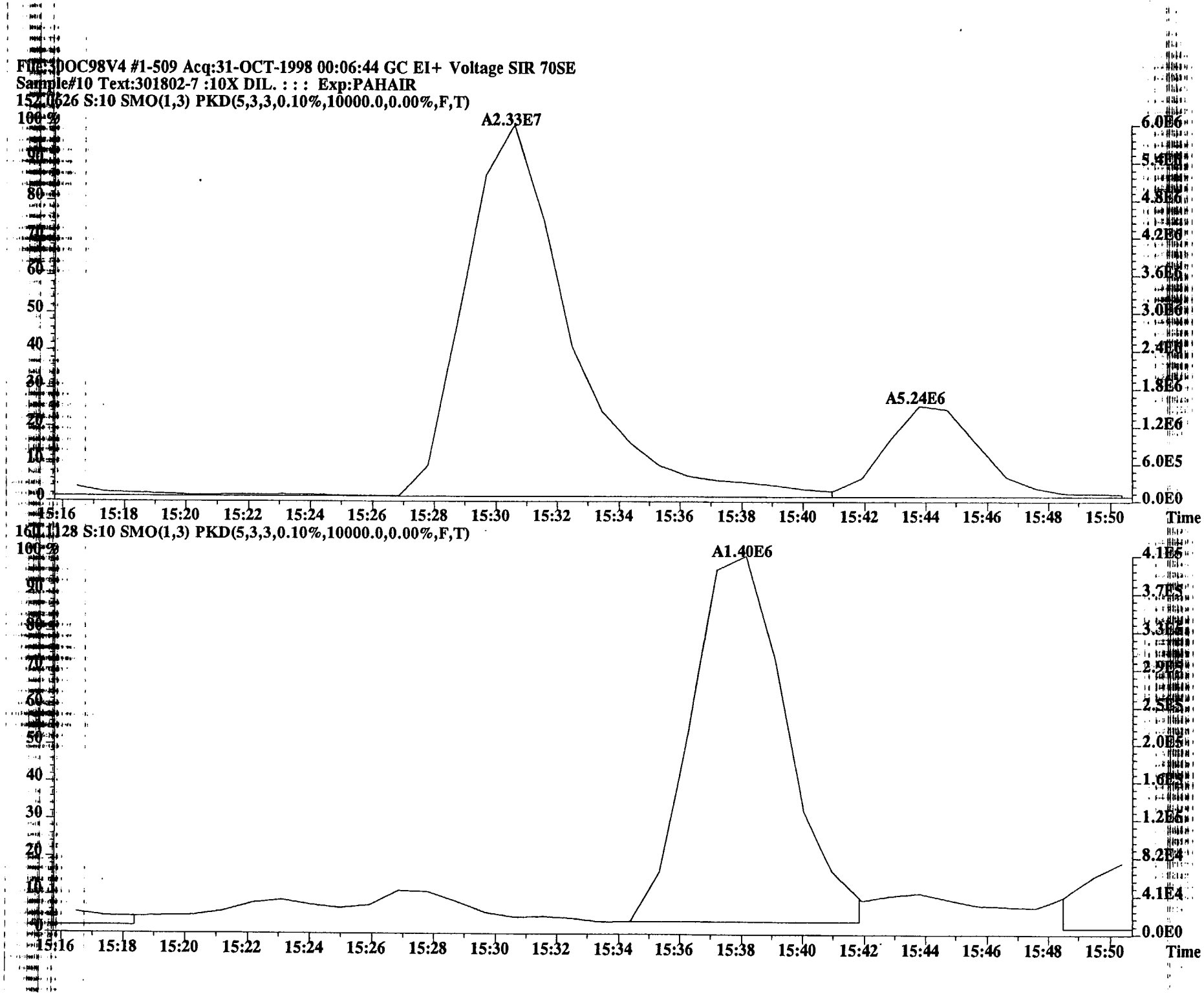


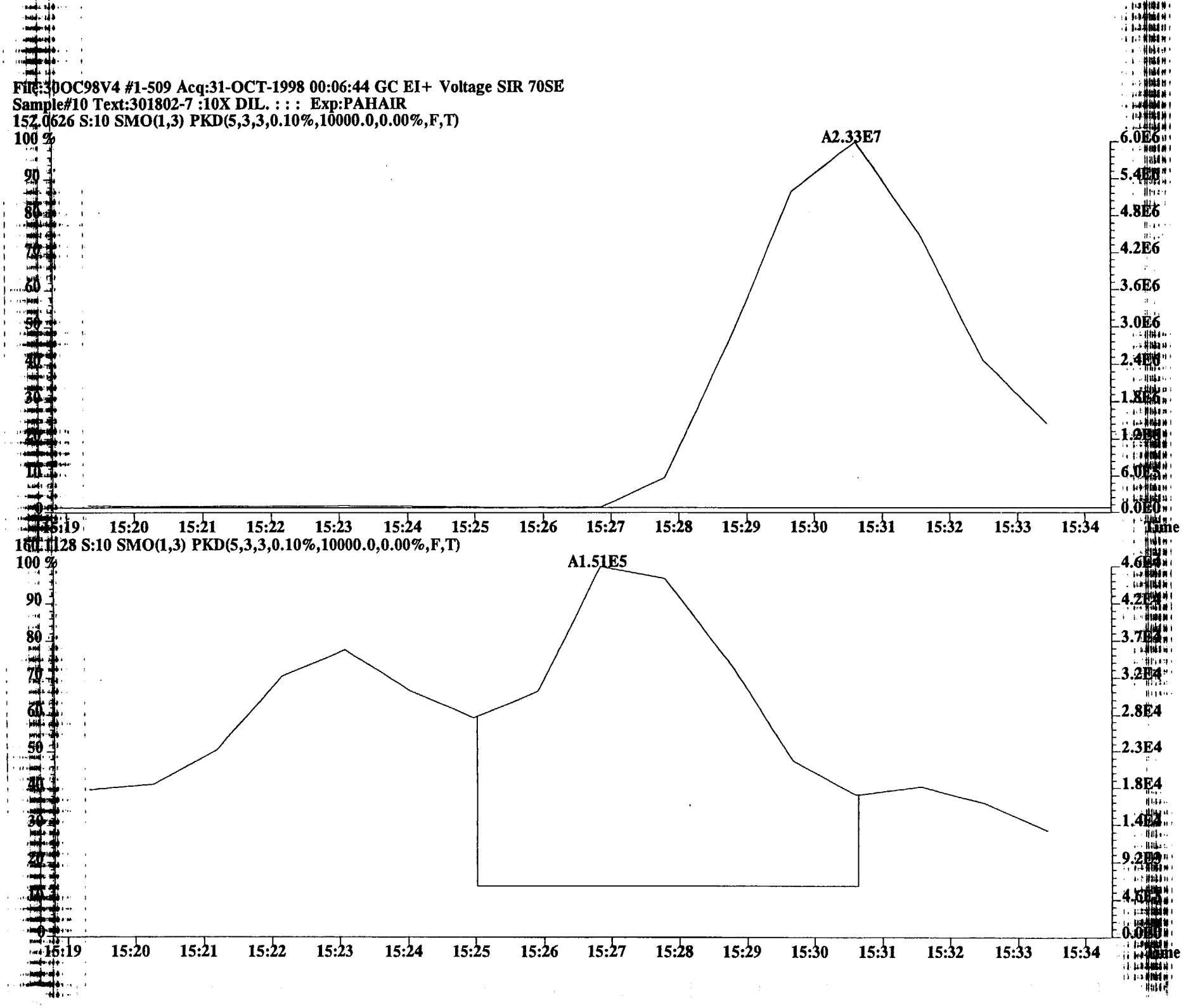
152.1410 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



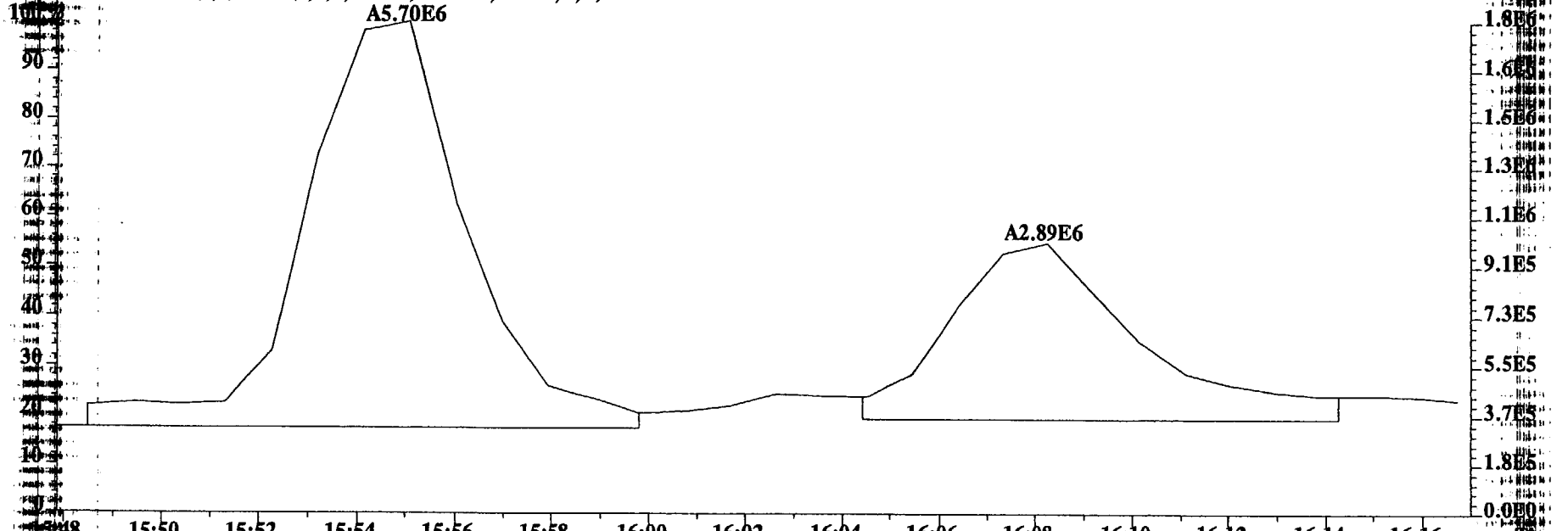

File:00C98V4 #1-509 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
126.0626 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.91E9
A5.88E8
9:36 9:42 9:48 9:54 10:00 10:06 10:12 10:18 10:24 10:30 10:36 10:42 10:48 10:54 11:00
Time
136.1128 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.33E6
9:36 9:42 9:48 9:54 10:00 10:06 10:12 10:18 10:24 10:30 10:36 10:42 10:48 10:54 11:00
Time


File:30OC98V4 #1-509 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
152.0626 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.26E6
A5.95E6
A2.33E7
A6.66E6
A8.46E7
160.1128 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A6.40E5
A1.40E6
A4.51E5
A2.81E5
A8.54E5
A3.82E5
154.0782 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.62E7
A5.70E6
A8.82E7
164.1410 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.41E5
Time

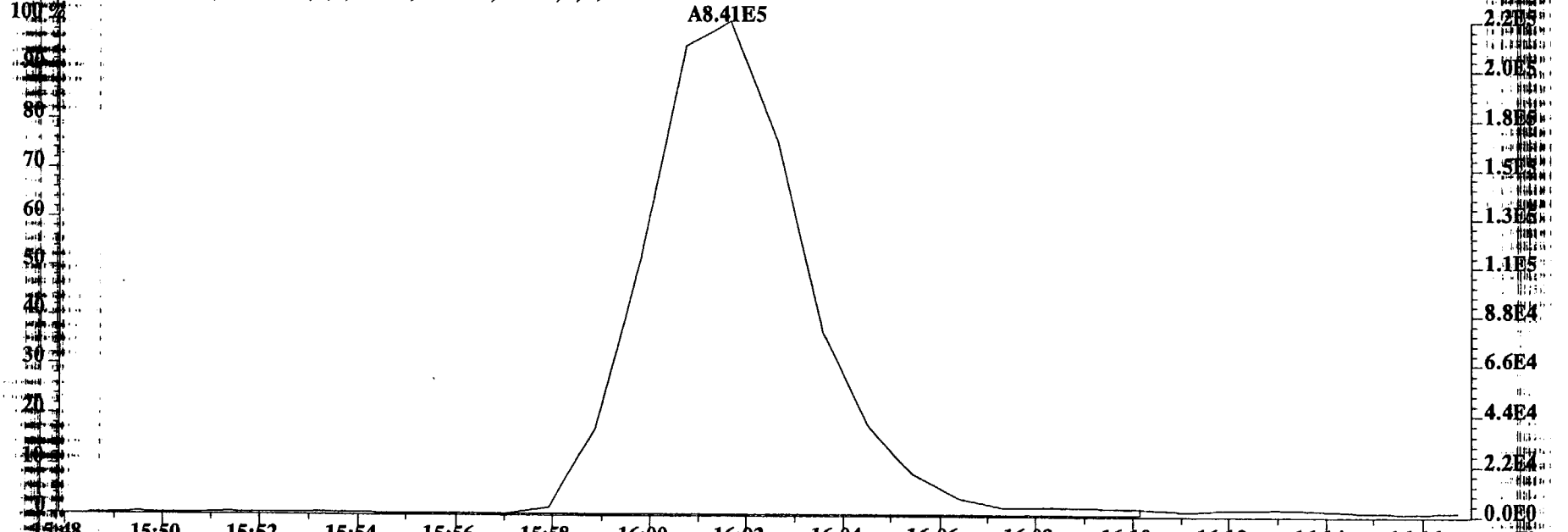

FILE:30OC98V4 #1-509 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
152.0626 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.33E7
A5.24E6
160.1128 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.40E6
15:16 15:18 15:20 15:22 15:24 15:26 15:28 15:30 15:32 15:34 15:36 15:38 15:40 15:42 15:44 15:46 15:48 15:50
Time

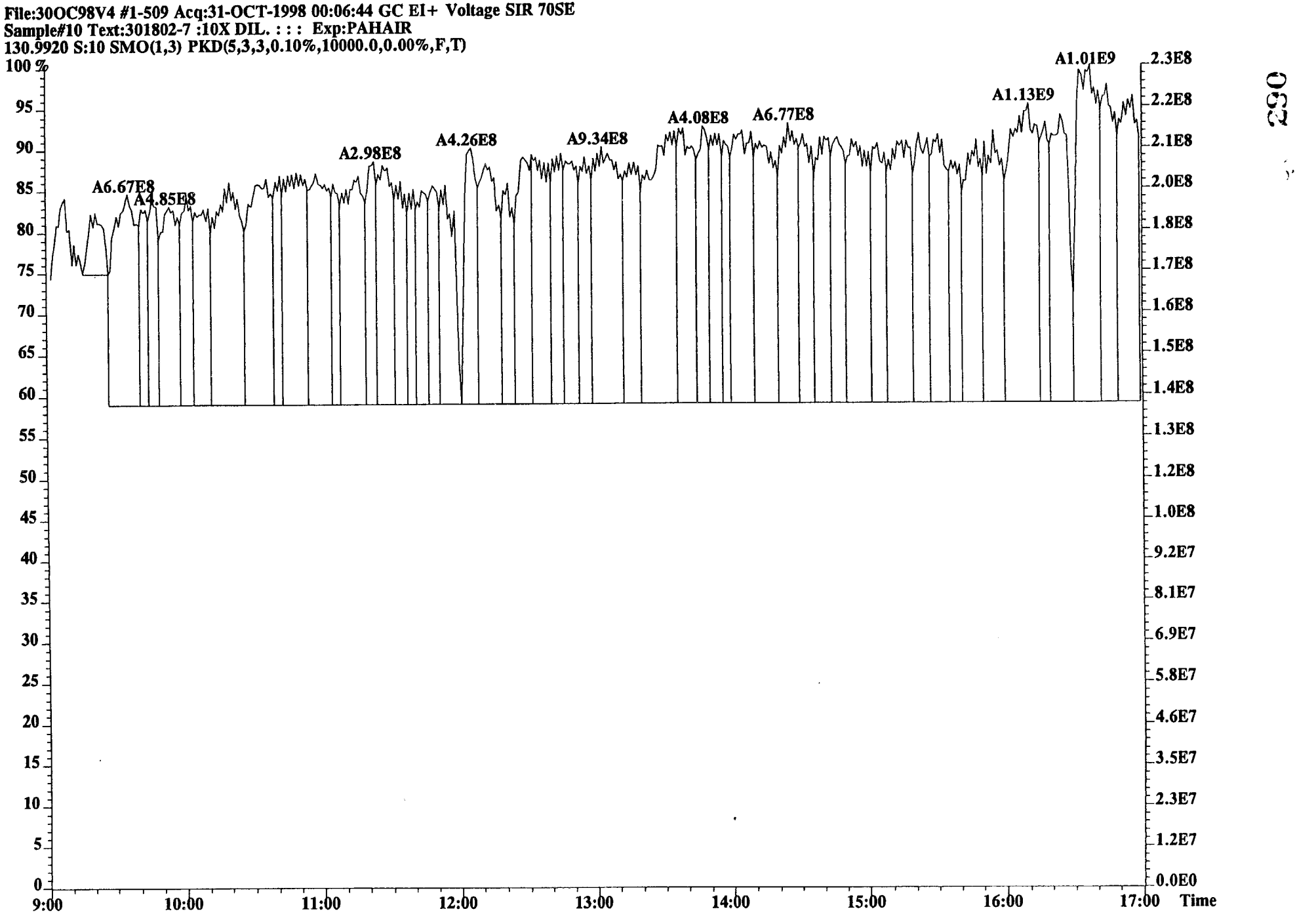

File:30OC98V4 #1-509 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
152.0626 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A2.33E7
6.0E6
5.4E6
4.8E6
4.2E6
3.6E6
3.0E6
15:19
15:20
15:21
15:22
15:23
15:24
15:25
15:26
15:27
15:28
15:29
15:30
15:31
15:32
15:33
15:34
Time
160.1128 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.51E5
4.6E4
4.2E4
3.7E4
3.2E4
2.8E4
2.3E4
1.8E4
1.4E4
9.2E3
0.0E0
15:19
15:20
15:21
15:22
15:23
15:24
15:25
15:26
15:27
15:28
15:29
15:30
15:31
15:32
15:33
15:34
Time

File:30OC98V4 #1-509 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
154.0782 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



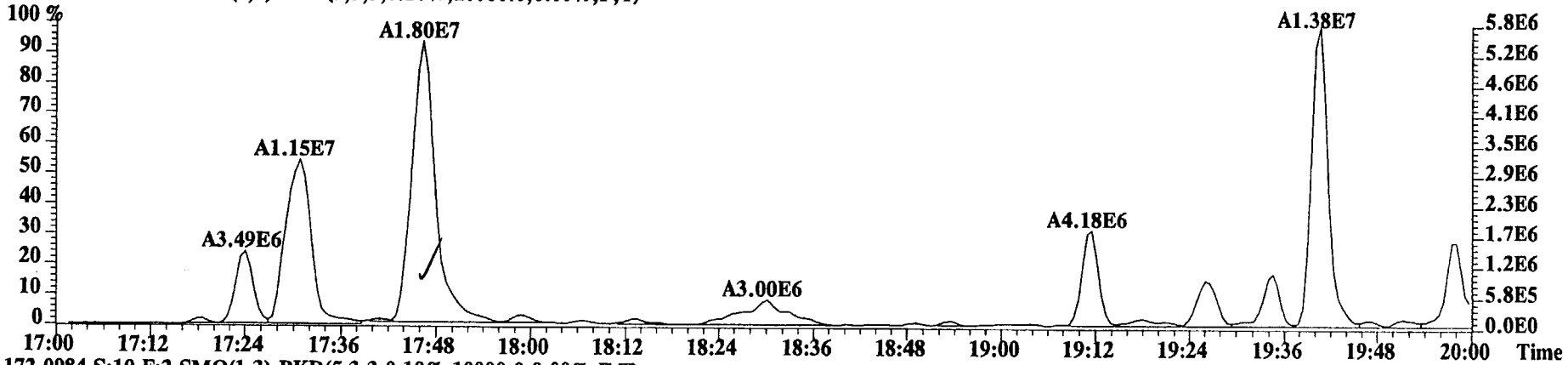
164.1410 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



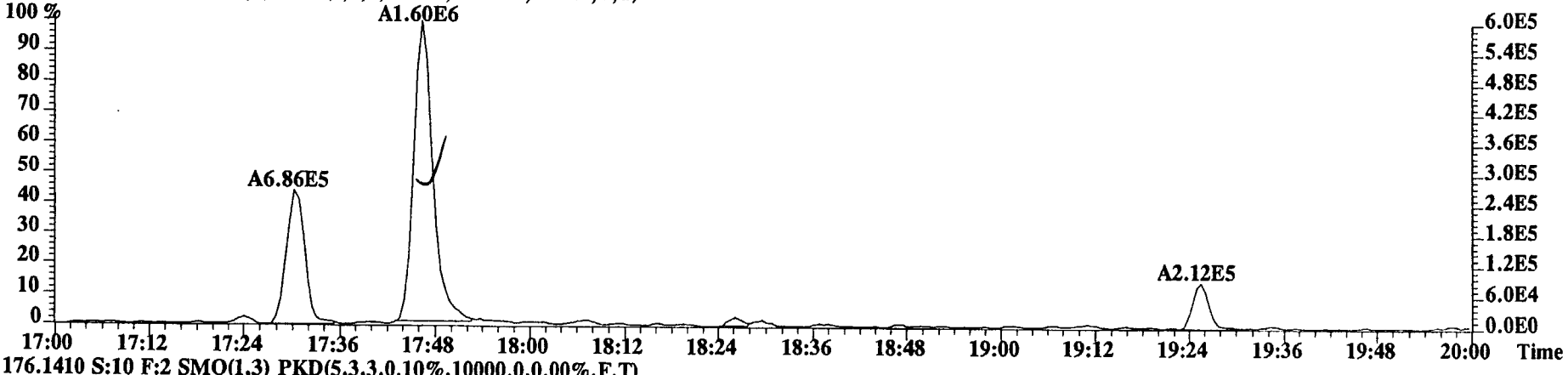

File:30OC98V4 #1-509 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
130.9920 S:10 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A6.67E8
A4.85E8
A2.98E8
A4.26E8
A9.34E8
A4.08E8
A6.77E8
A1.13E9
A1.01E9
2.3E8
2.2E8
2.1E8
2.0E8
1.8E8
1.7E8
1.6E8
1.5E8
1.4E8
1.3E8
1.2E8
1.0E8
9.2E7
8.1E7
6.9E7
5.8E7
4.6E7
3.5E7
2.3E7
1.2E7
0.0E0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
Time

290

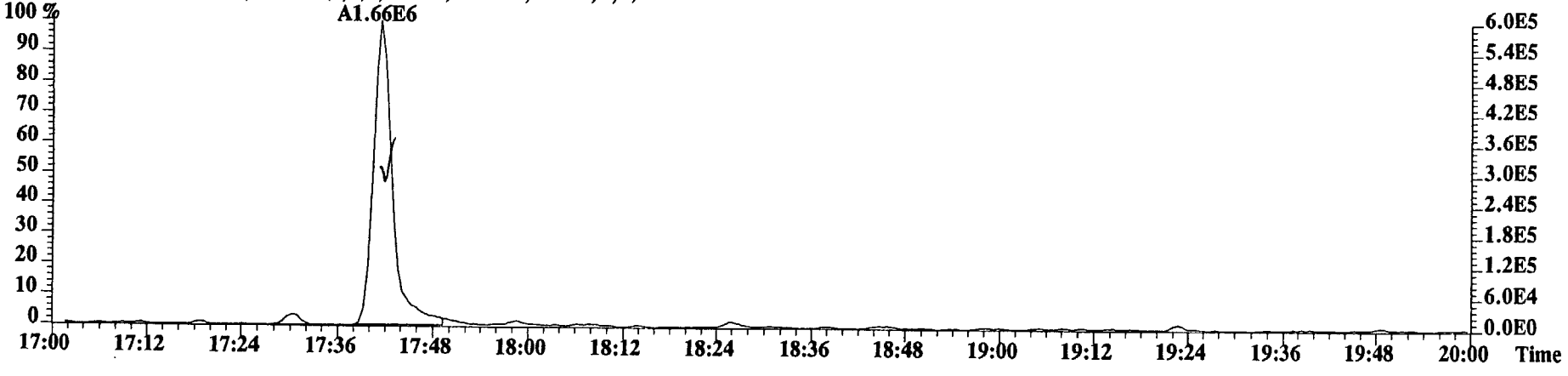
File:30OC98V4 #1-642 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
166.0798 S:10 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

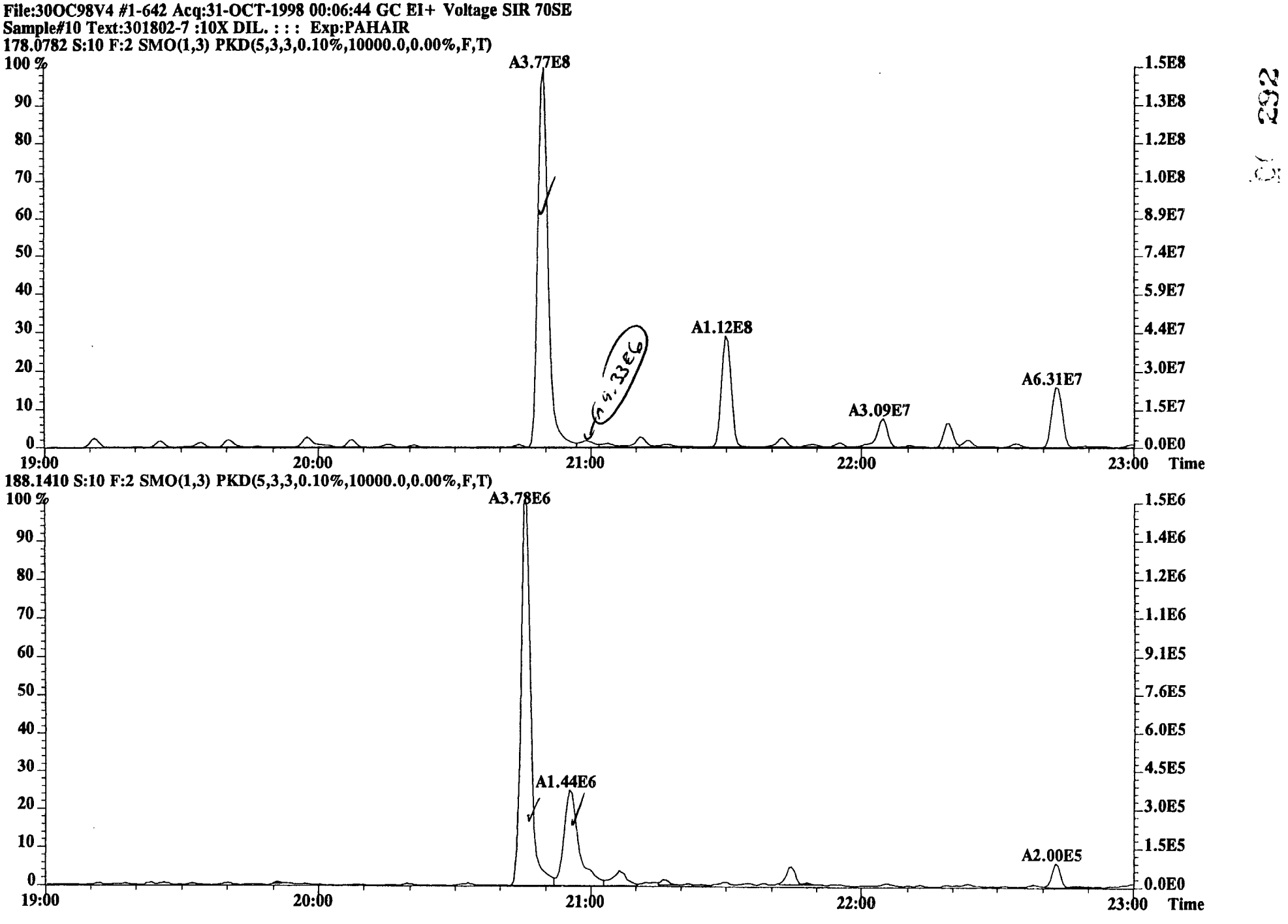


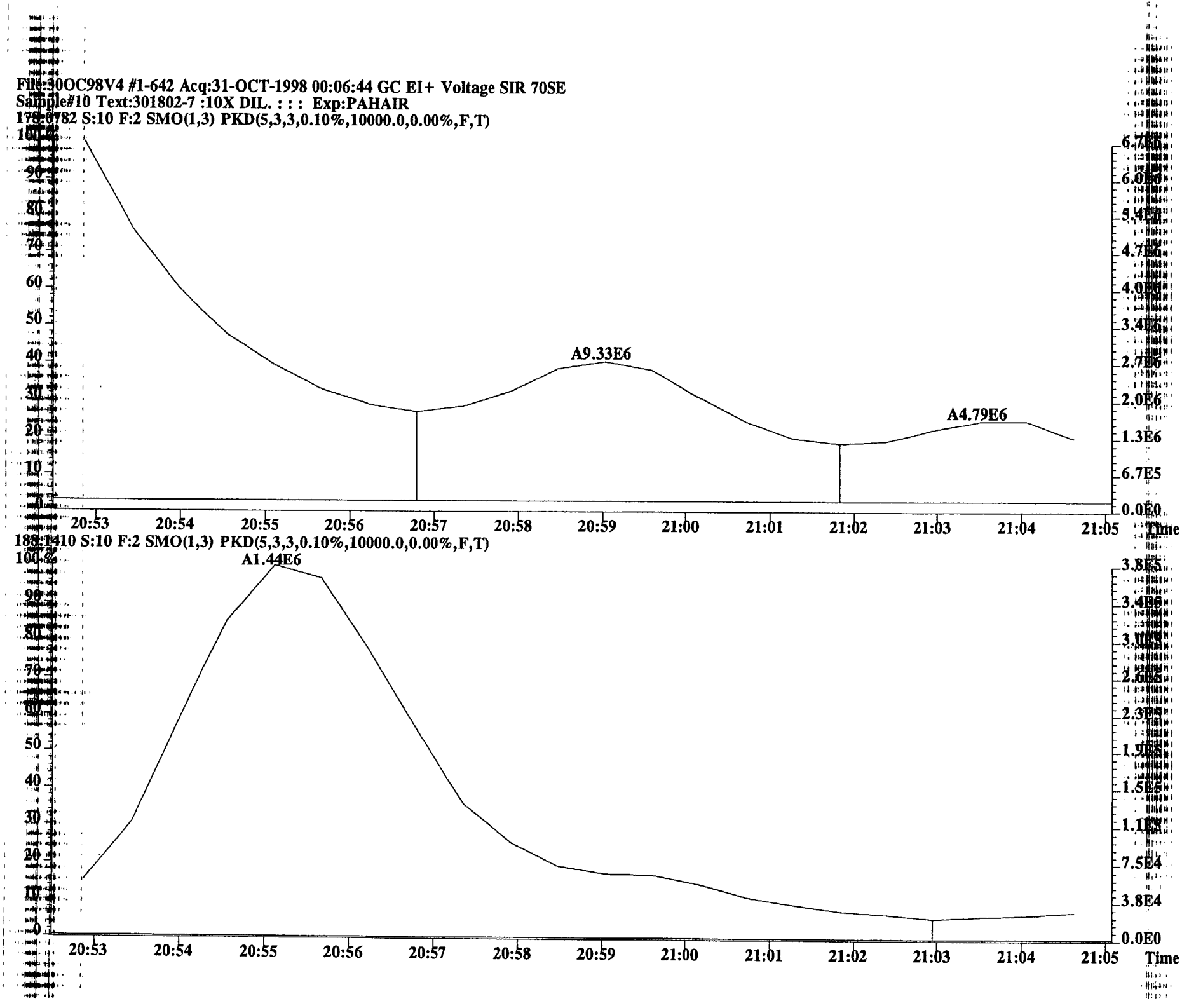
172.0984 S:10 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

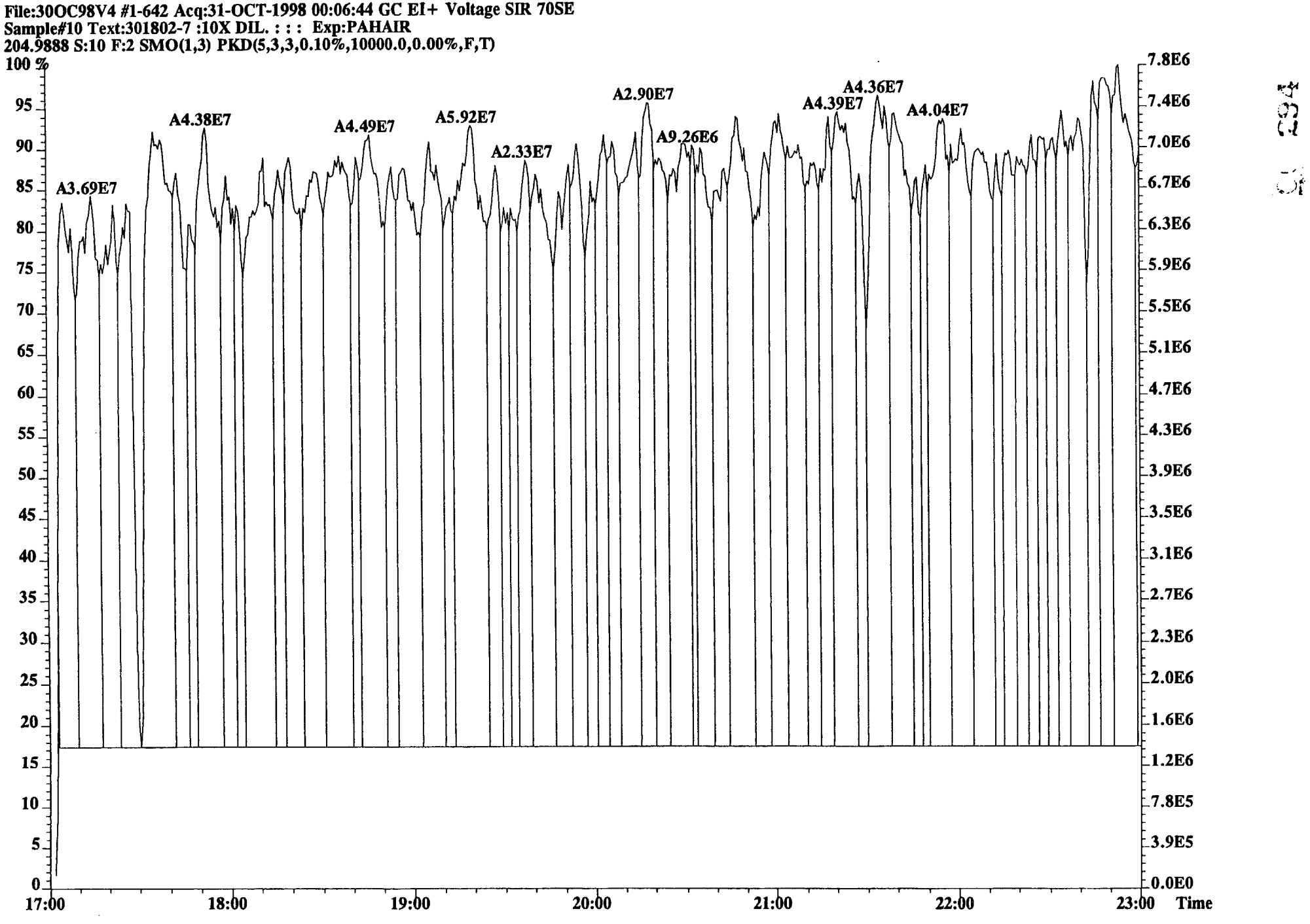


176.1410 S:10 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

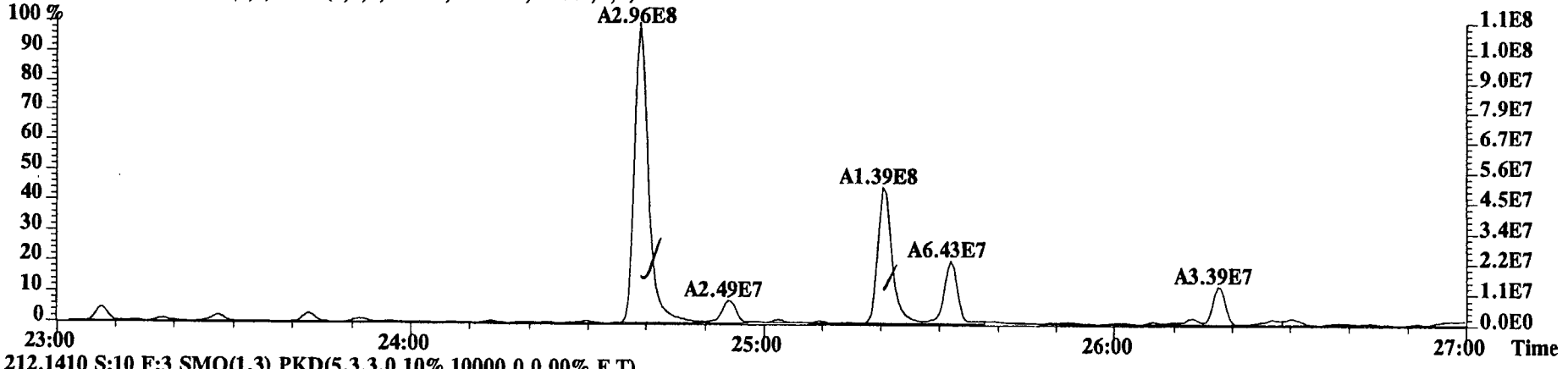



File:30OC98V4 #1-642 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
178.0782 S:10 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A3.77E8
A1.12E8
A6.31E7
A3.09E7
5.33E6
1.5E8
1.3E8
1.2E8
1.0E8
8.9E7
7.4E7
5.9E7
4.4E7
3.0E7
1.5E7
0.0E0
19:00
20:00
21:00
22:00
23:00
Time
188.1410 S:10 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A3.78E6
A1.44E6
A2.00E5
1.5E6
1.4E6
1.2E6
1.1E6
9.1E5
7.6E5
6.0E5
4.5E5
3.0E5
1.5E5
0.0E0
19:00
20:00
21:00
22:00
23:00
Time

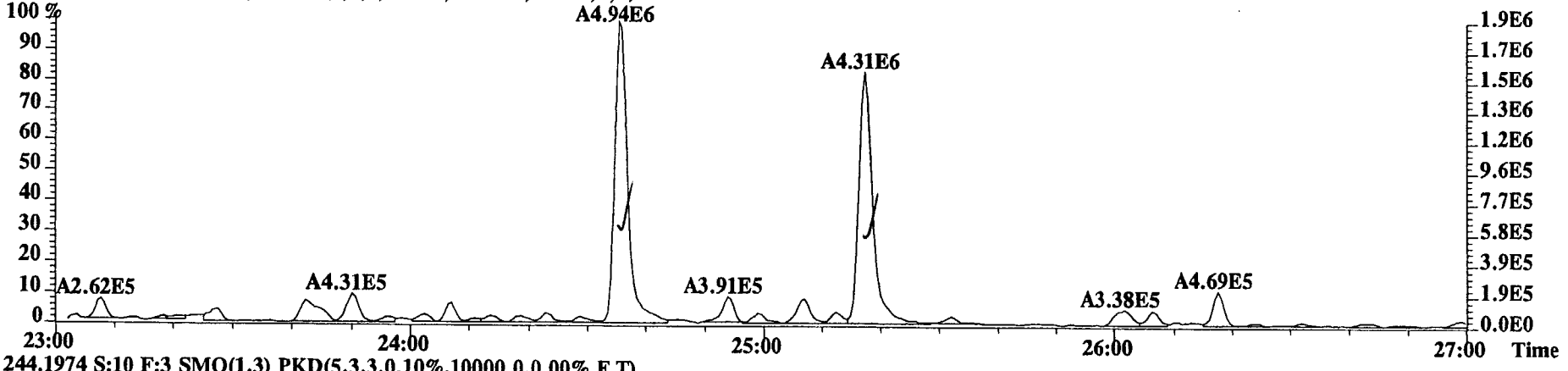

File:30OC98V4 #1-642 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
178:0782 S:10 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A9.33E6
A4.79E6
20:53 20:54 20:55 20:56 20:57 20:58 20:59 21:00 21:01 21:02 21:03 21:04 21:05 Time
188:1410 S:10 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.44E6
20:53 20:54 20:55 20:56 20:57 20:58 20:59 21:00 21:01 21:02 21:03 21:04 21:05 Time


File:30OC98V4 #1-642 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
204.9888 S:10 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A3.69E7
A4.38E7
A4.49E7
A5.92E7
A2.33E7
A2.90E7
A9.26E6
A4.39E7
A4.36E7
A4.04E7
7.8E6
7.4E6
7.0E6
6.7E6
6.3E6
5.9E6
5.5E6
5.1E6
4.7E6
4.3E6
3.9E6
3.5E6
3.1E6
2.7E6
2.3E6
2.0E6
1.6E6
1.2E6
7.8E5
3.9E5
0.0E0
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

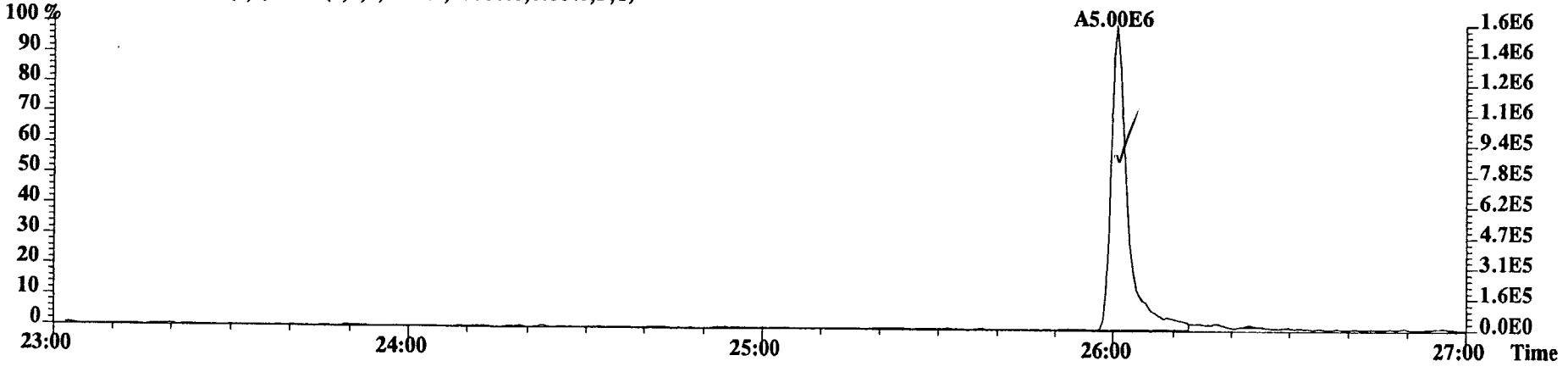
File:30OC98V4 #1-938 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
202.0782 S:10 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

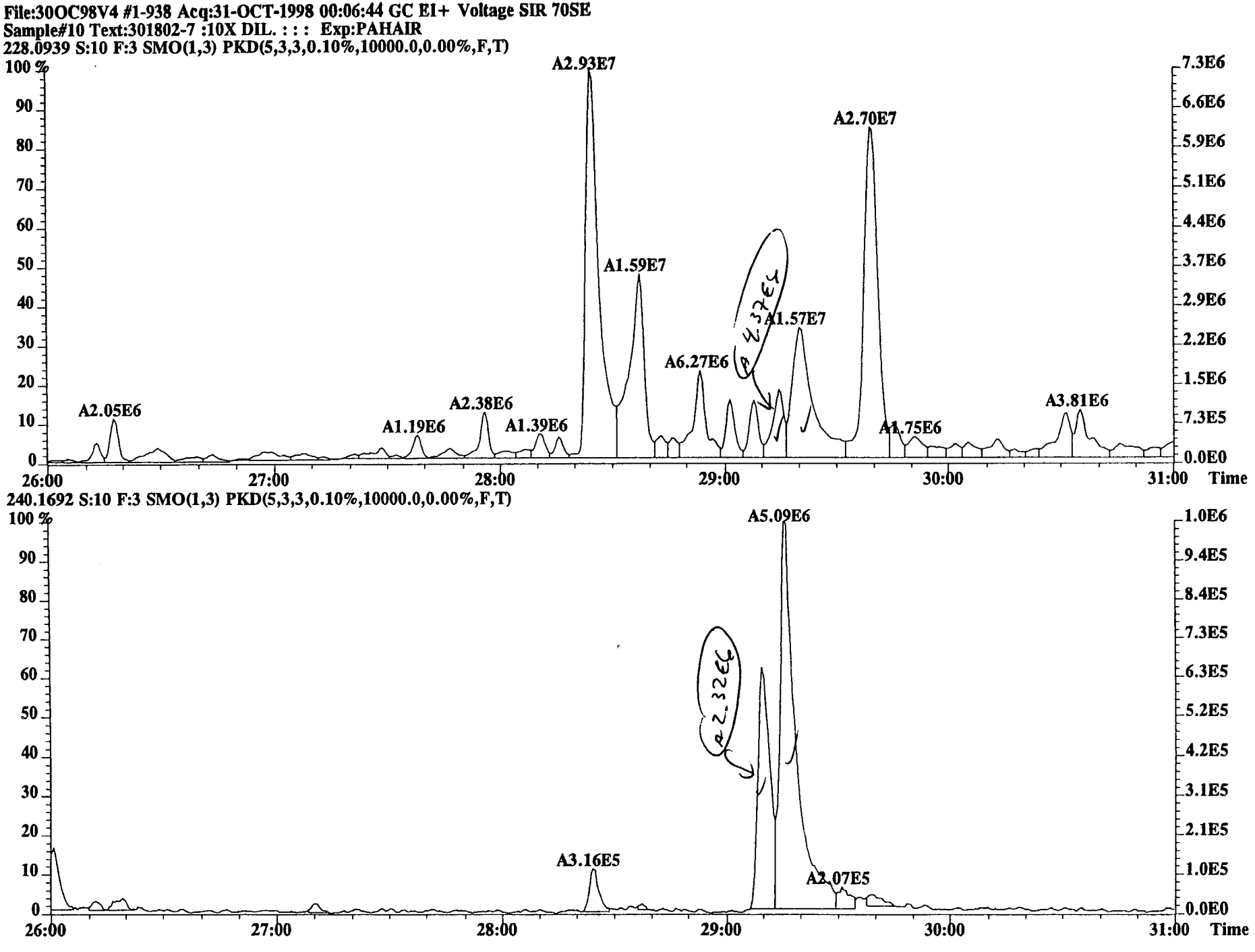


212.1410 S:10 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

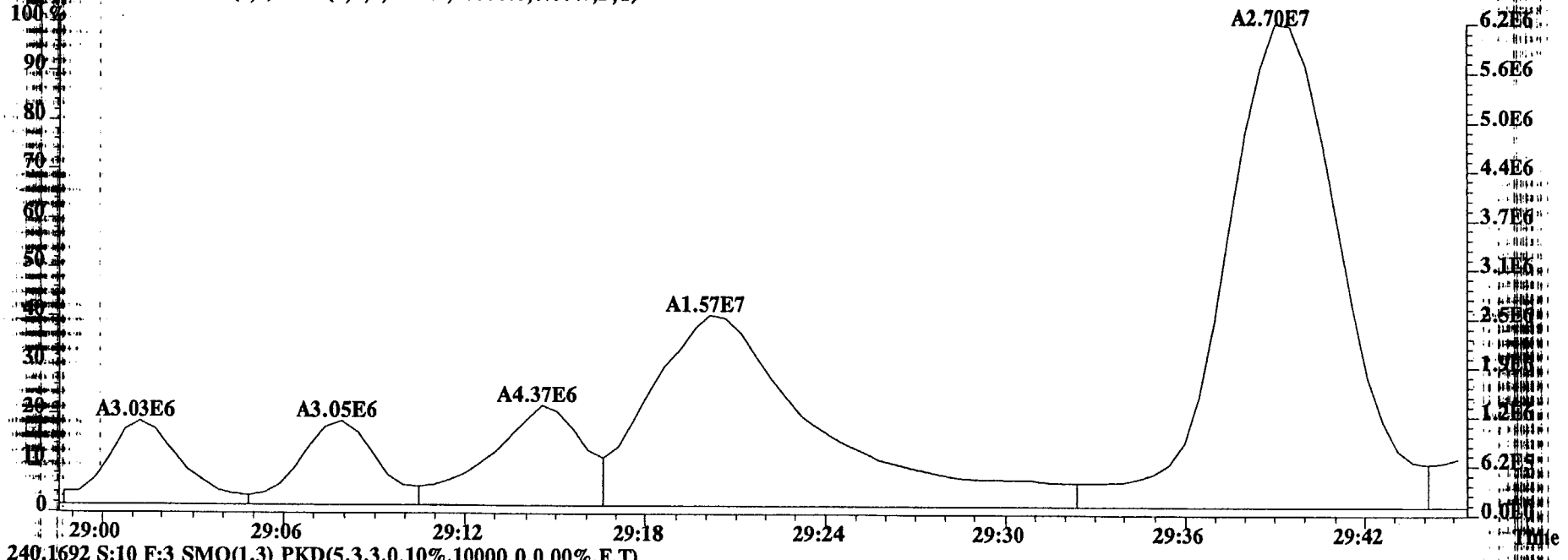


244.1974 S:10 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

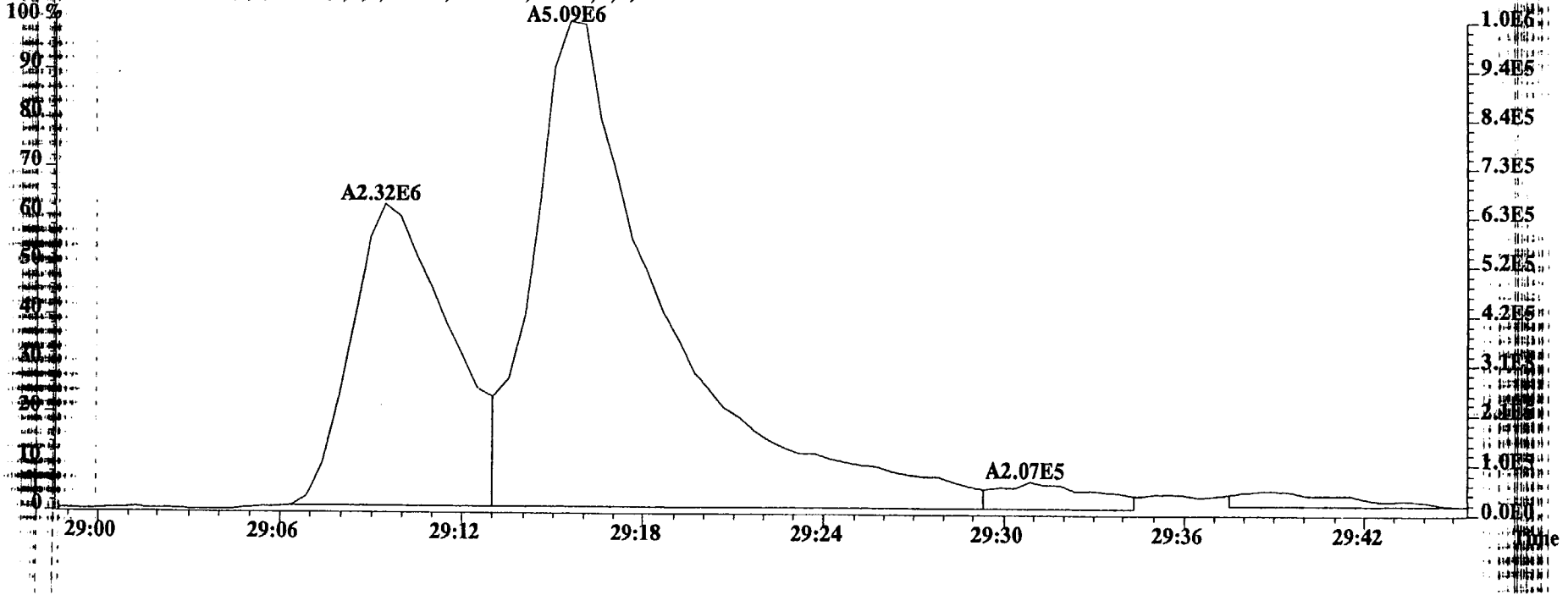


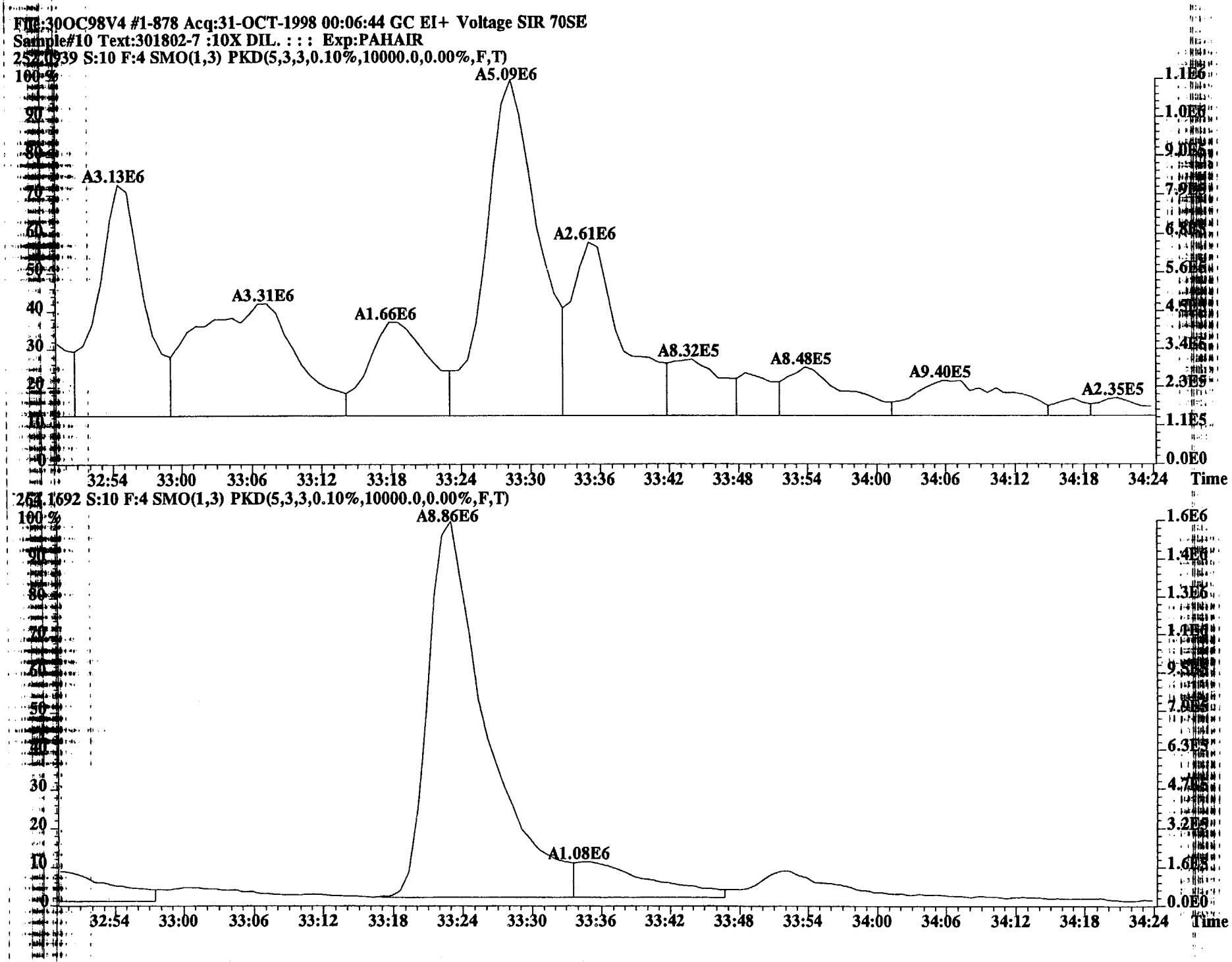

File:30OC98V4 #1-938 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
228.0939 S:10 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.93E7
A2.70E7
A1.59E7
A1.57E7
A6.27E6
A2.38E6
A2.05E6
A1.19E6
A1.39E6
A1.75E6
A3.81E6
Time
240.1692 S:10 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A5.09E6
A3.16E5
A2.07E5
Time

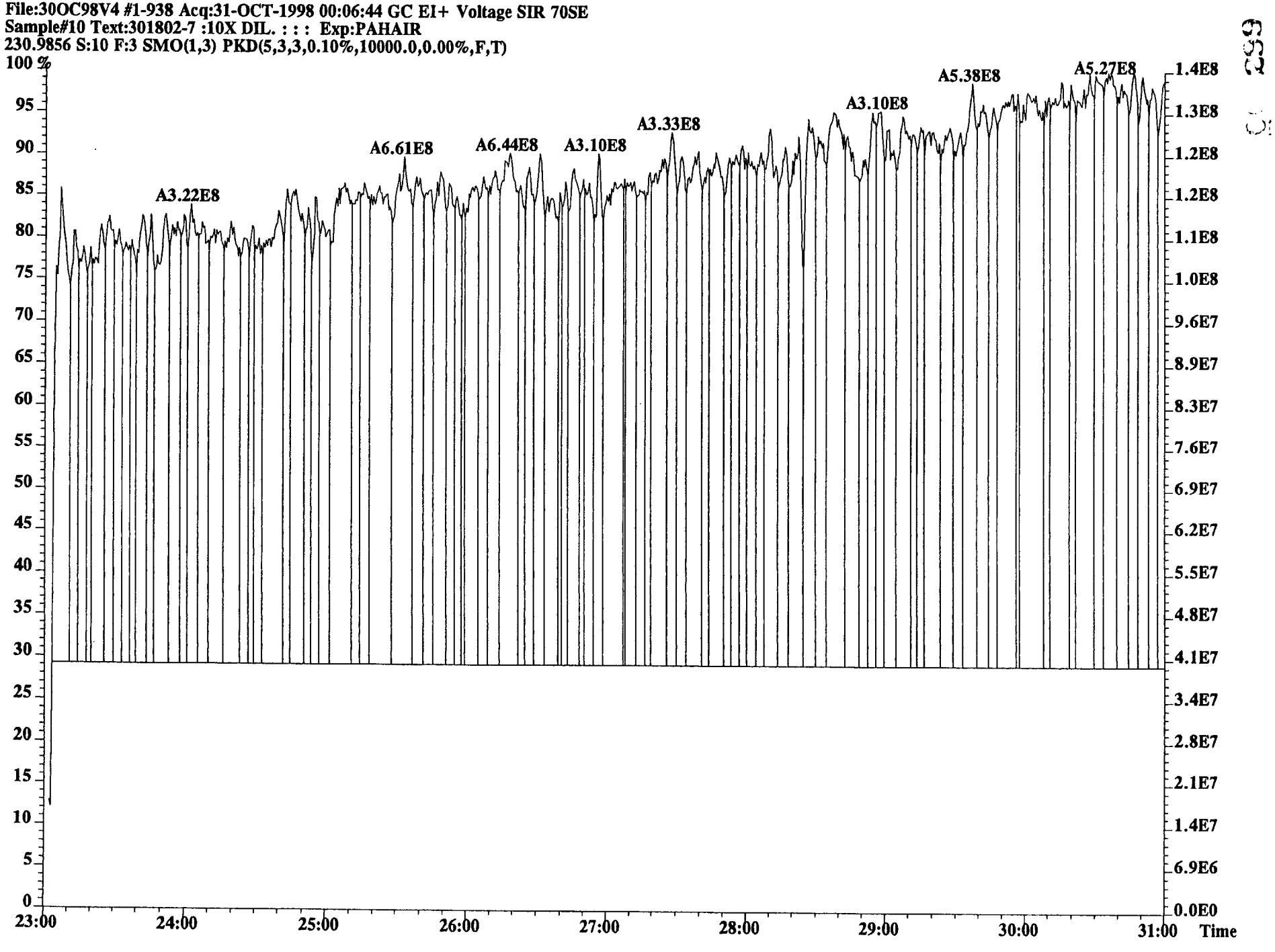
File:30OC98V4 #1-938 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
228.0939 S:10 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

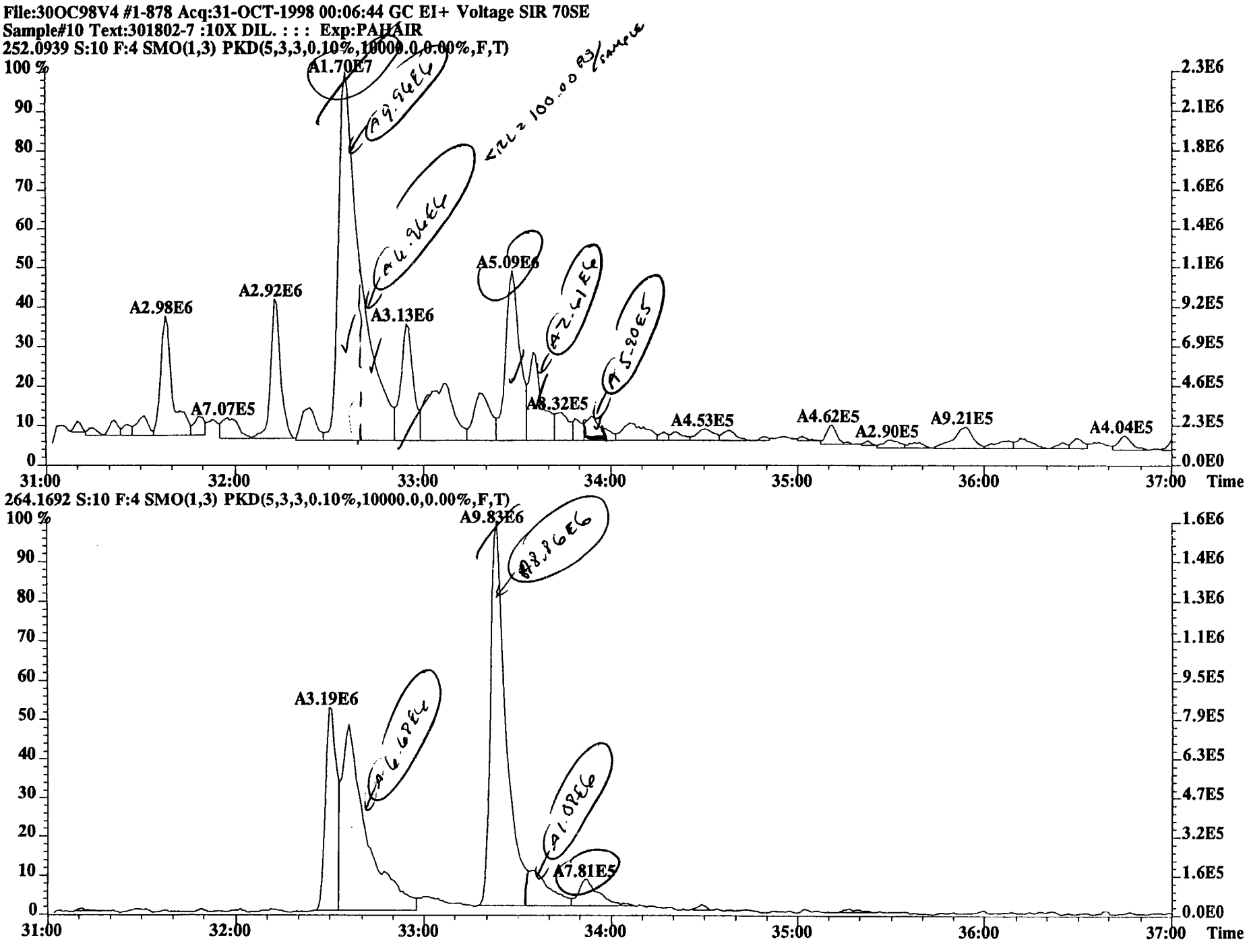


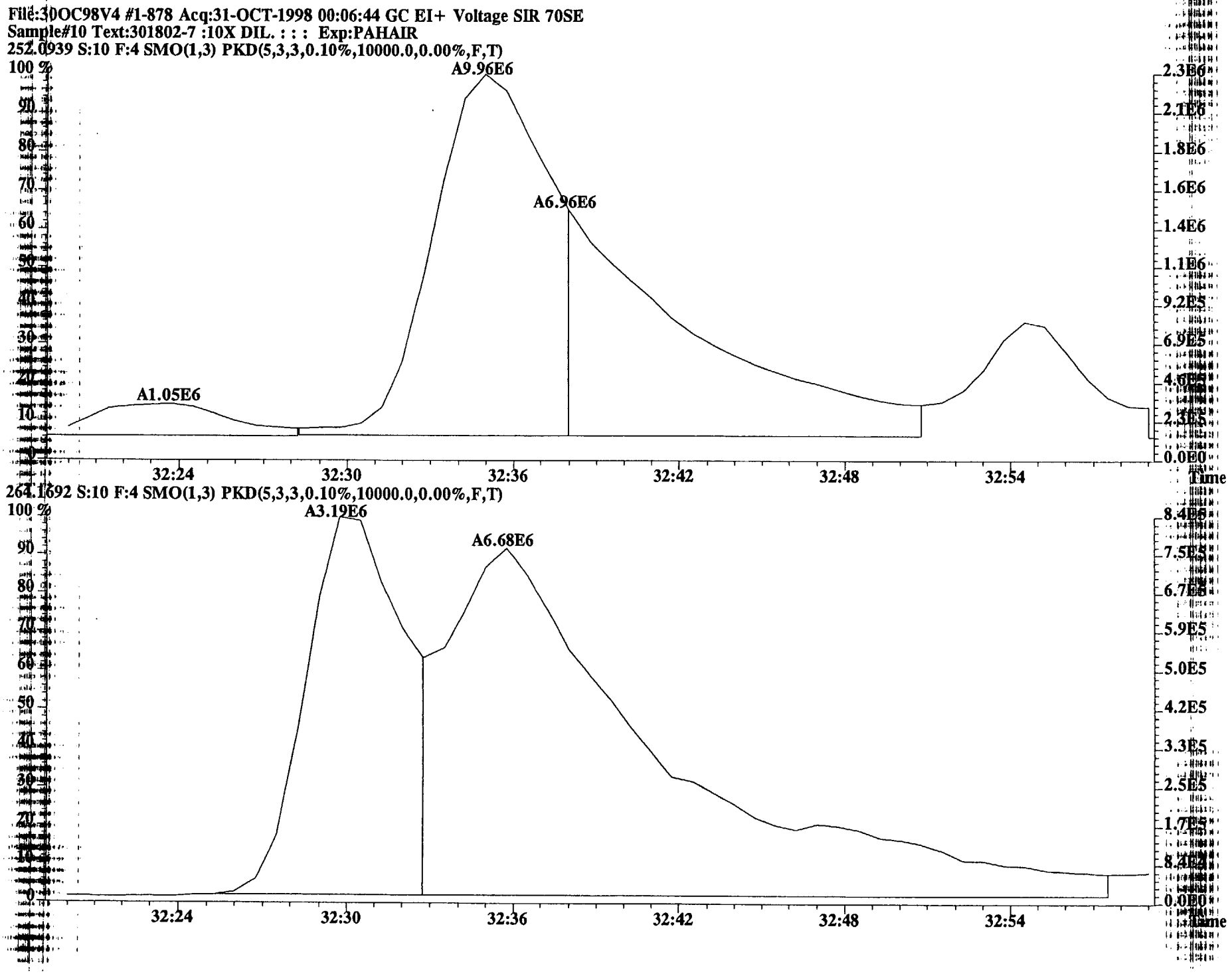
240.1692 S:10 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



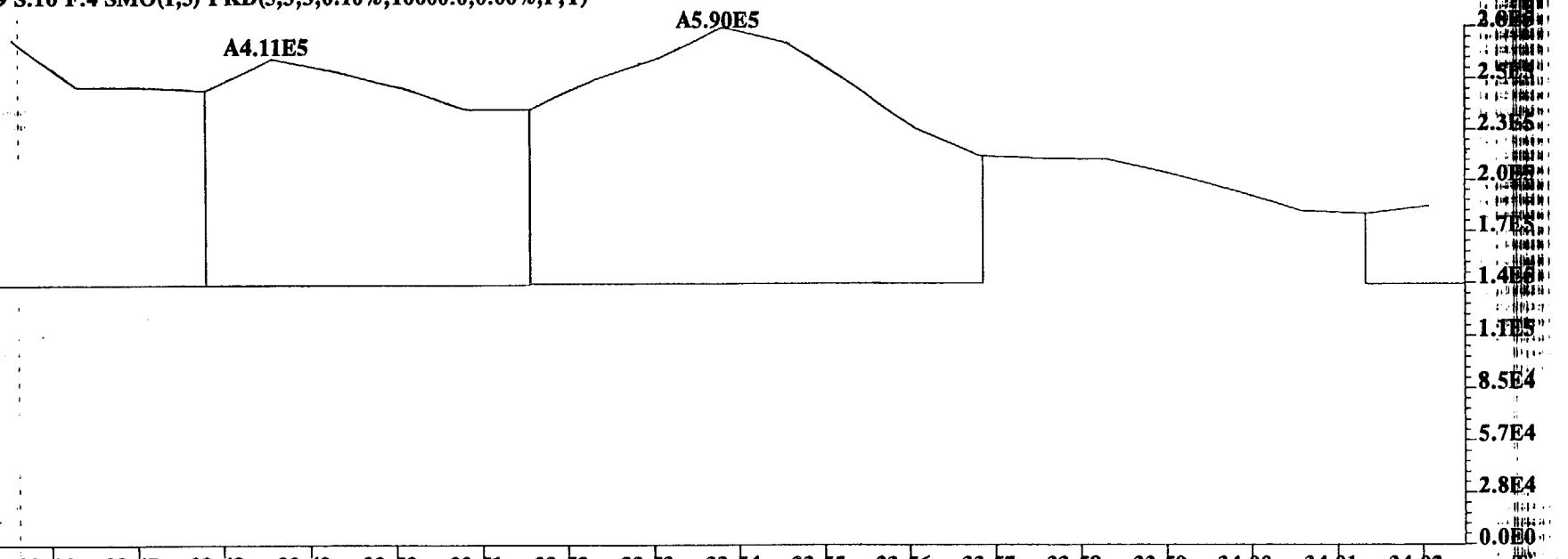

File:30OC98V4 #1-878 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
252.0939 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.13E6
A5.09E6
A3.31E6
A1.66E6
A2.61E6
A8.32E5
A8.48E5
A9.40E5
A2.35E5
Time
276.1692 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.86E6
A1.08E6
Time


File:30OC98V4 #1-938 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
230.9856 S:10 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A3.22E8
A6.61E8
A6.44E8
A3.10E8
A3.33E8
A3.10E8
A5.38E8
A5.27E8
1.4E8
1.3E8
1.2E8
1.2E8
1.1E8
1.0E8
9.6E7
8.9E7
8.3E7
7.6E7
6.9E7
6.2E7
5.5E7
4.8E7
4.1E7
3.4E7
2.8E7
2.1E7
1.4E7
6.9E6
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time

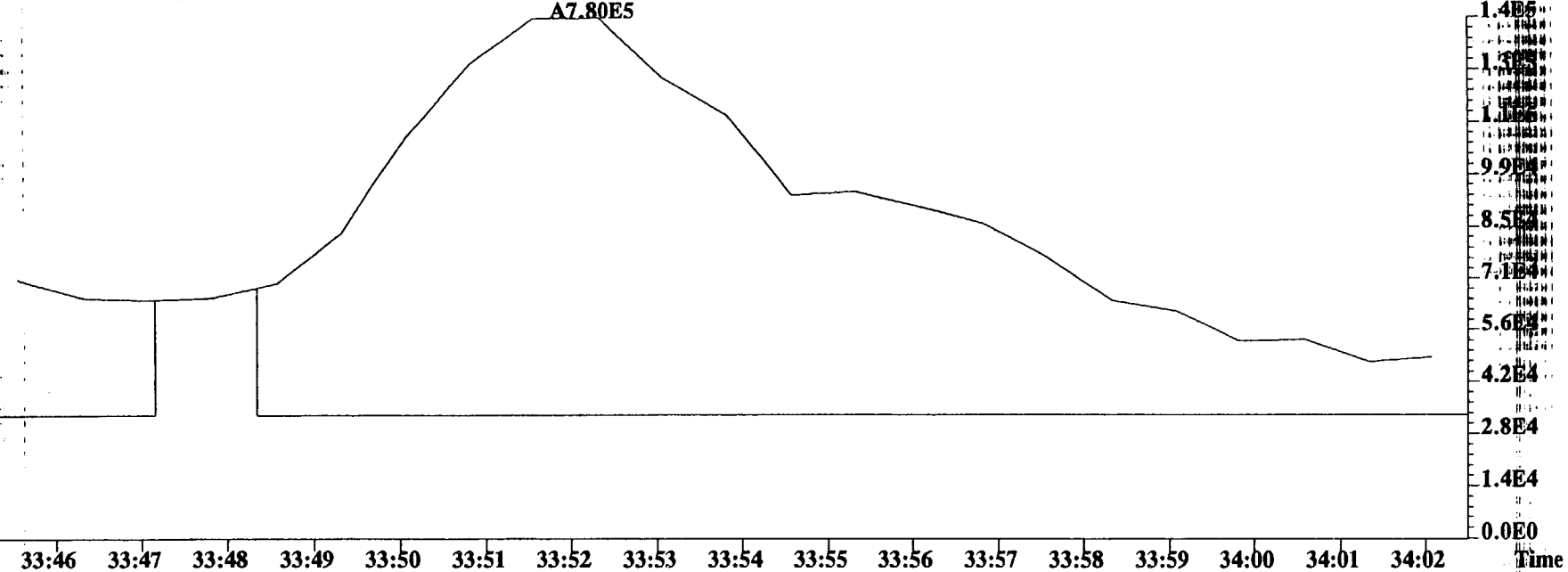

File:30OC98V4 #1-878 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
252.0939 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.70E7
A2.98E6
A2.92E6
A3.13E6
A5.09E6
A7.07E5
A8.32E5
A4.53E5
A4.62E5
A2.90E5
A9.21E5
A4.04E5
2.3E6
2.1E6
1.8E6
1.6E6
1.4E6
1.1E6
9.2E5
6.9E5
4.6E5
2.3E5
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
Time
264.1692 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A9.83E6
A3.19E6
A7.81E5
1.6E6
1.4E6
1.3E6
1.1E6
9.5E5
7.9E5
6.3E5
4.7E5
3.2E5
1.6E5
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
Time

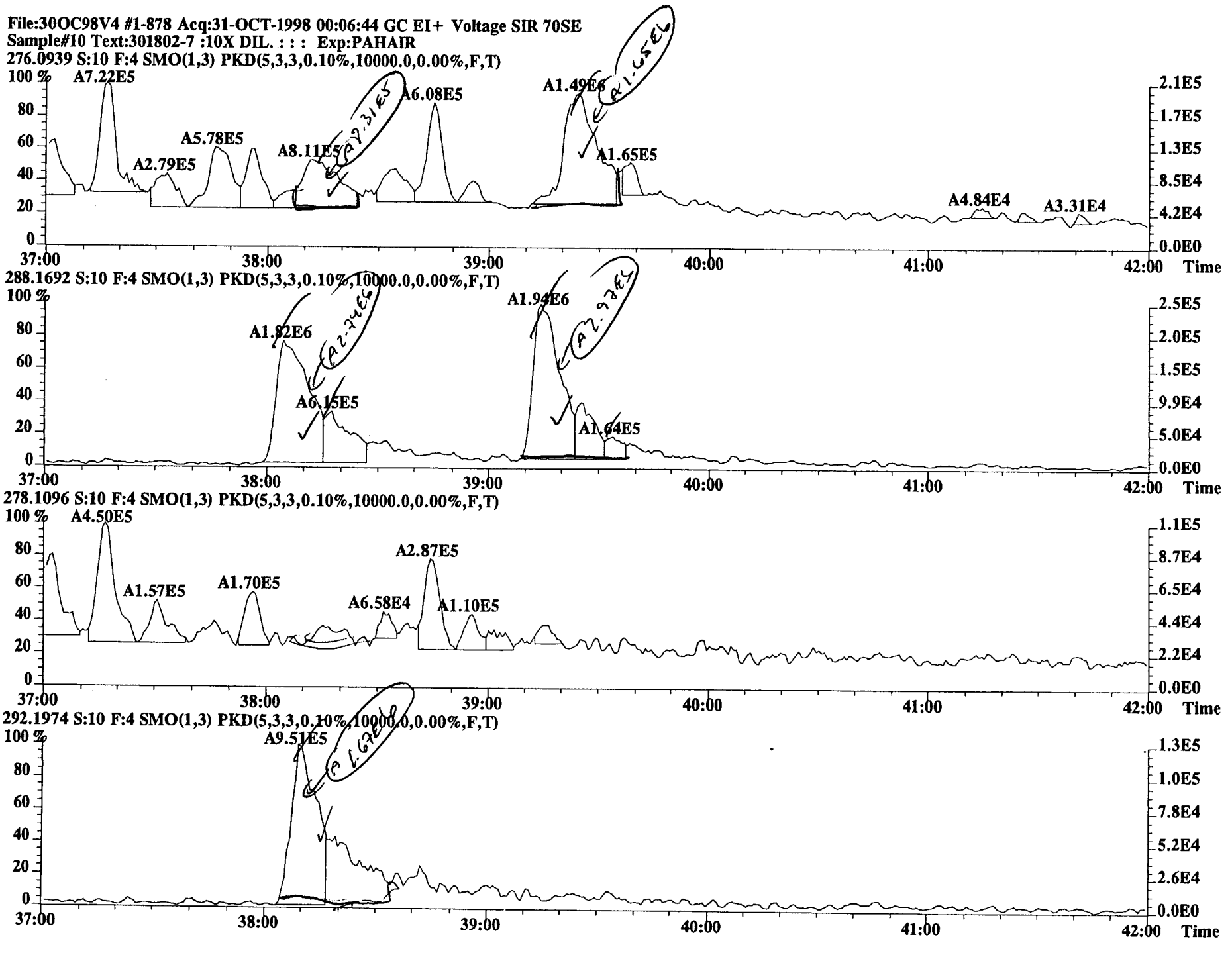

File:30OC98V4 #1-878 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
252.0939 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A9.96E6
A6.96E6
A1.05E6
2.3E6
2.1E6
1.8E6
1.6E6
1.4E6
1.1E6
9.2E5
6.9E5
4.6E5
2.3E5
0.0E0
32:24
32:30
32:36
32:42
32:48
32:54
Time
264.1692 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A3.19E6
A6.68E6
8.4E5
7.5E5
6.7E5
5.9E5
5.0E5
4.2E5
3.3E5
2.5E5
1.7E5
8.4E4
0.0E0
32:24
32:30
32:36
32:42
32:48
32:54
Time

FILE:3DOC98V4 #1-878 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
25.0939 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

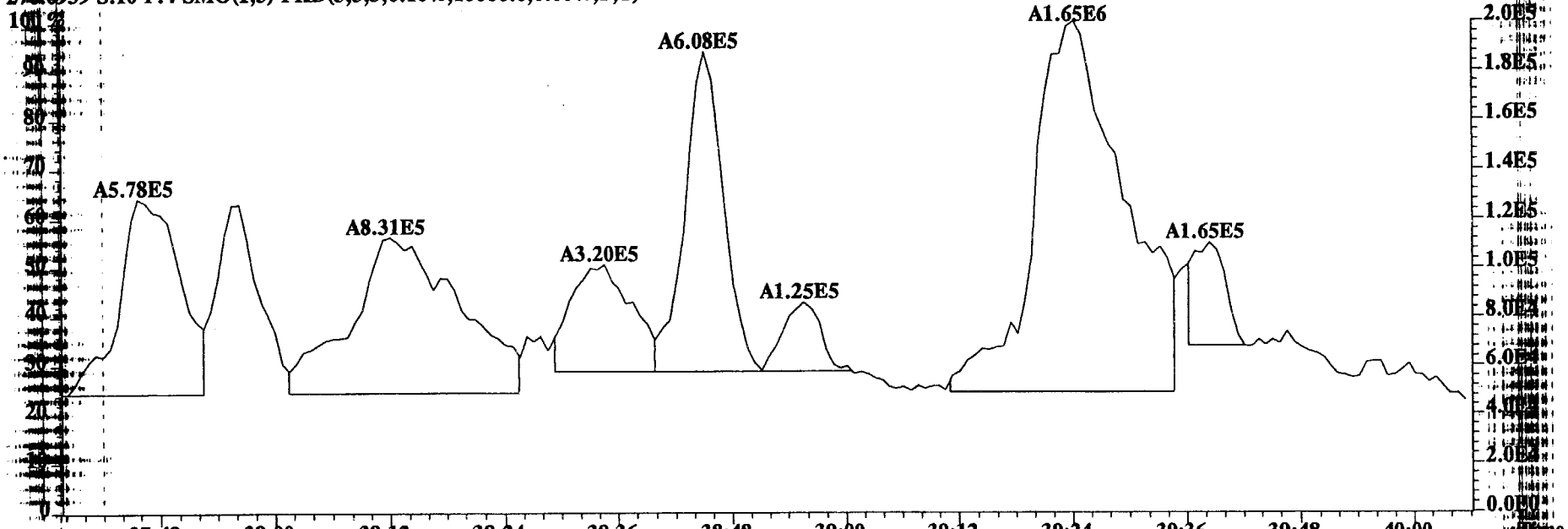


26.1692 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

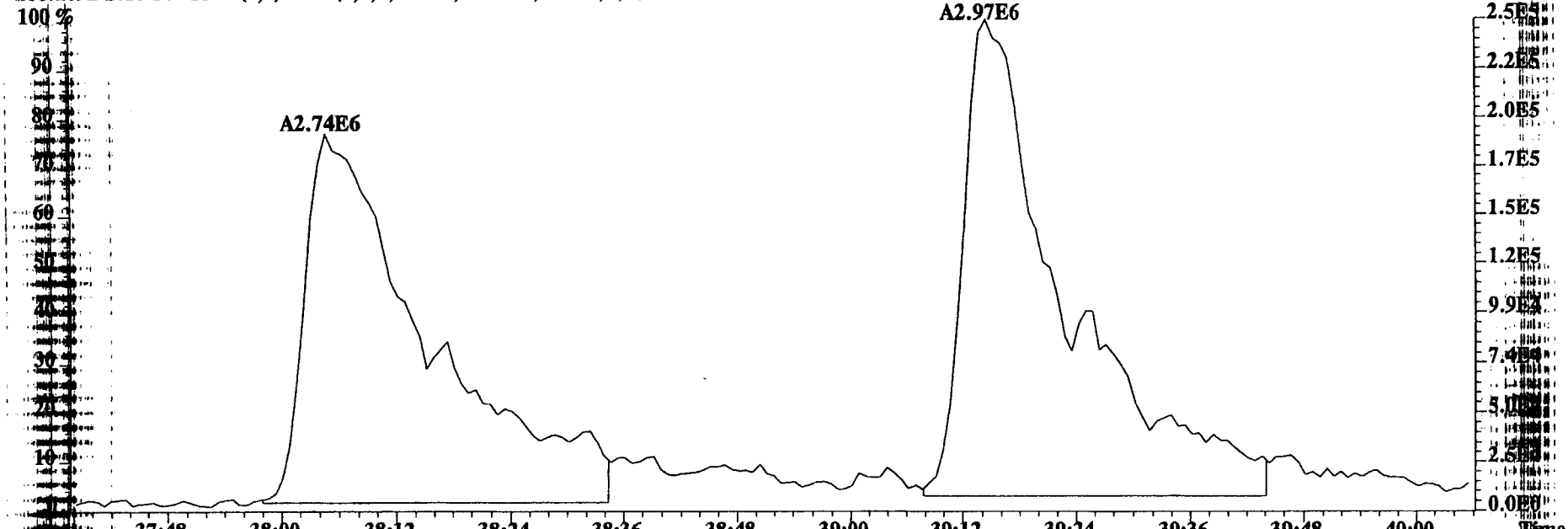


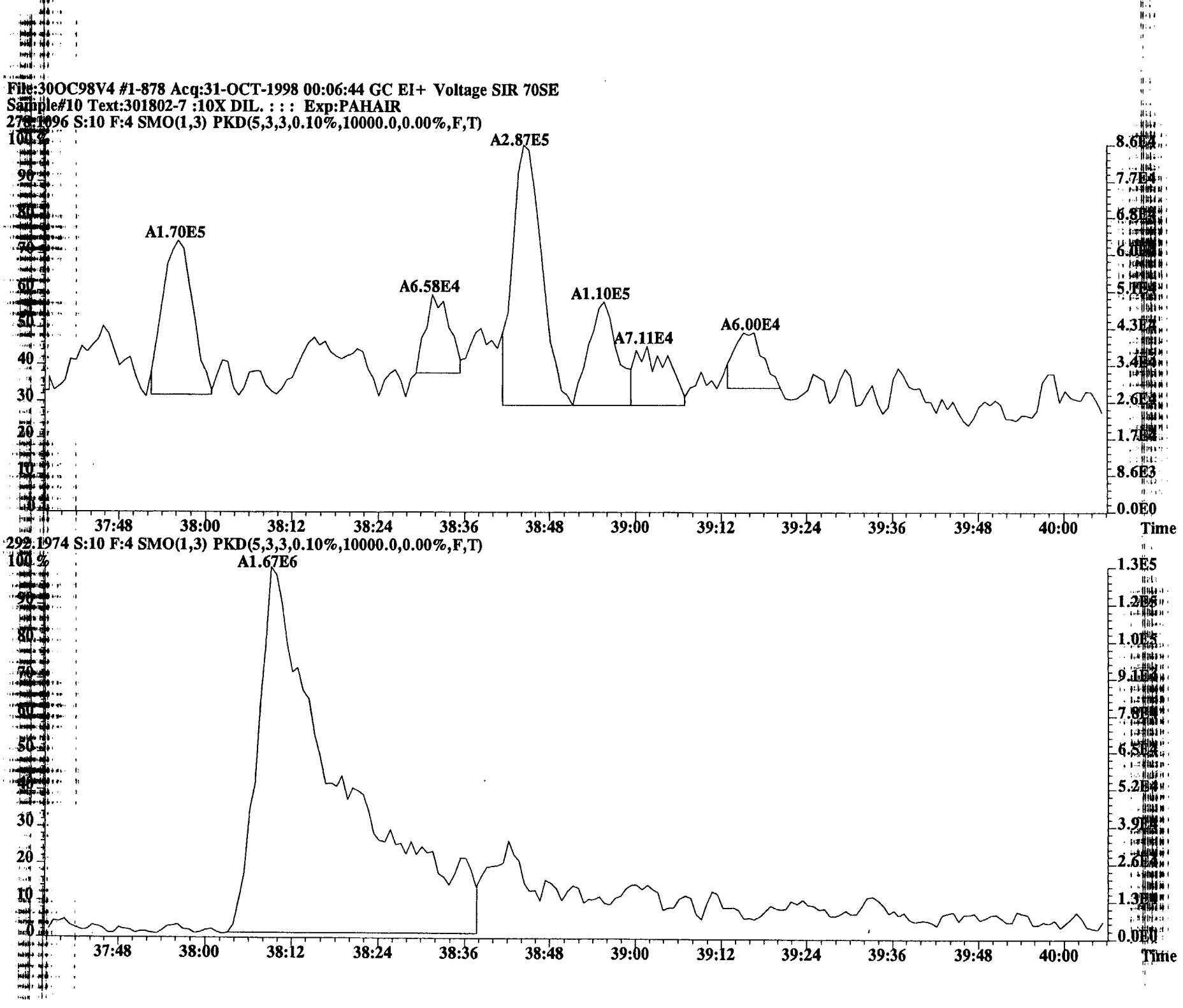

File:30OC98V4 #1-878 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
276.0939 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.22E5
A2.79E5
A5.78E5
A8.11E5
A6.08E5
A1.49E6
A1.65E5
A4.84E4
A3.31E4
288.1692 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.82E6
A6.15E5
A1.94E6
A1.64E5
278.1096 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.50E5
A1.57E5
A1.70E5
A6.58E4
A2.87E5
A1.10E5
292.1974 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A9.51E5
100 %
80
60
40
20
0
37:00
38:00
39:00
40:00
41:00
42:00
Time
2.1E5
1.7E5
1.3E5
8.5E4
4.2E4
0.0E0
2.5E5
2.0E5
1.5E5
9.9E4
5.0E4
1.1E5
8.7E4
6.5E4
4.4E4
2.2E4
1.3E5
1.0E5
7.8E4
5.2E4
2.6E4

File:30OC98V4 #1-878 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
276.0939 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

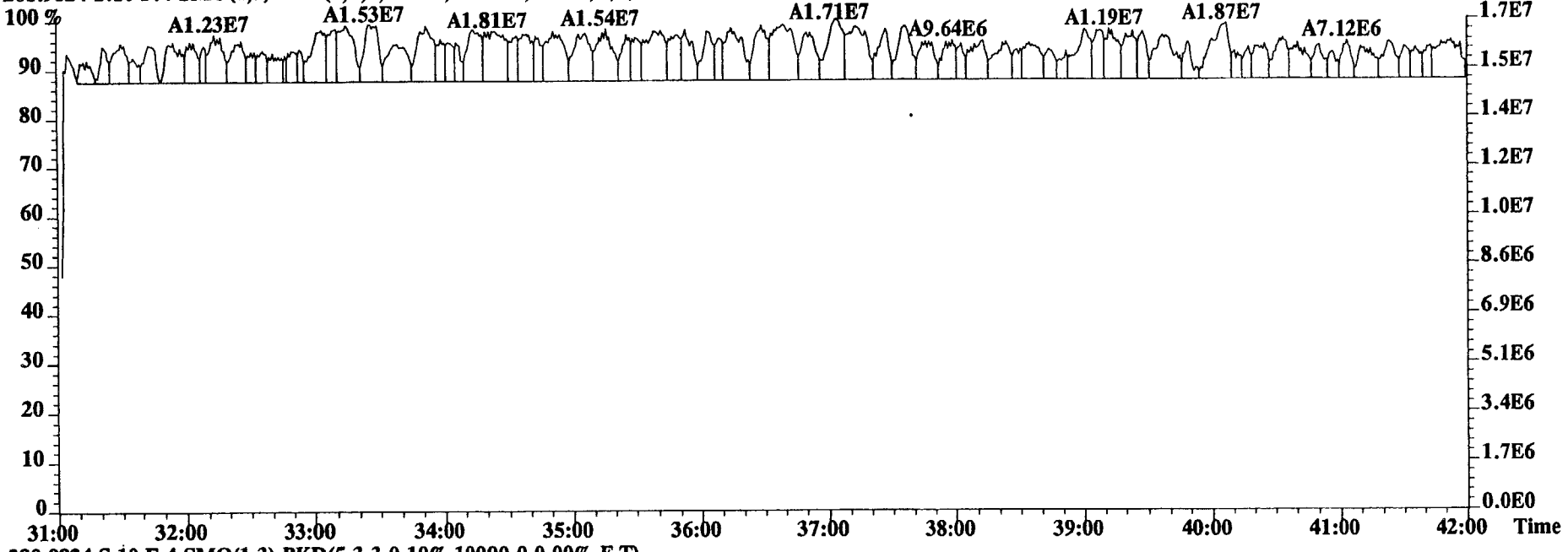


288.1692 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

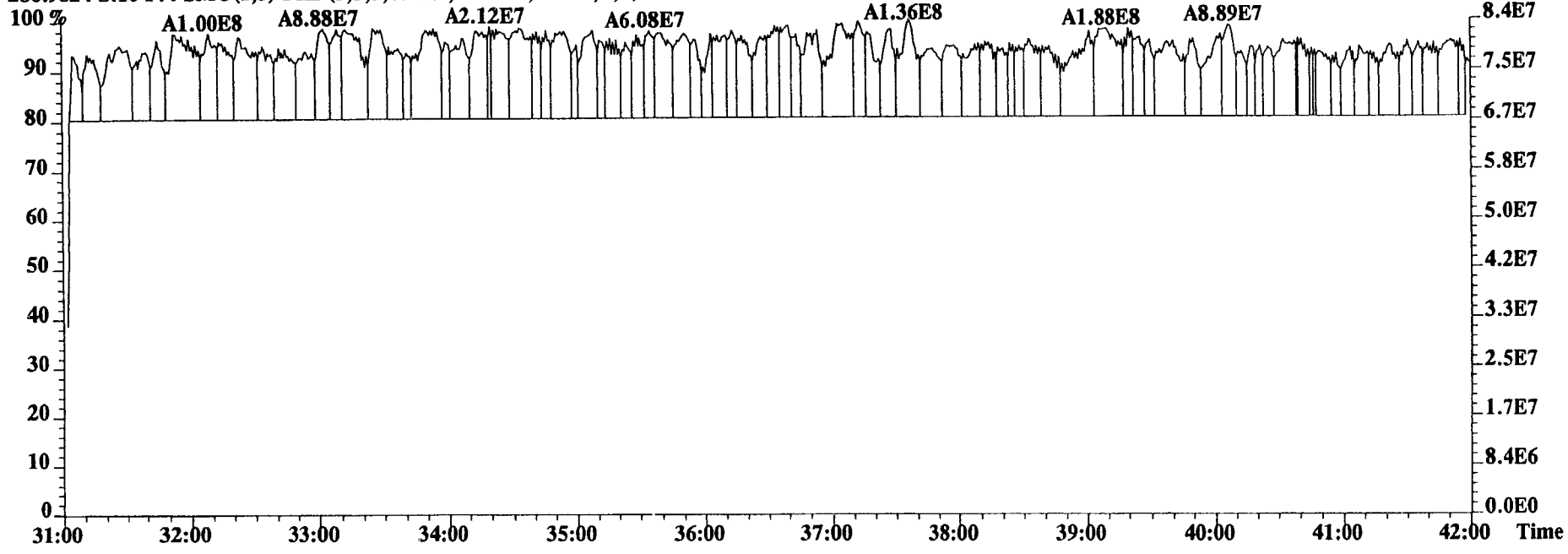



File:30OC98V4 #1-878 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
278.1096 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.70E5
A6.58E4
A2.87E5
A1.10E5
A7.11E4
A6.00E4
8.6E4
7.7E4
4.3E4
2.6E4
1.7E4
8.6E3
0.0E0
37:48
38:00
38:12
38:24
38:36
38:48
39:00
39:12
39:24
39:36
39:48
40:00
Time
292.1974 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.67E6
1.3E5
1.2E5
1.0E5
5.2E4
0.0E0
37:48
38:00
38:12
38:24
38:36
38:48
39:00
39:12
39:24
39:36
39:48
40:00
Time

File:30OC98V4 #1-878 Acq:31-OCT-1998 00:06:44 GC EI+ Voltage SIR 70SE
Sample#10 Text:301802-7 :10X DIL. : : : Exp:PAHAIR
268.9824 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



280.9824 S:10 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-U-429-2
Lab ID: 301802-0008-SA
Matrix: AIRTRAIN Sampled: 24 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	130000	ng/sample	--	B
2-Methylnaphthalene	2300	ng/sample	--	B
Acenaphthylene	68000	ng/sample	--	F
Acenaphthene	240	ng/sample	--	
Fluorene	690	ng/sample	--	
Phenanthrene	20000	ng/sample	--	
Anthracene	460	ng/sample	--	
Fluoranthene	12000	ng/sample	--	
Pyrene	21000	ng/sample	--	
Benzo(a)anthracene	100	ng/sample	--	
Chrysene	460	ng/sample	--	
Benzo(b)fluoranthene	420	ng/sample	--	
Benzo(k)fluoranthene	130	ng/sample	--	
Benzo(e)pyrene	1400	ng/sample	--	F
Benzo(a)pyrene	210	ng/sample	--	F
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
F = Reported value estimated due to an interference.
ND = Not Detected

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-U-429-2
Lab ID: 301802-0008-SA
Matrix: AIRTRAIN Sampled: 24 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	42	
Acenaphthylene-d8	4.0	m
Acenaphthene-d10	49	
Fluorene-d10	78	
Phenanthrene-d10	95	
Fluoranthene-d10	65	
Pyrene-d10	55	
Benzo(a)anthracene-d12	61	
Perylene-d12	12	m
Indeno(123-cd)pyrene-d12	52	
Chrysene-d12	76	
Benzo(b)fluoranthene-d12	74	
Benzo(k)fluoranthene-d12	66	
Benzo(a)pyrene-d12	17	m
Dibenz(a,h)anthracene-d14	56	
Benzo(g,h,i)perylene-d12	40	m

Field Surrogates	% Recovery
13C-Fluorene	99

m = Internal Standard recovery is outside method recovery goal.

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

04-NOV-1998 07:17:37 PM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4 Results : 30OC98V4111.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 30-OCT-98
Data file : 30OC98V4 301802-8 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMP	Rec/ MDL	
d10-2-Methylnaphthalene	5838300	1.00	Y	12: 28	Y	1.00	50.00		
d8-Naphthalene	5524320	1.00	Y	10: 12	Y	2.24	21.11	42	
Naphthalene	9087580000	1.00	Y	10: 16	Y	1.23	1.3e+05	B	E
2-Methylnaphthalene	70607600	1.00	Y	12: 34	Y	0.56	2280.12	B	
d8-Acenaphthylene	290936	1.00	Y	15: 28	Y	1.21	2.05	4	m
Acenaphthylene	185853200	1.00	Y	15: 31	Y	0.94	6.8e+04	E	F
d10-Acenaphthene	2146320	1.00	Y	16: 2	Y	0.74	24.69	49	
Acenaphthene	6540000	1.00	Y	16: 8	Y	1.25	244.53		
d10-Anthracene	3258480	1.00	Y	20: 55	Y	1.00	50.00		
d10-Fluorene	3628840	1.00	Y	17: 42	Y	1.42	39.19	78	
Fluorene	28931200	1.00	Y	17: 47	Y	1.16	686.98		
d10-Phenanthrene	8693120	1.00	Y	20: 45	Y	2.81	47.51	95	
Phenanthrene	1569824000	1.00	Y	20: 49	Y	0.89	2.0e+04	E	
Anthracene	31800000	1.00	Y	20: 59	Y	0.80	457.03		
d14-Terphenyl	11645580	1.00	Y	26: 0	Y	1.00	50.00		
d10-Fluoranthene	10675940	1.00	Y	24: 36	Y	1.41	32.49	65	
Fluoranthene	1376432000	1.00	Y	24: 39	Y	1.11	1.2e+04	E	
d10-Pyrene	9699220	1.00	Y	25: 17	Y	1.52	27.43	55	
Pyrene	2455760000	1.00	Y	25: 20	Y	1.21	2.1e+04	E	
d12-Benzo(a)anthracene	6392740	1.00	Y	29: 9	Y	0.90	30.50	61	
Benzo(a)anthracene	7919440	1.00	Y	29: 13	Y	1.20	102.85		
d12-Chrysene	11354900	1.00	Y	29: 15	Y	1.28	38.11	76	
Chrysene	56626400	1.00	Y	29: 20	Y	1.08	460.06		
d12-Benzo(e)pyrene	25020800	1.00	Y	33: 22	Y	1.00	50.00		
d12-Benzo(b)fluoranthene	8447640	1.00	Y	32: 30	Y	0.45	37.20	74	
Benzo(b)fluoranthene	41400000	1.00	Y	32: 34	Y	1.17	419.86		
d12-Benzo(k)fluoranthene	15647720	1.00	Y	32: 35	Y	0.95	32.98	66	
Benzo(k)fluoranthene	23000000	1.00	Y	32: 38	Y	1.16	126.26		
d12-Benzo(a)pyrene	2920000	1.00	Y	33: 32	Y	0.68	8.62	17	r
Benzo(e)pyrene	69200000	1.00	Y	33: 28	Y	1.64	1444.31	F	
Benzo(a)pyrene	6520000	1.00	Y	33: 38	N	1.07	208.29	F	
d12-Perylene	1906000	1.00	Y	33: 49	Y	0.63	6.04	12	r
Perylene	* No Peak	0.00	N	33: 55	N	1.71	NC	<RL=100	
d12-Indeno(123-cd)pyrene	5828860	1.00	Y	38: 5	Y	0.44	26.20	52	
Indeno(123-cd)pyrene	1235268	1.00	Y	38: 12	Y	0.62	<RL=100.00		
d14-Dibenz(ah)anthracene	3433960	1.00	Y	38: 8	Y	0.25	27.92	56	
Dibenz(ah)anthracene	* No Peak	0.00	N	38: 15	N	1.40	<RL=100.00		
d12-Benzo(ghi)perylene	5857140	1.00	Y	39: 15	Y	0.58	20.19	40	m
Benzo(ghi)perylene	3609860	1.00	Y	39: 24	Y	1.02	<RL=100.00		
d10-Fluorene	3628840	1.00	Y	17: 42	Y	1.00	50.00		
13C-Fluorene	2906200	1.00	Y	17: 47	Y	0.81	49.44	99	

369
11-4-98

0.5

98V4.RRF

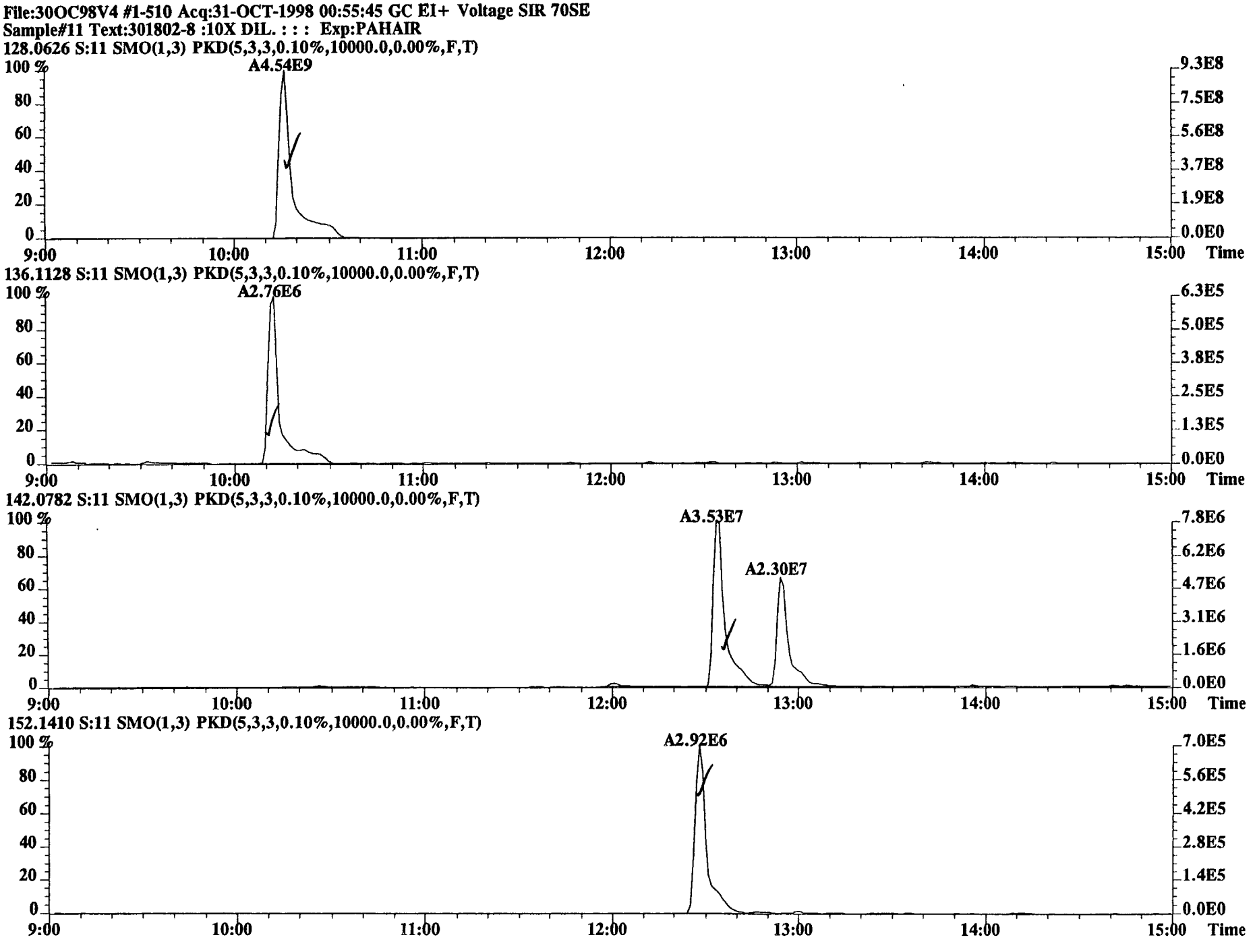
Rec/
MDL

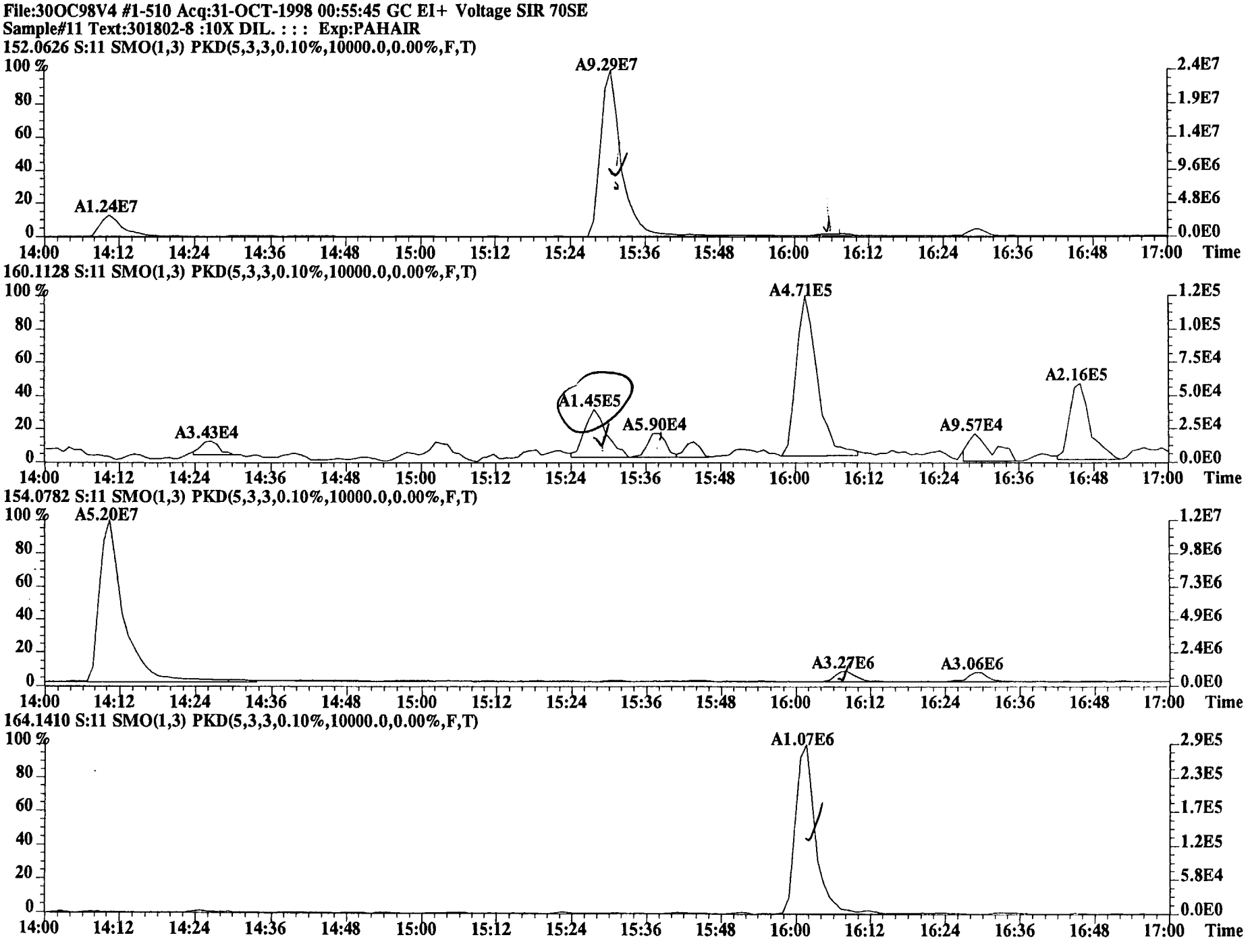
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42	2762160	2762160
B E	4543790000	4543790000
B	35303800	35303800
4	145468	145468
E	92926600	92926600
49	1073160	1073160
	3270000	3270000
	1629240	1629240
78	1814420	1814420
	14465600	14465600
95	4346560	4346560
E	784912000	784912000
	15900000	15900000
	5822790	5822790
65	5337970	5337970
E	688216000	688216000
55	4849610	4849610
E	1227880000	1227880000
61	3196370	3196370
	3959720	3959720
76	5677450	5677450
	28313200	28313200
	12510400	12510400
74	4223820	4223820
	20700000	20700000
66	7823860	7823860
	11500000	11500000
17	1460000	1460000
	34600000	34600000
	3260000	3260000
12	953000	953000
	0	0
52	2914430	2914430
_00.00	617634	617634
56	1716980	1716980
.00.00	0	0
40	2928570	2928570
.00.00	1804930	1804930

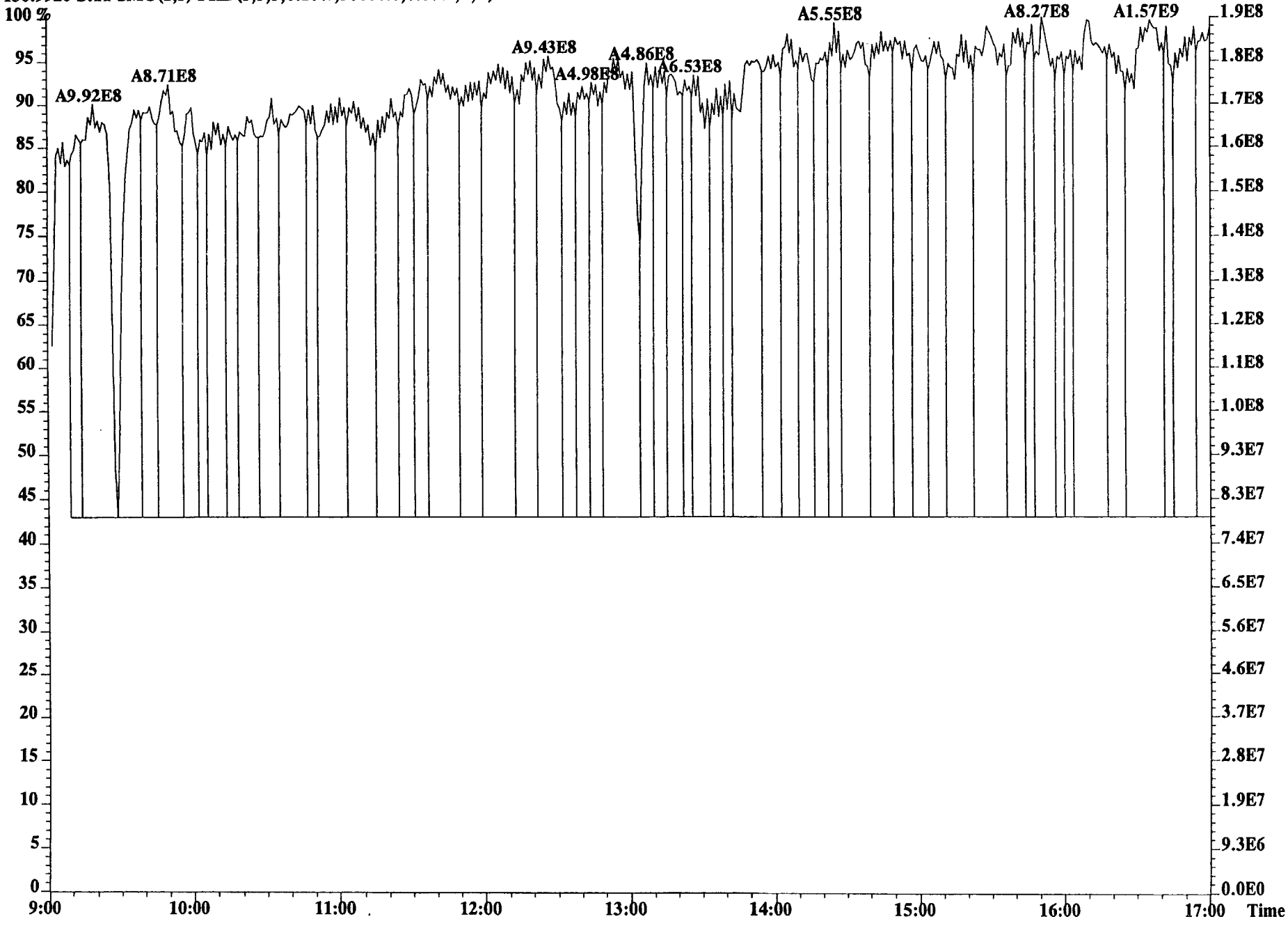
02-NOV-1998 08:58:52 AM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4 Results : 30OC98V4111.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 30-OCT-98
Data file : 30OC98V4 301802-8 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

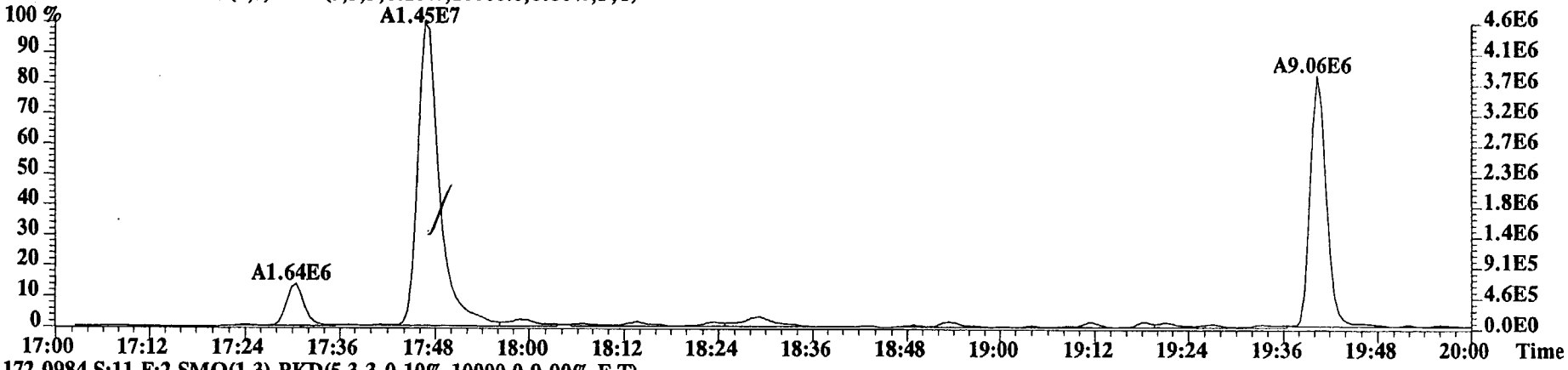
Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMP	Rec/ MDL
d10-2-Methylnaphthalene	5838300	1.00	Y	12: 28	Y	1.00	50.00	
d8-Naphthalene	5524320	1.00	Y	10: 12	Y	2.24	21.11	42
Naphthalene	9087580000	1.00	Y	10: 16	Y	1.23	1.3e+05	0.000
2-Methylnaphthalene	70607600	1.00	Y	12: 34	Y	0.56	2280.12	0.000
d8-Acenaphthylene	290936	1.00	Y	15: 28	Y	1.21	2.05	4
Acenaphthylene	185853200	1.00	Y	15: 31	Y	0.94	6.8e+04	0.000
d10-Acenaphthene	2146320	1.00	Y	16: 2	Y	0.74	24.69	49
Acenaphthene	* No Peak	0.00	N	16: 8	N	1.25	0.00	0.000
d10-Anthracene	3258480	1.00	Y	20: 55	Y	1.00	50.00	
d10-Fluorene	3628840	1.00	Y	17: 42	Y	1.42	39.19	78
Fluorene	28931200	1.00	Y	17: 47	Y	1.16	686.98	0.000
d10-Phenanthrene	8693120	1.00	Y	20: 45	Y	2.81	47.51	95
Phenanthrene	1569824000	1.00	Y	20: 49	Y	0.89	2.0e+04	0.000
Anthracene	* No Peak	0.00	N	20: 59	N	0.80	0.00	0.000
d14-Terphenyl	11645580	1.00	Y	26: 0	Y	1.00	50.00	
d10-Fluoranthene	10675940	1.00	Y	24: 36	Y	1.41	32.49	65
Fluoranthene	1376432000	1.00	Y	24: 39	Y	1.11	1.2e+04	0.000
d10-Pyrene	9699220	1.00	Y	25: 17	Y	1.52	27.43	55
Pyrene	2455760000	1.00	Y	25: 20	Y	1.21	2.1e+04	0.000
d12-Benzo(a)anthracene	6392740	1.00	Y	29: 9	Y	0.90	30.50	61
Benzo(a)anthracene	7919440	1.00	Y	29: 13	Y	1.20	102.85	0.000
d12-Chrysene	11354900	1.00	Y	29: 15	Y	1.28	38.11	76
Chrysene	56626400	1.00	Y	29: 20	Y	1.08	460.06	0.000
d12-Benzo(e)pyrene	25020800	1.00	Y	33: 22	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	8447640	1.00	Y	32: 30	Y	0.45	37.20	74
Benzo(b)fluoranthene	75738400	1.00	Y	32: 34	Y	1.17	768.10	0.000
d12-Benzo(k)fluoranthene	15647720	1.00	Y	32: 35	Y	0.95	32.98	66
Benzo(k)fluoranthene	75738400	1.00	Y	32: 34	Y	1.16	415.77	0.000
d12-Benzo(a)pyrene	* No Peak	0.00	N	33: 32	N	0.68	0.00	0
Benzo(e)pyrene	77195400	1.00	Y	33: 28	Y	1.64	*NoINoIs	
Benzo(a)pyrene	* No Peak	0.00	N	33: 38	N	1.07	*NoINoIs	
d12-Perylene	* No Peak	0.00	N	33: 49	N	0.63	0.00	0
Perylene	* No Peak	0.00	N	33: 55	N	1.71	*NoINoIs	
d12-Indeno(123-cd)pyrene	5828860	1.00	Y	38: 5	Y	0.44	26.20	52
Indeno(123-cd)pyrene	1235268	1.00	Y	38: 12	Y	0.62	34.13	0.000
d14-Dibenz(ah)anthracene	3433960	1.00	Y	38: 8	Y	0.25	27.92	56
Dibenz(ah)anthracene	* No Peak	0.00	N	38: 15	N	1.40	0.00	0.000
d12-Benzo(ghi)perylene	5857140	1.00	Y	39: 15	Y	0.58	20.19	40
Benzo(ghi)perylene	3609860	1.00	Y	39: 24	Y	1.02	60.66	0.000
d10-Fluorene	3628840	1.00	Y	17: 42	Y	1.42	5.10	10
13C-Fluorene	2906200	1.00	Y	17: 47	Y	1.00	80.09	0.000


File:30OC98V4 #1-510 Acq:31-OCT-1998 00:55:45 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-8 :10X DIL. : : : Exp:PAHAIR
128.0626 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.54E9
136.1128 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.76E6
142.0782 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.53E7
A2.30E7
152.1410 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.92E6
100 %
80
60
40
20
0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
Time
9.3E8
7.5E8
5.6E8
3.7E8
1.9E8
0.0E0
6.3E5
5.0E5
3.8E5
2.5E5
1.3E5
7.8E6
6.2E6
4.7E6
3.1E6
1.6E6
7.0E5
5.6E5
4.2E5
2.8E5
1.4E5

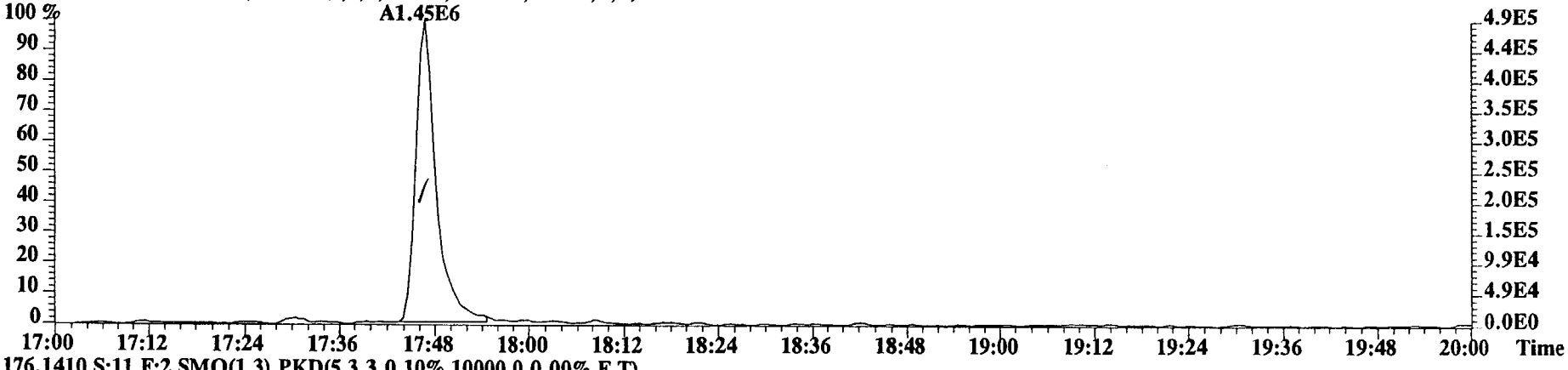

File:30OC98V4 #1-510 Acq:31-OCT-1998 00:55:45 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-8 :10X DIL. : : : Exp:PAHAIR
152.0626 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A9.29E7
A1.24E7
160.1128 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.71E5
A1.45E5
A5.90E4
A3.43E4
A9.57E4
A2.16E5
154.0782 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A5.20E7
A3.27E6
A3.06E6
164.1410 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.07E6
100 %
80
60
40
20
0
14:00
14:12
14:24
14:36
14:48
15:00
15:12
15:24
15:36
15:48
16:00
16:12
16:24
16:36
16:48
17:00
Time


File:30OC98V4 #1-510 Acq:31-OCT-1998 00:55:45 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-8 :10X DIL. : : : Exp:PAHAIR
130.9920 S:11 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A9.92E8
A8.71E8
A9.43E8
A4.98E8
A4.86E8
A6.53E8
A5.55E8
A8.27E8
A1.57E9
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
1.9E8
1.8E8
1.7E8
1.6E8
1.5E8
1.4E8
1.3E8
1.2E8
1.1E8
1.0E8
9.3E7
8.3E7
7.4E7
6.5E7
5.6E7
4.6E7
3.7E7
2.8E7
1.9E7
9.3E6
0.0E0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
Time

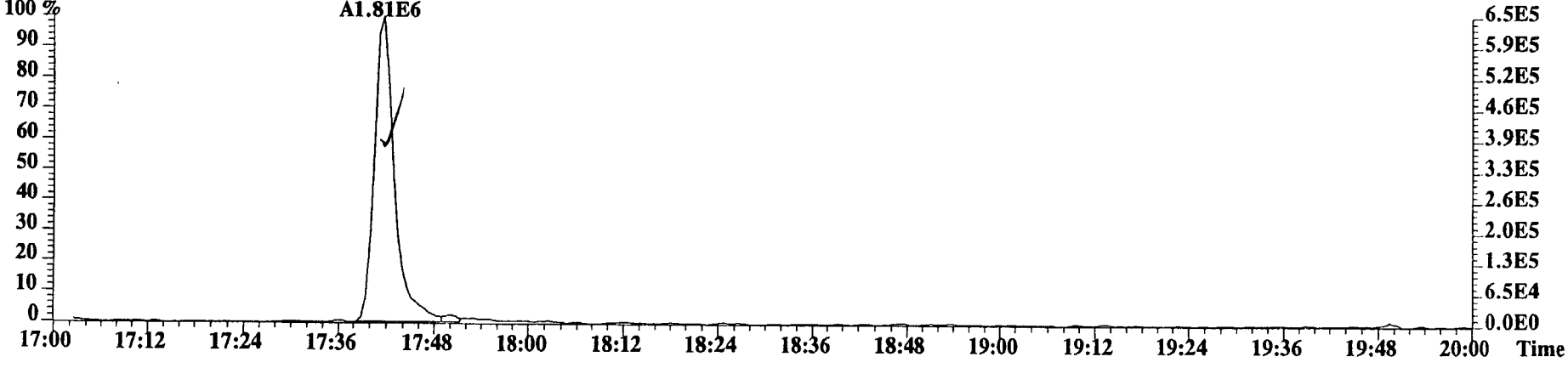
File:30OC98V4 #1-640 Acq:31-OCT-1998 00:55:45 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-8 :10X DIL. : : : Exp:PAHAIR
166.0798 S:11 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

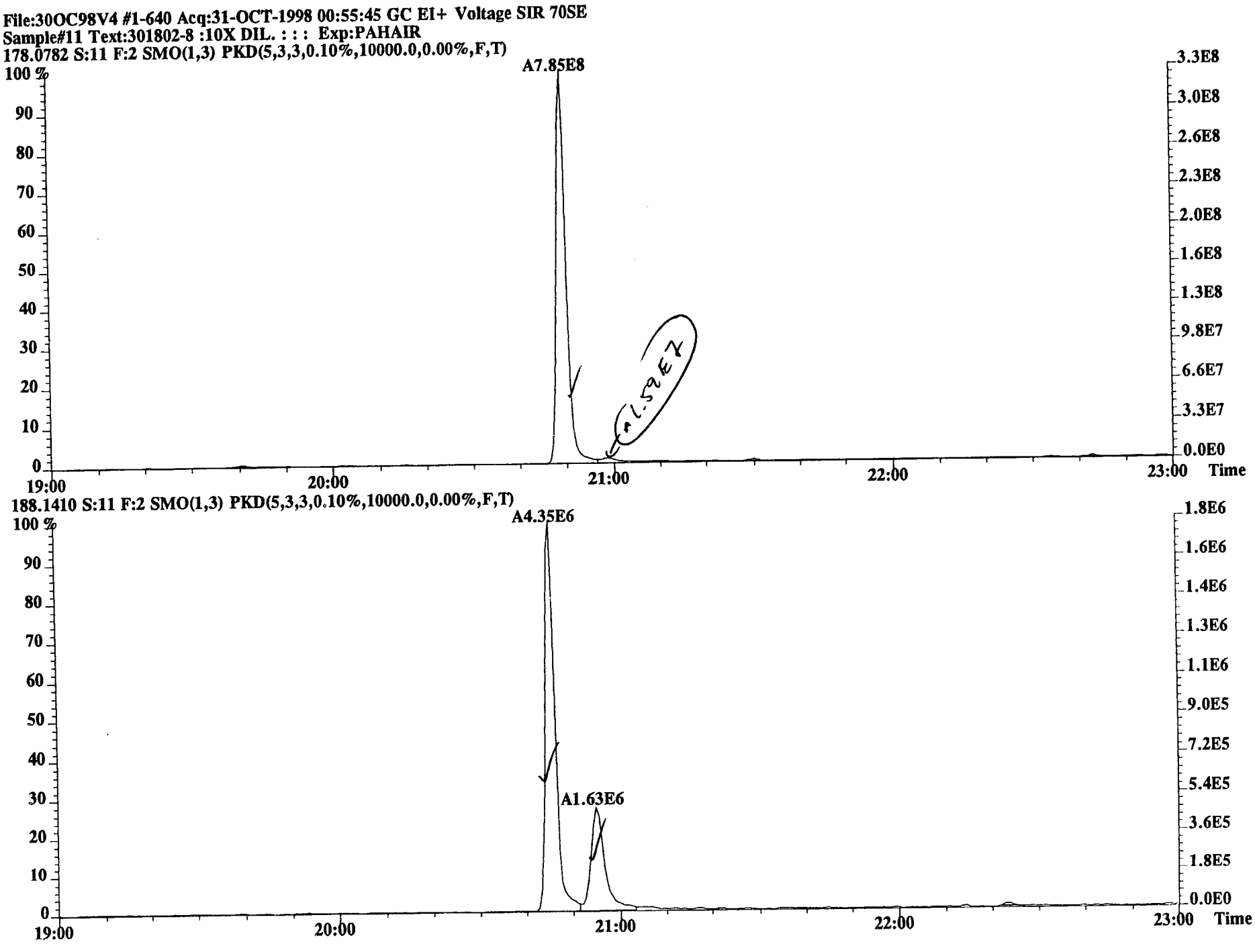


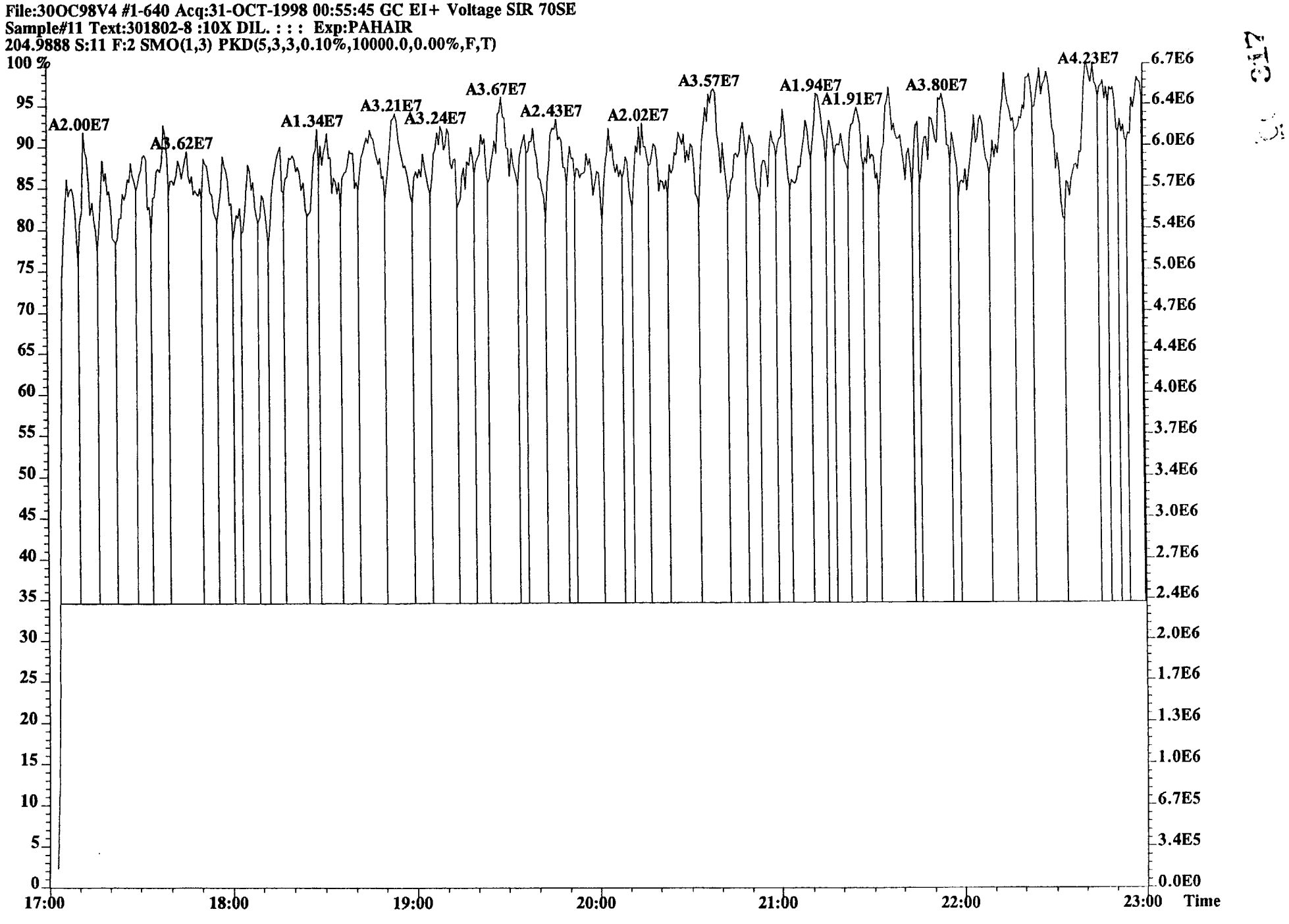
172.0984 S:11 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



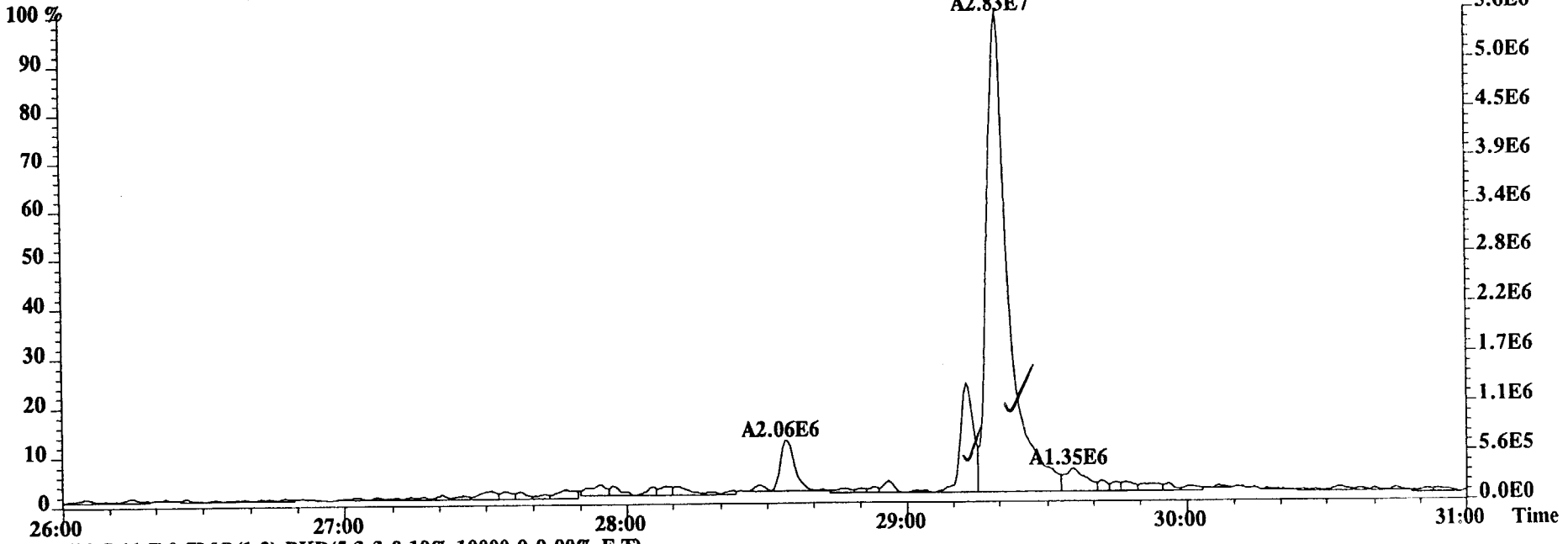
176.1410 S:11 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



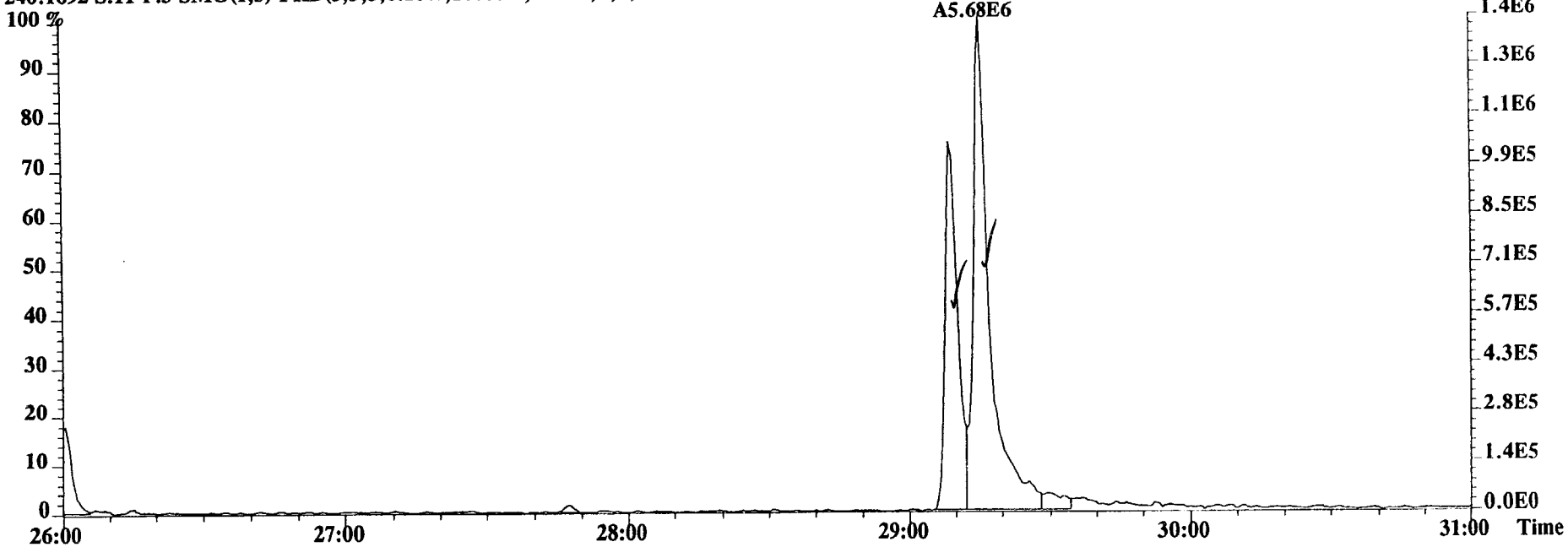

File:30OC98V4 #1-640 Acq:31-OCT-1998 00:55:45 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-8 :10X DIL. : : : Exp:PAHAIR
178.0782 S:11 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.85E8
A1.59E7
188.1410 S:11 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.35E6
A1.63E6
100 %
90
80
70
60
50
40
30
20
10
0
19:00
20:00
21:00
22:00
23:00
Time
3.3E8
3.0E8
2.6E8
2.3E8
2.0E8
1.6E8
1.3E8
9.8E7
6.6E7
3.3E7
0.0E0
1.8E6
1.6E6
1.4E6
1.3E6
1.1E6
9.0E5
7.2E5
5.4E5
3.6E5
1.8E5
0.0E0

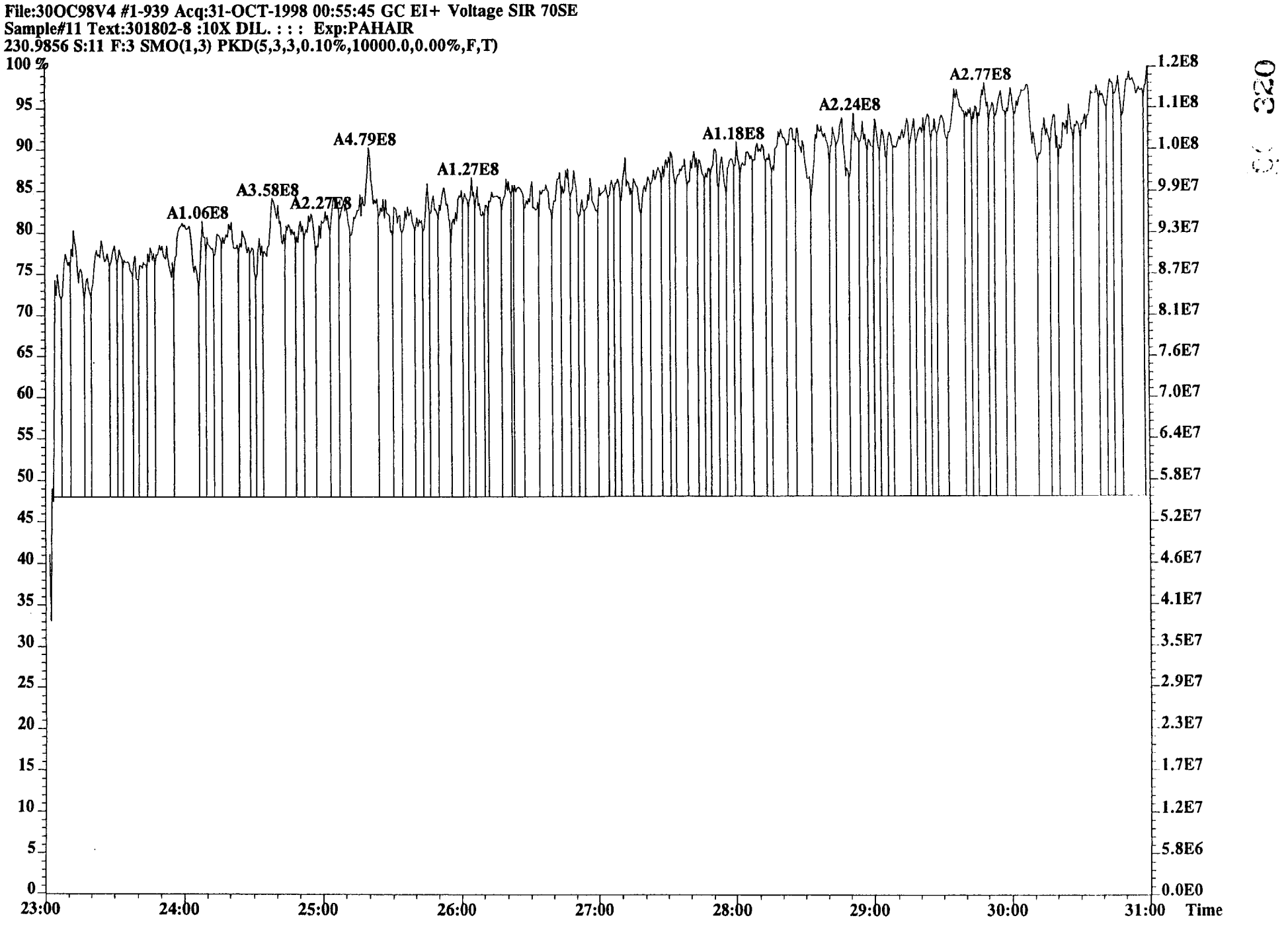

File:30OC98V4 #1-640 Acq:31-OCT-1998 00:55:45 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-8 :10X DIL. : : : Exp:PAHAIR
204.9888 S:11 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A2.00E7
A3.62E7
A1.34E7
A3.21E7
A3.24E7
A3.67E7
A2.43E7
A2.02E7
A3.57E7
A1.94E7
A1.91E7
A3.80E7
A4.23E7
6.7E6
6.4E6
6.0E6
5.7E6
5.4E6
5.0E6
4.7E6
4.4E6
4.0E6
3.7E6
3.4E6
3.0E6
2.7E6
2.4E6
2.0E6
1.7E6
1.3E6
1.0E6
6.7E5
3.4E5
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

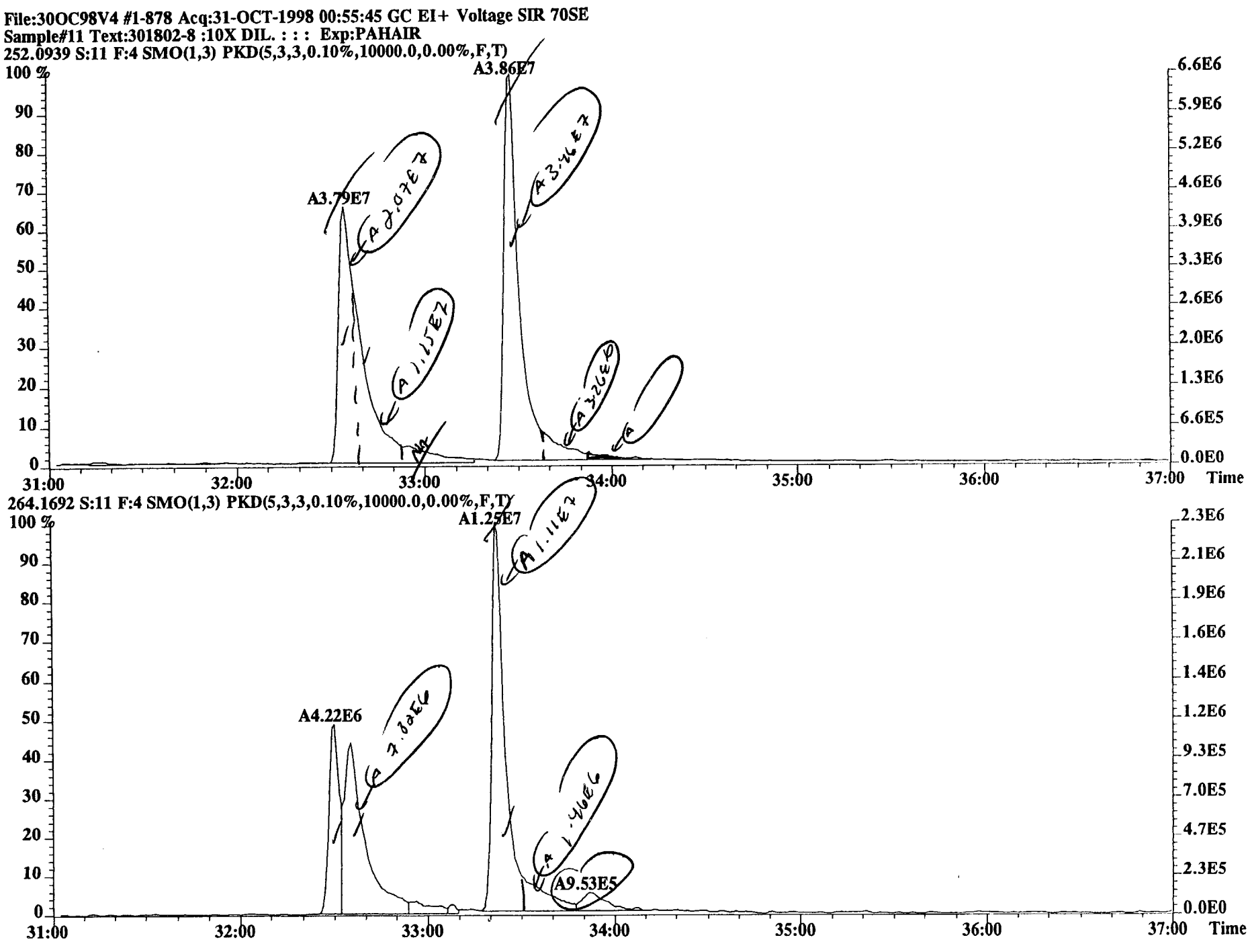
File:30OC98V4 #1-939 Acq:31-OCT-1998 00:55:45 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-8 :10X DIL. : : : Exp:PAHAIR
228.0939 S:11 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

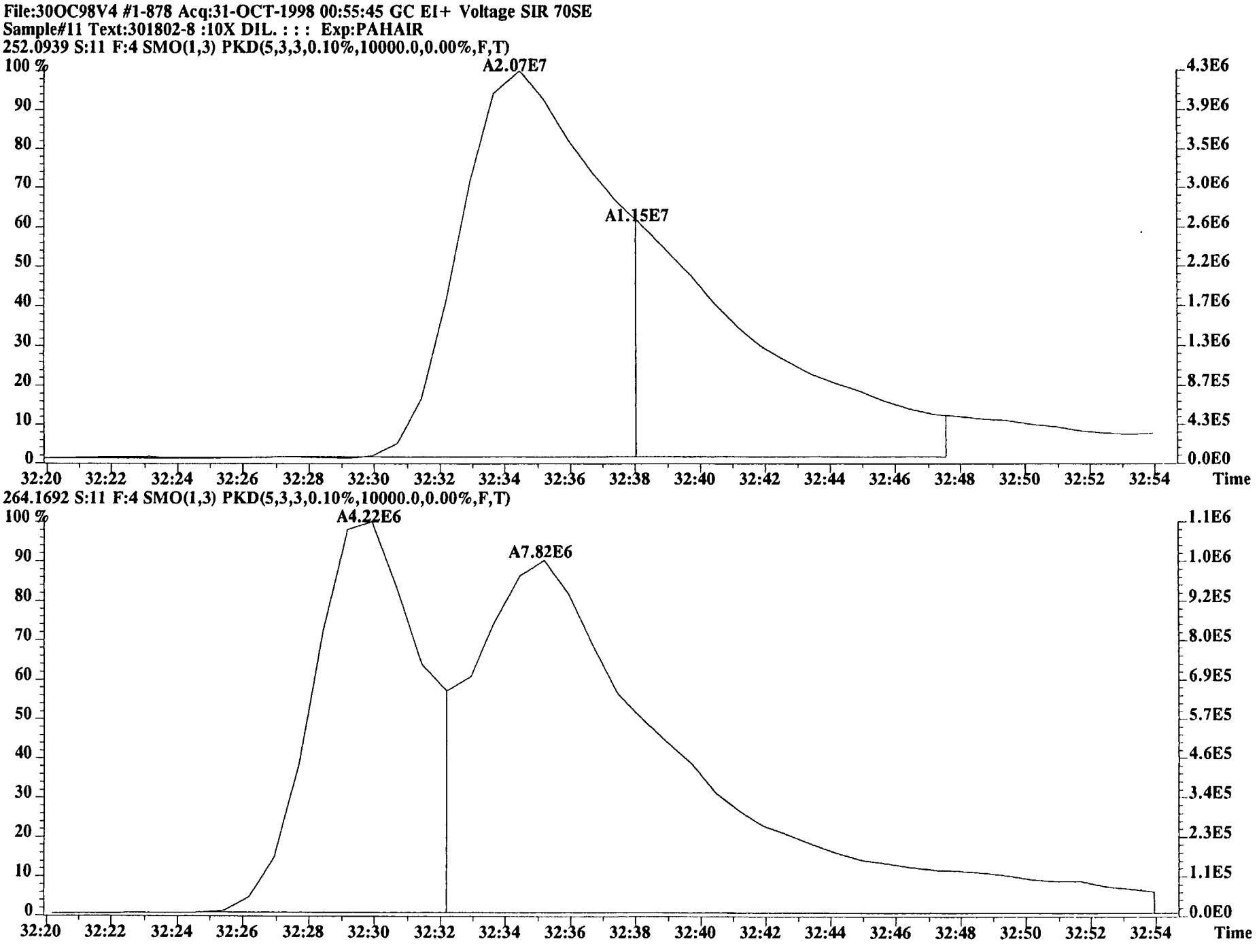


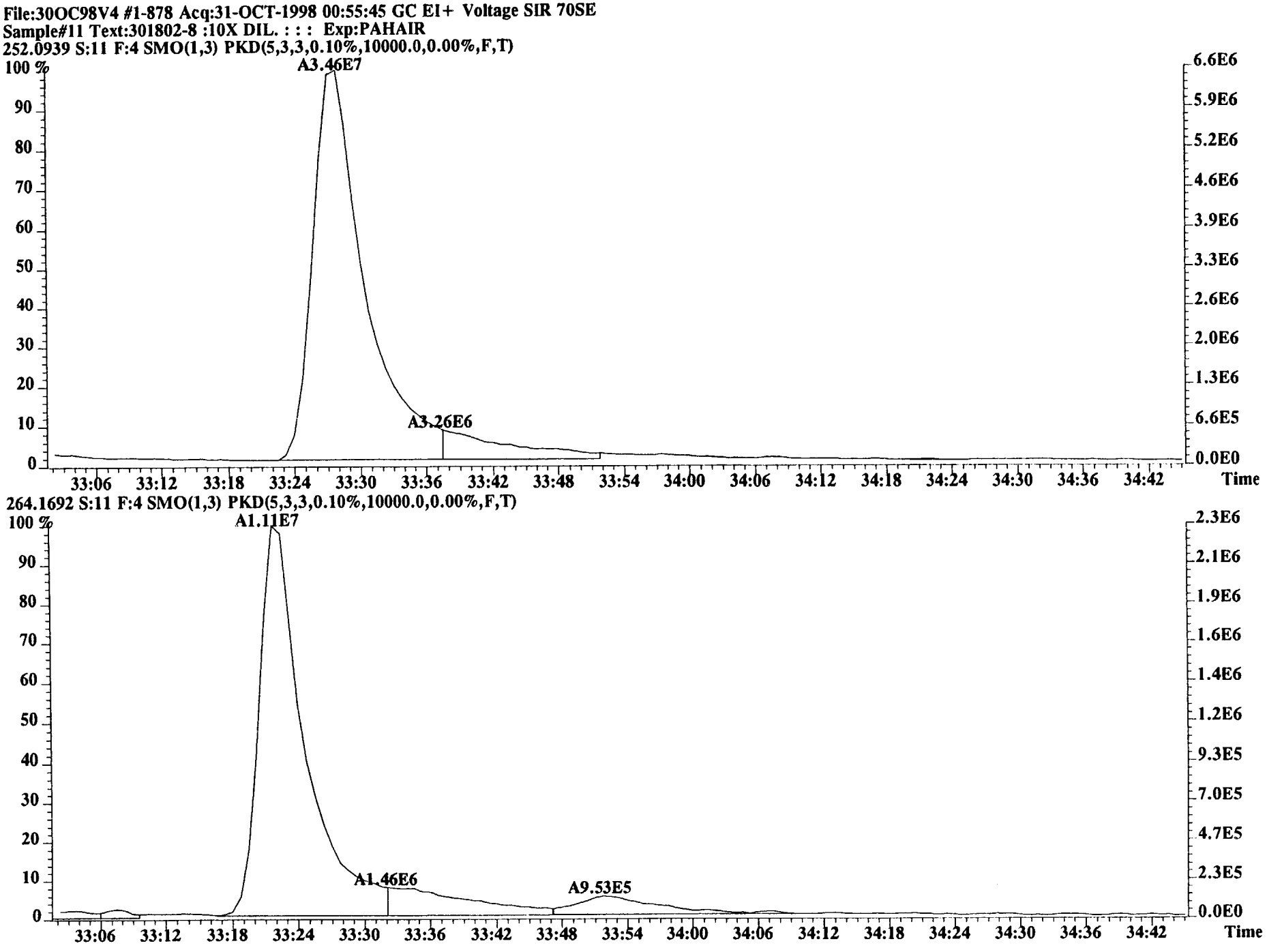
240.1692 S:11 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



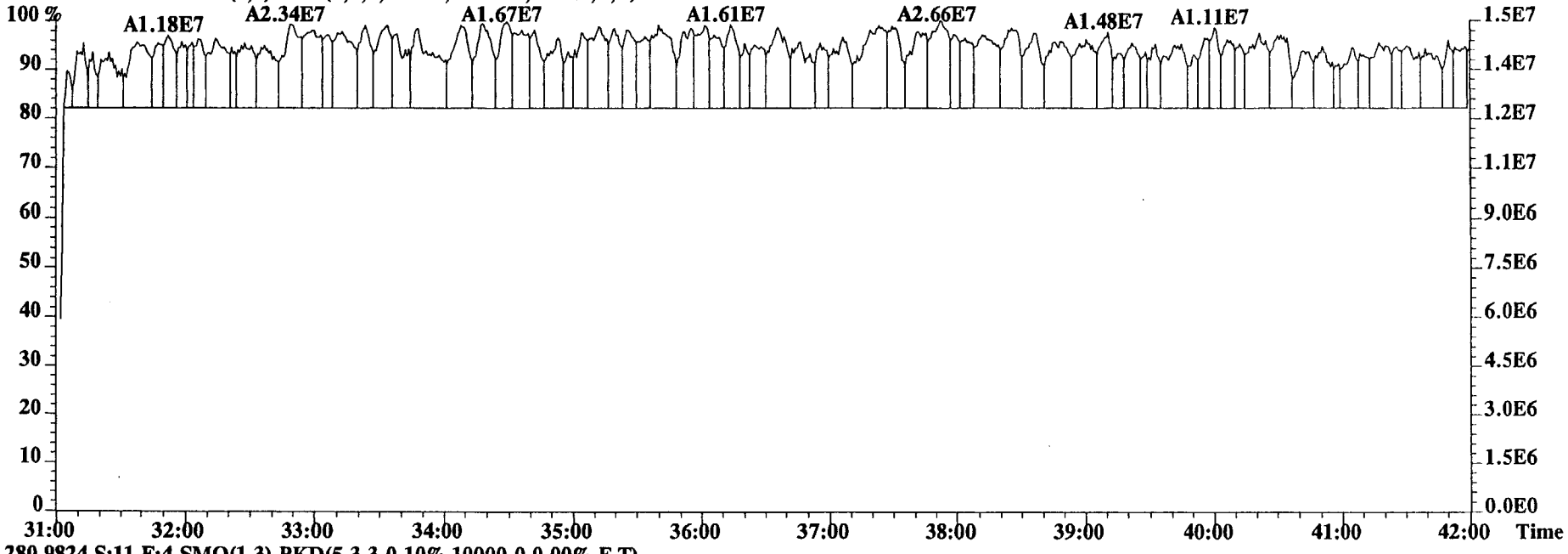

File:30OC98V4 #1-939 Acq:31-OCT-1998 00:55:45 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-8 :10X DIL. : : : Exp:PAHAIR
230.9856 S:11 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.06E8
A3.58E8
A2.27E8
A4.79E8
A1.27E8
A1.18E8
A2.24E8
A2.77E8
1.2E8
1.1E8
1.0E8
9.9E7
9.3E7
8.7E7
8.1E7
7.6E7
7.0E7
6.4E7
5.8E7
5.2E7
4.6E7
4.1E7
3.5E7
2.9E7
2.3E7
1.7E7
1.2E7
5.8E6
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time


File:30OC98V4 #1-878 Acq:31-OCT-1998 00:55:45 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-8 :10X DIL. : : : Exp:PAHAIR
252.0939 S:11 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A3.86E7
A3.79E7
A2.07E7
A3.46E7
A1.15E7
A3.26E6
A
6.6E6
5.9E6
5.2E6
4.6E6
3.9E6
3.3E6
2.6E6
2.0E6
1.3E6
6.6E5
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
Time
264.1692 S:11 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.25E7
A1.11E7
A4.22E6
A 3.03E6
A 1.40E6
A9.53E5
2.3E6
2.1E6
1.9E6
1.6E6
1.4E6
1.2E6
9.3E5
7.0E5
4.7E5
2.3E5
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
Time

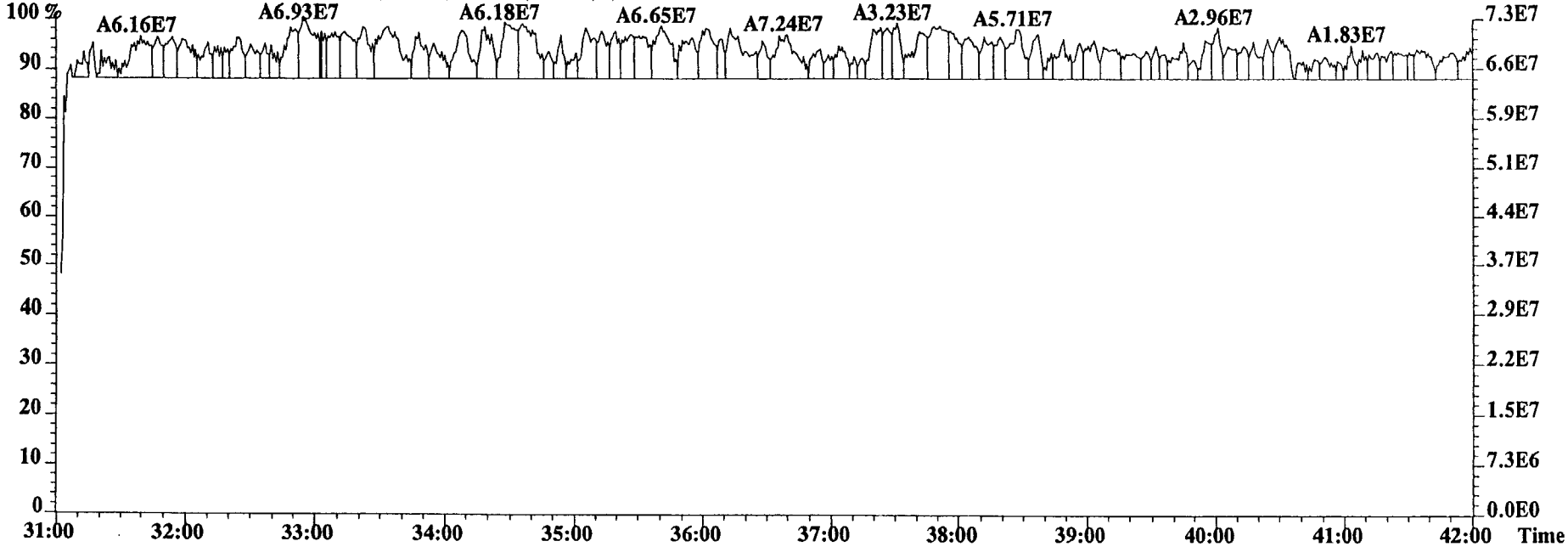

File:30OC98V4 #1-878 Acq:31-OCT-1998 00:55:45 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-8 :10X DIL. : : : Exp:PAHAIR
252.0939 S:11 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.07E7
A1.15E7
264.1692 S:11 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.22E6
A7.82E6
100 %
90
80
70
60
50
40
30
20
10
0
4.3E6
3.9E6
3.5E6
3.0E6
2.6E6
2.2E6
1.7E6
1.3E6
8.7E5
4.3E5
0.0E0
1.1E6
1.0E6
9.2E5
8.0E5
6.9E5
5.7E5
4.6E5
3.4E5
2.3E5
1.1E5
0.0E0
32:20
32:22
32:24
32:26
32:28
32:30
32:32
32:34
32:36
32:38
32:40
32:42
32:44
32:46
32:48
32:50
32:52
32:54
Time


File:30OC98V4 #1-878 Acq:31-OCT-1998 00:55:45 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-8 :10X DIL. : : : Exp:PAHAIR
252.0939 S:11 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A3.46E7
A3.26E6
6.6E6
5.9E6
5.2E6
4.6E6
3.9E6
3.3E6
2.6E6
2.0E6
1.3E6
6.6E5
0.0E0
Time
264.1692 S:11 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.11E7
A1.46E6
A9.53E5
2.3E6
2.1E6
1.9E6
1.6E6
1.4E6
1.2E6
9.3E5
7.0E5
4.7E5
2.3E5
0.0E0
Time
33:06
33:12
33:18
33:24
33:30
33:36
33:42
33:48
33:54
34:00
34:06
34:12
34:18
34:24
34:30
34:36
34:42

File:30OC98V4 #1-878 Acq:31-OCT-1998 00:55:45 GC EI+ Voltage SIR 70SE
Sample#11 Text:301802-8 :10X DIL. : : : Exp:PAHAIR
268.9824 S:11 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



280.9824 S:11 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-U-429-3
Lab ID: 301802-0009-SA
Matrix: AIRTRAIN Sampled: 25 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	76000	ng/sample	--	B
2-Methylnaphthalene	1600	ng/sample	--	B
Acenaphthylene	13000	ng/sample	--	F
Acenaphthene	120	ng/sample	--	
Fluorene	360	ng/sample	--	
Phenanthrene	9900	ng/sample	--	B
Anthracene	220	ng/sample	--	
Fluoranthene	4800	ng/sample	--	
Pyrene	3300	ng/sample	--	
Benzo(a)anthracene	ND	ng/sample	100	
Chrysene	290	ng/sample	--	
Benzo(b)fluoranthene	210	ng/sample	--	
Benzo(k)fluoranthene	ND	ng/sample	100	
Benzo(e)pyrene	350	ng/sample	--	
Benzo(a)pyrene	ND	ng/sample	100	
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
F = Reported value estimated due to an interference.
ND = Not Detected

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-U-429-3
Lab ID: 301802-0009-SA
Matrix: AIRTRAIN Sampled: 25 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	52	
Acenaphthylene-d8	9.0	m
Acenaphthene-d10	59	
Fluorene-d10	73	
Phenanthrene-d10	88	
Fluoranthene-d10	77	
Pyrene-d10	64	
Benzo(a)anthracene-d12	75	
Perylene-d12	20	m
Indeno(123-cd)pyrene-d12	77	
Chrysene-d12	95	
Benzo(b)fluoranthene-d12	93	
Benzo(k)fluoranthene-d12	90	
Benzo(a)pyrene-d12	22	m
Dibenz(a,h)anthracene-d14	79	
Benzo(g,h,i)perylene-d12	57	

Field Surrogates	% Recovery
13C-Fluorene	104

m = Internal Standard recovery is outside method recovery goal.

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

Mass Spec : VG-4 Results : 30OC98V4121.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 30-OCT-98
Data file : 30OC98V4 301802-9 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMP	Rec/ MDL	
d10-2-Methylnaphthalene	7708300	1.00	Y	12: 28	Y	1.00	50.00		
d8-Naphthalene	8989960	1.00	Y	10: 12	Y	2.24	26.02	52	
Naphthalene	8349100000	1.00	Y	10: 16	Y	1.23	7.6e+04	B	E
2-Methylnaphthalene	79278200	1.00	Y	12: 34	Y	0.56	1573.19	B	
d8-Acenaphthylene	798254	1.00	Y	15: 28	Y	1.21	4.27	9	m
Acenaphthylene	97227200	1.00	Y	15: 30	Y	0.94	1.3e+04	E	F
d10-Acenaphthene	3380080	1.00	Y	16: 2	Y	0.74	29.44	59	
Acenaphthene	5080000	1.00	Y	16: 8	Y	1.25	120.61		
d10-Anthracene	4888660	1.00	Y	20: 55	Y	1.00	50.00		
d10-Fluorene	5057040	1.00	Y	17: 41	Y	1.42	36.40	73	
Fluorene	20852000	1.00	Y	17: 47	Y	1.16	355.30		
d10-Phenanthrene	12122960	1.00	Y	20: 45	Y	2.81	44.16	88	
Phenanthrene	1077356000	1.00	Y	20: 49	Y	0.89	9934.91	E	
Anthracene	21200000	1.00	Y	20: 59	Y	0.80	218.48		
d14-Terphenyl	13195400	1.00	Y	26: 0	Y	1.00	50.00		
d10-Fluoranthene	14411760	1.00	Y	24: 36	Y	1.41	38.71	77	
Fluoranthene	767880000	1.00	Y	24: 39	Y	1.11	4792.49		
d10-Pyrene	12748280	1.00	Y	25: 17	Y	1.52	31.82	64	
Pyrene	511088000	1.00	Y	25: 20	Y	1.21	3326.87		
d12-Benzo(a)anthracene	8915960	1.00	Y	29: 9	Y	0.90	37.54	75	
Benzo(a)anthracene	8564840	1.00	Y	29: 13	Y	1.20	<RL=100.00		
d12-Chrysene	16006240	1.00	Y	29: 15	Y	1.28	47.41	95	
Chrysene	50730000	1.00	Y	29: 20	Y	1.08	292.39		
d12-Benzo(e)pyrene	30423600	1.00	Y	33: 22	Y	1.00	50.00		
d12-Benzo(b)fluoranthene	12877120	1.00	Y	32: 29	Y	0.45	46.63	93	
Benzo(b)fluoranthene	32000000	1.00	Y	32: 34	Y	1.17	212.90		
d12-Benzo(k)fluoranthene	25817200	1.00	Y	32: 35	Y	0.95	44.75	90	
Benzo(k)fluoranthene	25000000	1.00	Y	32: 34	Y	1.16	<RL=100.00		
d12-Benzo(a)pyrene	4540000	1.00	Y	33: 32	Y	0.68	11.03	22	m
Benzo(e)pyrene	26330600	1.00	Y	33: 28	Y	1.64	353.46		
Benzo(a)pyrene	2580000	1.00	Y	33: 38	N	1.07	<RL=100.00		
d12-Perylene	3760000	1.00	Y	33: 49	Y	0.63	9.81	20	m
Perylene	* No Peak	0.00	N	33: 55	N	1.71	<RL=100.00		
d12-Indeno(123-cd)pyrene	10360060	1.00	Y	38. 4	Y	0.44	38.30	77	
Indeno(123-cd)pyrene	912632	1.00	Y	38: 10	Y	0.62	<RL=100.00		
d14-Dibenz(ah)anthracene	5934300	1.00	Y	38: 9	Y	0.25	39.67	79	
Dibenz(ah)anthracene	97452	1.00	Y	38: 17	Y	1.40	<RL=100.00		
d12-Benzo(ghi)perylene	9997440	1.00	Y	39: 15	Y	0.58	28.34	57	
Benzo(ghi)perylene	3370860	1.00	Y	39: 23	Y	1.02	<RL=100.00		
d10-Fluorene	5057040	1.00	Y	17: 41	Y	1.00	50.00		
13C-Fluorene	4272480	1.00	Y	17: 47	Y	0.81	52.85	104	

11-4-98
CP

0.5

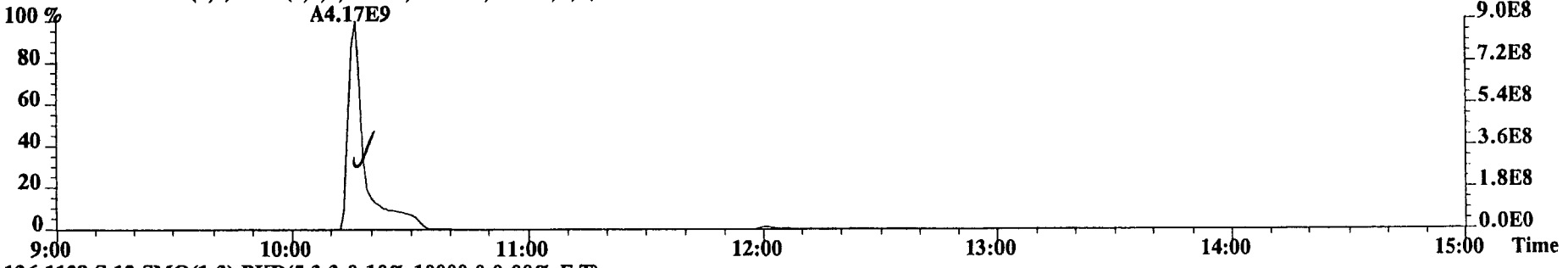
98V4.RRF

Rec/ MDL		
	3854150	3854150
52	4494980	4494980
B E	4174550000	4174550000
B	39639100	39639100
9	399127	399127
E F	48613600	48613600
59	1690040	1690040
	2540000	2540000
	2444330	2444330
73	2528520	2528520
	10426000	10426000
88	6061480	6061480
E	538678000	538678000
	10600000	10600000
	6597700	6597700
77	7205880	7205880
	383940000	383940000
64	6374140	6374140
	255544000	255544000
75	4457980	4457980
100.00	4282420	4282420
95	8003120	8003120
	25365000	25365000
	15211800	15211800
93	6438560	6438560
	16000000	16000000
90	12908600	12908600
100.00	12500000	12500000
22	2270000	2270000
	13165300	13165300
100.00	1290000	1290000
20	1880000	1880000
100.00	0	0
77	5180030	5180030
100.00	456316	456316
79	2967150	2967150
100.00	48726	48726
57	4998720	4998720
100.00	1685430	1685430

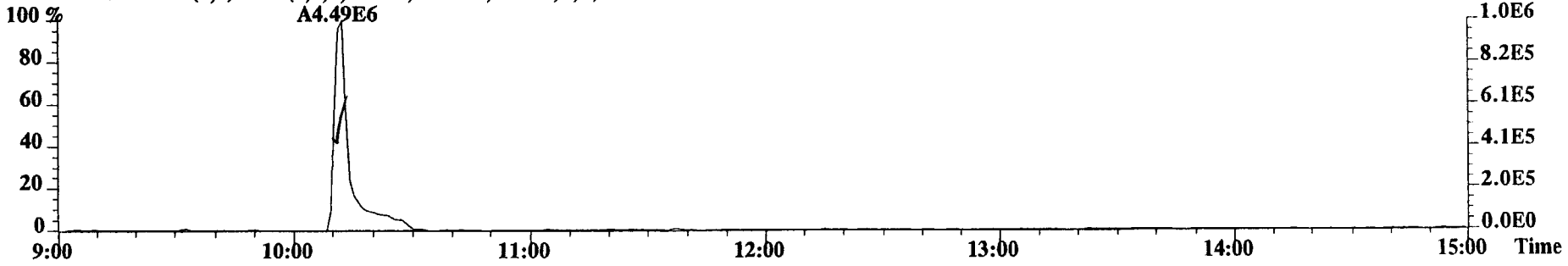
Mass Spec : VG-4 Results : 30OC98V4121.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 30-OCT-98
Data file : 30OC98V4 301802-9 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMP	Rec/ MDL
d10-2-Methylnaphthalene	7708300	1.00	Y	12: 28	Y	1.00	50.00	
d8-Naphthalene	8989960	1.00	Y	10: 12	Y	2.24	26.02	52
Naphthalene	8349100000	1.00	Y	10: 16	Y	1.23	7.6e+04	0.000
2-Methylnaphthalene	79278200	1.00	Y	12: 34	Y	0.56	1573.19	0.000
d8-Acenaphthylene	798254	1.00	Y	15: 28	Y	1.21	4.27	9
Acenaphthylene	97227200	1.00	Y	15: 30	Y	0.94	1.3e+04	0.000
d10-Acenaphthene	3380080	1.00	Y	16: 2	Y	0.74	29.44	59
Acenaphthene	* No Peak	0.00	N	16: 8	N	1.25	0.00	0.000
d10-Anthracene	4888660	1.00	Y	20: 55	Y	1.00	50.00	
d10-Fluorene	5057040	1.00	Y	17: 41	Y	1.42	36.40	73
Fluorene	20852000	1.00	Y	17: 47	Y	1.16	355.30	0.000
d10-Phenanthrene	12122960	1.00	Y	20: 45	Y	2.81	44.16	88
Phenanthrene	1077356000	1.00	Y	20: 49	Y	0.89	9934.91	0.000
Anthracene	* No Peak	0.00	N	20: 59	N	0.80	0.00	0.000
d14-Terphenyl	13195400	1.00	Y	26: 0	Y	1.00	50.00	
d10-Fluoranthene	14411760	1.00	Y	24: 36	Y	1.41	38.71	77
Fluoranthene	767880000	1.00	Y	24: 39	Y	1.11	4792.49	0.000
d10-Pyrene	12748280	1.00	Y	25: 17	Y	1.52	31.82	64
Pyrene	511088000	1.00	Y	25: 20	Y	1.21	3326.87	0.000
d12-Benzo(a)anthracene	8915960	1.00	Y	29: 9	Y	0.90	37.54	75
Benzo(a)anthracene	8564840	1.00	Y	29: 13	Y	1.20	79.75	0.000
d12-Chrysene	16006240	1.00	Y	29: 15	Y	1.28	47.41	95
Chrysene	50730000	1.00	Y	29: 20	Y	1.08	292.39	0.000
d12-Benzo(e)pyrene	30423600	1.00	Y	33: 22	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	12877120	1.00	Y	32: 29	Y	0.45	46.63	93
Benzo(b)fluoranthene	61473800	1.00	Y	32: 34	Y	1.17	408.98	0.000
d12-Benzo(k)fluoranthene	25817200	1.00	Y	32: 35	Y	0.95	44.75	90
Benzo(k)fluoranthene	61473800	1.00	Y	32: 34	Y	1.16	204.54	0.000
d12-Benzo(a)pyrene	* No Peak	0.00	N	33: 32	N	0.68	0.00	0
Benzo(e)pyrene	26330600	1.00	Y	33: 28	Y	1.64	*NoINoIs	
Benzo(a)pyrene	* No Peak	0.00	N	33: 38	N	1.07	*NoINoIs	
d12-Perylene	* No Peak	0.00	N	33: 49	N	0.63	0.00	0
Perylene	* No Peak	0.00	N	33: 55	N	1.71	*NoINoIs	
d12-Indeno(123-cd)pyrene	10360060	1.00	Y	38: 4	Y	0.44	38.30	77
Indeno(123-cd)pyrene	912632	1.00	Y	38: 10	Y	0.62	14.19	0.000
d14-Dibenz(ah)anthracene	5934300	1.00	Y	38: 9	Y	0.25	39.67	79
Dibenz(ah)anthracene	97452	1.00	Y	38: 17	Y	1.40	1.17	0.000
d12-Benzo(ghi)perylene	9997440	1.00	Y	39: 15	Y	0.58	28.34	57
Benzo(ghi)perylene	3370860	1.00	Y	39: 23	Y	1.02	33.19	0.000
d10-Fluorene	5057040	1.00	Y	17: 41	Y	1.42	5.85	12
13C-Fluorene	4272480	1.00	Y	17: 47	Y	1.00	84.49	0.000

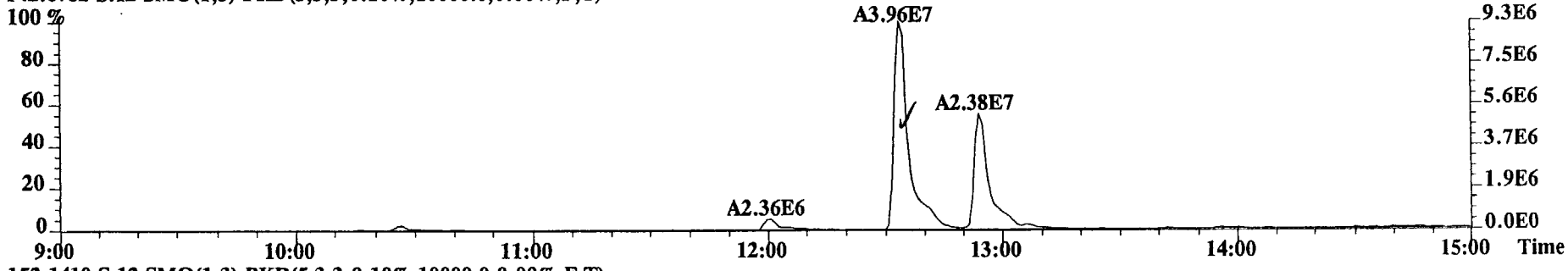
File:30OC98V4 #1-510 Acq:31-OCT-1998 01:44:49 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-9 :10X DIL. : : : Exp:PAHAIR
128.0626 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



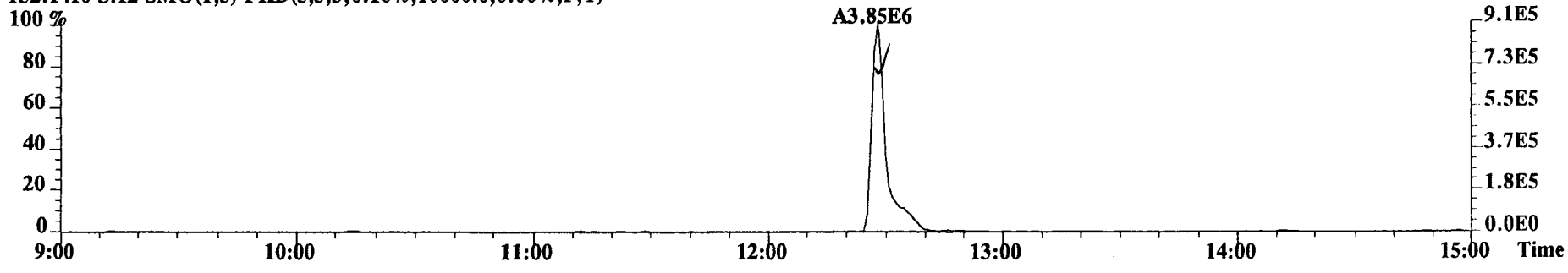
136.1128 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

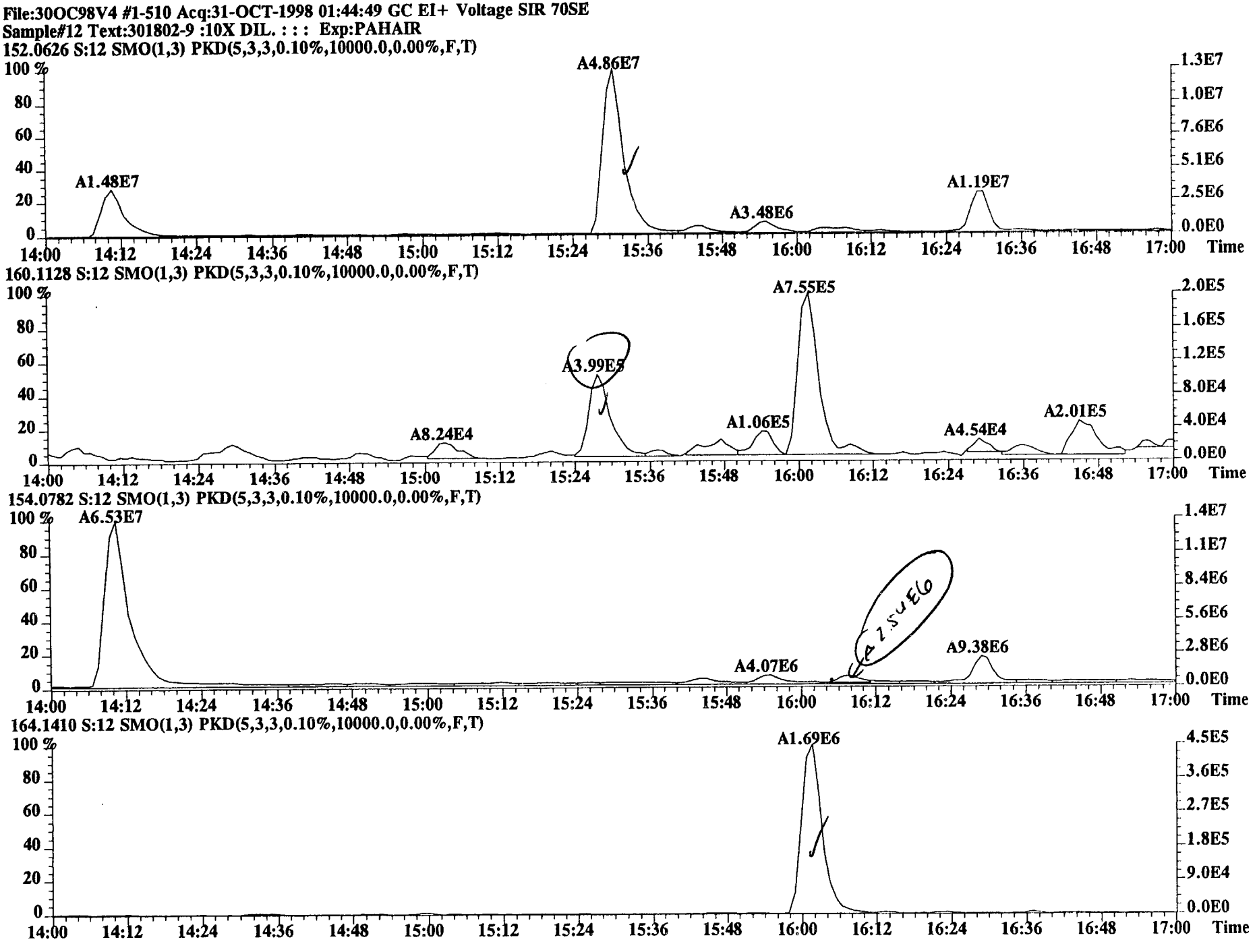


142.0782 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

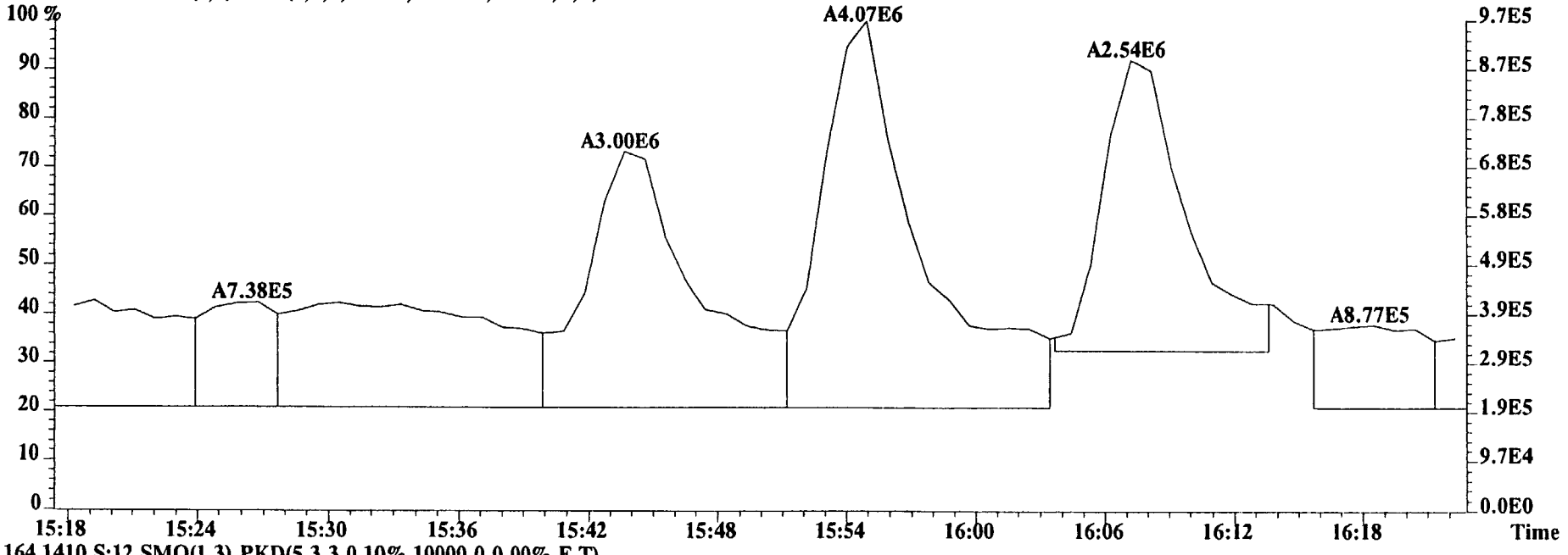


152.1410 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

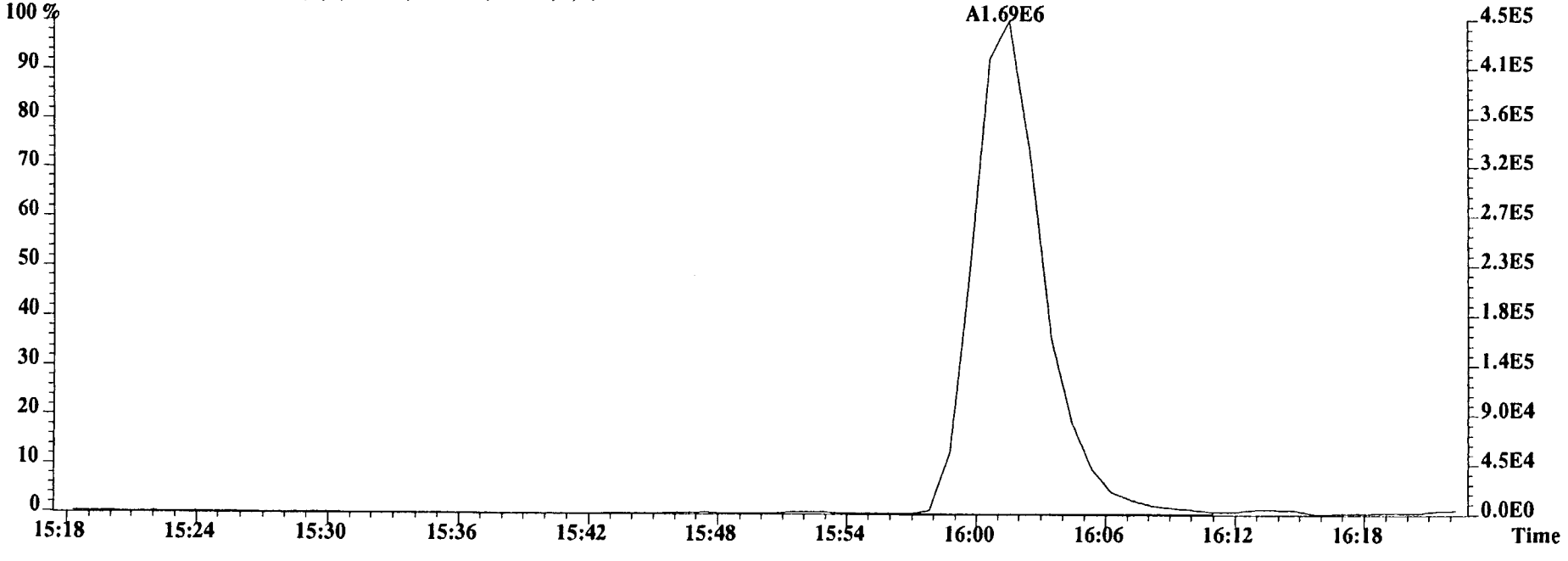


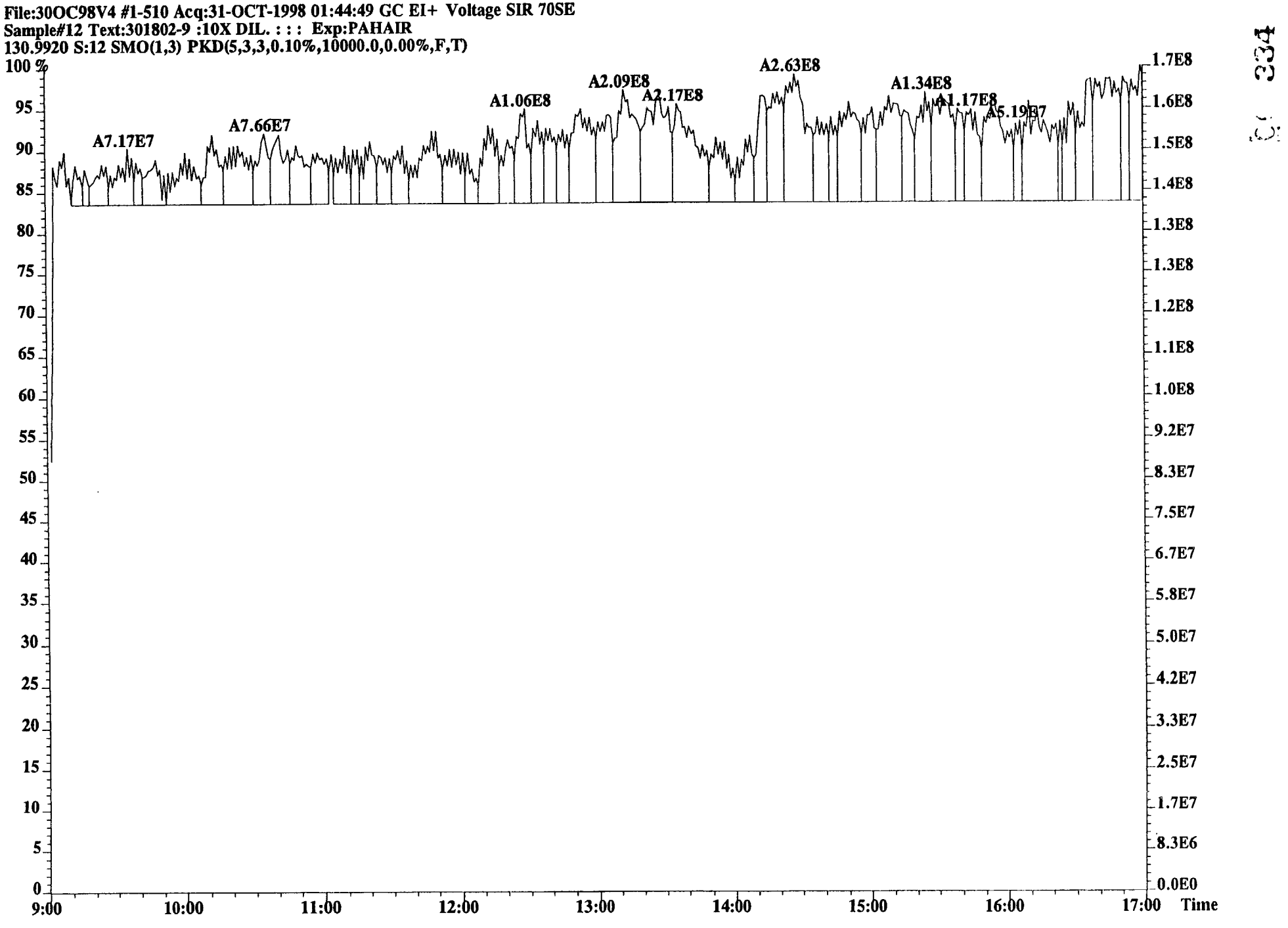

File:30OC98V4 #1-510 Acq:31-OCT-1998 01:44:49 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-9 :10X DIL. : : : Exp:PAHAIR
152.0626 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.86E7
A1.48E7
A3.48E6
A1.19E7
160.1128 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.55E5
A3.99E5
A8.24E4
A1.06E5
A4.54E4
A2.01E5
154.0782 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A6.53E7
A4.07E6
A9.38E6
164.1410 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.69E6
100 %
80
60
40
20
0
14:00
14:12
14:24
14:36
14:48
15:00
15:12
15:24
15:36
15:48
16:00
16:12
16:24
16:36
16:48
17:00
Time

File:30OC98V4 #1-510 Acq:31-OCT-1998 01:44:49 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-9 :10X DIL. : : : Exp:PAHAIR
154.0782 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



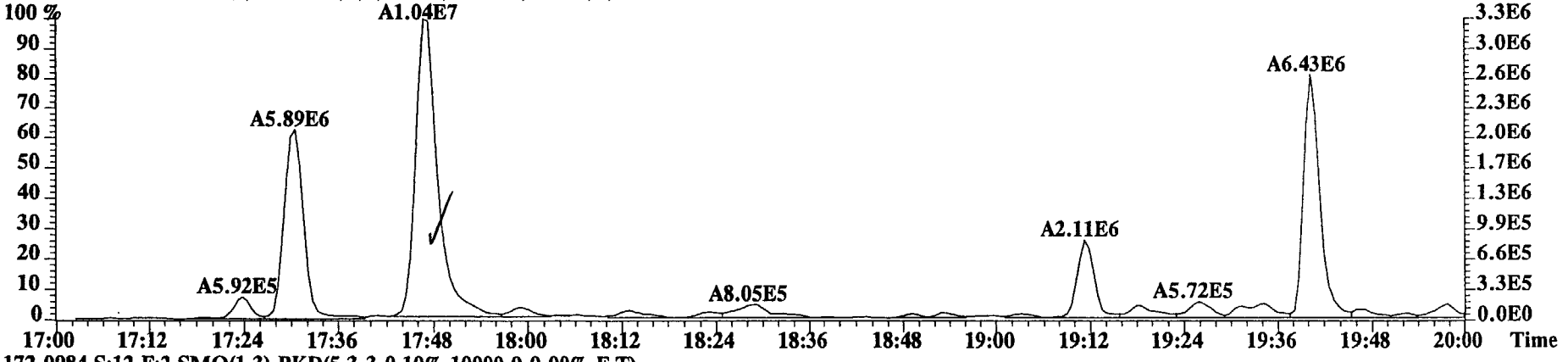
164.1410 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



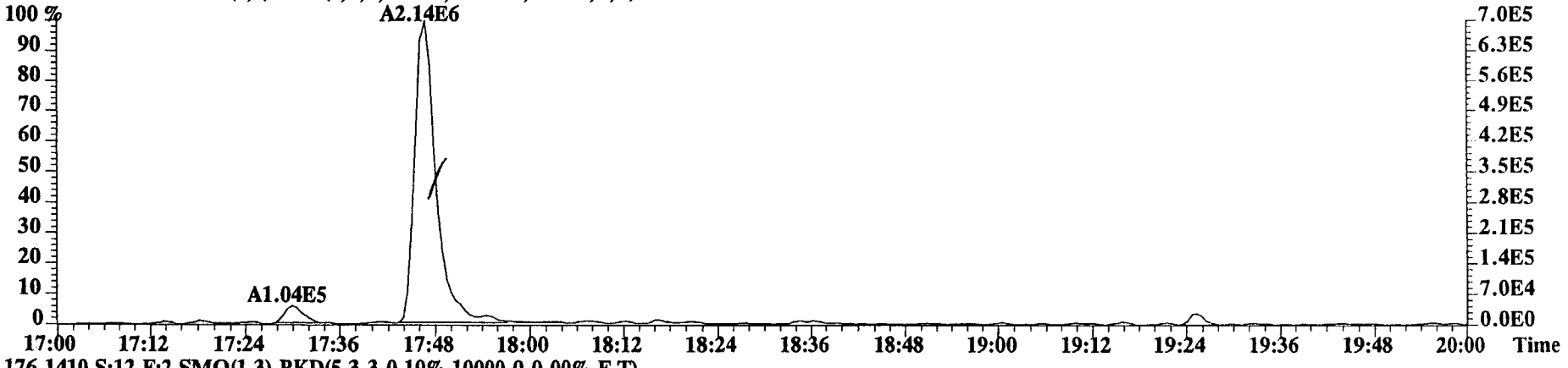

File:30OC98V4 #1-510 Acq:31-OCT-1998 01:44:49 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-9 :10X DIL. : : : Exp:PAHAIR
130.9920 S:12 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A7.17E7
A7.66E7
A1.06E8
A2.09E8
A2.17E8
A2.63E8
A1.34E8
A1.17E8
A5.19E7
1.7E8
1.6E8
1.5E8
1.4E8
1.3E8
1.3E8
1.2E8
1.1E8
1.0E8
9.2E7
8.3E7
7.5E7
6.7E7
5.8E7
5.0E7
4.2E7
3.3E7
2.5E7
1.7E7
8.3E6
0.0E0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
Time

SC 334

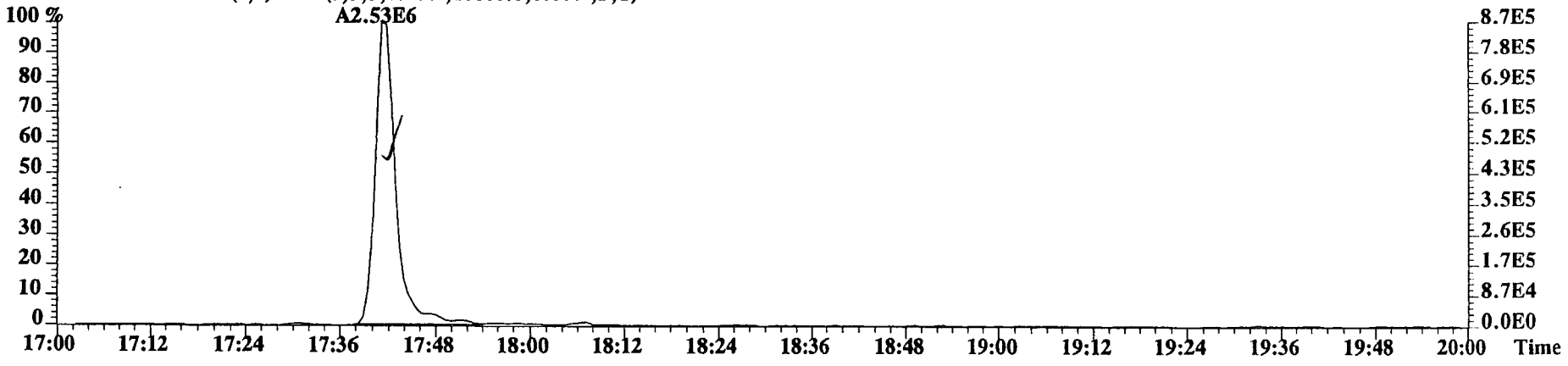
File:30OC98V4 #1-640 Acq:31-OCT-1998 01:44:49 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-9 :10X DIL. : : : Exp:PAHAIR
166.0798 S:12 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



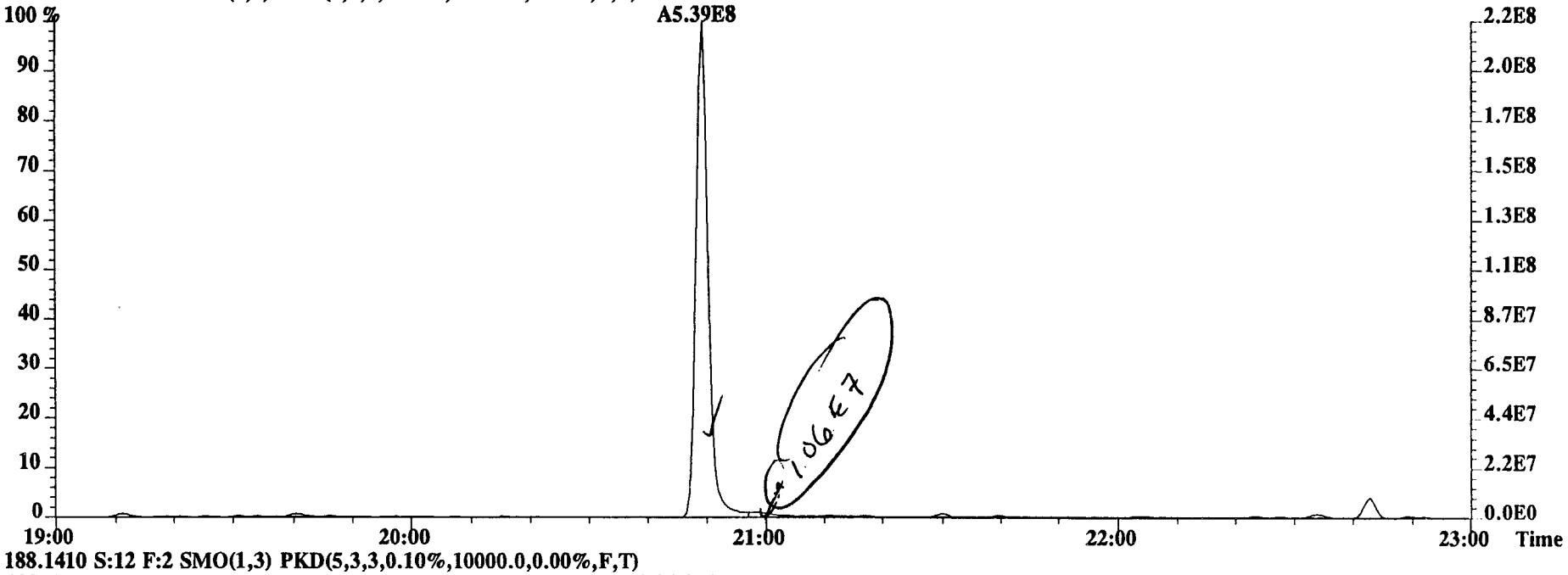
172.0984 S:12 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



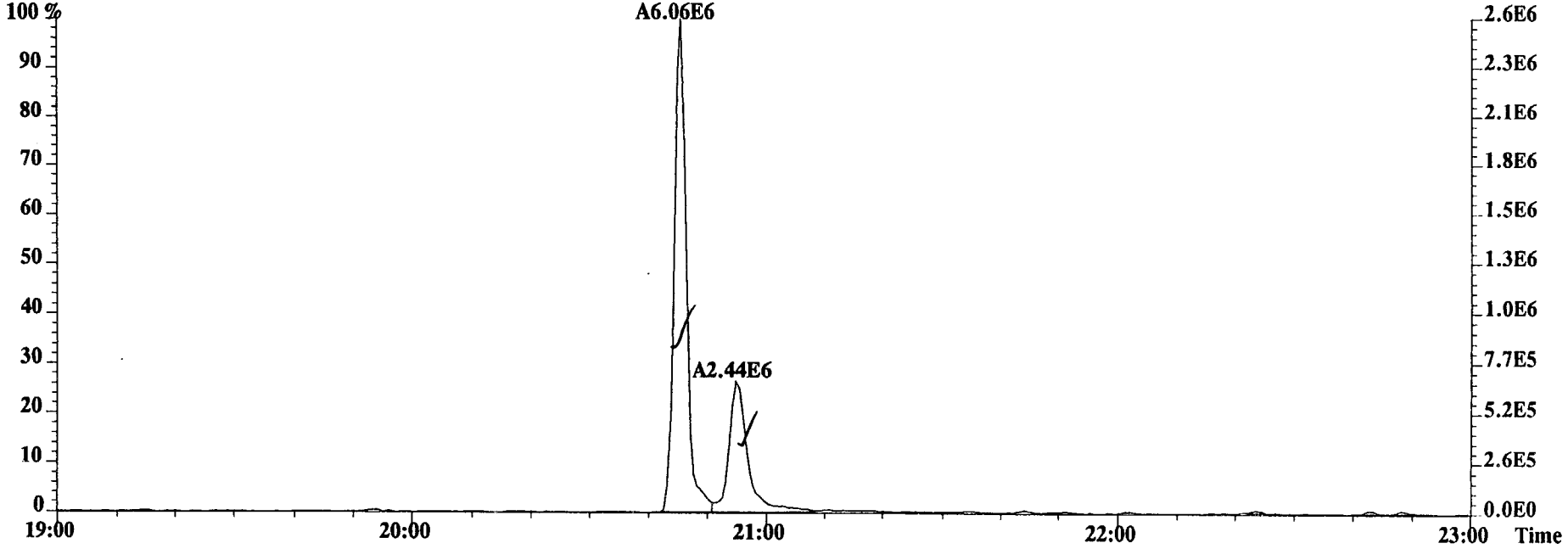
176.1410 S:12 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



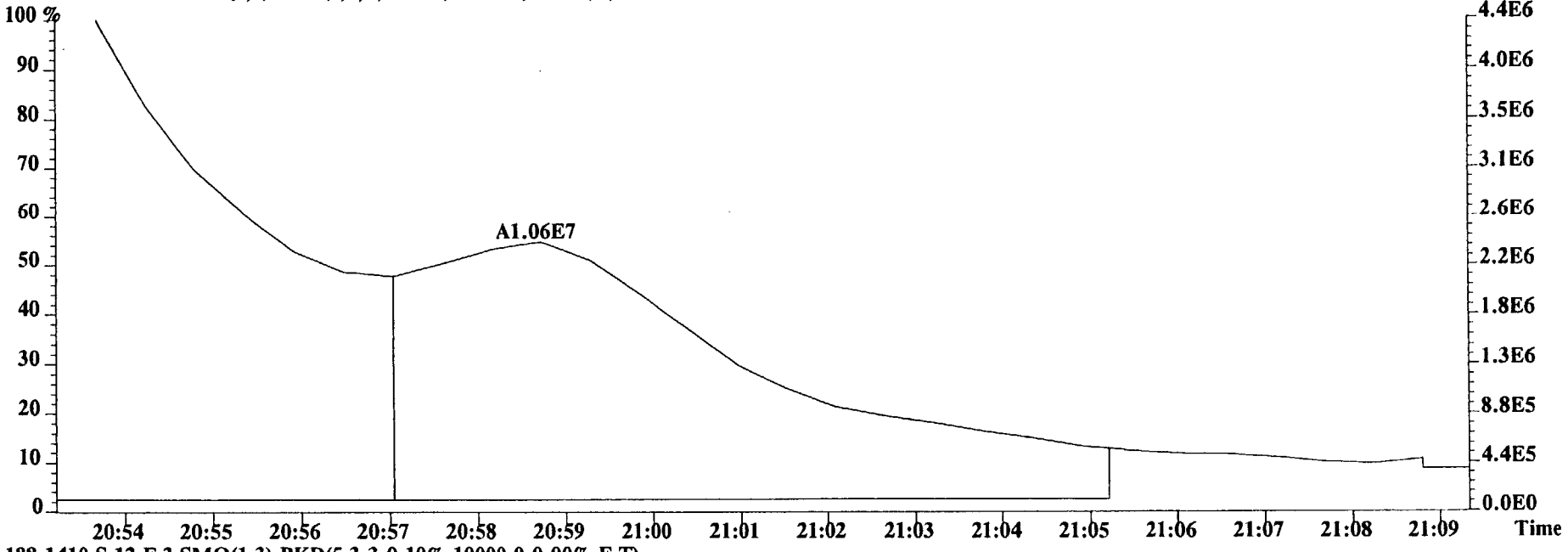
File:30OC98V4 #1-640 Acq:31-OCT-1998 01:44:49 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-9 :10X DIL. : : : Exp:PAHAIR
178.0782 S:12 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



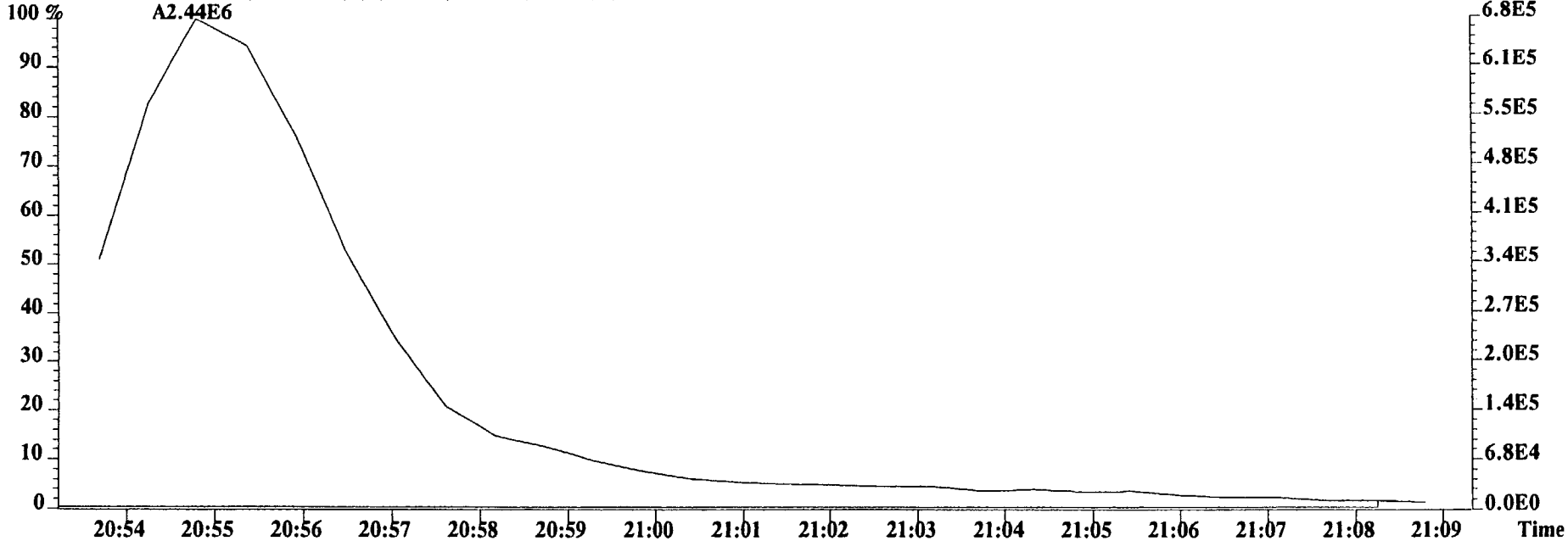
188.1410 S:12 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

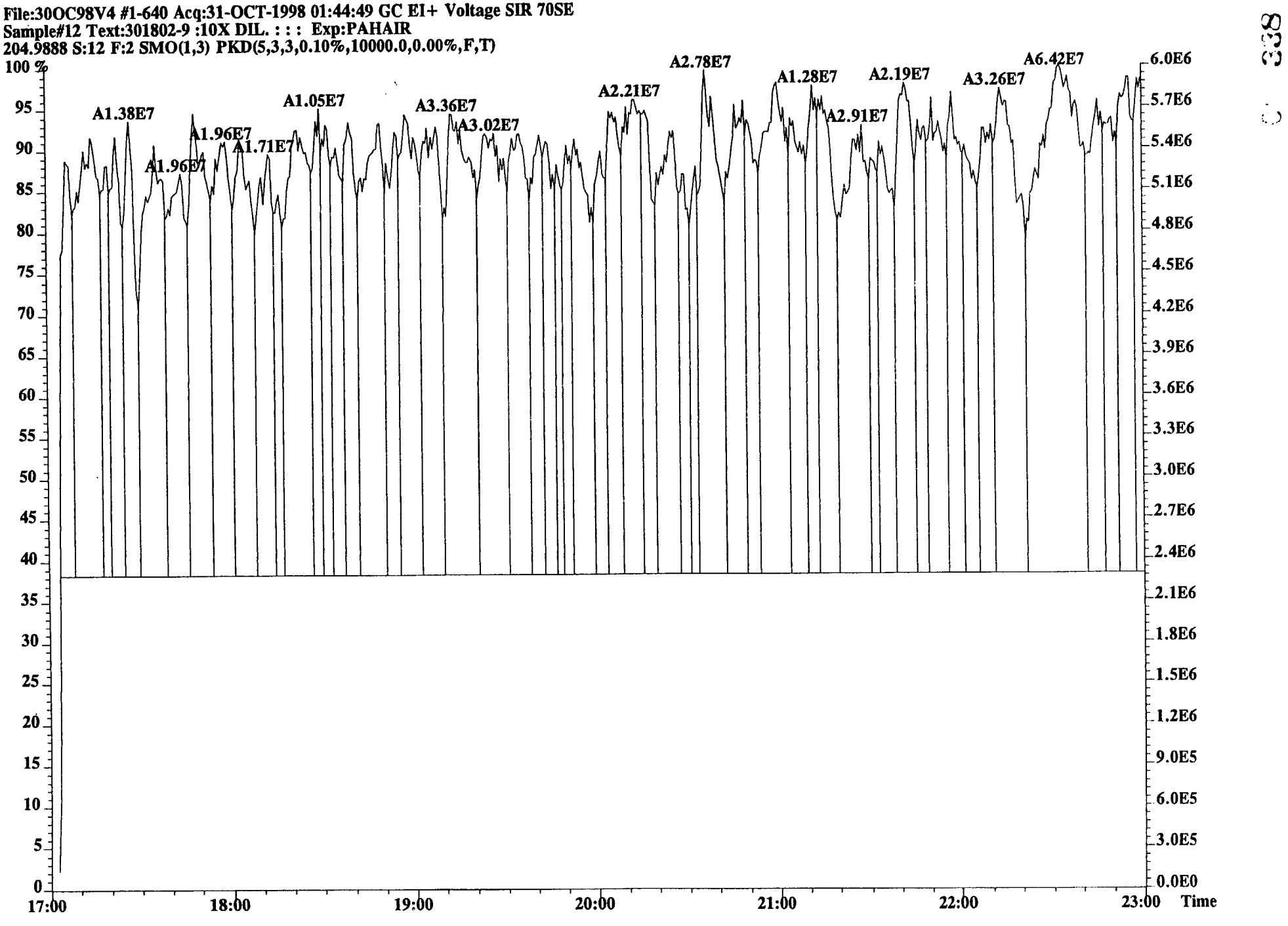


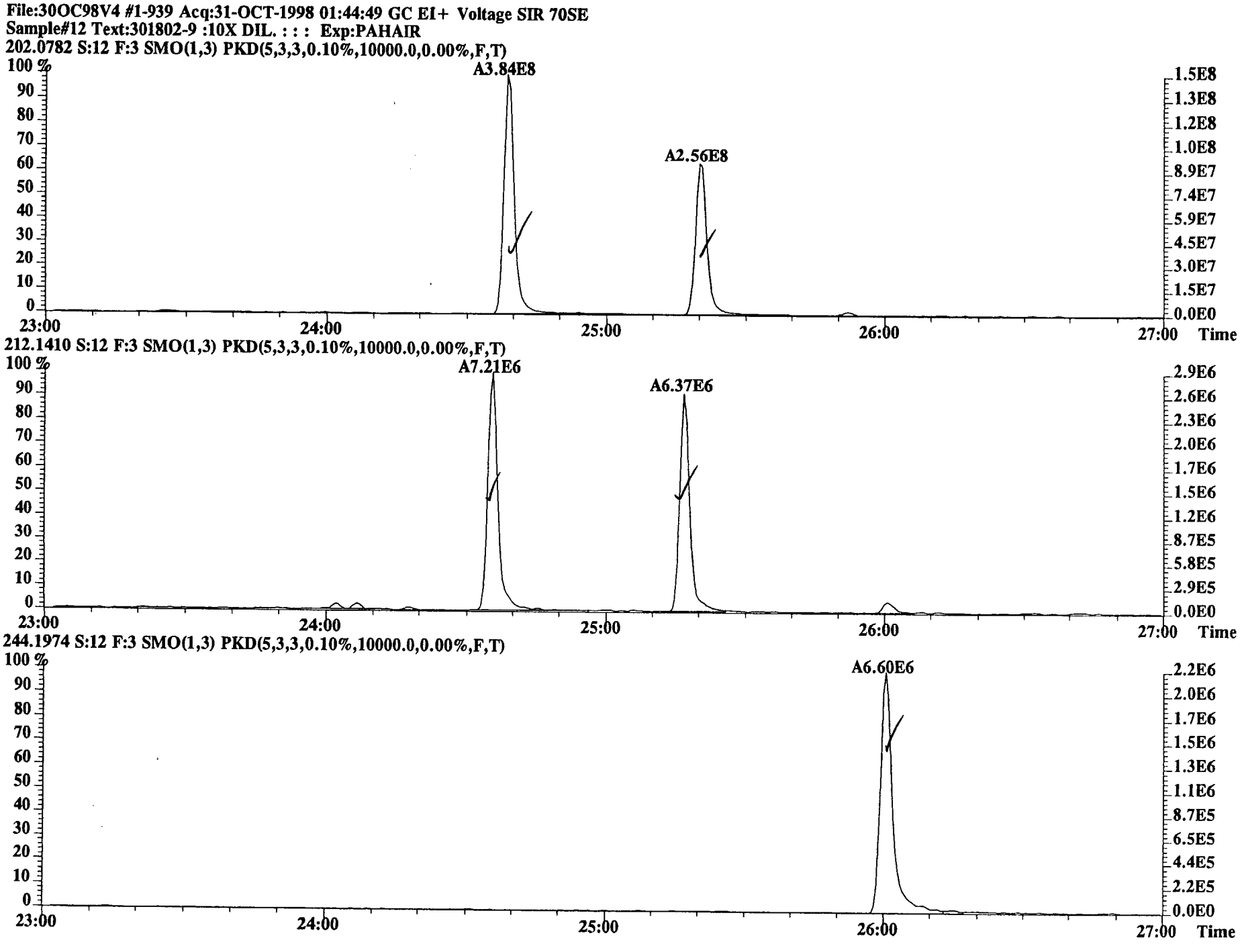
File:30OC98V4 #1-640 Acq:31-OCT-1998 01:44:49 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-9 :10X DIL. : : : Exp:PAHAIR
178.0782 S:12 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

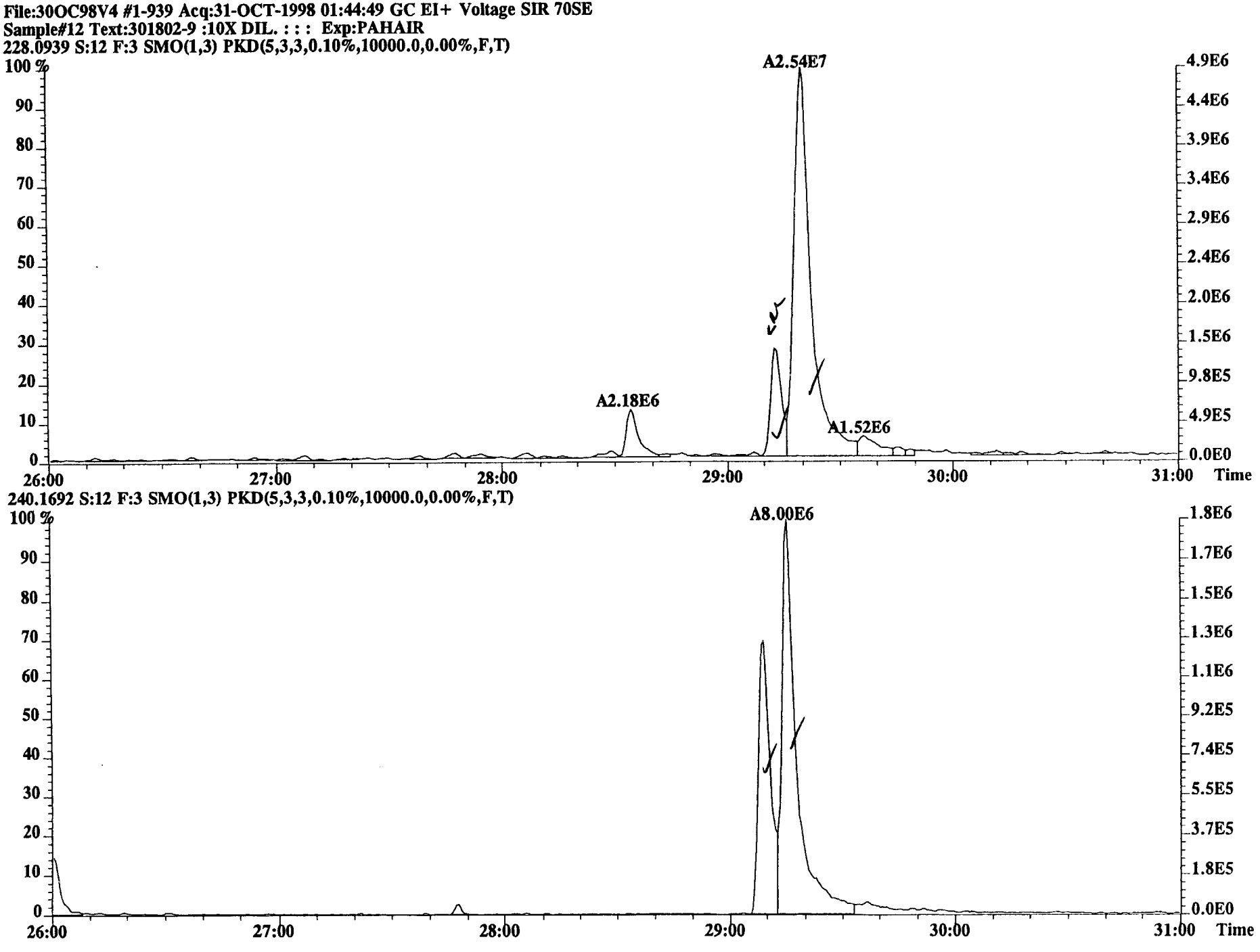


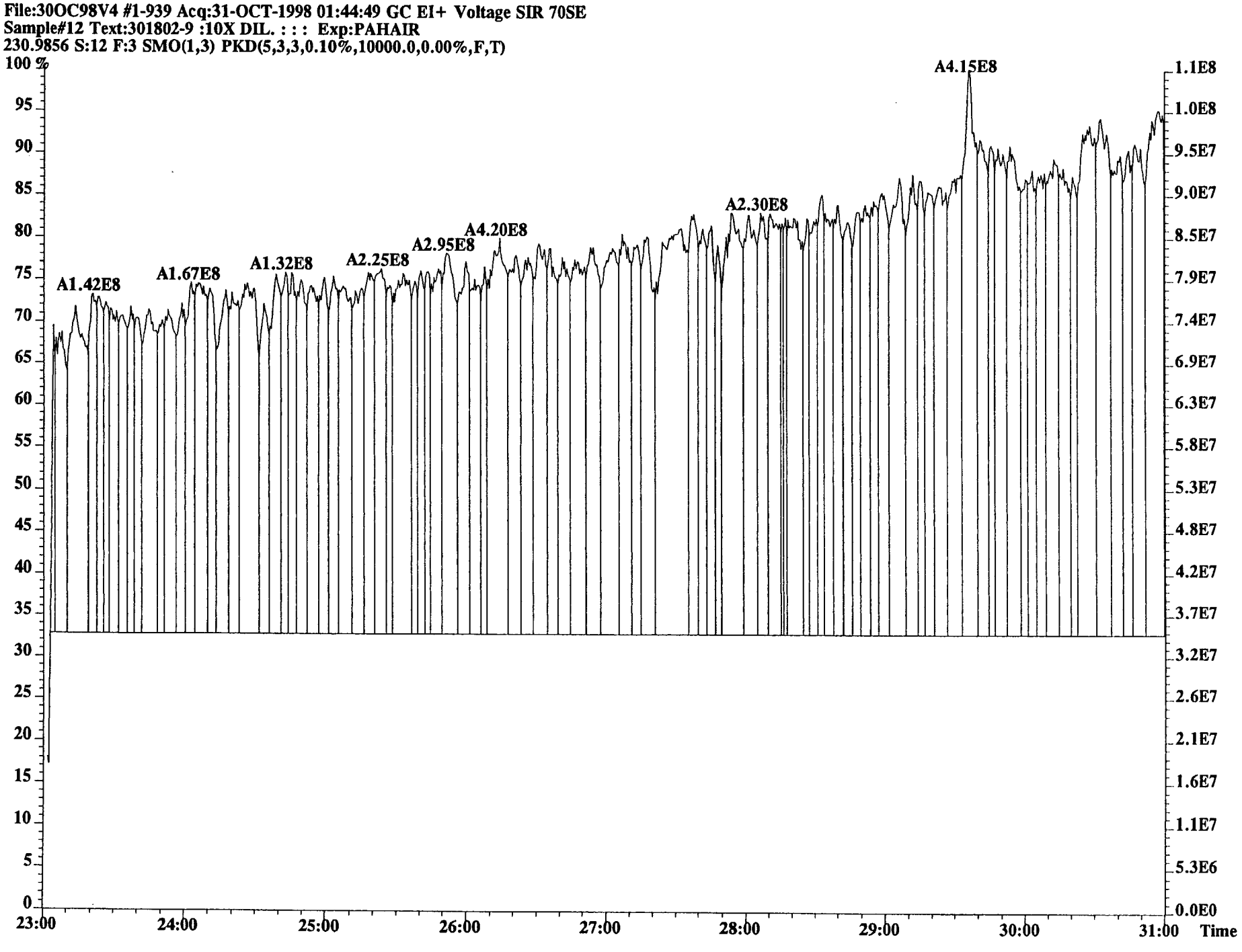
188.1410 S:12 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

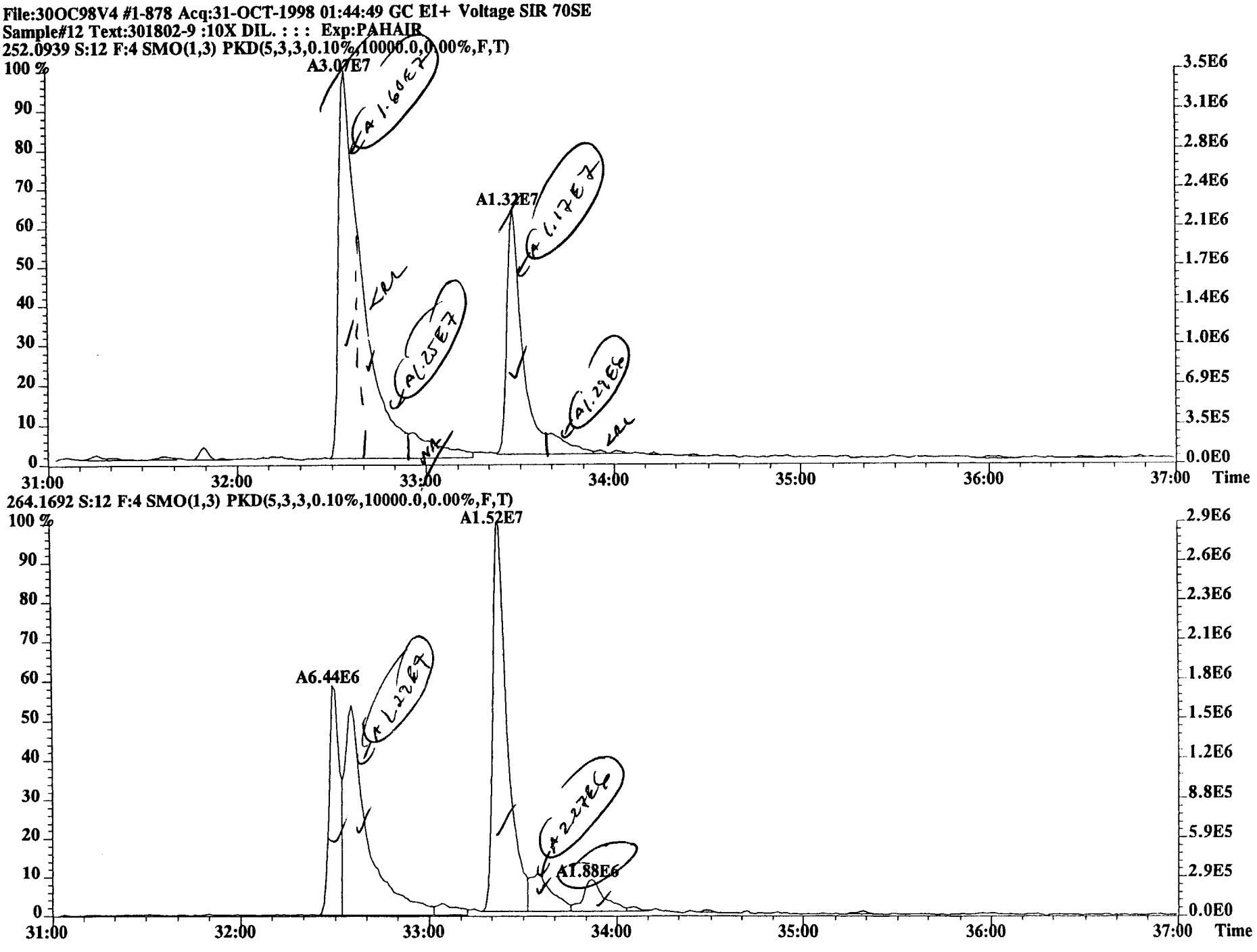



File:30OC98V4 #1-640 Acq:31-OCT-1998 01:44:49 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-9 :10X DIL. : : : Exp:PAHAIR
204.9888 S:12 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.38E7
A1.96E7
A1.96E7
A1.71E7
A1.05E7
A3.36E7
A3.02E7
A2.21E7
A2.78E7
A1.28E7
A2.91E7
A2.19E7
A3.26E7
A6.42E7
6.0E6
5.7E6
5.4E6
5.1E6
4.8E6
4.5E6
4.2E6
3.9E6
3.6E6
3.3E6
3.0E6
2.7E6
2.4E6
2.1E6
1.8E6
1.5E6
1.2E6
9.0E5
6.0E5
3.0E5
0.0E0
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

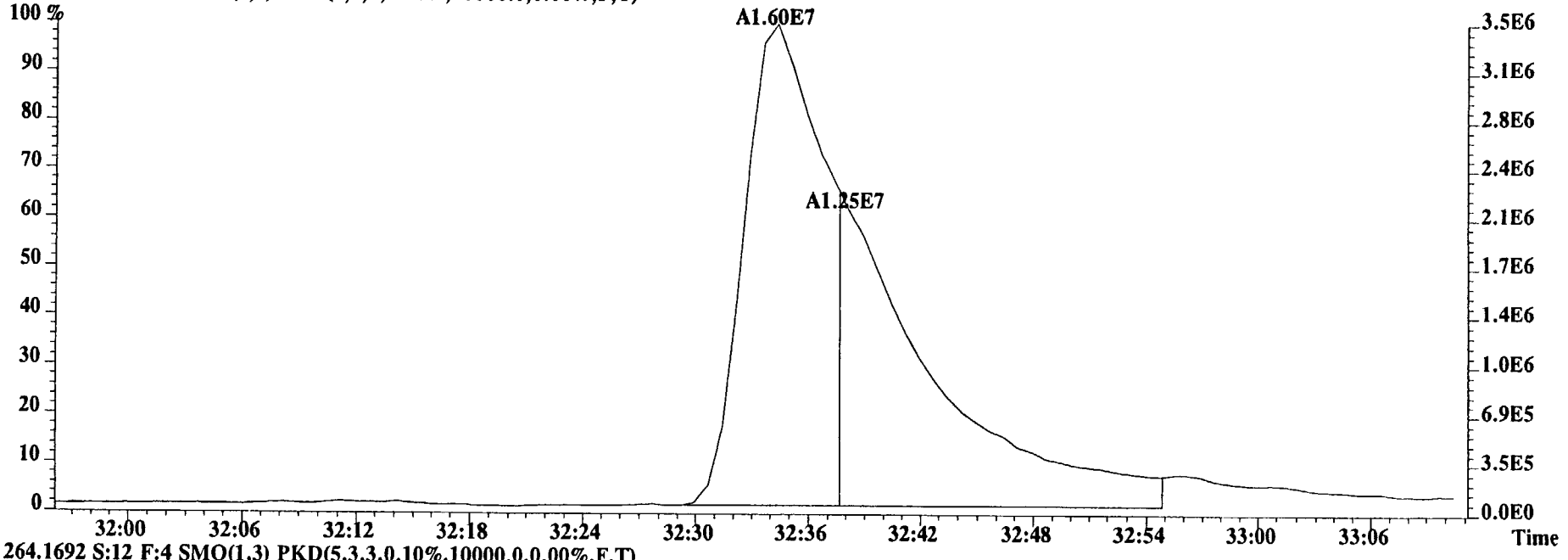

File:30OC98V4 #1-939 Acq:31-OCT-1998 01:44:49 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-9 :10X DIL. : : : Exp:PAHAIR
202.0782 S:12 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.84E8
A2.56E8
212.1410 S:12 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.21E6
A6.37E6
244.1974 S:12 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A6.60E6
100 %
90
80
70
60
50
40
30
20
10
0
23:00
24:00
25:00
26:00
27:00
Time
1.5E8
1.3E8
1.2E8
1.0E8
8.9E7
7.4E7
5.9E7
4.5E7
3.0E7
1.5E7
0.0E0
2.9E6
2.6E6
2.3E6
2.0E6
1.7E6
1.5E6
1.2E6
8.7E5
5.8E5
2.9E5
0.0E0
2.2E6
2.0E6
1.7E6
1.5E6
1.3E6
1.1E6
8.7E5
6.5E5
4.4E5
2.2E5
0.0E0


File:30OC98V4 #1-939 Acq:31-OCT-1998 01:44:49 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-9 :10X DIL. : : : Exp:PAHAIR
228.0939 S:12 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A2.54E7
A2.18E6
A1.52E6
4.9E6
4.4E6
3.9E6
3.4E6
2.9E6
2.4E6
2.0E6
1.5E6
9.8E5
4.9E5
0.0E0
26:00
27:00
28:00
29:00
30:00
31:00
Time
240.1692 S:12 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A8.00E6
1.8E6
1.7E6
1.5E6
1.3E6
1.1E6
9.2E5
7.4E5
5.5E5
3.7E5
1.8E5
0.0E0
26:00
27:00
28:00
29:00
30:00
31:00
Time

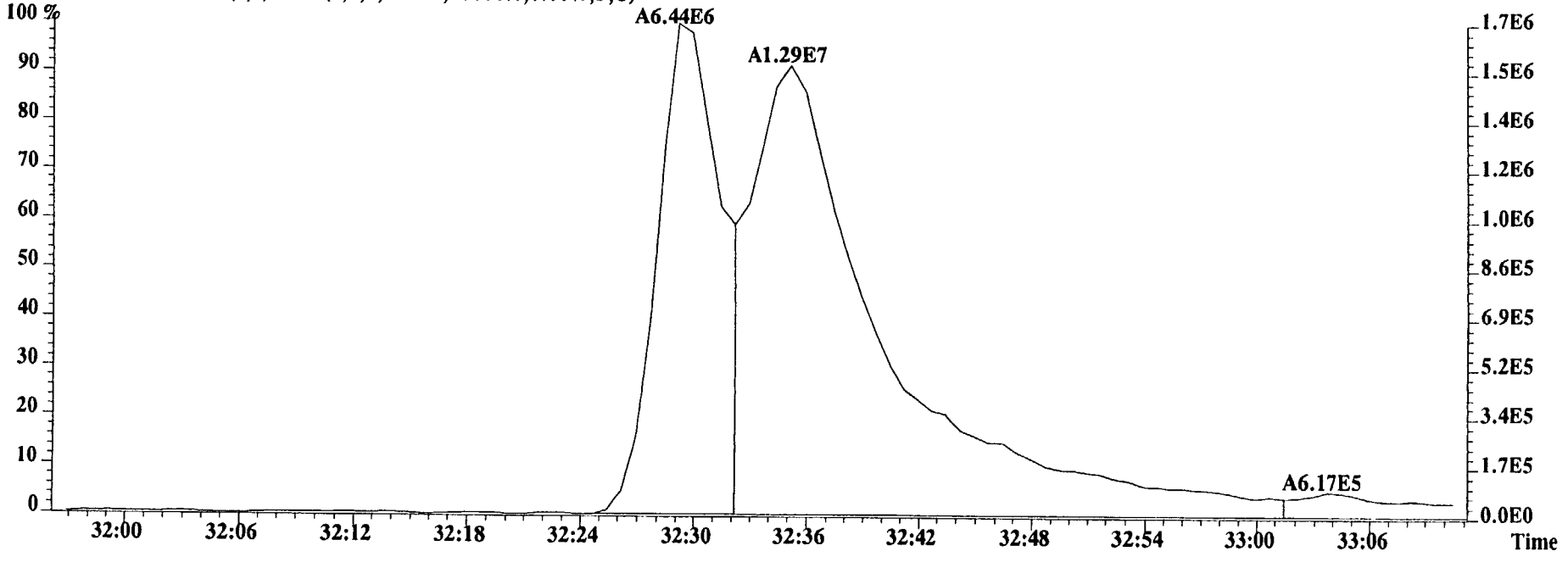

File:30OC98V4 #1-939 Acq:31-OCT-1998 01:44:49 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-9 :10X DIL. : : : Exp:PAHAIR
230.9856 S:12 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.42E8
A1.67E8
A1.32E8
A2.25E8
A2.95E8
A4.20E8
A2.30E8
A4.15E8
1.1E8
1.0E8
9.5E7
9.0E7
8.5E7
7.9E7
7.4E7
6.9E7
6.3E7
5.8E7
5.3E7
4.8E7
4.2E7
3.7E7
3.2E7
2.6E7
2.1E7
1.6E7
1.1E7
5.3E6
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time


File:30OC98V4 #1-878 Acq:31-OCT-1998 01:44:49 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-9 :10X DIL. : : : Exp:PAHAIR
252.0939 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.07E7
A1.32E7
A1.25E7
A1.22E6
264.1692 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.52E7
A6.44E6
A1.88E6
Time

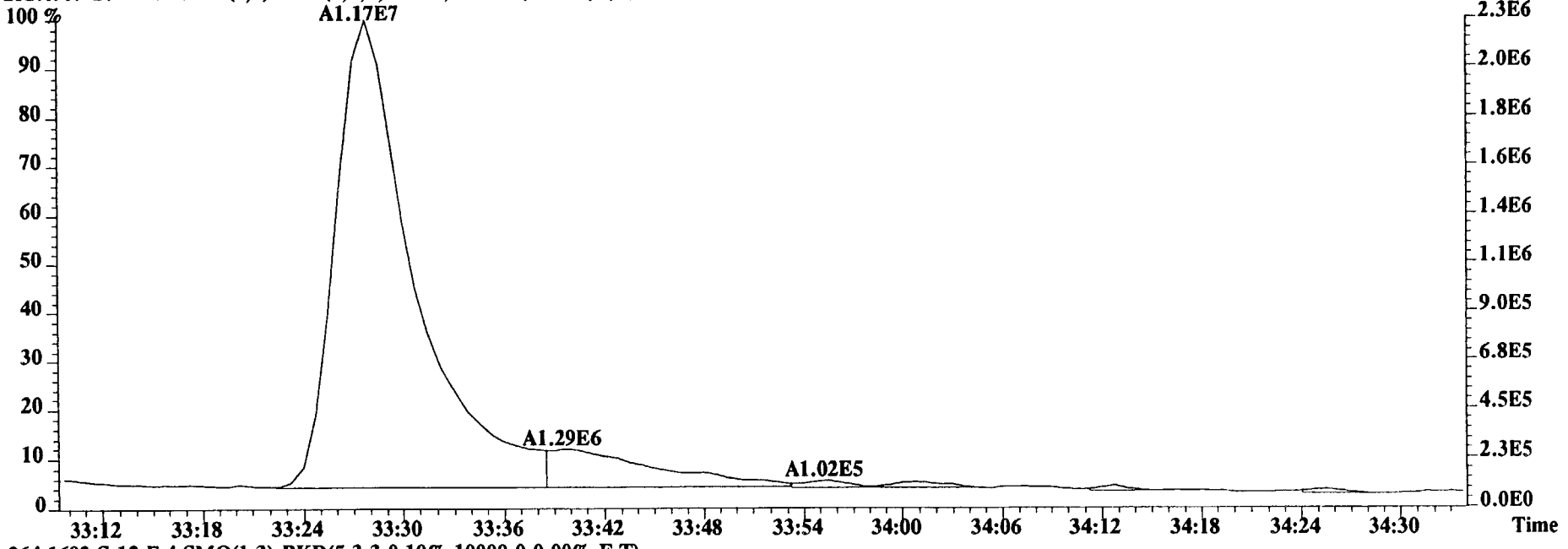
File:30OC98V4 #1-878 Acq:31-OCT-1998 01:44:49 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-9 :10X DIL. : : : Exp:PAHAIR
252.0939 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



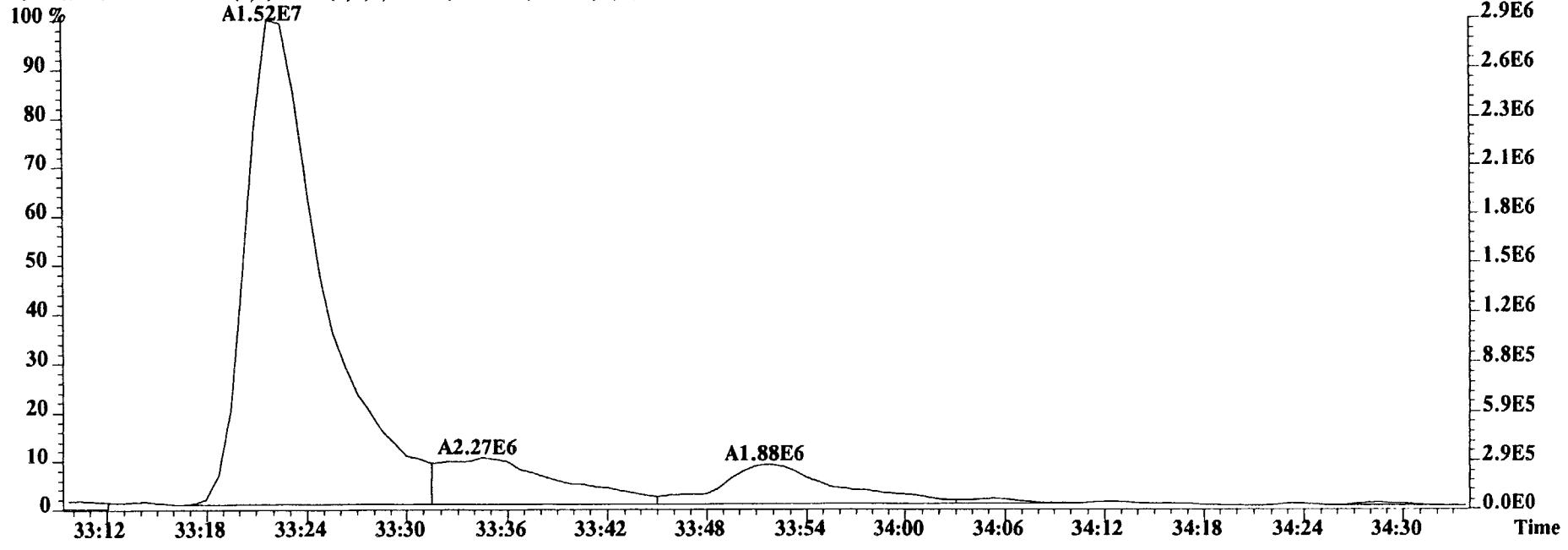
264.1692 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

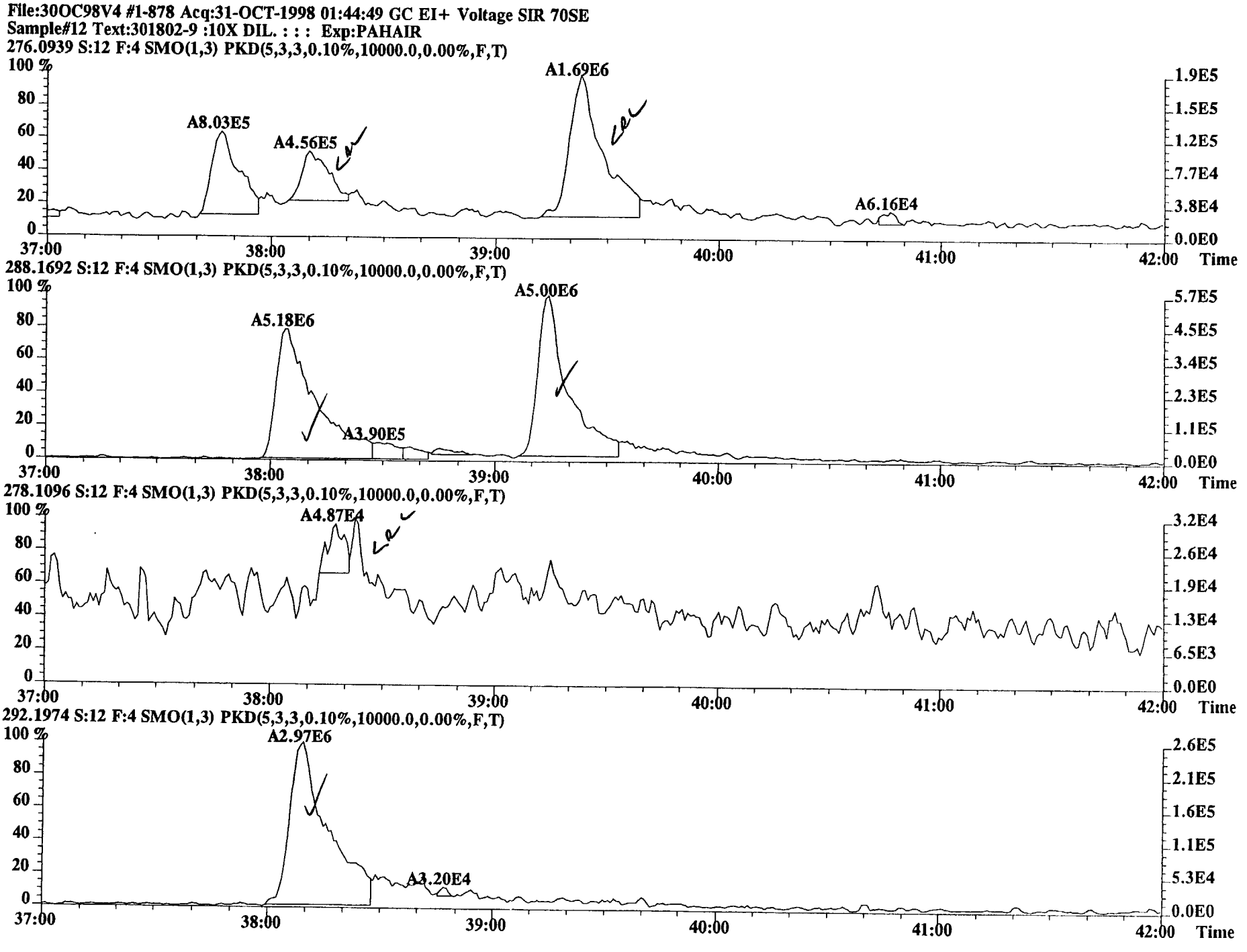


File:30OC98V4 #1-878 Acq:31-OCT-1998 01:44:49 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-9 :10X DIL. : : : Exp:PAHAIR
252.0939 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

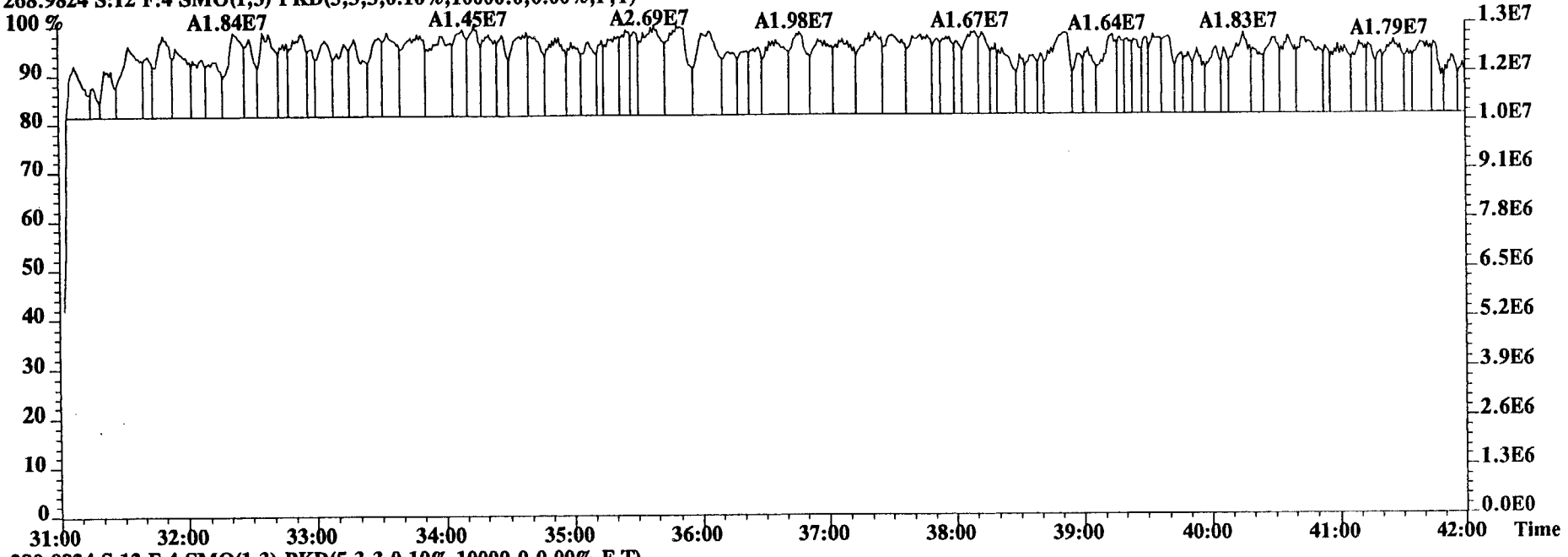


264.1692 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

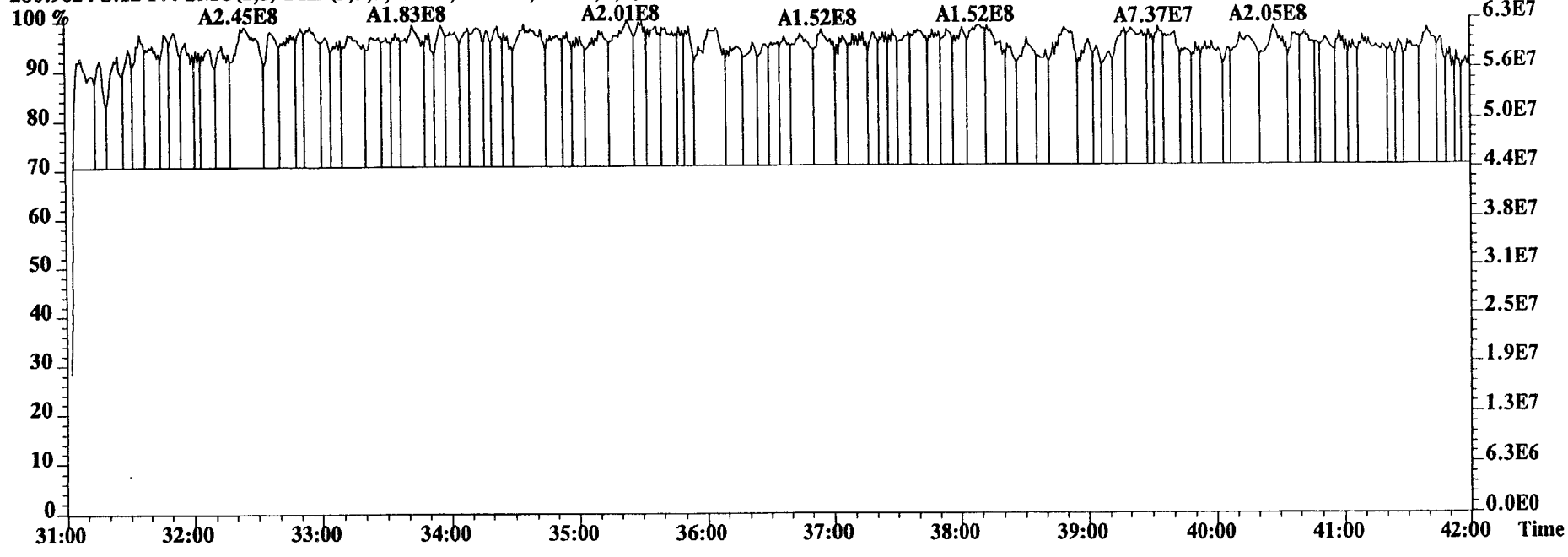



File:30OC98V4 #1-878 Acq:31-OCT-1998 01:44:49 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-9 :10X DIL. : : : Exp:PAHAIR
276.0939 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.03E5
A4.56E5
A1.69E6
A6.16E4
288.1692 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A5.18E6
A3.90E5
A5.00E6
278.1096 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.87E4
292.1974 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.97E6
A3.20E4
100 %
80
60
40
20
0
37:00
38:00
39:00
40:00
41:00
42:00
Time
1.9E5
1.5E5
1.2E5
7.7E4
3.8E4
0.0E0
5.7E5
4.5E5
3.4E5
2.3E5
1.1E5
3.2E4
2.6E4
1.9E4
1.3E4
6.5E3
2.6E5
2.1E5
1.6E5
1.1E5
5.3E4

File:30OC98V4 #1-878 Acq:31-OCT-1998 01:44:49 GC EI+ Voltage SIR 70SE
Sample#12 Text:301802-9 :10X DIL. : : : Exp:PAHAIR
268.9824 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



280.9824 S:12 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-U-429-4
Lab ID: 301802-0010-SA
Matrix: AIRTRAIN Sampled: 25 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	99000	ng/sample	--	B
2-Methylnaphthalene	4400	ng/sample	--	B
Acenaphthylene	NC	ng/sample	--	
Acenaphthene	240	ng/sample	--	
Fluorene	1300	ng/sample	--	
Phenanthrene	18000	ng/sample	--	B
Anthracene	280	ng/sample	--	
Fluoranthene	7100	ng/sample	--	
Pyrene	4600	ng/sample	--	
Benzo(a)anthracene	150	ng/sample	--	
Chrysene	520	ng/sample	--	
Benzo(b)fluoranthene	260	ng/sample	--	
Benzo(k)fluoranthene	110	ng/sample	--	
Benzo(e)pyrene	300	ng/sample	--	F
Benzo(a)pyrene	160	ng/sample	--	F
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
F = Reported value estimated due to an interference.
NC = Not Calculated, calculation not applicable.
ND = Not Detected

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-U-429-4
Lab ID: 301802-0010-SA
Matrix: AIRTRAIN Sampled: 25 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	43	m
Acenaphthylene-d8	NC	
Acenaphthene-d10	45	
Fluorene-d10	79	
Phenanthrene-d10	87	
Fluoranthene-d10	80	
Pyrene-d10	53	
Benzo(a)anthracene-d12	53	
Perylene-d12	8.0	m
Indeno(123-cd)pyrene-d12	55	
Chrysene-d12	79	
Benzo(b)fluoranthene-d12	94	
Benzo(k)fluoranthene-d12	75	
Benzo(a)pyrene-d12	16	m
Dibenz(a,h)anthracene-d14	61	
Benzo(g,h,i)perylene-d12	41	m

Field Surrogates	% Recovery
13C-Fluorene	122

m = Internal Standard recovery is outside method recovery goal.
NC = Not Calculated, calculation not applicable.

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

04-NOV-1998 07:27:40 PM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4 | Results : 30OC98V4131.RES | : PAHAIR.TRG
GC Column : DB-5 | Date analyzed : 30-OCT-98
Data file : 30OC98V4 | 301802-10 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMP	Rec/ MDL	
d10-2-Methylnaphthalene	7498280	1.00	Y	12: 28	Y	1.00	50.00		
d8-Naphthalene	7174680	1.00	Y	10: 12	Y	2.24	21.35	43	m
Naphthalene	8741280000	1.00	Y	10: 16	Y	1.23	9.9e+04	B	E
2-Methylnaphthalene	176474000	1.00	Y	12: 33	Y	0.56	4387.96	B	
d8-Acenaphthylene	* No Peak	0.00	N	15: 28	N	1.21	0.00	0	NA
Acenaphthylene	63711000	1.00	Y	15: 30	Y	0.94	NC		
d10-Acenaphthene	2518540	1.00	Y	16: 1	Y	0.74	22.55	45	
Acenaphthene	7640000	1.00	Y	16: 8	Y	1.25	243.44		
d10-Anthracene	4569820	1.00	Y	20: 55	Y	1.00	50.00		
d10-Fluorene	5126960	1.00	Y	17: 41	Y	1.42	39.48	79	
Fluorene	74847600	1.00	Y	17: 46	Y	1.16	1257.96		
d10-Phenanthrene	11134240	1.00	Y	20: 45	Y	2.81	43.39	87	
Phenanthrene	1834640000	1.00	Y	20: 49	Y	0.89	1.8e+04	B	E
Anthracene	24600000	1.00	Y	20: 59	Y	0.80	276.04		
d14-Terphenyl	14911620	1.00	Y	26: 0	Y	1.00	50.00		
d10-Fluoranthene	16826180	1.00	Y	24: 35	Y	1.41	39.99	80	
Fluoranthene	1323714000	1.00	Y	24: 39	Y	1.11	7076.09		E
d10-Pyrene	12074540	1.00	Y	25: 17	Y	1.52	26.67	53	
Pyrene	667264000	1.00	Y	25: 20	Y	1.21	4585.84		
d12-Benzo(a)anthracene	7170060	1.00	Y	29: 9	Y	0.90	26.71	53	
Benzo(a)anthracene	13040660	1.00	Y	29: 13	Y	1.20	151.00		
d12-Chrysene	14987060	1.00	Y	29: 15	Y	1.28	39.29	79	
Chrysene	83859000	1.00	Y	29: 20	Y	1.08	516.20		
d12-Benzo(e)pyrene	29000000	1.00	Y	33: 22	Y	1.00	50.00		
d12-Benzo(b)fluoranthene	12379800	1.00	Y	32: 30	Y	0.45	47.03	94	
Benzo(b)fluoranthene	37600000	1.00	Y	32: 34	Y	1.17	260.20		
d12-Benzo(k)fluoranthene	20678000	1.00	Y	32: 35	Y	0.95	37.61	75	
Benzo(k)fluoranthene	27000000	1.00	Y	32: 38	Y	1.16	112.16		
d12-Benzo(a)pyrene	3120000	1.00	Y	33: 32	Y	0.68	7.95	16	r
Benzo(e)pyrene	15172820	1.00	Y	33: 28	Y	1.64	296.38	F	
Benzo(a)pyrene	5217900	1.00	Y	33: 35	Y	1.07	156.01	F	
d12-Perylene	1512000	1.00	Y	33: 49	Y	0.63	4.14	8	
Perylene	1606000	1.00	Y	33: 55	Y	1.71	<RL=100.00		
d12-Indeno(123-cd)pyrene	7038920	1.00	Y	38: 4	Y	0.44	27.30	55	
Indeno(123-cd)pyrene	1625238	1.00	Y	38: 10	Y	0.62	<RL=100.00		
d14-Dibenz(ah)anthracene	4313320	1.00	Y	38: 8	Y	0.25	30.25	61	
Dibenz(ah)anthracene	* No Peak	0.00	N	38: 15	N	1.40	<RL=100.00		
d12-Benzo(ghi)perylene	6836620	1.00	Y	39: 14	Y	0.58	20.33	41	m
Benzo(ghi)perylene	3314680	1.00	Y	39: 23	Y	1.02	<RL=100.00		
d10-Fluorene	5126960	1.00	Y	17: 41	Y	1.00	50.00		
13C-Fluorene	5067840	1.00	Y	17: 46	Y	0.81	61.02	122	

0.5

98V4.RRF

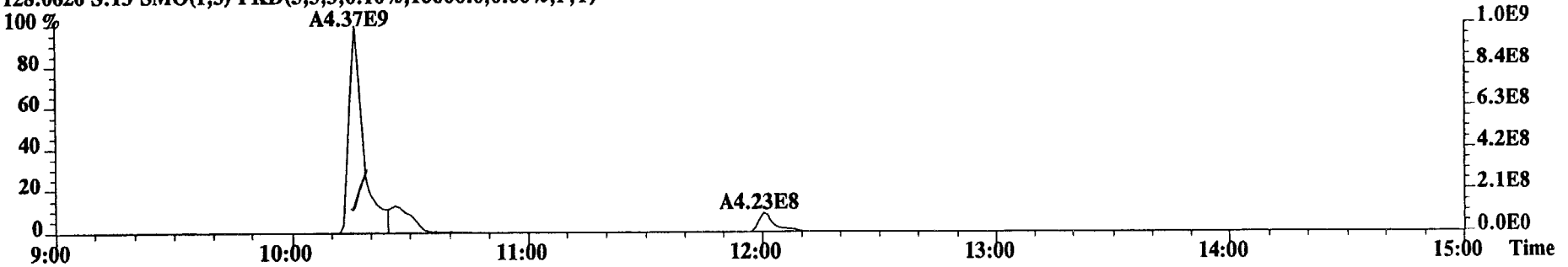
Rec/ MDL		
	3749140	3749140
43	3587340	3587340
B E	4370640000	4370640000
B	88237000	88237000
0	0	0
	31855500	31855500
45	1259270	1259270
	3820000	3820000
	2284910	2284910
79	2563480	2563480
	37423800	37423800
87	5567120	5567120
B E	917320000	917320000
	12300000	12300000
	7455810	7455810
80	8413090	8413090
E	661857000	661857000
53	6037270	6037270
	333632000	333632000
53	3585030	3585030
	6520330	6520330
79	7493530	7493530
	41929500	41929500
	14500000	14500000
94	6189900	6189900
	18800000	18800000
75	10339000	10339000
	13500000	13500000
16	1560000	1560000
F	7586410	7586410
F	2608950	2608950
8	756000	756000
100.00	803000	803000
55	3519460	3519460
100.00	812619	812619
61	2156660	2156660
100.00	0	0
41	3418310	3418310
100.00	1657340	1657340

02-NOV-1998 09:05:34 AM Dioxin Furan Unknown RESULTS

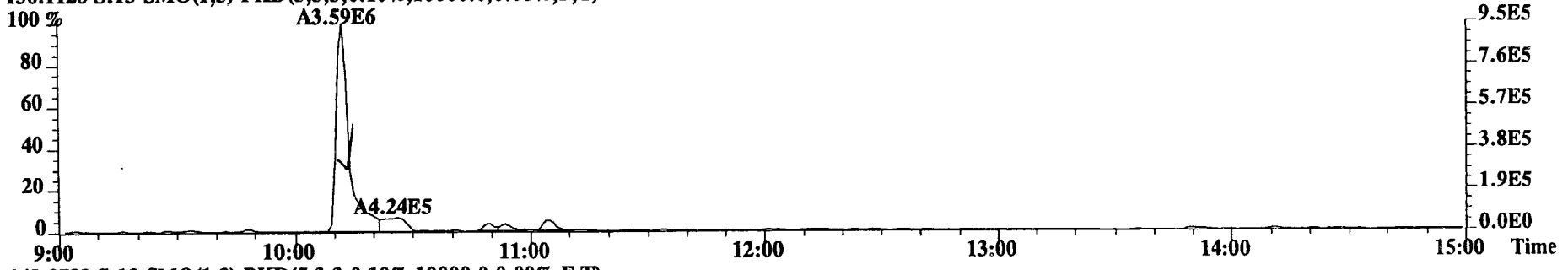
Mass Spec : VG-4 | Results : 30OC98V4131.RES | : PAHAIR.TRG
GC Column : DB-5 | Date analyzed : 30-OCT-98
Data file : 30OC98V4 | 301802-10 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMP	Rec/ MDL
d10-2-Methylnaphthalene	7498280	1.00	Y	12: 28	Y	1.00	50.00	
d8-Naphthalene	7174680	1.00	Y	10: 12	Y	2.24	21.35	43
Naphthalene	8741280000	1.00	Y	10: 16	Y	1.23	9.9e+04	0.000
2-Methylnaphthalene	176474000	1.00	Y	12: 33	Y	0.56	4387.96	0.000
d8-Acenaphthylene	* No Peak	0.00	N	15: 28	N	1.21	0.00	0
Acenaphthylene	63711000	1.00	Y	15: 30	Y	0.94	*NoINoIs	
d10-Acenaphthene	2518540	1.00	Y	16: 1	Y	0.74	22.55	45
Acenaphthene	* No Peak	0.00	N	16: 8	N	1.25	0.00	0.000
d10-Anthracene	4569820	1.00	Y	20: 55	Y	1.00	50.00	
d10-Fluorene	5126960	1.00	Y	17: 41	Y	1.42	39.48	79
Fluorene	74847600	1.00	Y	17: 46	Y	1.16	1257.96	0.000
d10-Phenanthrene	11134240	1.00	Y	20: 45	Y	2.81	43.39	87
Phenanthrene	1834640000	1.00	Y	20: 49	Y	0.89	1.8e+04	0.000
Anthracene	* No Peak	0.00	N	20: 59	N	0.80	0.00	0.000
d14-Terphenyl	14911620	1.00	Y	26: 0	Y	1.00	50.00	
d10-Fluoranthene	16826180	1.00	Y	24: 35	Y	1.41	39.99	80
Fluoranthene	1323714000	1.00	Y	24: 39	Y	1.11	7076.09	0.000
d10-Pyrene	12074540	1.00	Y	25: 17	Y	1.52	26.67	53
Pyrene	667264000	1.00	Y	25: 20	Y	1.21	4585.84	0.000
d12-Benzo(a)anthracene	7170060	1.00	Y	29: 9	Y	0.90	26.71	53
Benzo(a)anthracene	13040660	1.00	Y	29: 13	Y	1.20	151.00	0.000
d12-Chrysene	14987060	1.00	Y	29: 15	Y	1.28	39.29	79
Chrysene	83859000	1.00	Y	29: 20	Y	1.08	516.20	0.000
d12-Benzo(e)pyrene	32214200	1.00	Y	33: 22	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	12379800	1.00	Y	32: 30	Y	0.45	42.34	85
Benzo(b)fluoranthene	64974200	1.00	Y	32: 34	Y	1.17	449.64	0.000
d12-Benzo(k)fluoranthene	20678000	1.00	Y	32: 35	Y	0.95	33.85	68
Benzo(k)fluoranthene	64974200	1.00	Y	32: 34	Y	1.16	269.91	0.000
d12-Benzo(a)pyrene	* No Peak	0.00	N	33: 32	N	0.68	0.00	0
Benzo(e)pyrene	15172820	1.00	Y	33: 28	Y	1.64	*NoINoIs	
Benzo(a)pyrene	5217900	1.00	Y	33: 35	Y	1.07	*NoINoIs	
d12-Perylene	* No Peak	0.00	N	33: 49	N	0.63	0.00	0
Perylene	* No Peak	0.00	N	33: 55	N	1.71	*NoINoIs	
d12-Indeno(123-cd)pyrene	7038920	1.00	Y	38: 4	Y	0.44	24.58	49
Indeno(123-cd)pyrene	1625238	1.00	Y	38: 10	Y	0.62	37.18	0.000
d14-Dibenz(ah)anthracene	4313320	1.00	Y	38: 8	Y	0.25	27.23	54
Dibenz(ah)anthracene	* No Peak	0.00	N	38: 15	N	1.40	0.00	0.000
d12-Benzo(ghi)perylene	6836620	1.00	Y	39: 14	Y	0.58	18.30	37
Benzo(ghi)perylene	3314680	1.00	Y	39: 23	Y	1.02	47.72	0.000
d10-Fluorene	5126960	1.00	Y	17: 41	Y	1.42	5.60	11
13C-Fluorene	5067840	1.00	Y	17: 46	Y	1.00	98.85	0.000

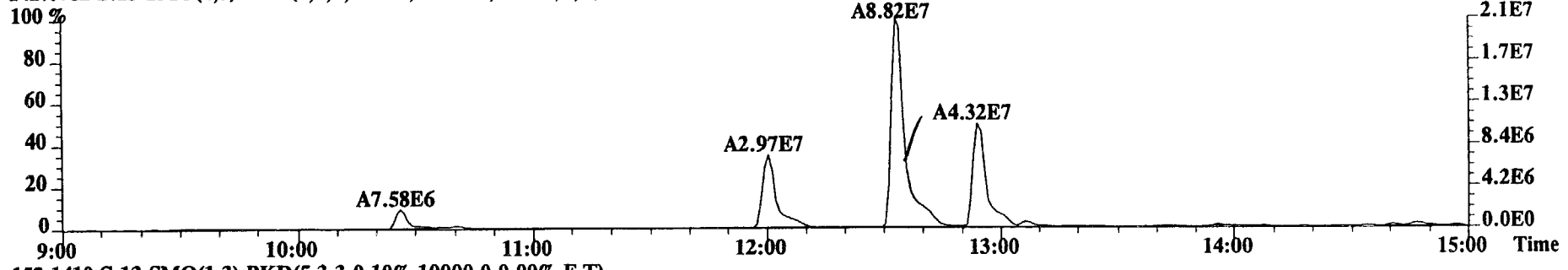
File:30OC98V4 #1-510 Acq:31-OCT-1998 02:33:51 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-10 :10X DIL. : : : Exp:PAHAIR
128.0626 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



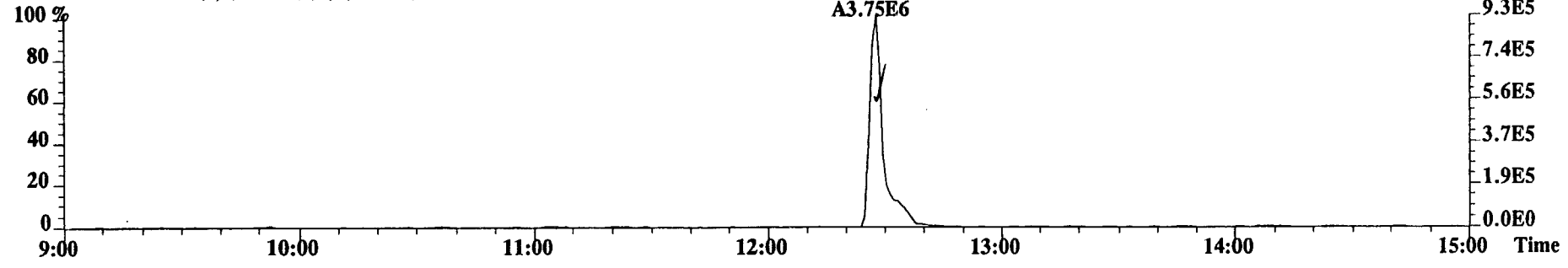
136.1128 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

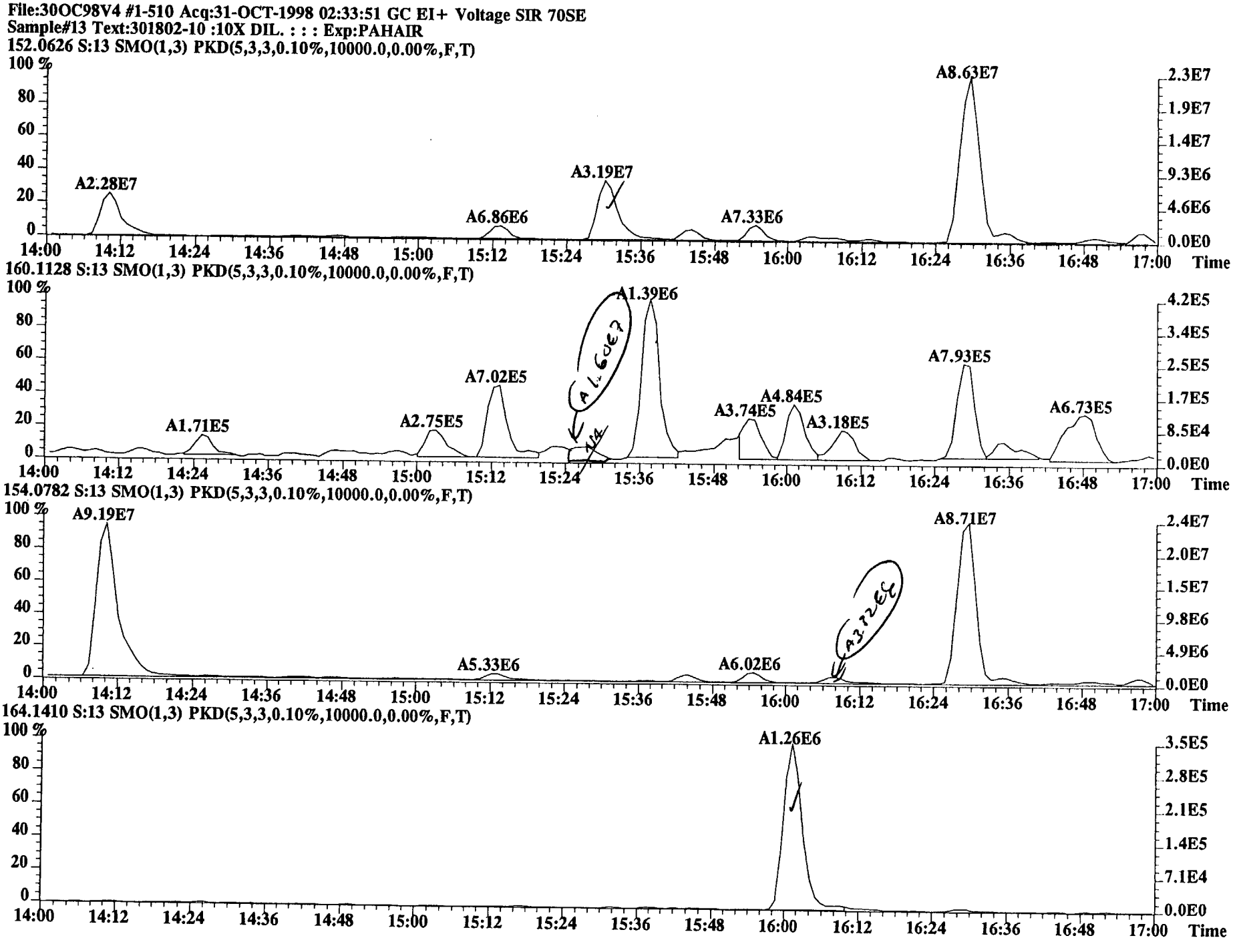


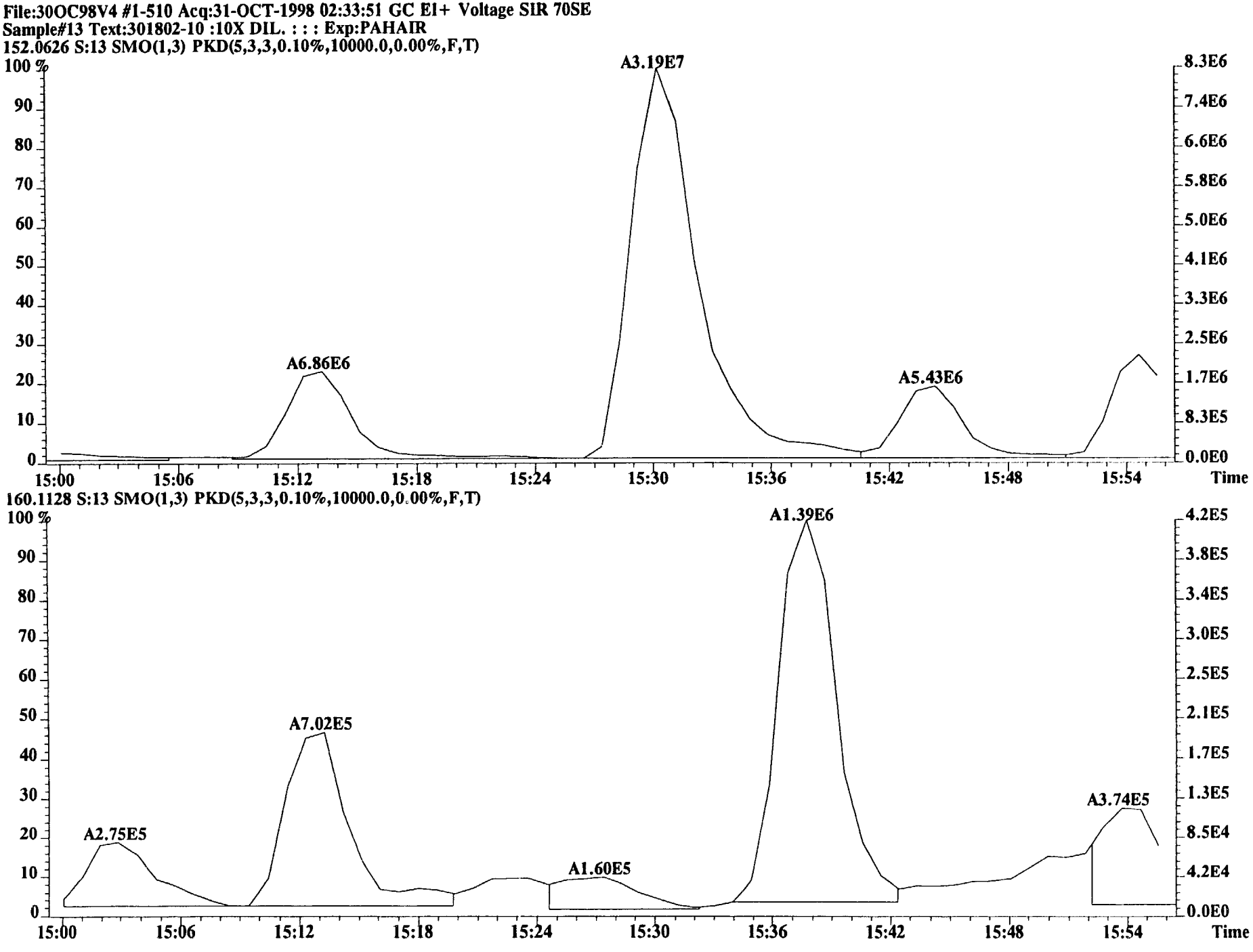
142.0782 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



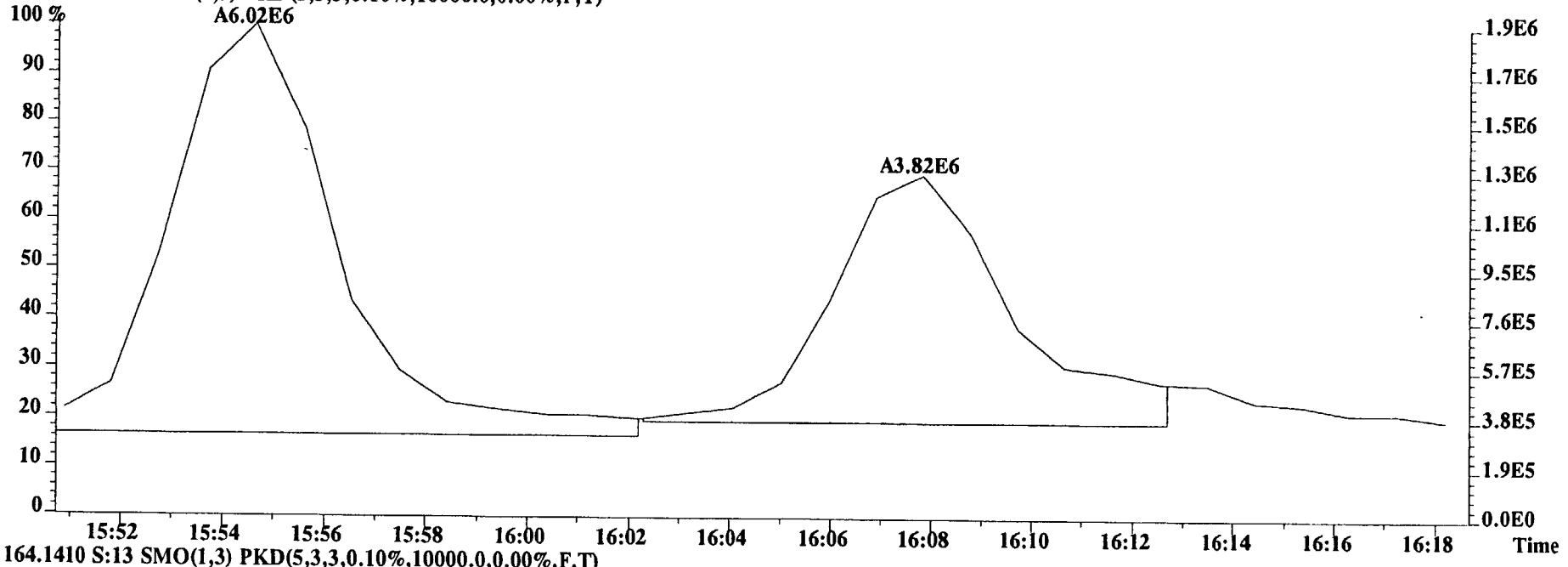
152.1410 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



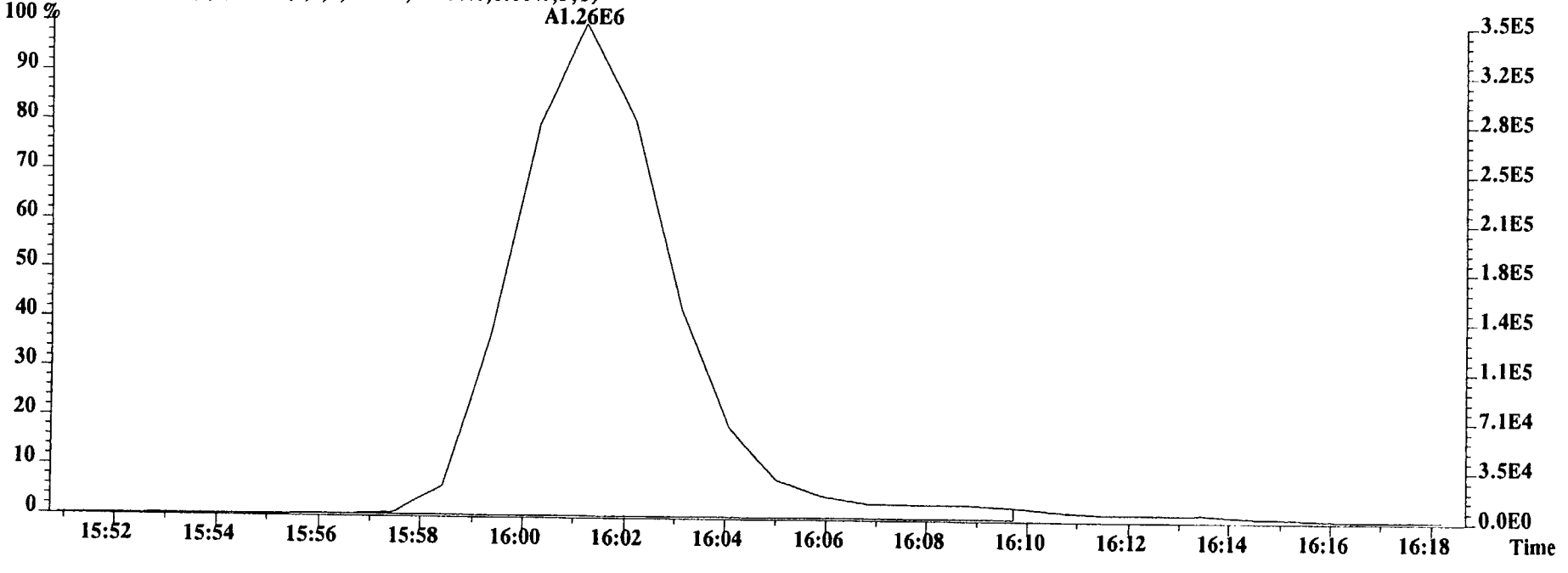

File:30OC98V4 #1-510 Acq:31-OCT-1998 02:33:51 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-10 :10X DIL. : : : Exp:PAHAIR
152.0626 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.28E7
A6.86E6
A3.19E7
A7.33E6
A8.63E7
160.1128 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.71E5
A2.75E5
A7.02E5
A1.39E6
A3.74E5
A4.84E5
A3.18E5
A7.93E5
A6.73E5
154.0782 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A9.19E7
A5.33E6
A6.02E6
A8.71E7
164.1410 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.26E6
Time

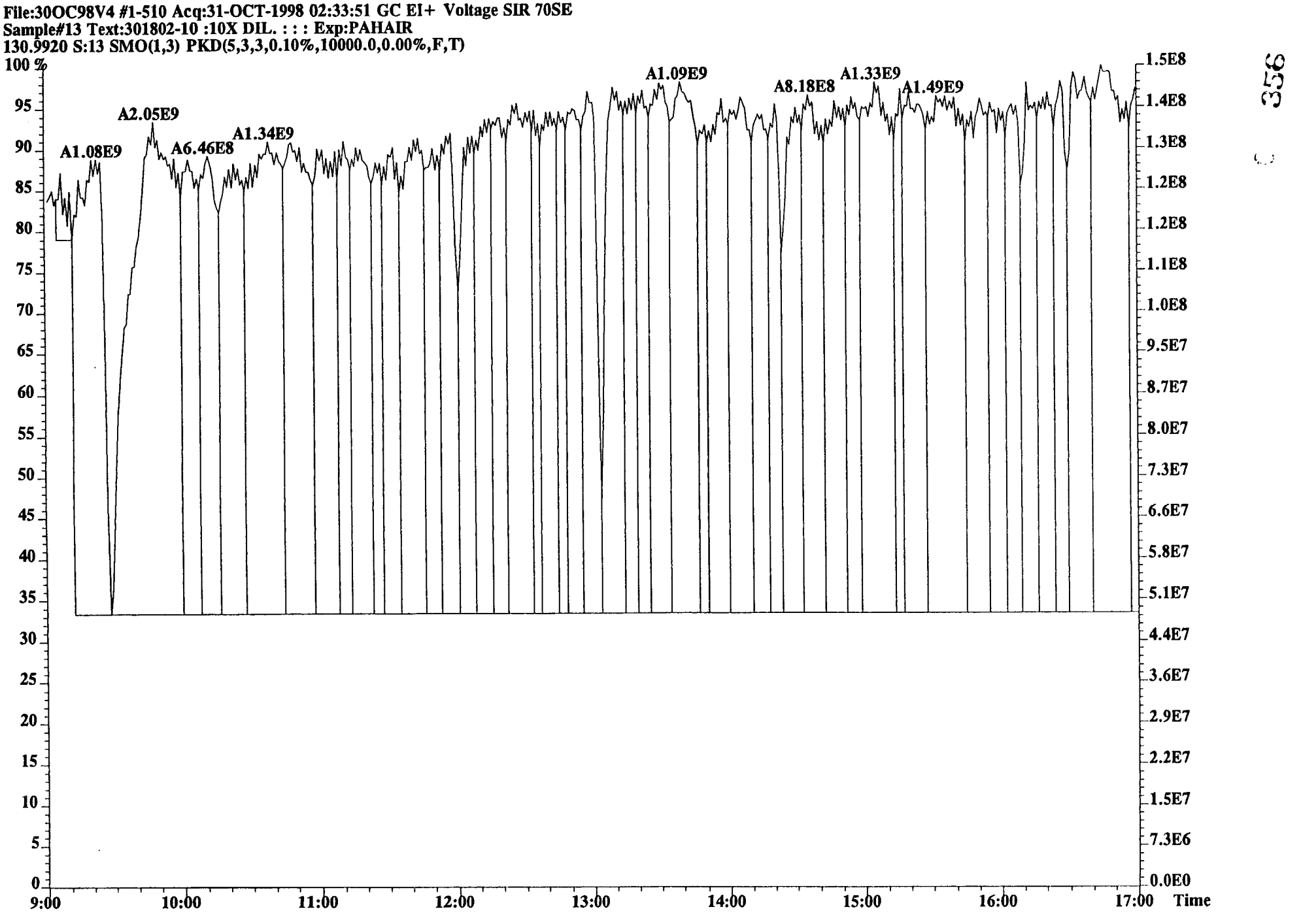

File:30OC98V4 #1-510 Acq:31-OCT-1998 02:33:51 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-10 :10X DIL. : : : Exp:PAHAIR
152.0626 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.19E7
A6.86E6
A5.43E6
160.1128 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.39E6
A7.02E5
A2.75E5
A1.60E5
A3.74E5
Time

File:30OC98V4 #1-510 Acq:31-OCT-1998 02:33:51 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-10 :10X DIL. : : : Exp:PAHAIR
154.0782 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

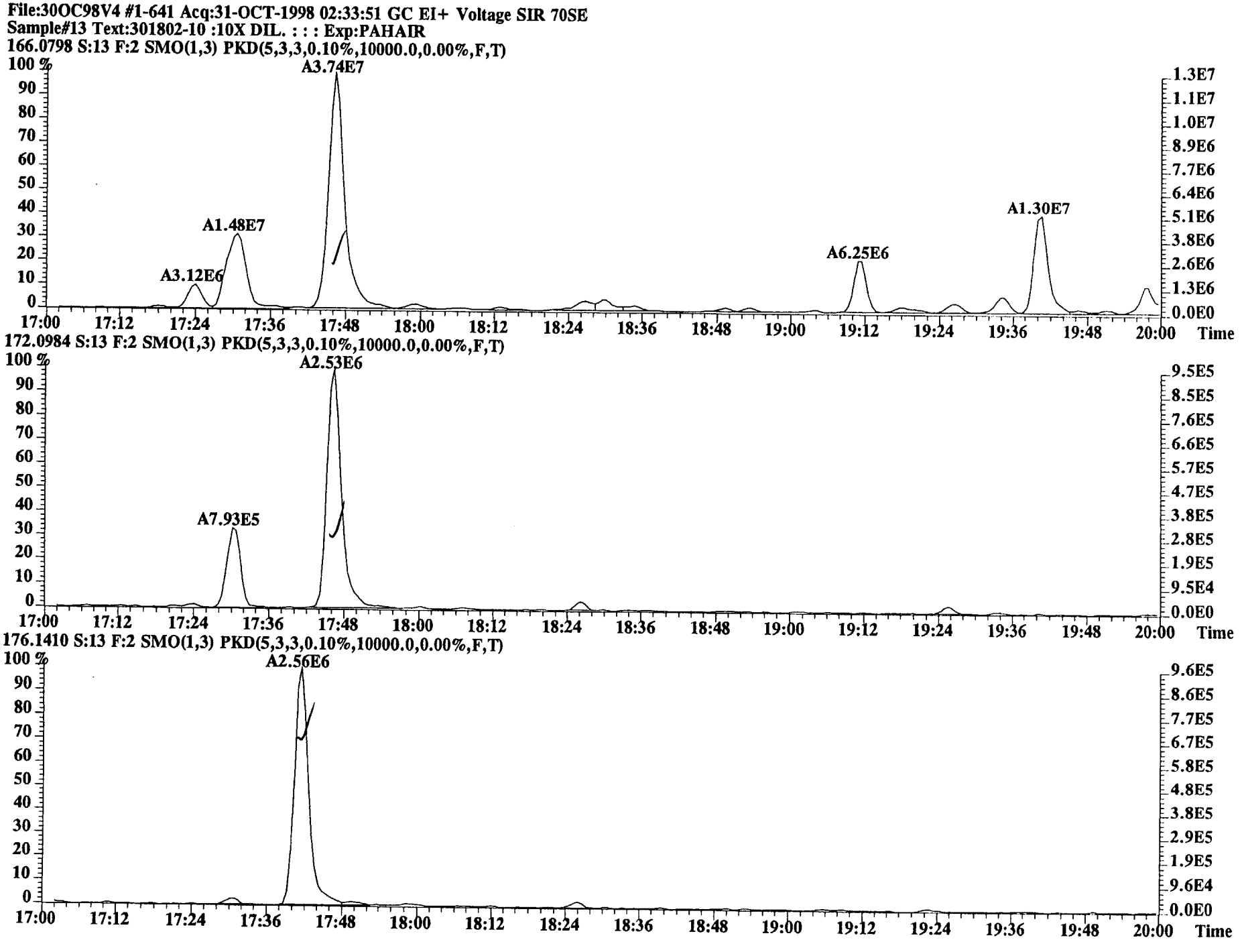


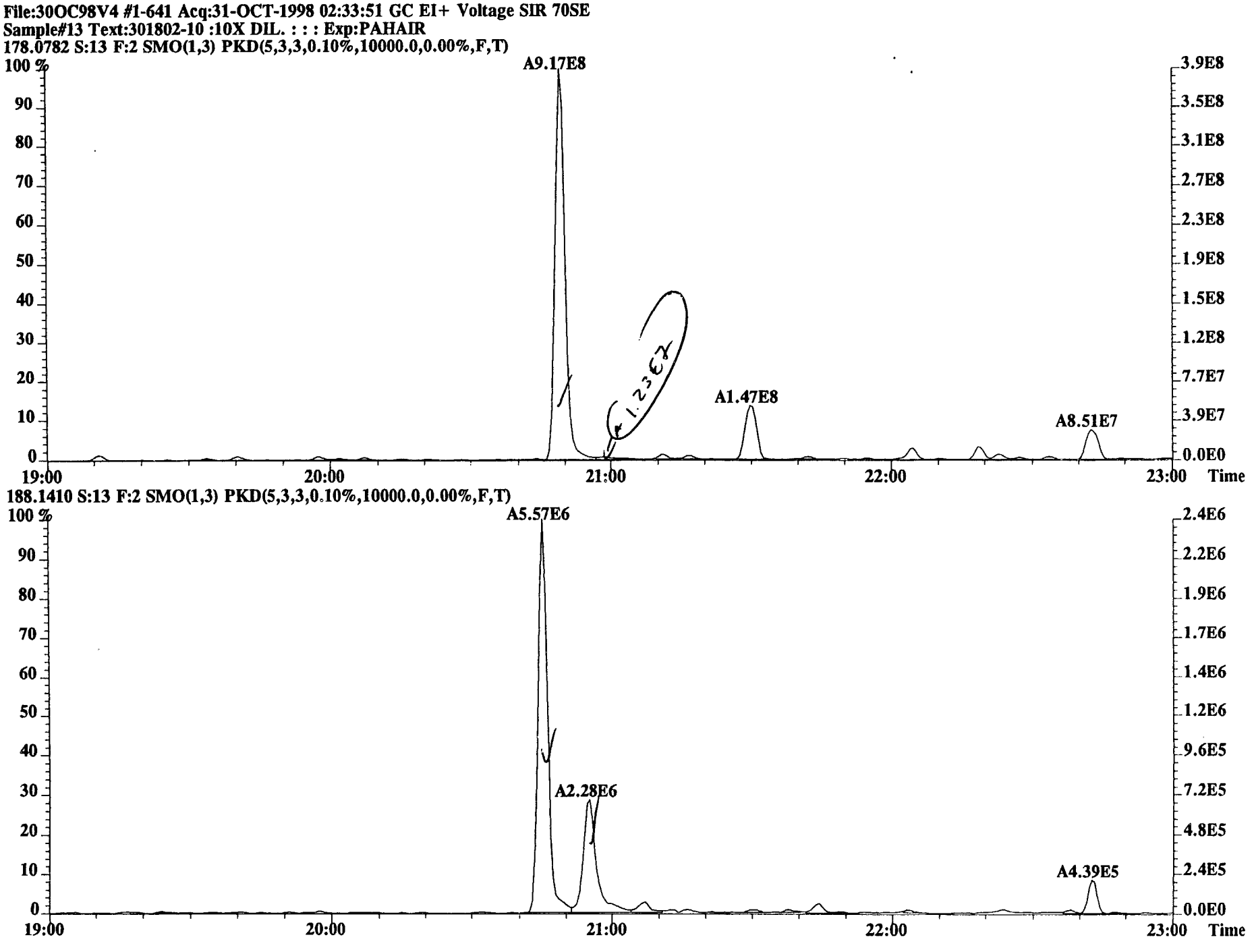
164.1410 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



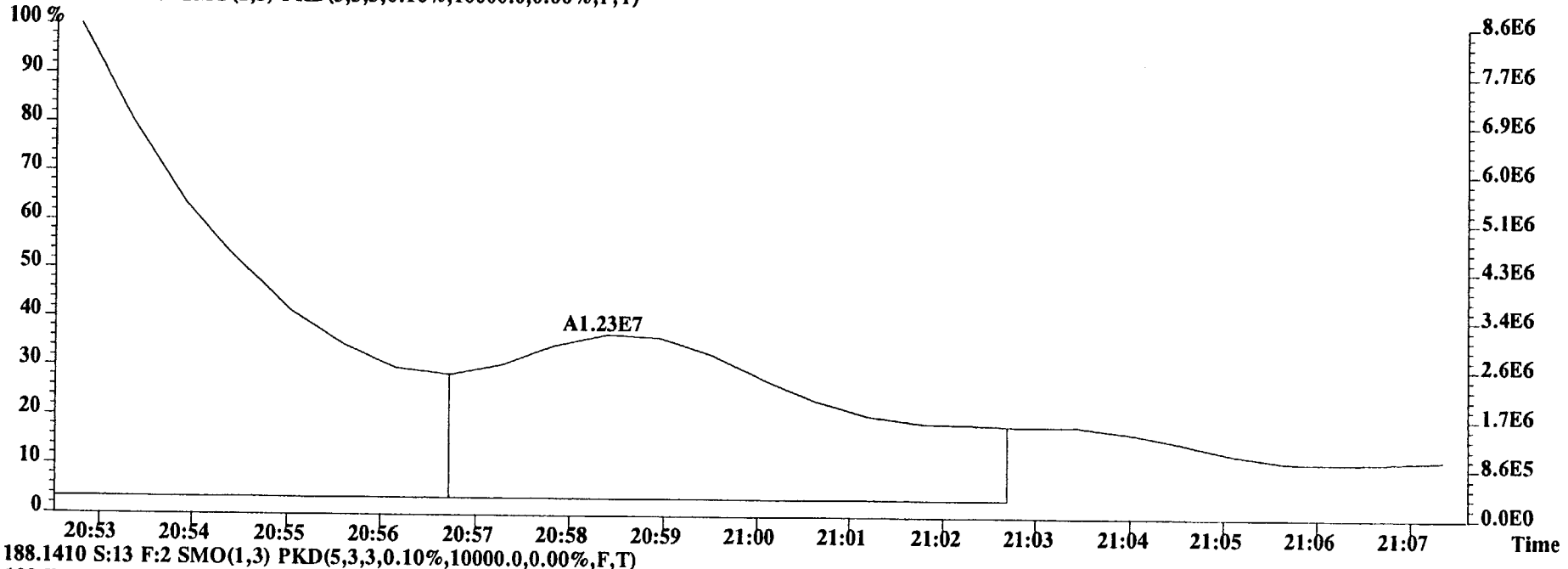

File:30OC98V4 #1-510 Acq:31-OCT-1998 02:33:51 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-10 :10X DIL. : : : Exp:PAHAIR
130.9920 S:13 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.08E9
A2.05E9
A6.46E8
A1.34E9
A1.09E9
A8.18E8
A1.33E9
A1.49E9
1.5E8
1.4E8
1.3E8
1.2E8
1.2E8
1.1E8
1.0E8
9.5E7
8.7E7
8.0E7
7.3E7
6.6E7
5.8E7
5.1E7
4.4E7
3.6E7
2.9E7
2.2E7
1.5E7
7.3E6
0.0E0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
Time

356

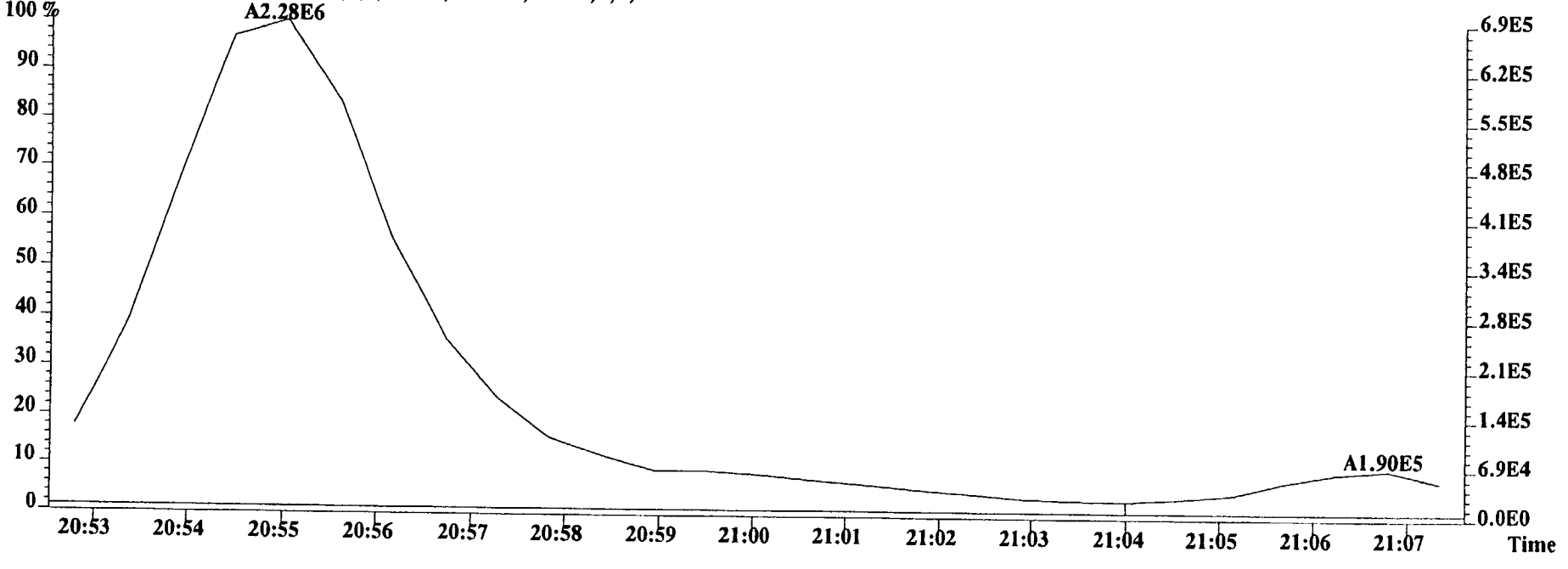

File:30OC98V4 #1-641 Acq:31-OCT-1998 02:33:51 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-10 :10X DIL. : : : Exp:PAHAIR
166.0798 S:13 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.74E7
A1.48E7
A3.12E6
A6.25E6
A1.30E7
172.0984 S:13 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.53E6
A7.93E5
176.1410 S:13 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.56E6
Time


File:30OC98V4 #1-641 Acq:31-OCT-1998 02:33:51 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-10 :10X DIL. : : : Exp:PAHAIR
178.0782 S:13 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A9.17E8
A1.47E8
A8.51E7
188.1410 S:13 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A5.57E6
A2.28E6
A4.39E5
Time

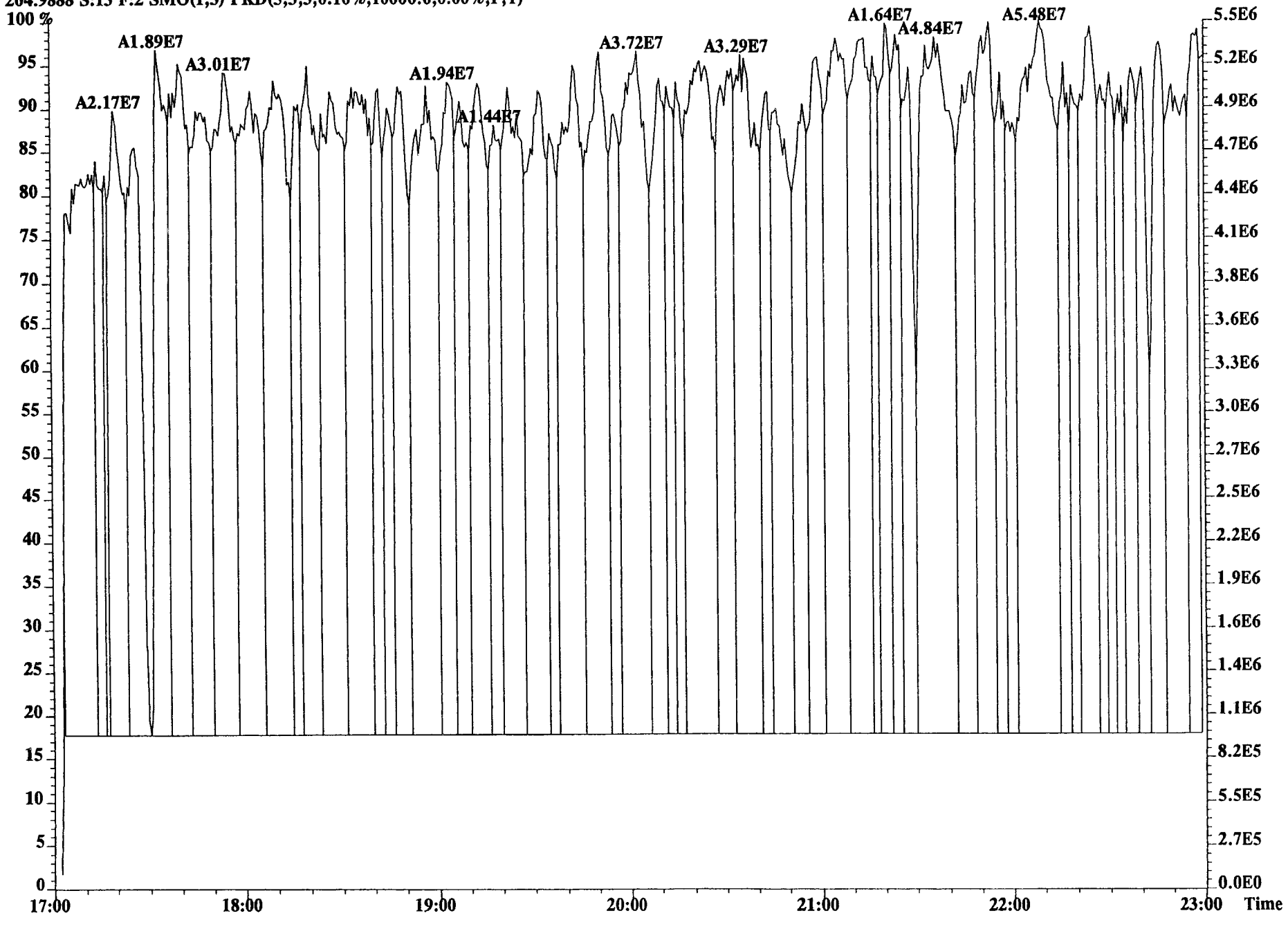
File:30OC98V4 #1-641 Acq:31-OCT-1998 02:33:51 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-10 :10X DIL. : : : Exp:PAHAIR
178.0782 S:13 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



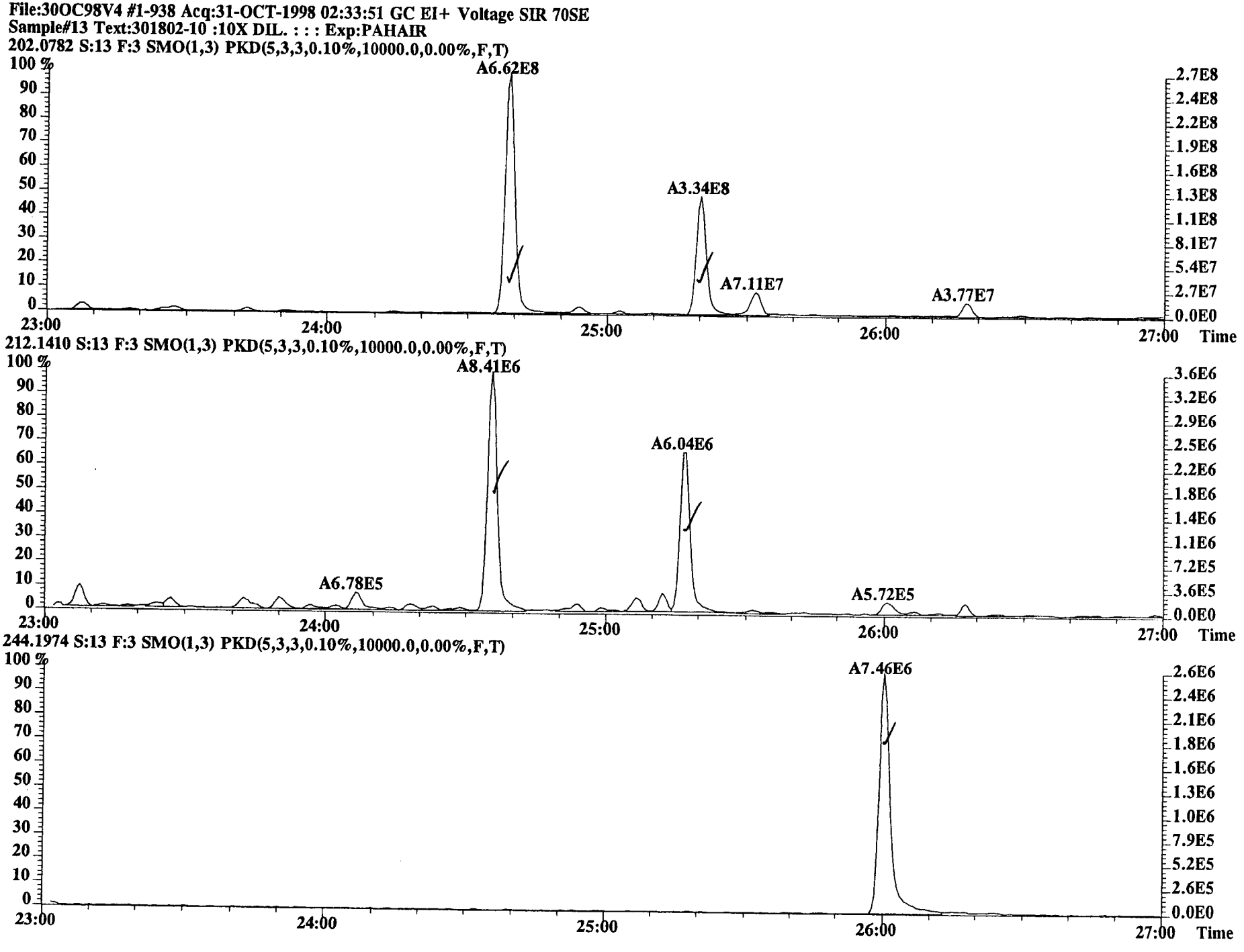
188.1410 S:13 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



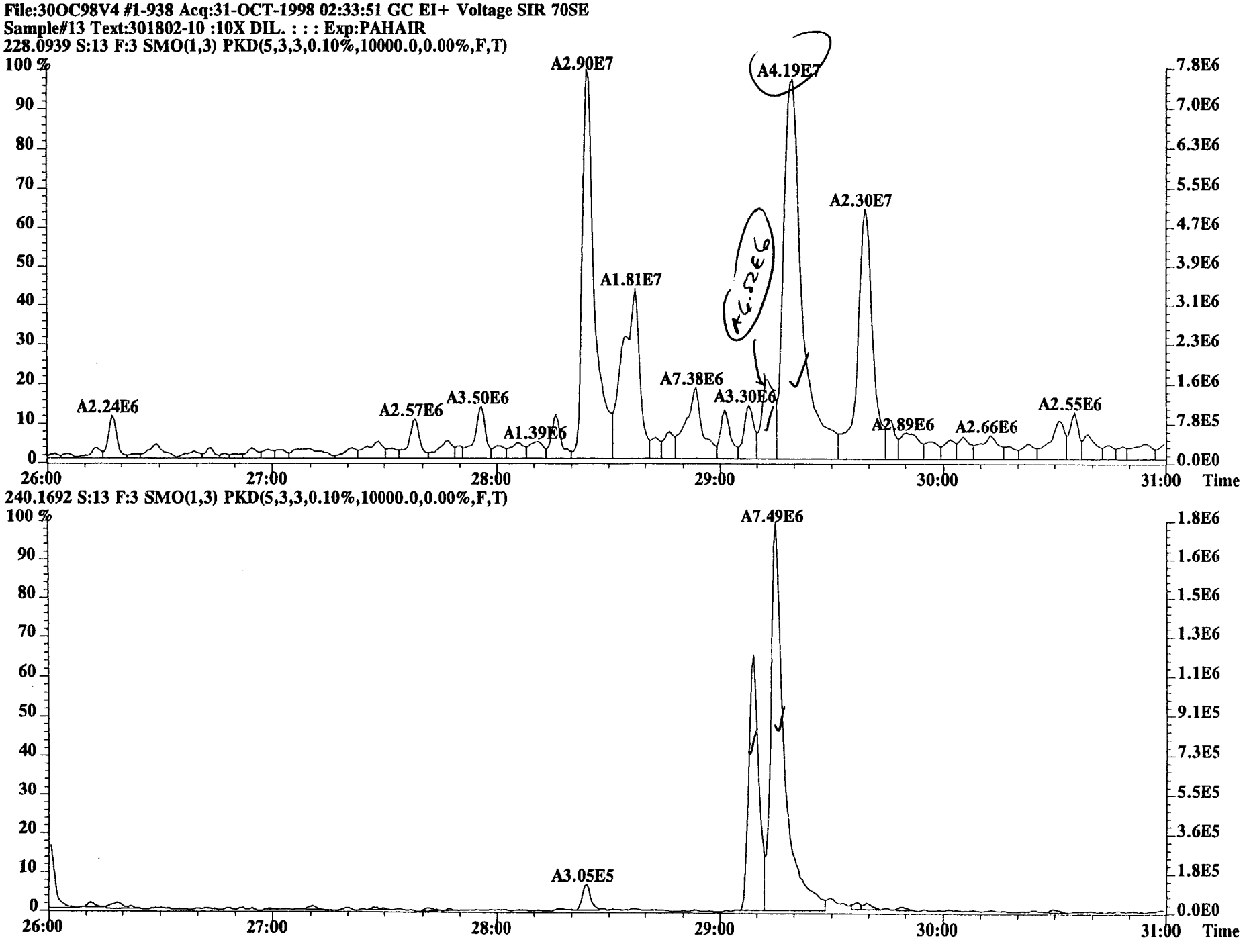
File:30OC98V4 #1-641 Acq:31-OCT-1998 02:33:51 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-10 :10X DIL. : : : Exp:PAHAIR
204.9888 S:13 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

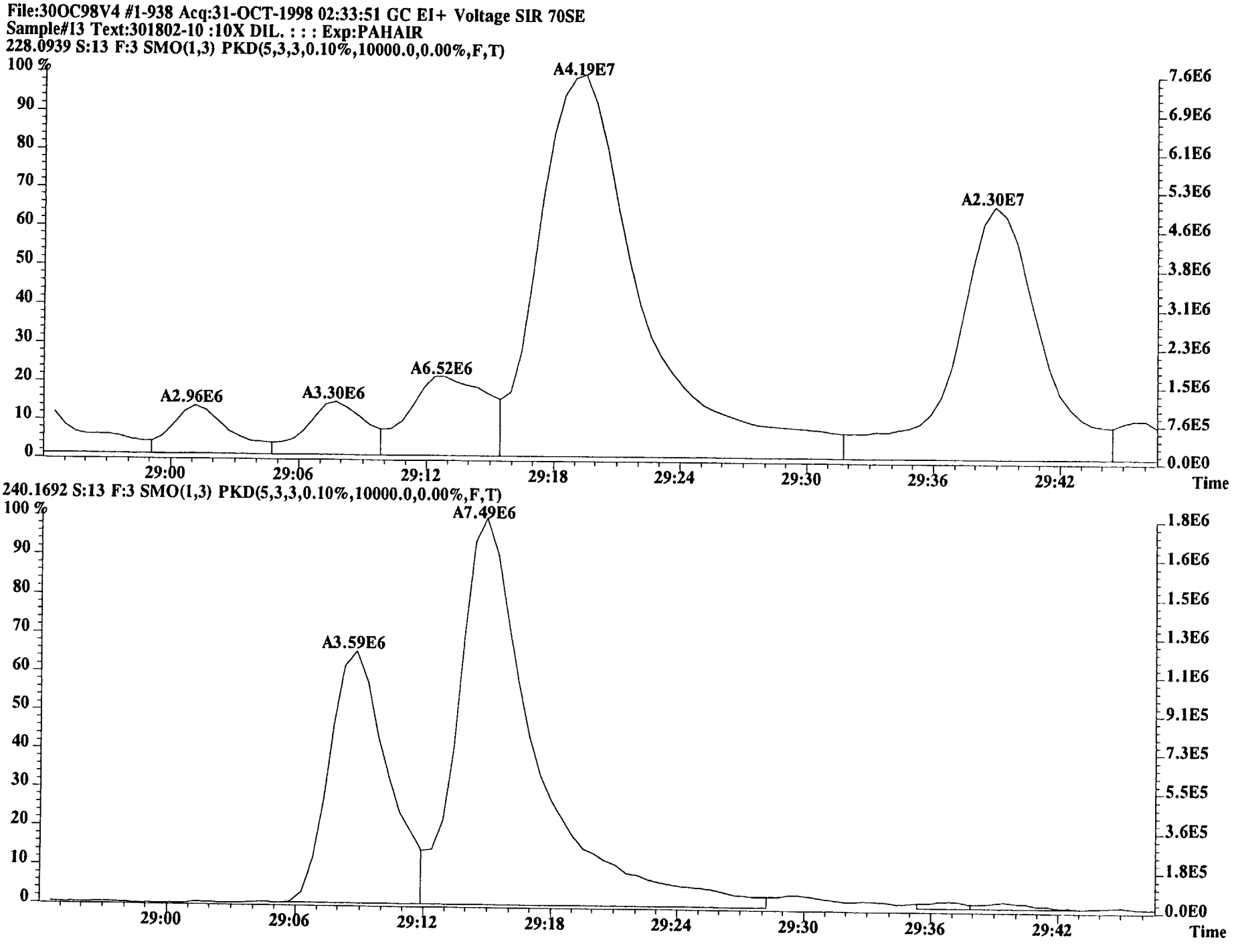


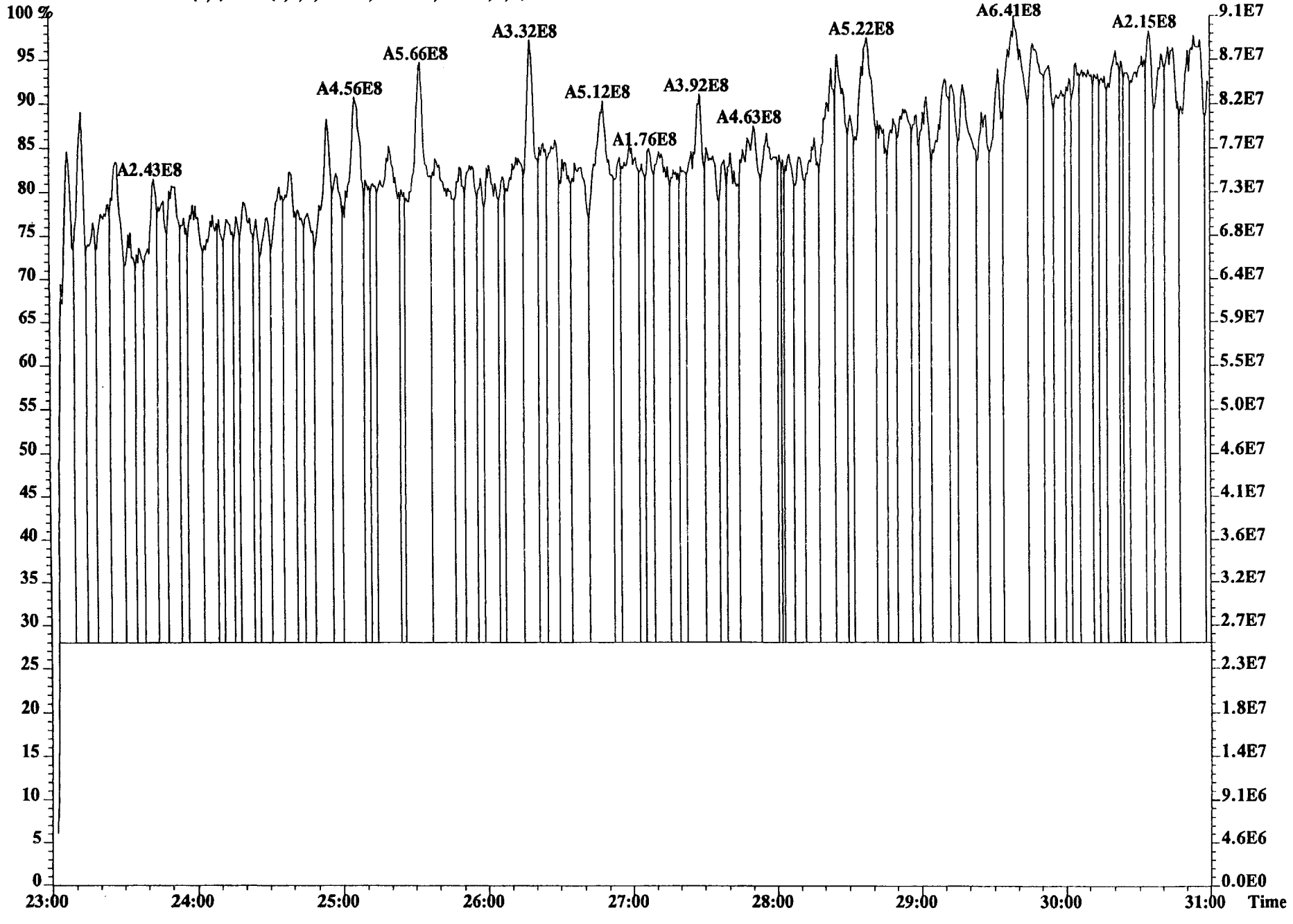
360


File:30OC98V4 #1-938 Acq:31-OCT-1998 02:33:51 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-10 :10X DIL. : : : Exp:PAHAIR
202.0782 S:13 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A6.62E8
A3.34E8
A7.11E7
A3.77E7
212.1410 S:13 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.41E6
A6.04E6
A6.78E5
A5.72E5
244.1974 S:13 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.46E6
100 %
90
80
70
60
50
40
30
20
10
0
23:00
24:00
25:00
26:00
27:00
Time
2.7E8
2.4E8
2.2E8
1.9E8
1.6E8
1.3E8
1.1E8
8.1E7
5.4E7
2.7E7
0.0E0
3.6E6
3.2E6
2.9E6
2.5E6
2.2E6
1.8E6
1.4E6
1.1E6
7.2E5
3.6E5
0.0E0
2.6E6
2.4E6
2.1E6
1.8E6
1.6E6
1.3E6
1.0E6
7.9E5
5.2E5
2.6E5
0.0E0

361

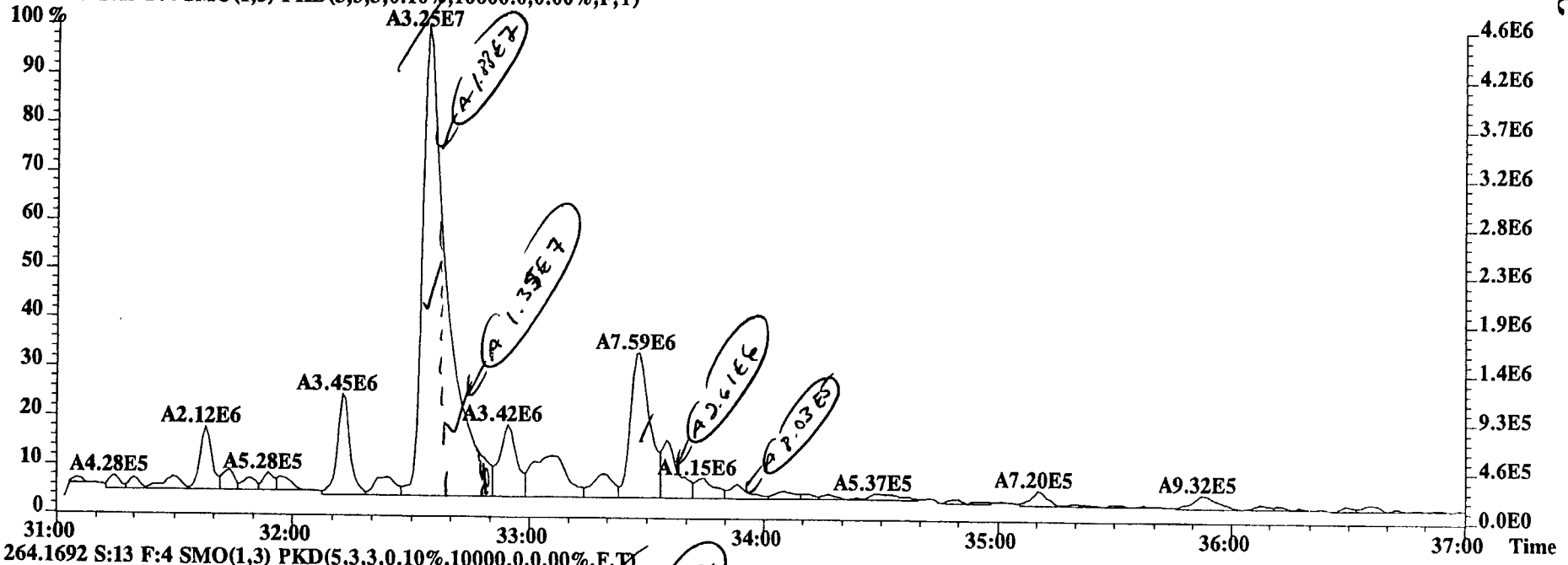

File:30OC98V4 #1-938 Acq:31-OCT-1998 02:33:51 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-10 :10X DIL. : : : Exp:PAHAIR
228.0939 S:13 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A2.90E7
A4.19E7
A2.30E7
A1.81E7
A7.38E6
A3.30E6
A2.24E6
A2.57E6
A3.50E6
A1.39E6
A2.89E6
A2.66E6
A2.55E6
7.8E6
7.0E6
6.3E6
5.5E6
4.7E6
3.9E6
3.1E6
2.3E6
1.6E6
7.8E5
0.0E0
26:00
27:00
28:00
29:00
30:00
31:00
Time
240.1692 S:13 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A7.49E6
A3.05E5
1.8E6
1.6E6
1.5E6
1.3E6
1.1E6
9.1E5
7.3E5
5.5E5
3.6E5
1.8E5
0.0E0
26:00
27:00
28:00
29:00
30:00
31:00
Time


File:30OC98V4 #1-938 Acq:31-OCT-1998 02:33:51 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-10 :10X DIL. : : : Exp:PAHAIR
228.0939 S:13 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A4.19E7
A2.30E7
A6.52E6
A3.30E6
A2.96E6
7.6E6
6.9E6
6.1E6
5.3E6
4.6E6
3.8E6
3.1E6
2.3E6
1.5E6
7.6E5
0.0E0
29:00
29:06
29:12
29:18
29:24
29:30
29:36
29:42
Time
240.1692 S:13 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A7.49E6
A3.59E6
1.8E6
1.6E6
1.5E6
1.3E6
1.1E6
9.1E5
7.3E5
5.5E5
3.6E5
1.8E5
0.0E0
29:00
29:06
29:12
29:18
29:24
29:30
29:36
29:42
Time

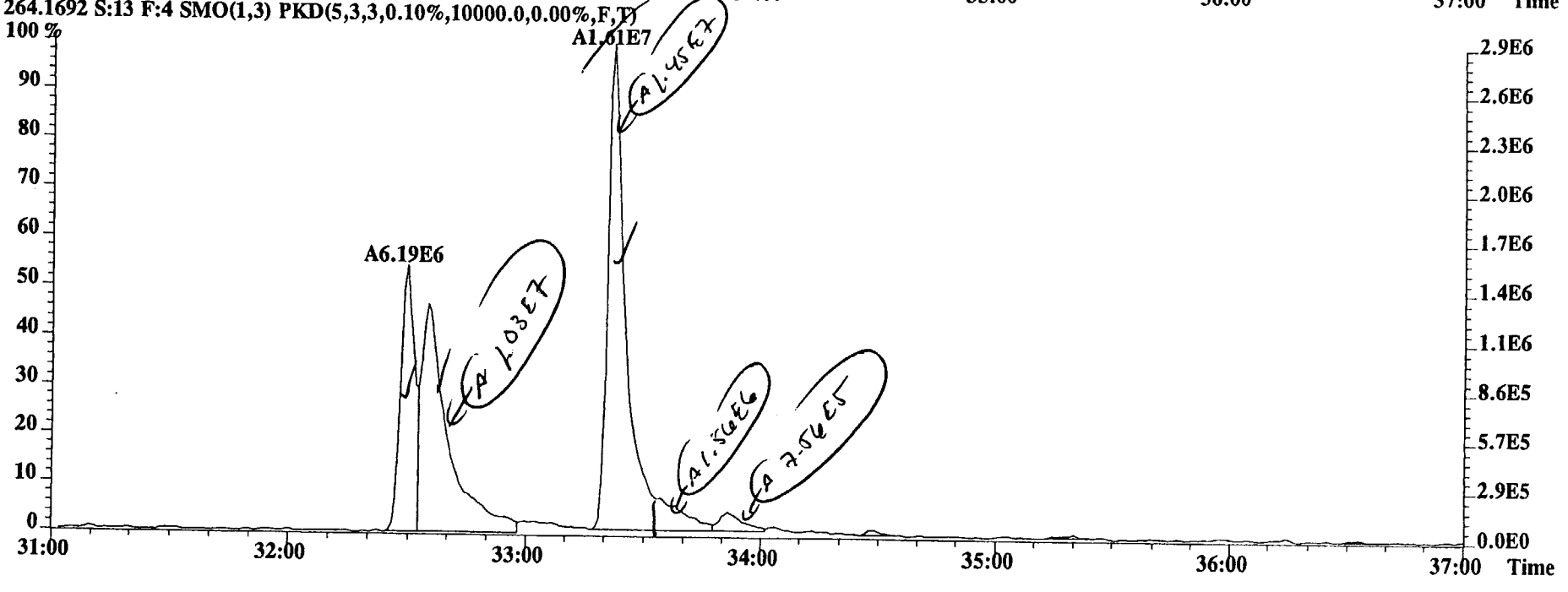

File:30OC98V4 #1-938 Acq:31-OCT-1998 02:33:51 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-10 :10X DIL. : : : Exp:PAHAIR
230.9856 S:13 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A2.43E8
A4.56E8
A5.66E8
A3.32E8
A5.12E8
A1.76E8
A3.92E8
A4.63E8
A5.22E8
A6.41E8
A2.15E8
9.1E7
8.7E7
8.2E7
7.7E7
7.3E7
6.8E7
6.4E7
5.9E7
5.5E7
5.0E7
4.6E7
4.1E7
3.6E7
3.2E7
2.7E7
2.3E7
1.8E7
1.4E7
9.1E6
4.6E6
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time

364

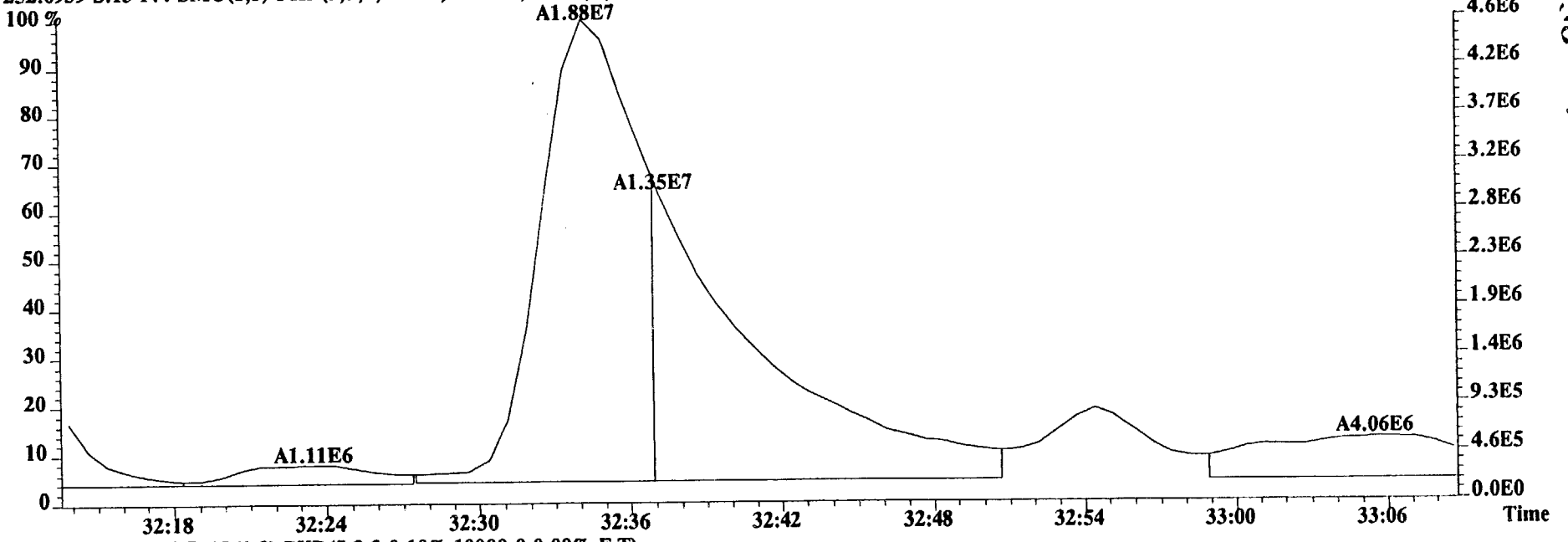
File:30OC98V4 #1-878 Acq:31-OCT-1998 02:33:51 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-10 :10X DIL. : : : Exp:PAHAIR
252.0939 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



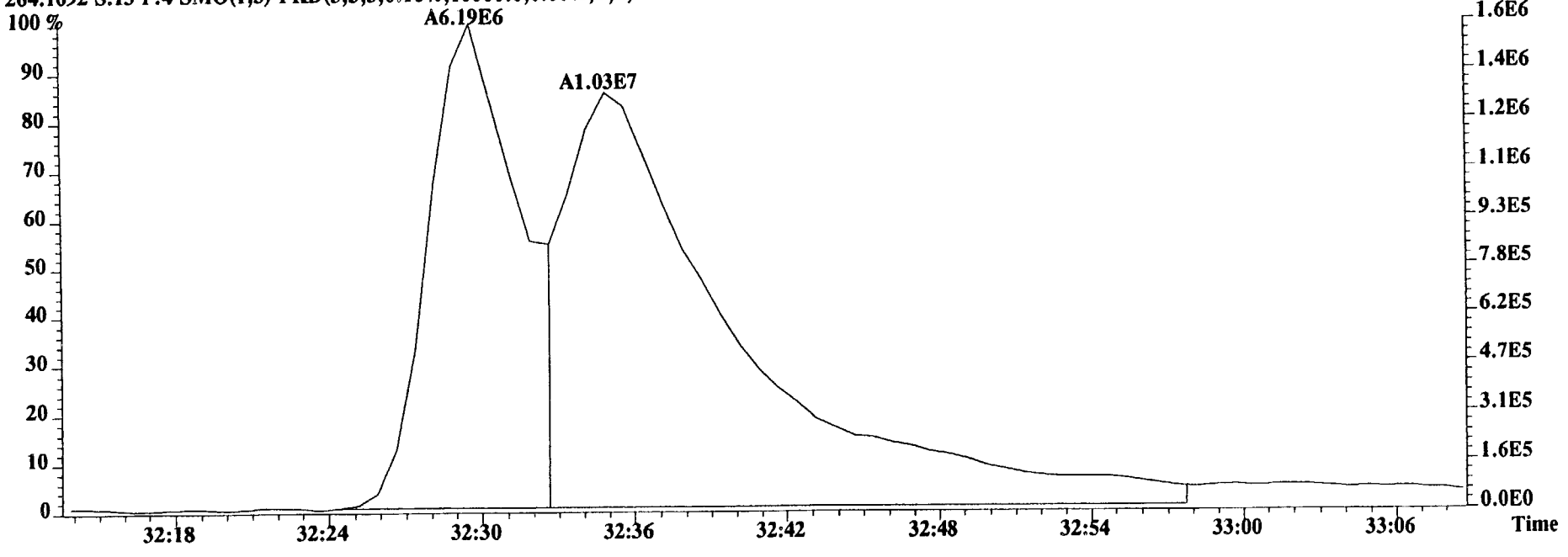
264.1692 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



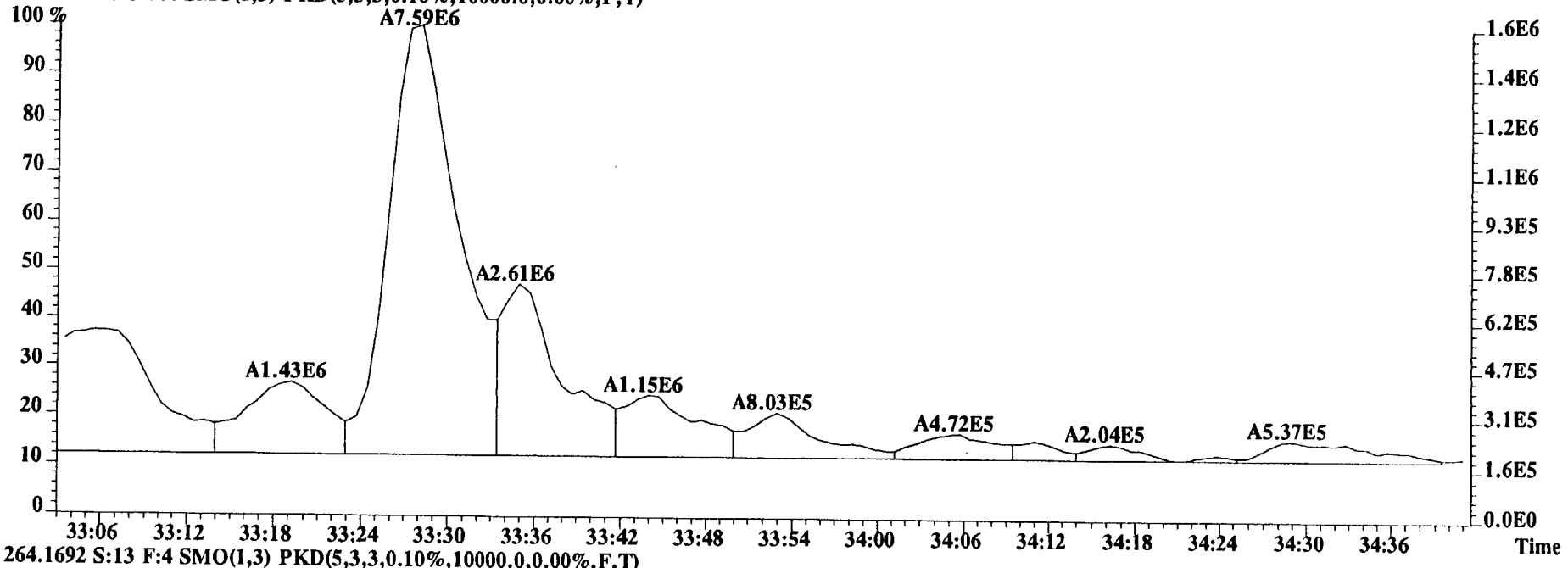
File:30OC98V4 #1-878 Acq:31-OCT-1998 02:33:51 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-10 :10X DIL. : : : Exp:PAHAIR
252.0939 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



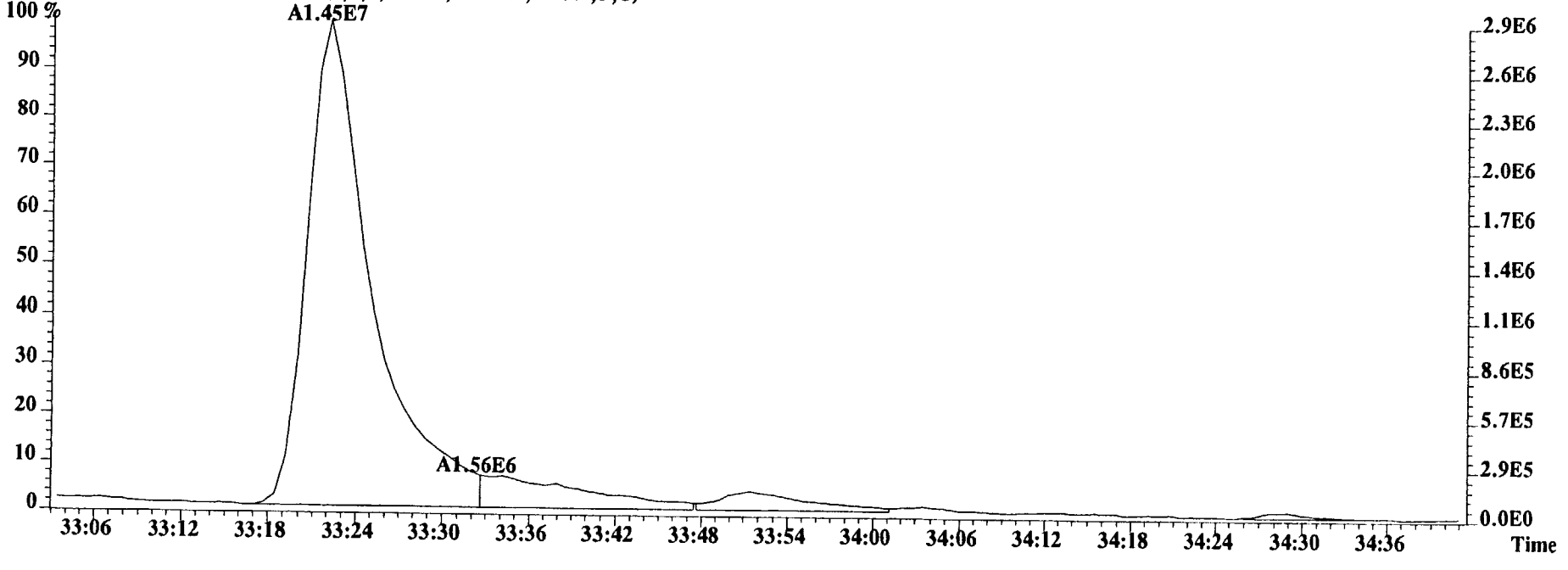
264.1692 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

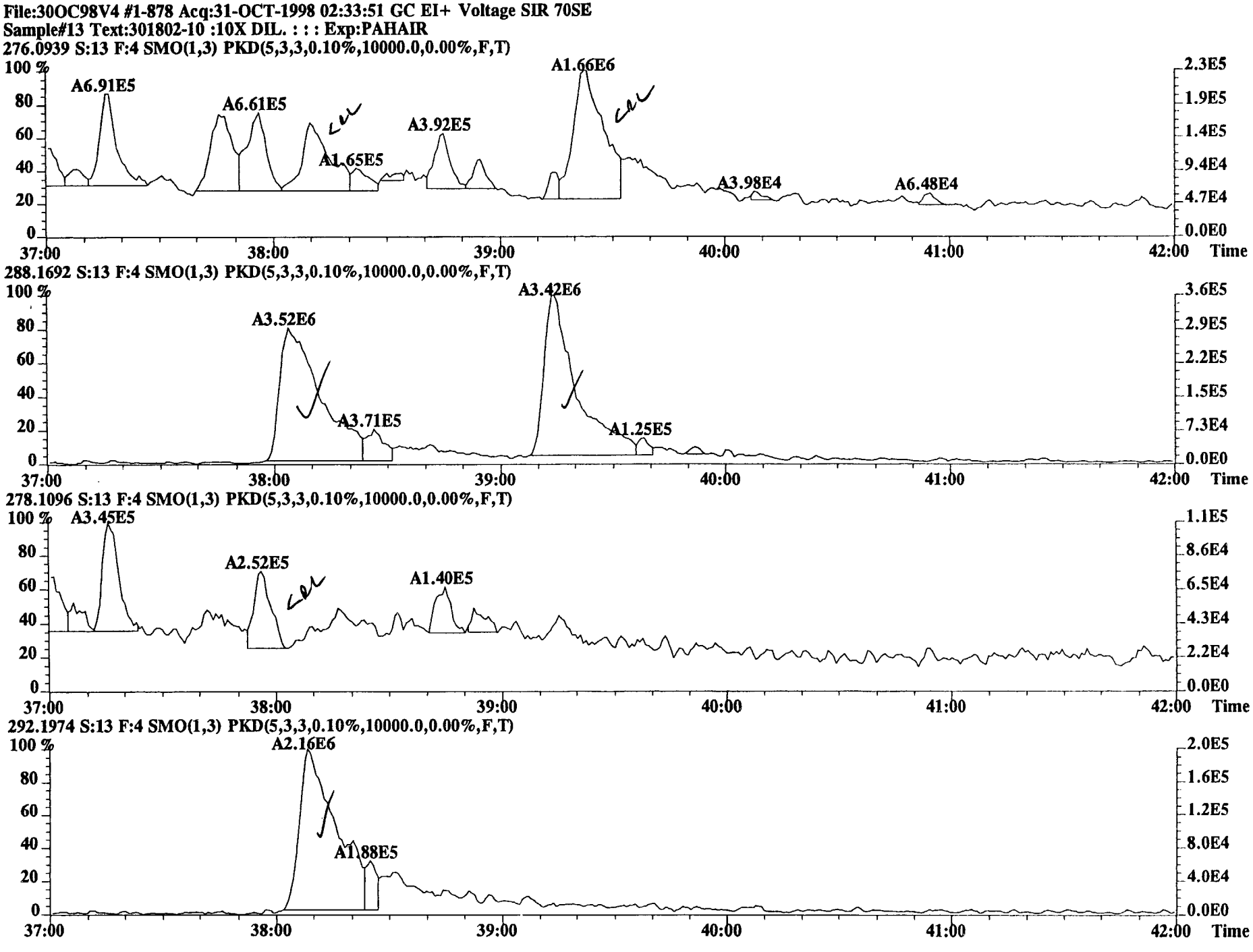


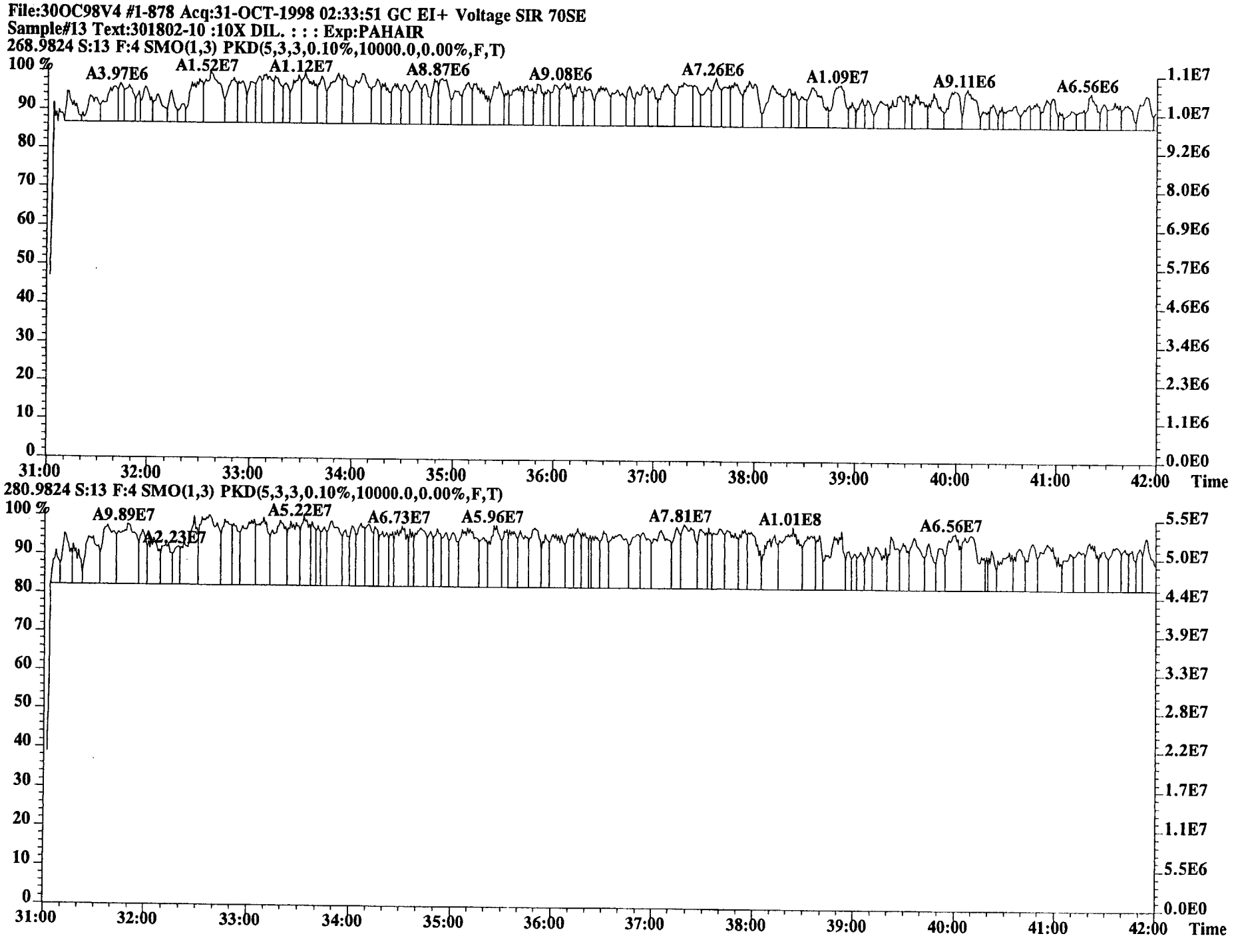
File:30OC98V4 #1-878 Acq:31-OCT-1998 02:33:51 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-10 :10X DIL. : : : Exp:PAHAIR
252.0939 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



264.1692 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)




File:30OC98V4 #1-878 Acq:31-OCT-1998 02:33:51 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-10 :10X DIL. : : : Exp:PAHAIR
276.0939 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A6.91E5
A6.61E5
A1.65E5
A3.92E5
A1.66E6
A3.98E4
A6.48E4
288.1692 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.52E6
A3.71E5
A3.42E6
A1.25E5
278.1096 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.45E5
A2.52E5
A1.40E5
292.1974 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.16E6
A1.88E5
100 %
80
60
40
20
0
37:00
38:00
39:00
40:00
41:00
42:00
Time
2.3E5
1.9E5
1.4E5
9.4E4
4.7E4
0.0E0
3.6E5
2.9E5
2.2E5
1.5E5
7.3E4
1.1E5
8.6E4
6.5E4
4.3E4
2.2E4
2.0E5
1.6E5
1.2E5
8.0E4
4.0E4


File:30OC98V4 #1-878 Acq:31-OCT-1998 02:33:51 GC EI+ Voltage SIR 70SE
Sample#13 Text:301802-10 :10X DIL. : : : Exp:PAHAIR
268.9824 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.97E6
A1.52E7
A1.12E7
A8.87E6
A9.08E6
A7.26E6
A1.09E7
A9.11E6
A6.56E6
280.9824 S:13 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A9.89E7
A2.23E7
A5.22E7
A6.73E7
A5.96E7
A7.81E7
A1.01E8
A6.56E7
Time

369

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-I-429-FB
Lab ID: 301802-0011-SA
Matrix: AIRTRAIN Sampled: 24 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	1600	ng/sample	--	B
2-Methylnaphthalene	200	ng/sample	--	B
Acenaphthylene	ND	ng/sample	100	
Acenaphthene	ND	ng/sample	100	
Fluorene	ND	ng/sample	100	
Phenanthrene	210	ng/sample	--	B
Anthracene	ND	ng/sample	100	
Fluoranthene	ND	ng/sample	100	
Pyrene	ND	ng/sample	100	
Benzo(a)anthracene	ND	ng/sample	100	
Chrysene	ND	ng/sample	100	
Benzo(b)fluoranthene	ND	ng/sample	100	
Benzo(k)fluoranthene	ND	ng/sample	100	
Benzo(e)pyrene	ND	ng/sample	100	
Benzo(a)pyrene	ND	ng/sample	100	
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
ND = Not Detected

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-I-429-FB
Lab ID: 301802-0011-SA
Matrix: AIRTRAIN Sampled: 24 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	45	m
Acenaphthylene-d8	54	
Acenaphthene-d10	62	
Fluorene-d10	57	
Phenanthrene-d10	61	
Fluoranthene-d10	68	
Pyrene-d10	70	
Benzo(a)anthracene-d12	64	
Perylene-d12	65	
Indeno(123-cd)pyrene-d12	81	
Chrysene-d12	89	
Benzo(b)fluoranthene-d12	72	
Benzo(k)fluoranthene-d12	87	
Benzo(a)pyrene-d12	68	
Dibenz(a,h)anthracene-d14	75	
Benzo(g,h,i)perylene-d12	70	

Field Surrogates	% Recovery
13C-Fluorene	103

m = Internal Standard recovery is outside method recovery goal.

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

Mass Spec : VG-4 Results : 30OC98V4141.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 30-OCT-98
Data file : 30OC98V4 301802-11 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMP	Rec/ MDL	
d10-2-Methylnaphthalene	7751400	1.00	Y	12: 27	Y	1.00	50.00		
d8-Naphthalene	7890140	1.00	Y	10: 13	Y	2.24	22.71	45	m
Naphthalene	151028800	1.00	Y	10: 16	Y	1.23	1562.43	B	
2-Methylnaphthalene	8790760	1.00	Y	12: 34	Y	0.56	198.76	B	
d8-Acenaphthylene	5068280	1.00	Y	15: 28	Y	1.21	26.94	54	
Acenaphthylene	2545600	1.00	Y	15: 31	Y	0.94	<RL=100.00		
d10-Acenaphthene	3581540	1.00	Y	16: 1	Y	0.74	31.03	62	
Acenaphthene	1356346	1.00	Y	16: 8	Y	1.25	<RL=100.00		
d10-Anthracene	5198000	1.00	Y	20: 56	Y	1.00	50.00		
d10-Fluorene	4176380	1.00	Y	17: 42	Y	1.42	28.27	57	
Fluorene	* No Peak	0.00	N	17: 48	N	1.16	<RL=100.00		
d10-Phenanthrene	8892200	1.00	Y	20: 46	Y	2.81	30.47	61	
Phenanthrene	16545020	1.00	Y	20: 50	Y	0.89	208.00	B	
Anthracene	* No Peak	0.00	N	21: 0	N	0.80	<RL=100.00		
d14-Terphenyl	10706800	1.00	Y	26: 1	Y	1.00	50.00		
d10-Fluoranthene	10283040	1.00	Y	24: 37	Y	1.41	34.04	68	
Fluoranthene	6852180	1.00	Y	24: 40	Y	1.11	<RL=100.00		
d10-Pyrene	11419840	1.00	Y	25: 18	Y	1.52	35.13	70	
Pyrene	4832060	1.00	Y	25: 21	Y	1.21	<RL=100.00		
d12-Benzo(a)anthracene	6196900	1.00	Y	29: 10	Y	0.90	32.15	64	
Benzo(a)anthracene	496926	1.00	Y	29: 14	Y	1.20	<RL=100.00		
d12-Chrysene	12217860	1.00	Y	29: 16	Y	1.28	44.60	89	
Chrysene	1754734	1.00	Y	29: 21	Y	1.08	<RL=100.00		
d12-Benzo(e)pyrene	29385200	1.00	Y	33: 22	Y	1.00	50.00		
d12-Benzo(b)fluoranthene	9575520	1.00	Y	32: 31	Y	0.45	35.90	72	
Benzo(b)fluoranthene	3097500	1.00	Y	32: 36	Y	1.17	<RL=100.00		
d12-Benzo(k)fluoranthene	24254600	1.00	Y	32: 36	Y	0.95	43.53	87	
Benzo(k)fluoranthene	3097500	1.00	Y	32: 39	Y	1.16	<RL=100.00		
d12-Benzo(a)pyrene	13446080	1.00	Y	33: 35	Y	0.68	33.81	68	
Benzo(e)pyrene	1355680	1.00	Y	33: 28	Y	1.64	<RL=100.00		
Benzo(a)pyrene	583780	1.00	Y	33: 41	Y	1.07	<RL=100.00		
d12-Perylene	12063480	1.00	Y	33: 51	Y	0.63	32.57	65	
Perylene	87404	1.00	Y	33: 56	Y	1.71	<RL=100.00		
d12-Indeno(123-cd)pyrene	10531720	1.00	Y	38: 5	Y	0.44	40.33	81	
Indeno(123-cd)pyrene	85246	1.00	Y	38: 11	Y	0.62	<RL=100.00		
d14-Dibenz(ah)anthracene	5405380	1.00	Y	38: 10	Y	0.25	37.42	75	
Dibenz(ah)anthracene	* No Peak	0.00	N	38: 15	N	1.40	<RL=100.00		
d12-Benzo(ghi)perylene	11903780	1.00	Y	39: 14	Y	0.58	34.94	70	
Benzo(ghi)perylene	389202	1.00	Y	39: 23	Y	1.02	<RL=100.00		
d10-Fluorene	4176380	1.00	Y	17: 42	Y	1.00	50.00		
13C-Fluorene	3469460	1.00	Y	17: 47	Y	0.81	51.28	103	

372

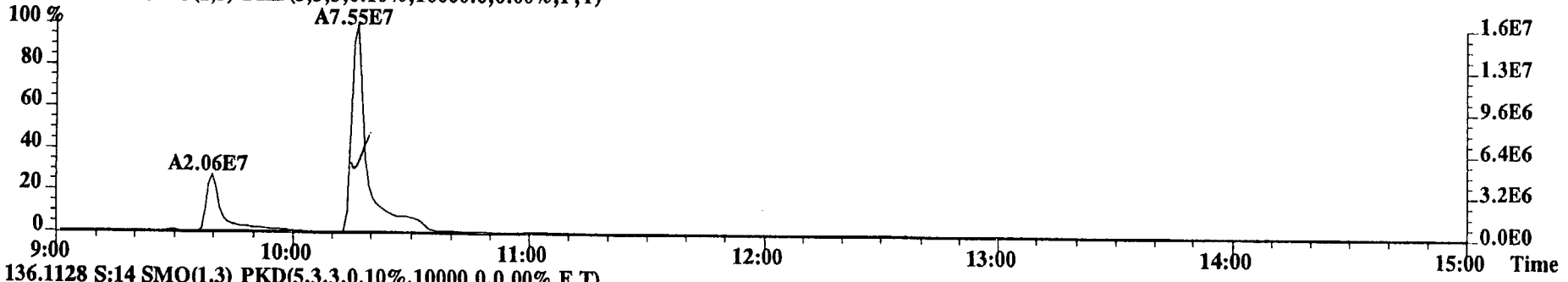
11-4-98
CI

	0.5	
98V4.RRF		
Rec/ MDL		
	3875700	3875700
45	3945070	3945070
B	75514400	75514400
B	4395380	4395380
54	2534140	2534140
100.00	1272800	1272800
62	1790770	1790770
100.00	678173	678173
	2599000	2599000
57	2088190	2088190
100.00	0	0
61	4446100	4446100
B	8272510	8272510
100.00	0	0
	5353400	5353400
68	5141520	5141520
100.00	3426090	3426090
70	5709920	5709920
100.00	2416030	2416030
64	3098450	3098450
100.00	248463	248463
89	6108930	6108930
100.00	877367	877367
	14692600	14692600
72	4787760	4787760
100.00	1548750	1548750
87	12127300	12127300
100.00	1548750	1548750
68	6723040	6723040
100.00	677840	677840
100.00	291890	291890
65	6031740	6031740
100.00	43702	43702
81	5265860	5265860
100.00	42623	42623
75	2702690	2702690
100.00	0	0
70	5951890	5951890
100.00	194601	194601

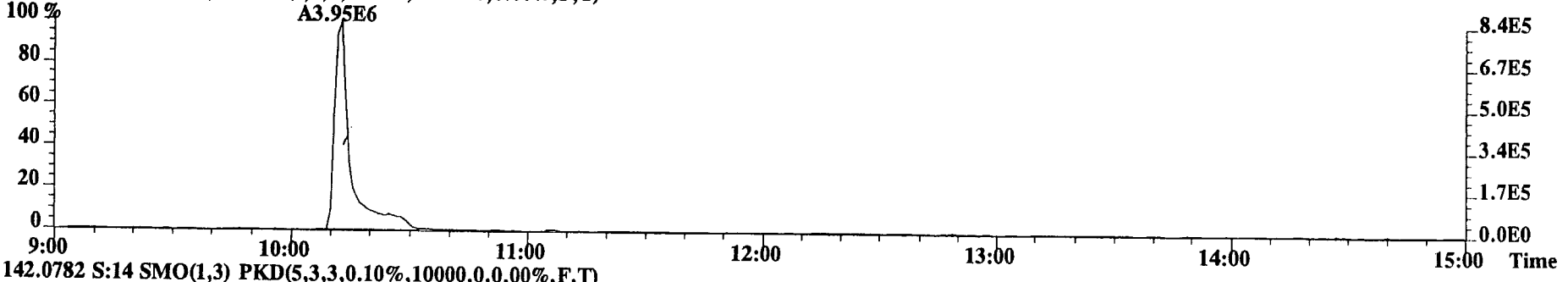
Mass Spec : VG-4 Results : 300C98V4141.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 30-OCT-98
Data file : 300C98V4 301802-11 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMP	Rec/ MDL
d10-2-Methylnaphthalene	7751400	1.00	Y	12: 27	Y	1.00	50.00	
d8-Naphthalene	7890140	1.00	Y	10: 13	Y	2.24	22.71	45
Naphthalene	151028800	1.00	Y	10: 16	Y	1.23	1562.43	0.000
2-Methylnaphthalene	8790760	1.00	Y	12: 34	Y	0.56	198.76	0.000
d8-Acenaphthylene	5068280	1.00	Y	15: 28	Y	1.21	26.94	54
Acenaphthylene	2545600	1.00	Y	15: 31	Y	0.94	53.20	0.000
d10-Acenaphthene	3581540	1.00	Y	16: 1	Y	0.74	31.03	62
Acenaphthene	1356346	1.00	Y	16: 8	Y	1.25	30.39	0.000
d10-Anthracene	5198000	1.00	Y	20: 56	Y	1.00	50.00	
d10-Fluorene	4176380	1.00	Y	17: 42	Y	1.42	28.27	57
Fluorene	* No Peak	0.00	N	17: 48	N	1.16	0.00	0.000
d10-Phenanthrene	8892200	1.00	Y	20: 46	Y	2.81	30.47	61
Phenanthrene	16545020	1.00	Y	20: 50	Y	0.89	208.00	0.000
Anthracene	* No Peak	0.00	N	21: 0	N	0.80	0.00	0.000
d14-Terphenyl	10706800	1.00	Y	26: 1	Y	1.00	50.00	
d10-Fluoranthene	10283040	1.00	Y	24: 37	Y	1.41	34.04	68
Fluoranthene	6852180	1.00	Y	24: 40	Y	1.11	59.94	0.000
d10-Pyrene	11419840	1.00	Y	25: 18	Y	1.52	35.13	70
Pyrene	4832060	1.00	Y	25: 21	Y	1.21	35.11	0.000
d12-Benzo(a)anthracene	6196900	1.00	Y	29: 10	Y	0.90	32.15	64
Benzo(a)anthracene	496926	1.00	Y	29: 14	Y	1.20	6.66	0.000
d12-Chrysene	12217860	1.00	Y	29: 16	Y	1.28	44.60	89
Chrysene	1754734	1.00	Y	29: 21	Y	1.08	13.25	0.000
d12-Benzo(e)pyrene	29385200	1.00	Y	33: 22	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	9575520	1.00	Y	32: 31	Y	0.45	35.90	72
Benzo(b)fluoranthene	3097500	1.00	Y	32: 39	Y	1.17	27.71	0.000
d12-Benzo(k)fluoranthene	24254600	1.00	Y	32: 36	Y	0.95	43.53	87
Benzo(k)fluoranthene	3097500	1.00	Y	32: 39	Y	1.16	10.97	0.000
d12-Benzo(a)pyrene	13446080	1.00	Y	33: 35	Y	0.68	33.81	68
Benzo(e)pyrene	1355680	1.00	Y	33: 28	Y	1.64	6.14	0.000
Benzo(a)pyrene	583780	1.00	Y	33: 41	Y	1.07	4.05	0.000
d12-Perylene	12063480	1.00	Y	33: 51	Y	0.63	32.57	65
Perylene	87404	1.00	Y	33: 56	Y	1.71	0.42	0.000
d12-Indeno(123-cd)pyrene	10531720	1.00	Y	38: 5	Y	0.44	40.31	81
Indeno(123-cd)pyrene	85246	1.00	Y	38: 11	Y	0.62	1.30	0.000
d14-Dibenz(ah)anthracene	5405380	1.00	Y	38: 10	Y	0.25	37.42	75
Dibenz(ah)anthracene	* No Peak	0.00	N	38: 15	N	1.40	0.00	0.000
d12-Benzo(ghi)perylene	11903780	1.00	Y	39: 14	Y	0.58	34.94	70
Benzo(ghi)perylene	389202	1.00	Y	39: 23	Y	1.02	3.22	0.000
d10-Fluorene	4176380	1.00	Y	17: 42	Y	1.42	5.00	10
13C-Fluorene	3469460	1.00	Y	17: 47	Y	1.00	83.07	0.000

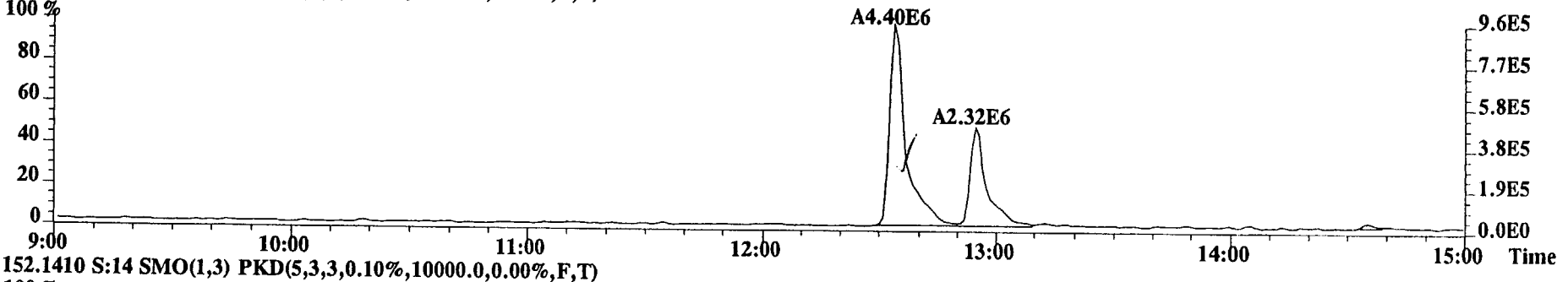
File:30OC98V4 #1-510 Acq:31-OCT-1998 03:22:54 GC EI+ Voltage SIR 70SE
Sample#14 Text:301802-11 :10X DIL. : : : Exp:PAHAIR
128.0626 S:14 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



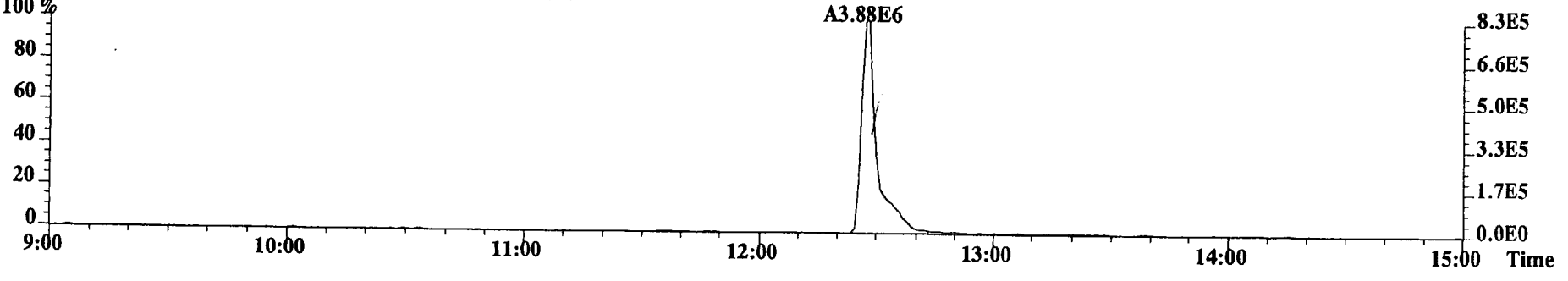
136.1128 S:14 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



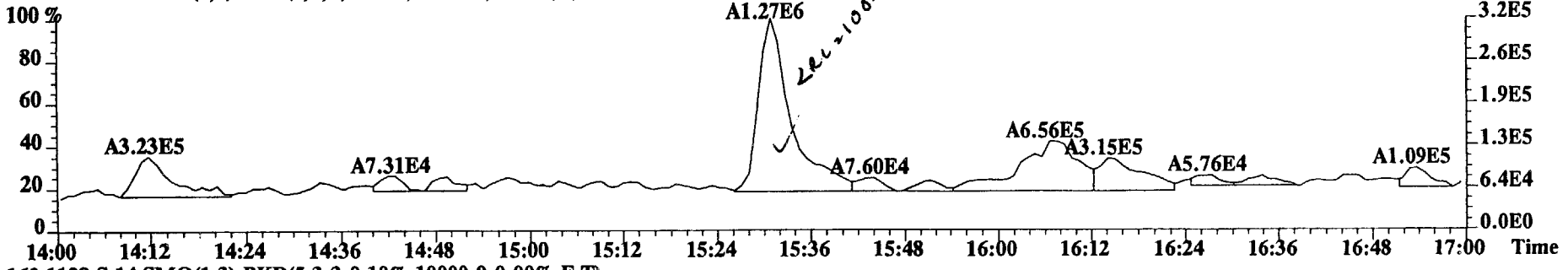
142.0782 S:14 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



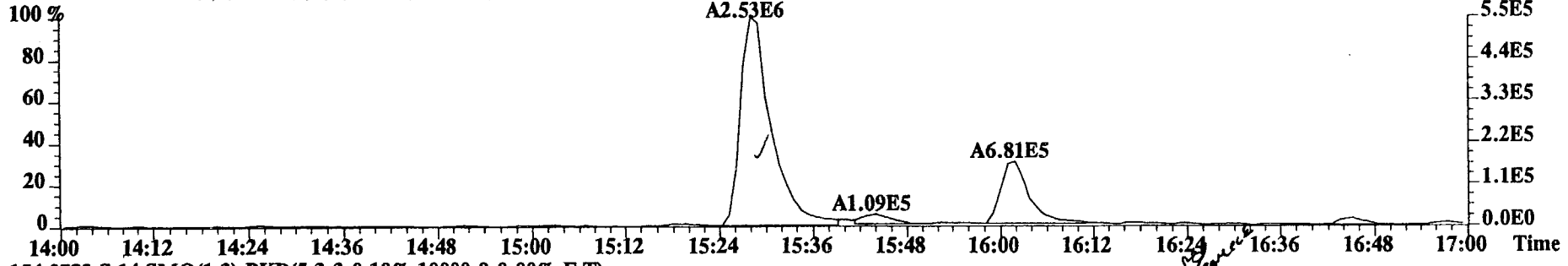
152.1410 S:14 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



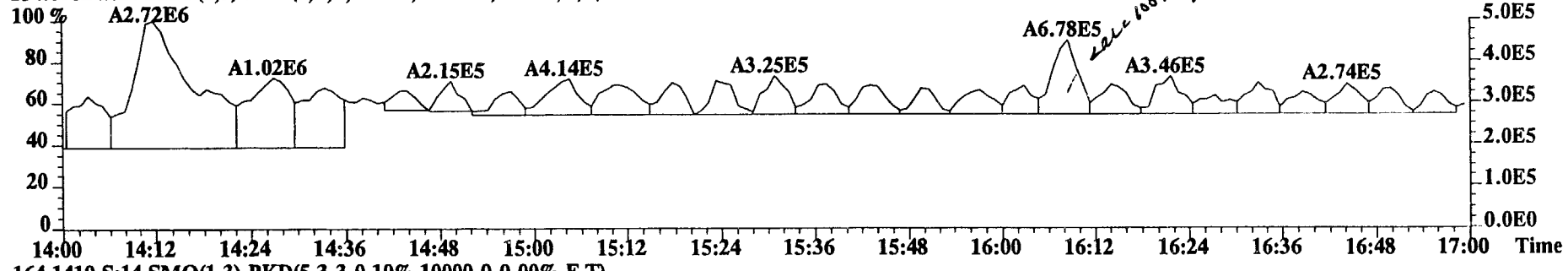
File:30OC98V4 #1-510 Acq:31-OCT-1998 03:22:54 GC EI+ Voltage SIR 70SE
Sample#14 Text:301802-11 :10X DIL. : : : Exp:PAHAIR
152.0626 S:14 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



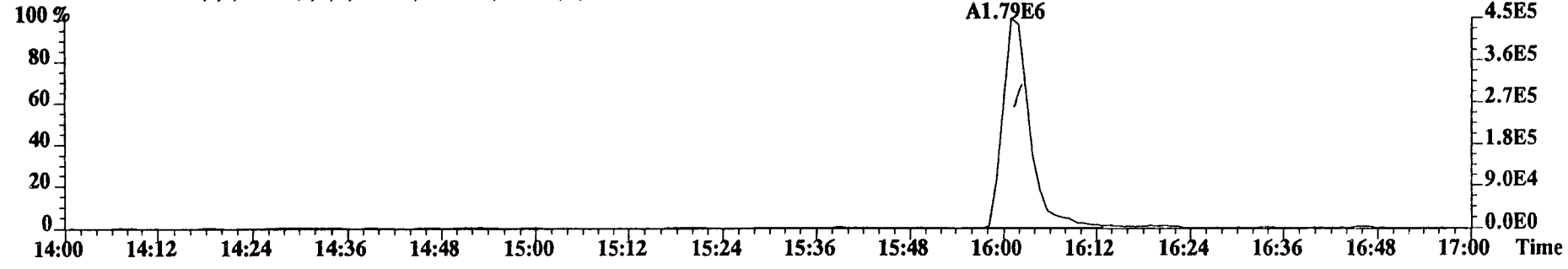
160.1128 S:14 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



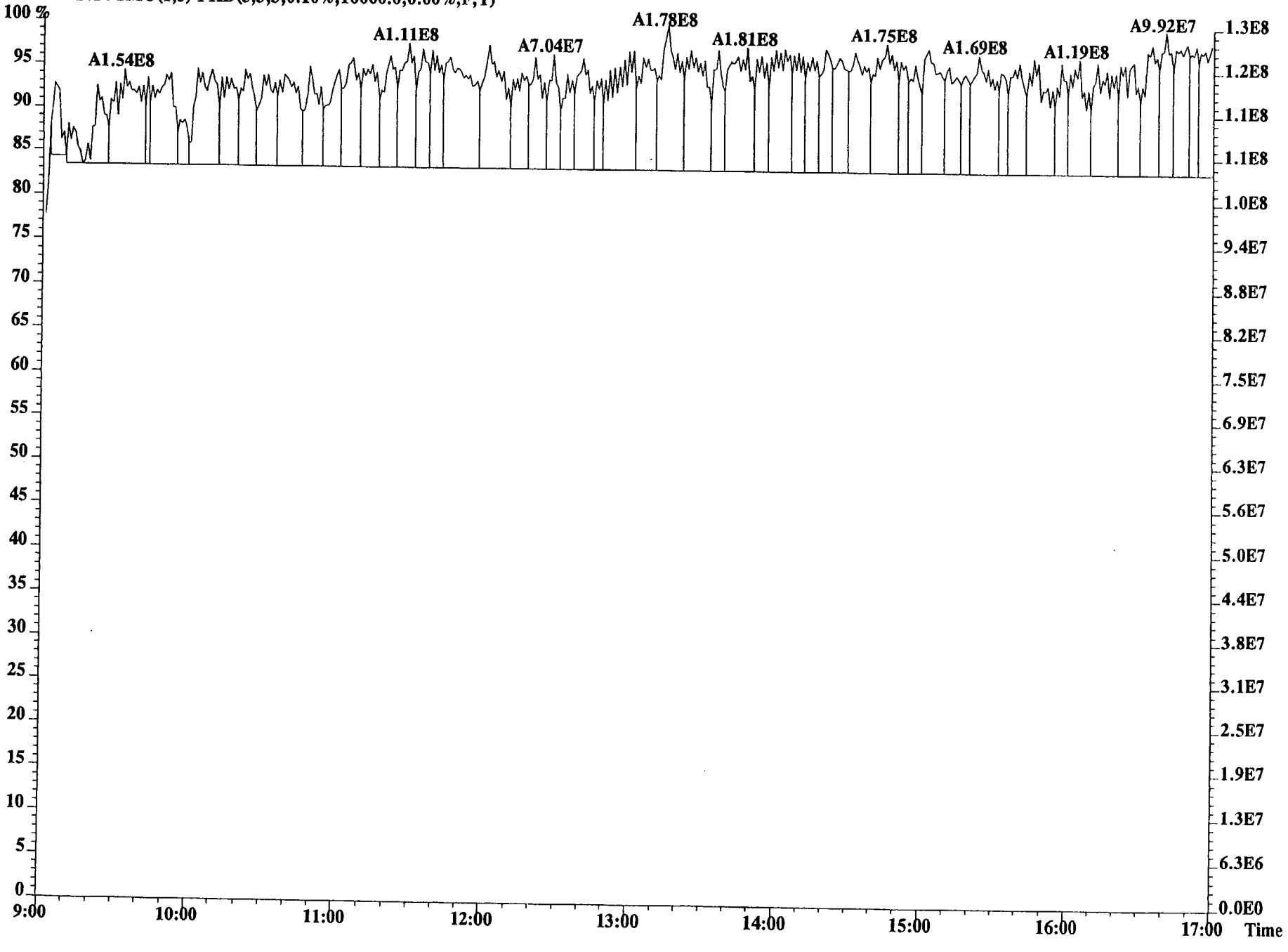
154.0782 S:14 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



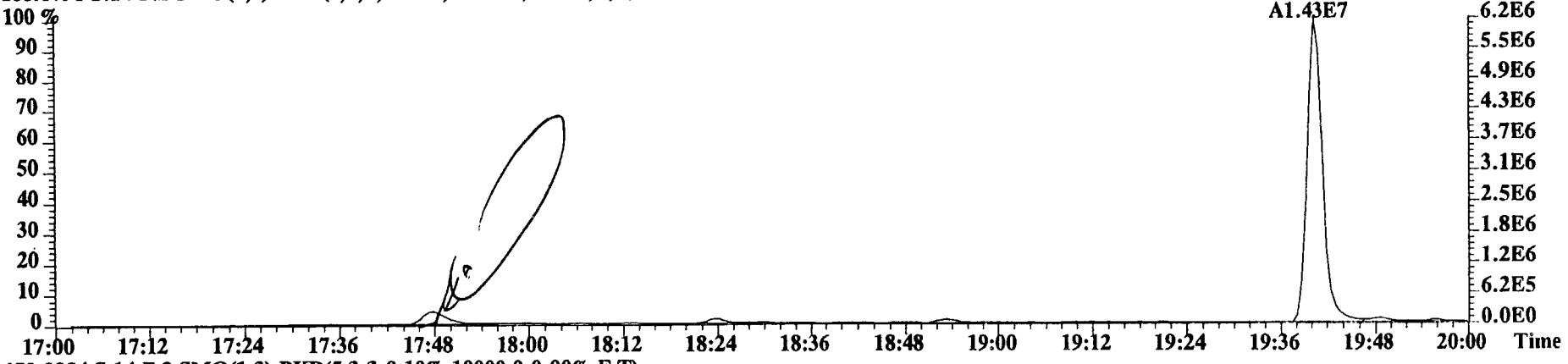
164.1410 S:14 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



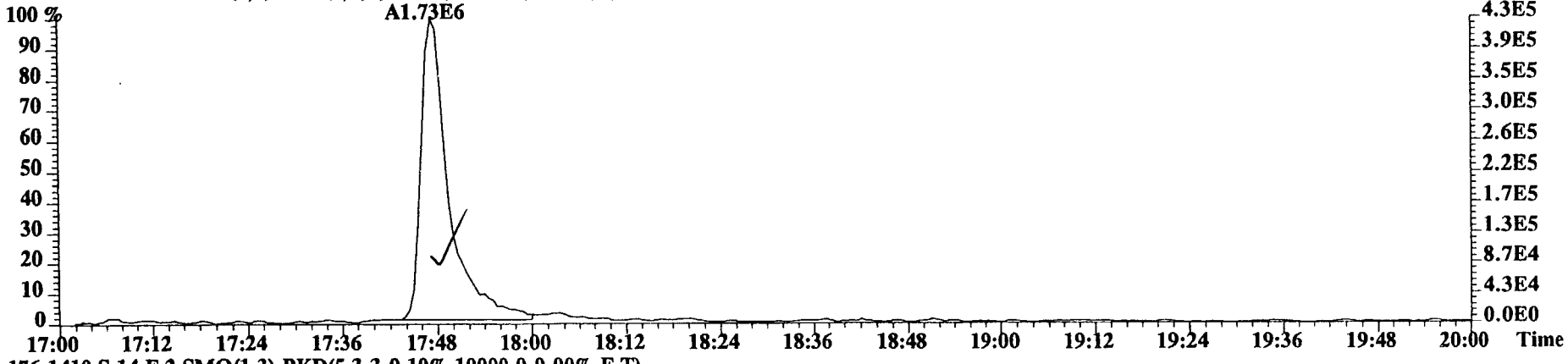
File:30OC98V4 #1-510 Acq:31-OCT-1998 03:22:54 GC EI+ Voltage SIR 70SE
Sample#14 Text:301802-11 :10X DIL. : : : Exp:PAHAIR
130.9920 S:14 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



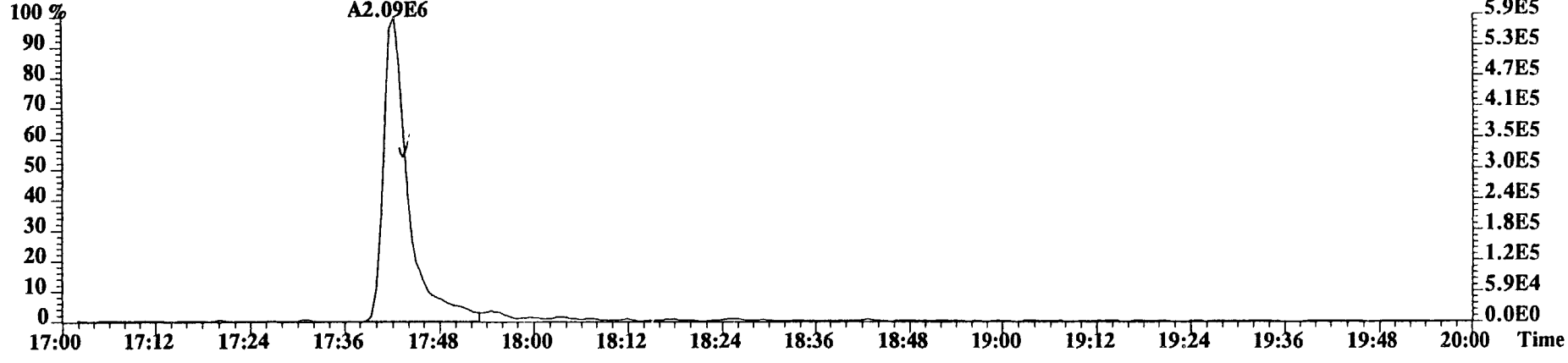
File:30OC98V4 #1-641 Acq:31-OCT-1998 03:22:54 GC EI+ Voltage SIR 70SE
Sample#14 Text:301802-11 :10X DIL. : : : Exp:PAHAIR
166.0798 S:14 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



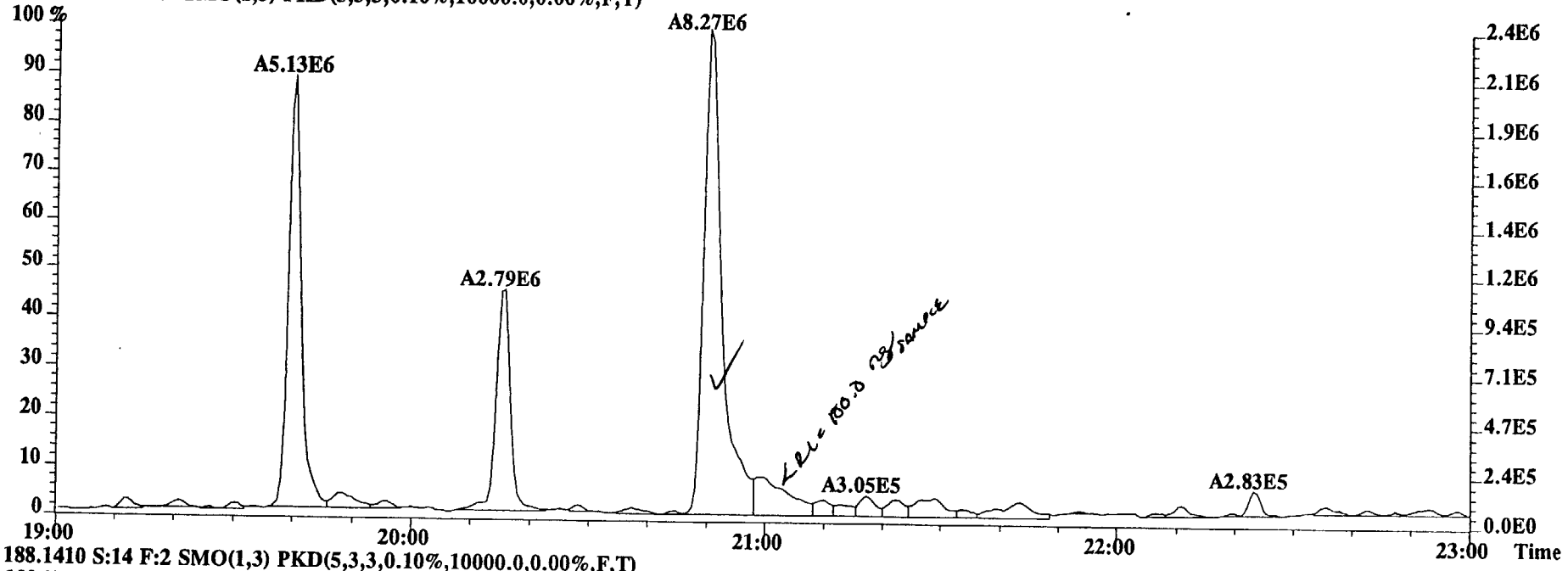
172.0984 S:14 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



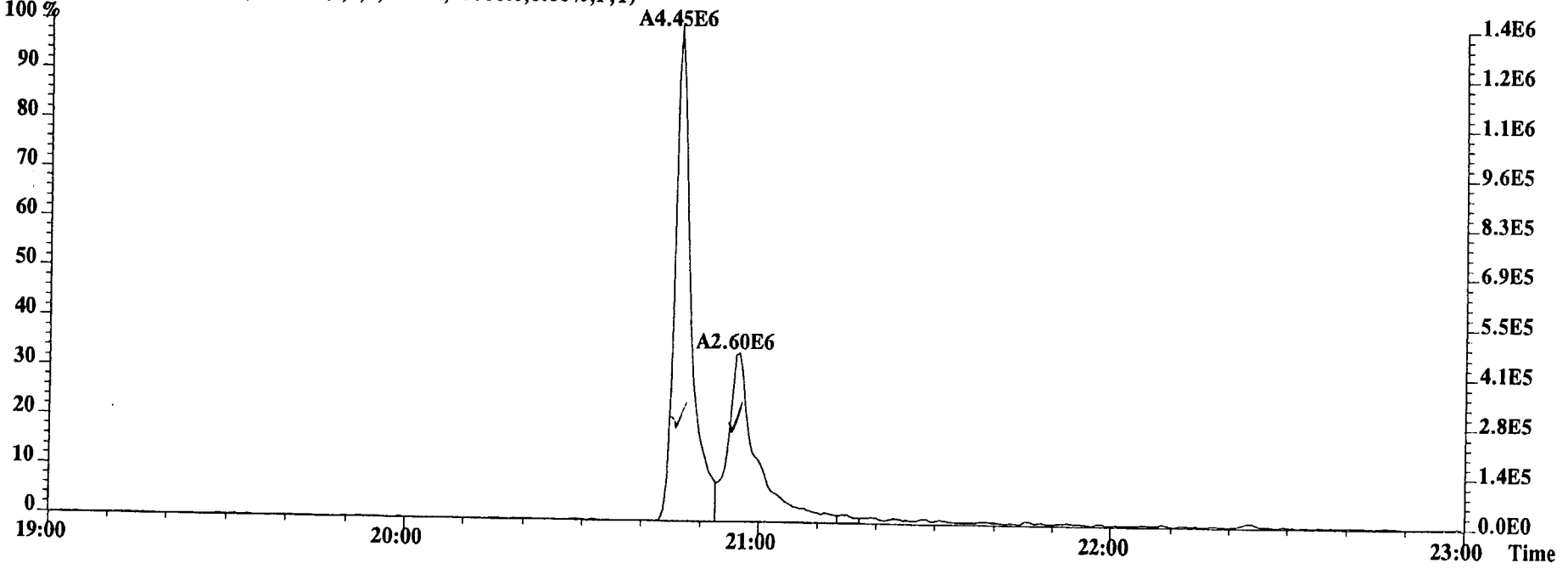
176.1410 S:14 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

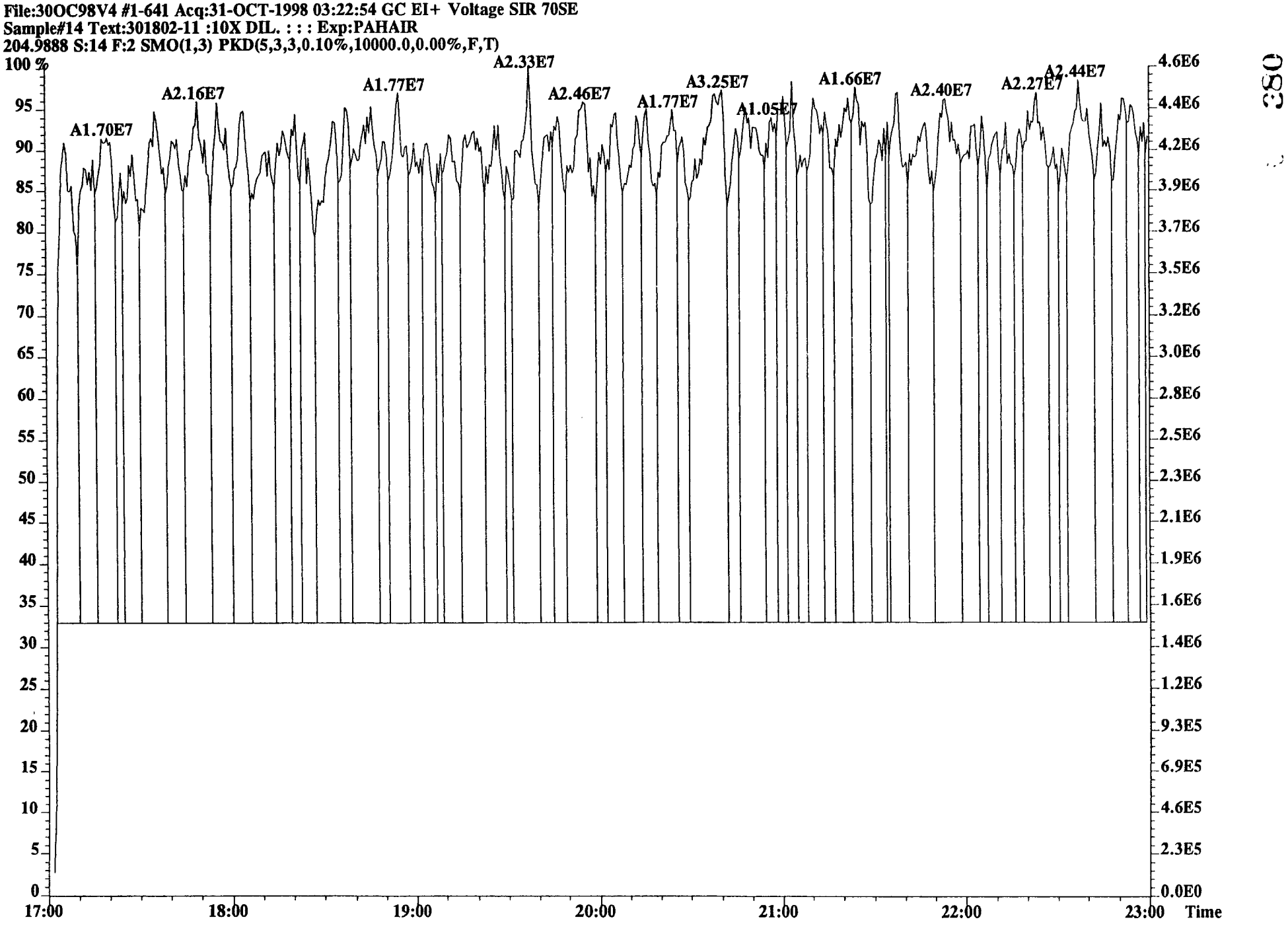


File:30OC98V4 #1-641 Acq:31-OCT-1998 03:22:54 GC EI+ Voltage SIR 70SE
Sample#14 Text:301802-11 :10X DIL. : : : Exp:PAHAIR
178.0782 S:14 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

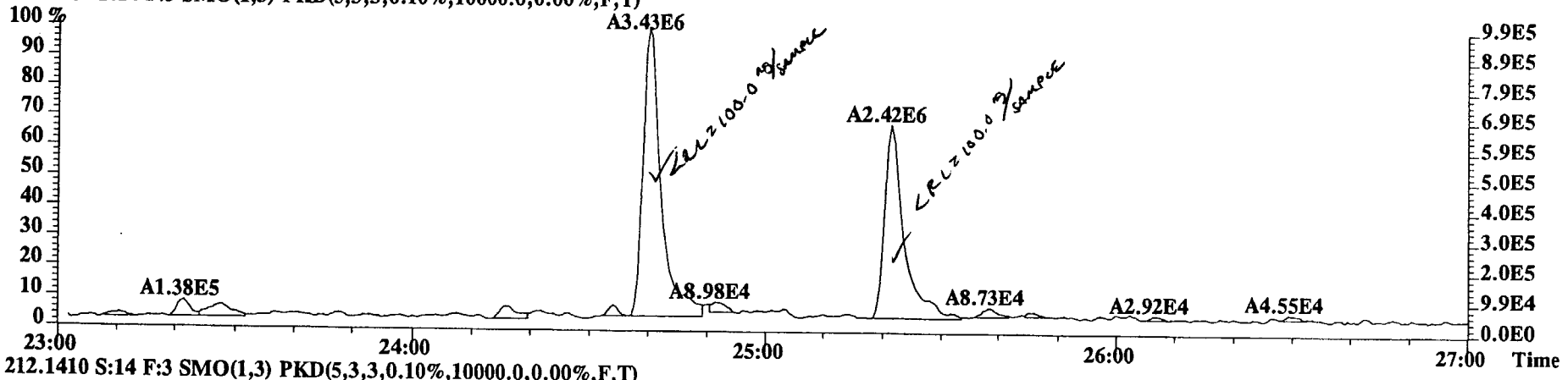


188.1410 S:14 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

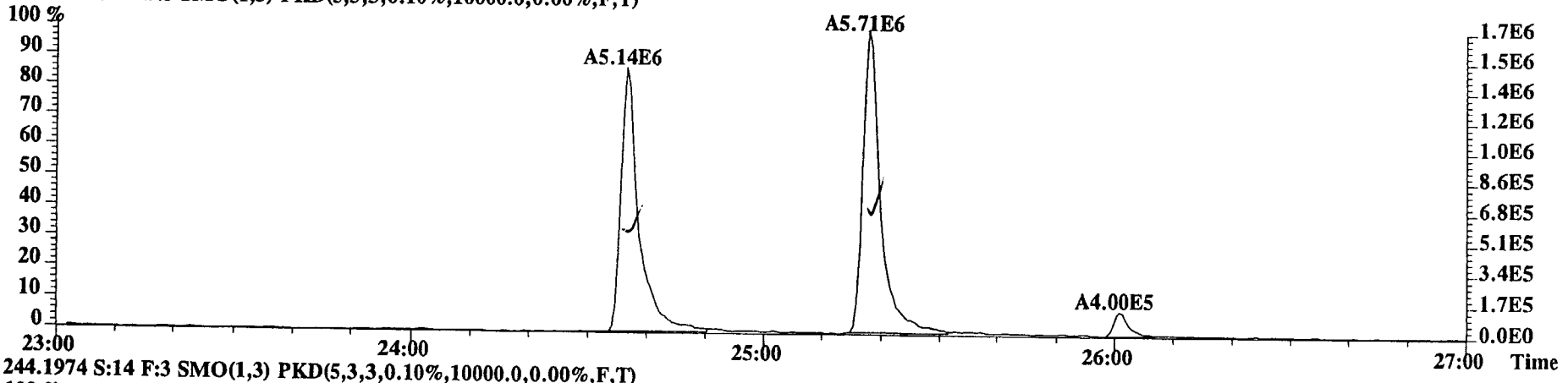



File:30OC98V4 #1-641 Acq:31-OCT-1998 03:22:54 GC EI+ Voltage SIR 70SE
Sample#14 Text:301802-11 :10X DIL. : : : Exp:PAHAIR
204.9888 S:14 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.70E7
A2.16E7
A1.77E7
A2.33E7
A2.46E7
A1.77E7
A3.25E7
A1.05E7
A1.66E7
A2.40E7
A2.27E7
A2.44E7
4.6E6
4.4E6
4.2E6
3.9E6
3.7E6
3.5E6
3.2E6
3.0E6
2.8E6
2.5E6
2.3E6
2.1E6
1.9E6
1.6E6
1.4E6
1.2E6
9.3E5
6.9E5
4.6E5
2.3E5
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

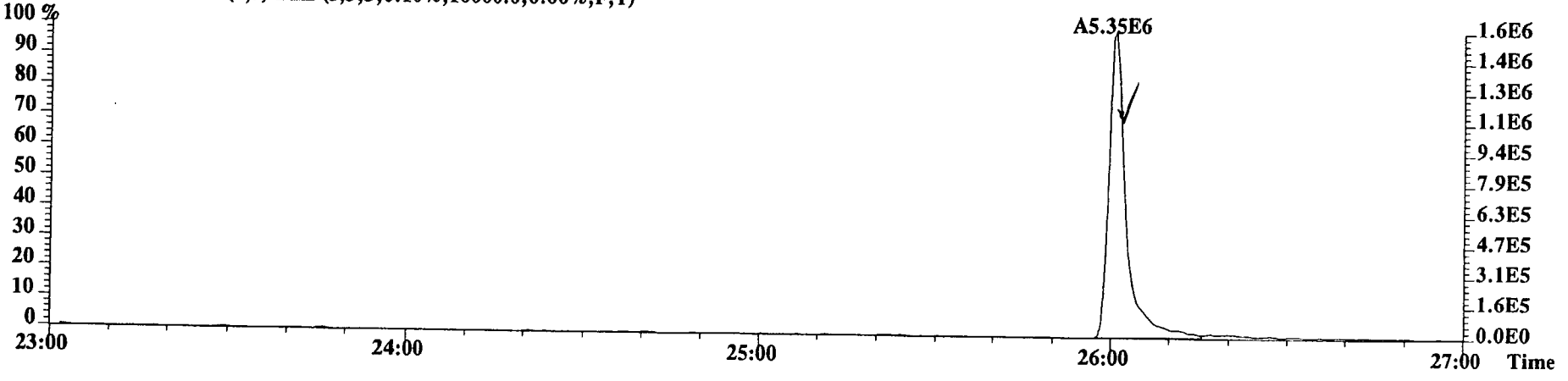
File:30OC98V4 #1-939 Acq:31-OCT-1998 03:22:54 GC EI+ Voltage SIR 70SE
Sample#14 Text:301802-11 :10X DIL. : : : Exp:PAHAIR
202.0782 S:14 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



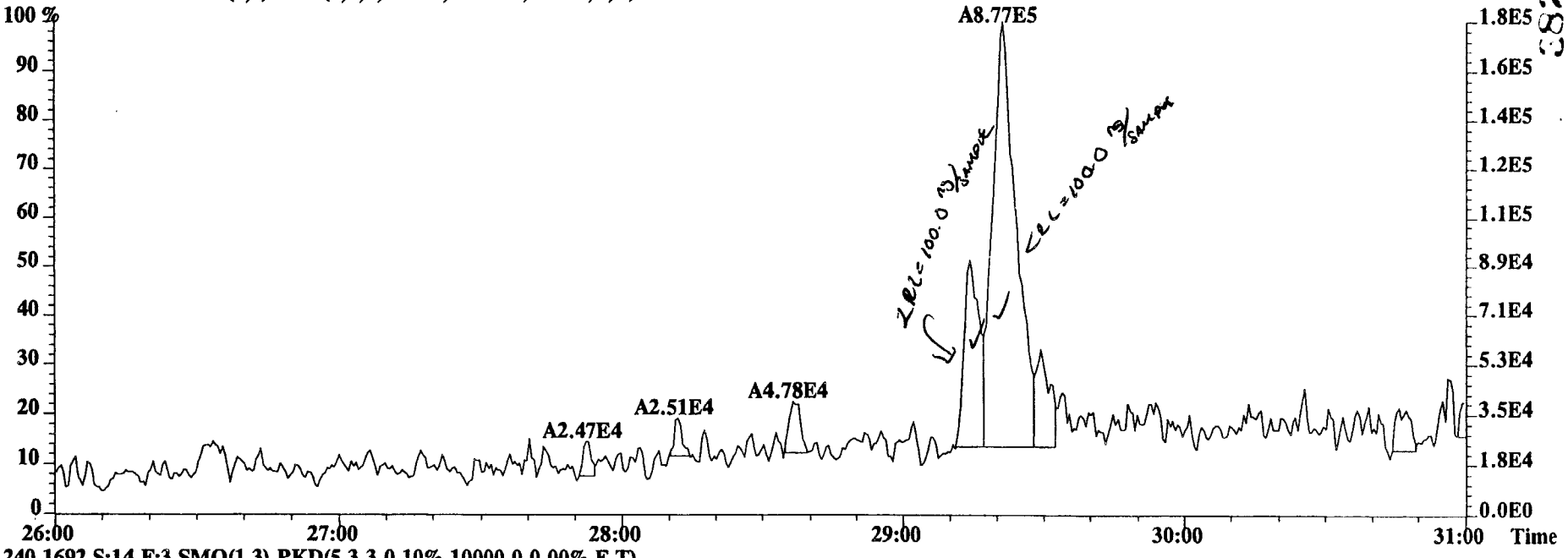
212.1410 S:14 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



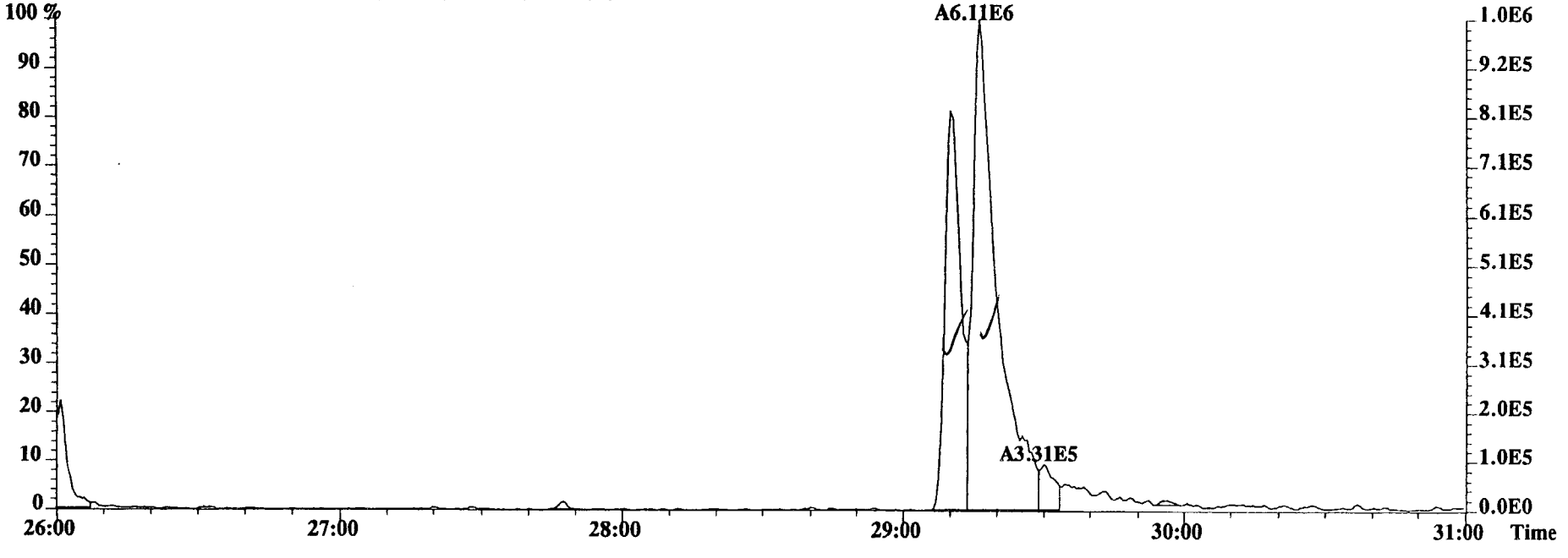
244.1974 S:14 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

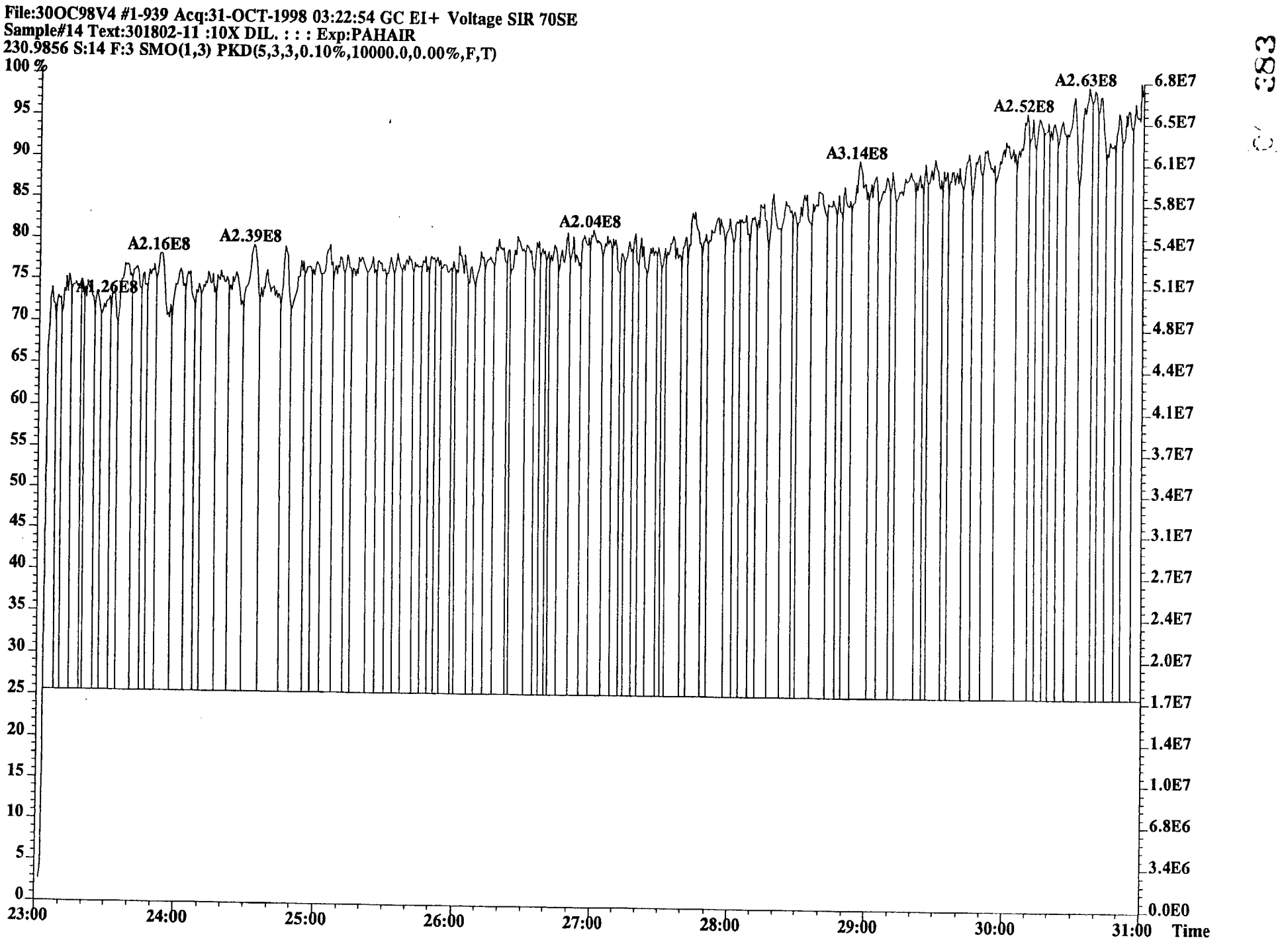


File:30OC98V4 #1-939 Acq:31-OCT-1998 03:22:54 GC EI+ Voltage SIR 70SE
Sample#14 Text:301802-11 :10X DIL. : : : Exp:PAHAIR
228.0939 S:14 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



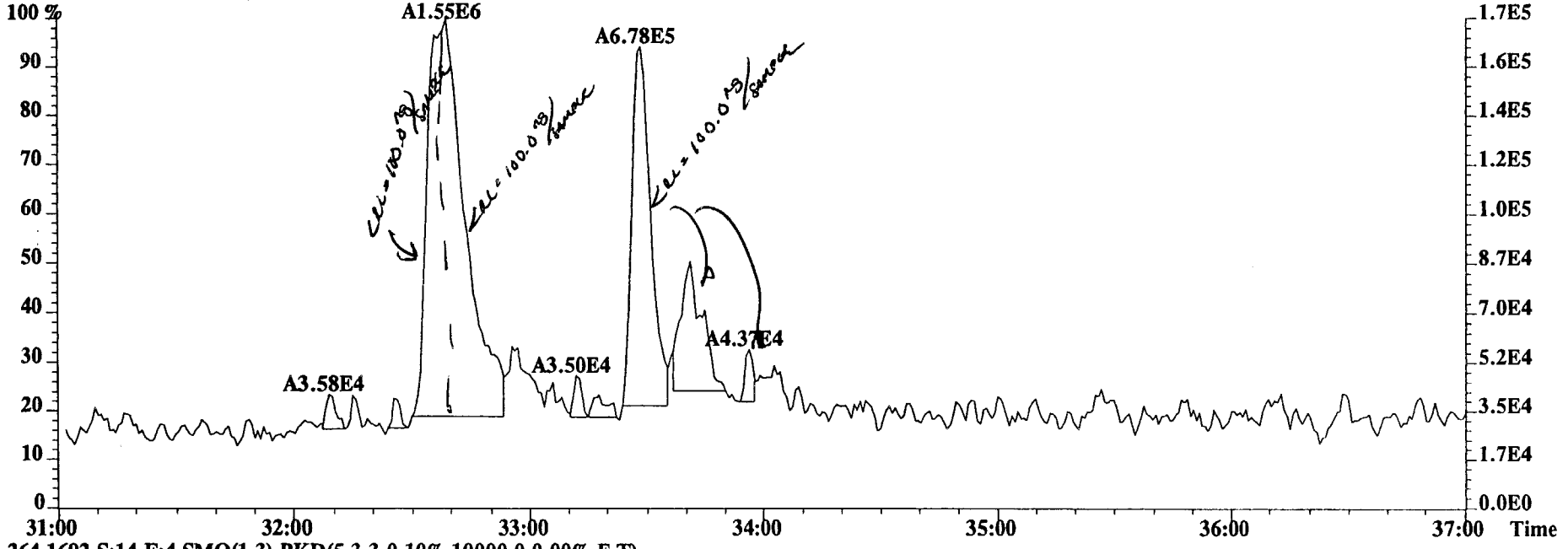
240.1692 S:14 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



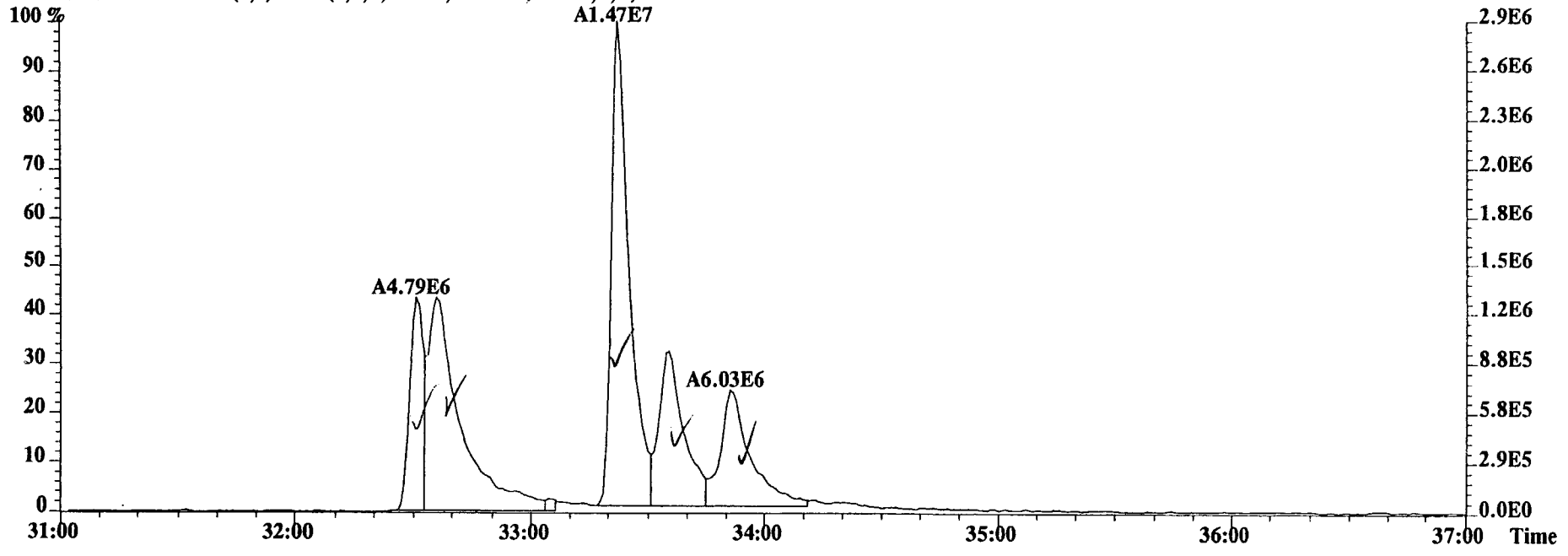

File:30OC98V4 #1-939 Acq:31-OCT-1998 03:22:54 GC EI+ Voltage SIR 70SE
Sample#14 Text:301802-11 :10X DIL. : : : Exp:PAHAIR
230.9856 S:14 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A1.26E8
A2.16E8
A2.39E8
A2.04E8
A3.14E8
A2.52E8
A2.63E8
6.8E7
6.5E7
6.1E7
5.8E7
5.4E7
5.1E7
4.8E7
4.4E7
4.1E7
3.7E7
3.4E7
3.1E7
2.7E7
2.4E7
2.0E7
1.7E7
1.4E7
1.0E7
6.8E6
3.4E6
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time

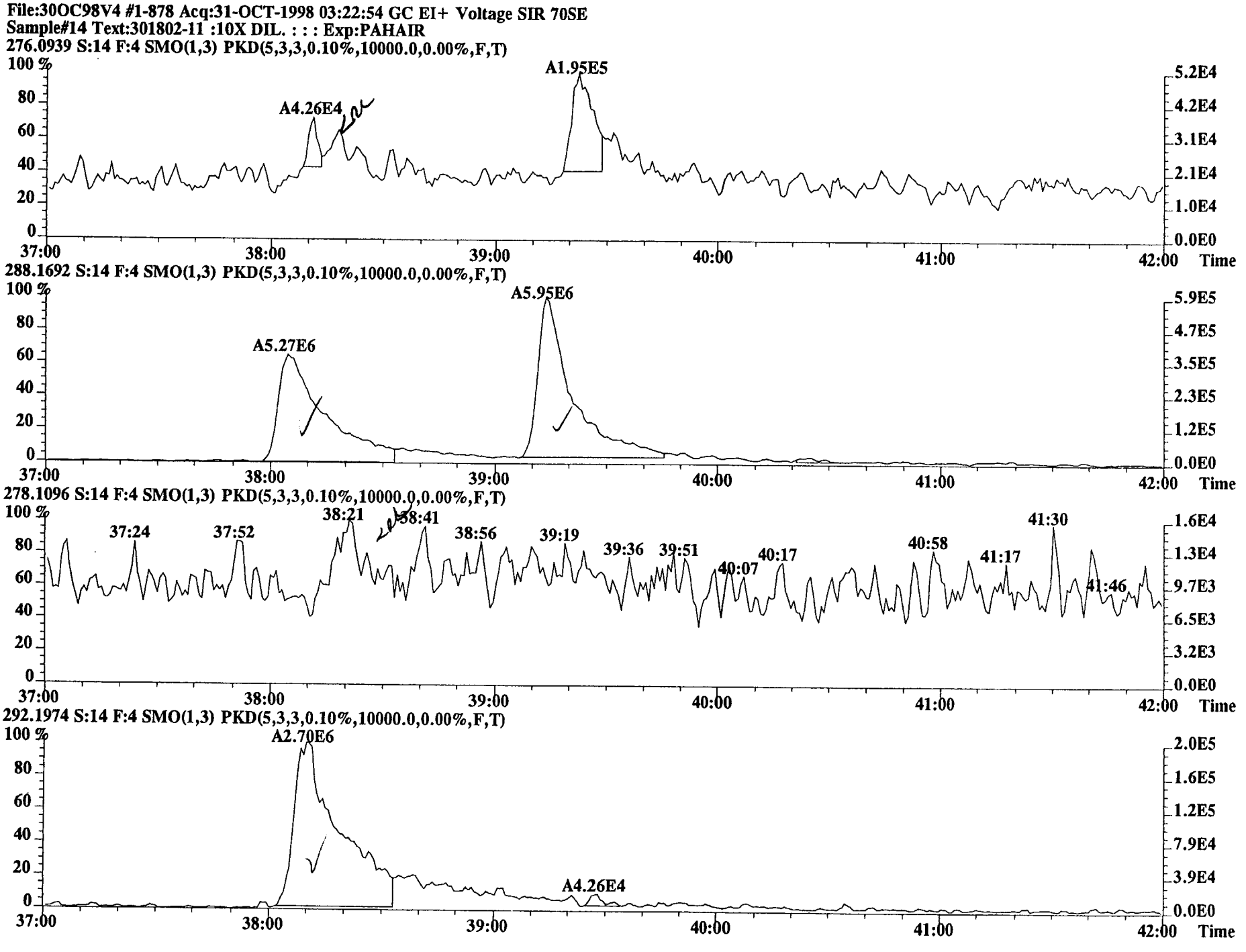
383

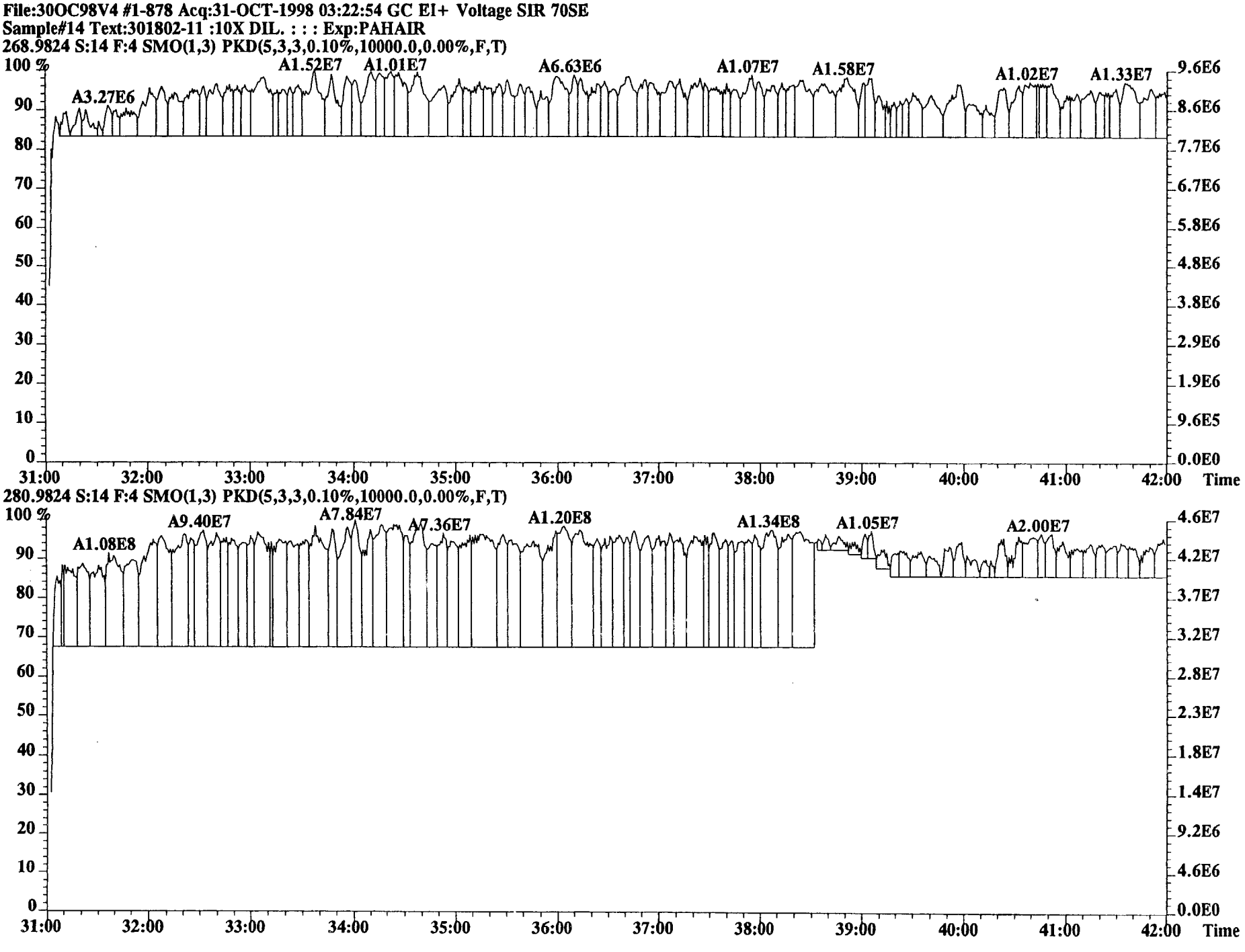
File:30OC98V4 #1-878 Acq:31-OCT-1998 03:22:54 GC EI+ Voltage SIR 70SE
Sample#14 Text:301802-11 :10X DIL. : : : Exp:PAHAIR
252.0939 S:14 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



264.1692 S:14 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)




File:30OC98V4 #1-878 Acq:31-OCT-1998 03:22:54 GC EI+ Voltage SIR 70SE
Sample#14 Text:301802-11 :10X DIL. : : : Exp:PAHAIR
276.0939 S:14 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.95E5
A4.26E4
288.1692 S:14 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A5.95E6
A5.27E6
278.1096 S:14 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
37:24
37:52
38:21
38:41
38:56
39:19
39:36
39:51
40:07
40:17
40:58
41:17
41:30
41:46
292.1974 S:14 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.70E6
A4.26E4
Time


File:30OC98V4 #1-878 Acq:31-OCT-1998 03:22:54 GC EI+ Voltage SIR 70SE
Sample#14 Text:301802-11 :10X DIL. : : : Exp:PAHAIR
268.9824 S:14 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.27E6
A1.52E7
A1.01E7
A6.63E6
A1.07E7
A1.58E7
A1.02E7
A1.33E7
280.9824 S:14 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.08E8
A9.40E7
A7.84E7
A7.36E7
A1.20E8
A1.34E8
A1.05E7
A2.00E7
100 %
90
80
70
60
50
40
30
20
10
0
9.6E6
8.6E6
7.7E6
6.7E6
5.8E6
4.8E6
3.8E6
2.9E6
1.9E6
9.6E5
0.0E0
4.6E7
4.2E7
3.7E7
3.2E7
2.8E7
2.3E7
1.8E7
1.4E7
9.2E6
4.6E6
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-O-429-FB
Lab ID: 301802-0012-SA
Matrix: AIRTRAIN Sampled: 24 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	1000	ng/sample	--	B
2-Methylnaphthalene	ND	ng/sample	100	
Acenaphthylene	ND	ng/sample	100	
Acenaphthene	ND	ng/sample	100	
Fluorene	ND	ng/sample	100	
Phenanthrene	270	ng/sample	--	B
Anthracene	ND	ng/sample	100	
Fluoranthene	190	ng/sample	--	
Pyrene	150	ng/sample	--	
Benzo(a)anthracene	ND	ng/sample	100	
Chrysene	ND	ng/sample	100	
Benzo(b)fluoranthene	ND	ng/sample	100	
Benzo(k)fluoranthene	ND	ng/sample	100	
Benzo(e)pyrene	ND	ng/sample	100	
Benzo(a)pyrene	ND	ng/sample	100	
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
ND = Not Detected

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-O-429-FB
Lab ID: 301802-0012-SA
Matrix: AIRTRAIN Sampled: 24 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Internal Standards	% Recovery	
Naphthalene-d8	46	m
Acenaphthylene-d8	54	
Acenaphthene-d10	68	
Fluorene-d10	51	
Phenanthrene-d10	65	
Fluoranthene-d10	75	
Pyrene-d10	71	
Benzo(a)anthracene-d12	60	
Perylene-d12	57	
Indeno(123-cd)pyrene-d12	73	
Chrysene-d12	94	
Benzo(b)fluoranthene-d12	80	
Benzo(k)fluoranthene-d12	77	
Benzo(a)pyrene-d12	61	
Dibenz(a,h)anthracene-d14	66	
Benzo(g,h,i)perylene-d12	66	

Field Surrogates	% Recovery
13C-Fluorene	107

m = Internal Standard recovery is outside method recovery goal.

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

04-NOV-1998 06:32:52 PM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4
GC Column : DB-5
Data file : 30OC98V4
Weight : 0.5

Results : 30OC98V4151.RES : PAHAIR.TRG
Date analyzed : 30-OCT-98
301802-12 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R

Name	Total Response	Isotope Ratio	R. T. mm:ss	RRF	pg/ SAMP	Rec/ MDL
d10-2-Methylnaphthalene	5288960	1.00 Y	12: 28 Y	1.00	50.00	
d8-Naphthalene	5453300	1.00 Y	10: 12 Y	2.24	23.01	46
Naphthalene	69007400	1.00 Y	10: 16 Y	1.23	1032.91	B
2-Methylnaphthalene	2464560	1.00 Y	12: 34 Y	0.56	<RL=100.00	
d8-Acenaphthylene	3478260	1.00 Y	15: 29 Y	1.21	27.09	54
Acenaphthylene	555228	1.00 Y	15: 31 Y	0.94	<RL=100.00	
d10-Acenaphthene	2661640	1.00 Y	16: 1 Y	0.74	33.79	68
Acenaphthene	1579826	1.00 Y	16: 7 Y	1.25	<RL=100.00	
d10-Anthracene	3746380	1.00 Y	20: 56 Y	1.00	50.00	
d10-Fluorene	2729320	1.00 Y	17: 42 Y	1.42	25.64	51
Fluorene	965902	1.00 Y	17: 48 Y	1.16	<RL=100.00	
d10-Phenanthrene	6811120	1.00 Y	20: 46 Y	2.81	32.38	65
Phenanthrene	16420000	1.00 Y	20: 51 Y	0.89	269.51	B
Anthracene	* No Peak	0.00 N	21: 0 N	0.80	<RL=100.00	
d14-Terphenyl	7701460	1.00 Y	26: 1 Y	1.00	50.00	
d10-Fluoranthene	8133080	1.00 Y	24: 37 Y	1.41	37.43	75
Fluoranthene	16742020	1.00 Y	24: 40 Y	1.11	185.16	
d10-Pyrene	8254040	1.00 Y	25: 18 Y	1.52	35.30	71
Pyrene	15148300	1.00 Y	25: 21 Y	1.21	152.30	
d12-Benzo(a)anthracene	4176740	1.00 Y	29: 10 Y	0.90	30.13	60
Benzo(a)anthracene	977006	1.00 Y	29: 14 Y	1.20	<RL=100.00	
d12-Chrysene	9286780	1.00 Y	29: 16 Y	1.28	47.13	94
Chrysene	4474660	1.00 Y	29: 21 Y	1.08	<RL=100.00	
d12-Benzo(e)pyrene	21132600	1.00 Y	33: 22 Y	1.00	50.00	
d12-Benzo(b)fluoranthene	7689560	1.00 Y	32: 30 Y	0.45	40.09	80
Benzo(b)fluoranthene	9149740	1.00 Y	32: 36 Y	1.17	<RL=100.00	
d12-Benzo(k)fluoranthene	15475900	1.00 Y	32: 36 Y	0.95	38.62	77
Benzo(k)fluoranthene	9149740	1.00 Y	32: 39 Y	1.16	<RL=100.00	
d12-Benzo(a)pyrene	8657940	1.00 Y	33: 35 Y	0.68	30.27	61
Benzo(e)pyrene	4443260	1.00 Y	33: 28 Y	1.64	<RL=100.00	
Benzo(a)pyrene	2517480	1.00 Y	33: 40 Y	1.07	<RL=100.00	
d12-Perylene	7564260	1.00 Y	33: 52 Y	0.63	28.40	57
Perylene	968200	1.00 Y	33: 58 Y	1.71	<RL=100.00	
d12-Indeno(123-cd)pyrene	6884340	1.00 Y	38: 5 Y	0.44	36.64	73
Indeno(123-cd)pyrene	799534	1.00 Y	38: 12 Y	0.62	<RL=100.00	
d14-Dibenz(ah)anthracene	3421880	1.00 Y	38: 9 Y	0.25	32.94	66
Dibenz(ah)anthracene	* No Peak	0.00 N	38: 15 N	1.40	<RL=100.00	
d12-Benzo(ghi)perylene	8065080	1.00 Y	39: 14 Y	0.58	32.92	66
Benzo(ghi)perylene	2360660	1.00 Y	39: 23 Y	1.02	<RL=100.00	
d10-Fluorene	2729320	1.00 Y	17: 42 Y	1.00	50.00	
13C-Fluorene	2357220	1.00 Y	17: 47 Y	0.81	53.31	107

C 259 11-4-98

0.5

98V4.RRF
Rec/
MDL

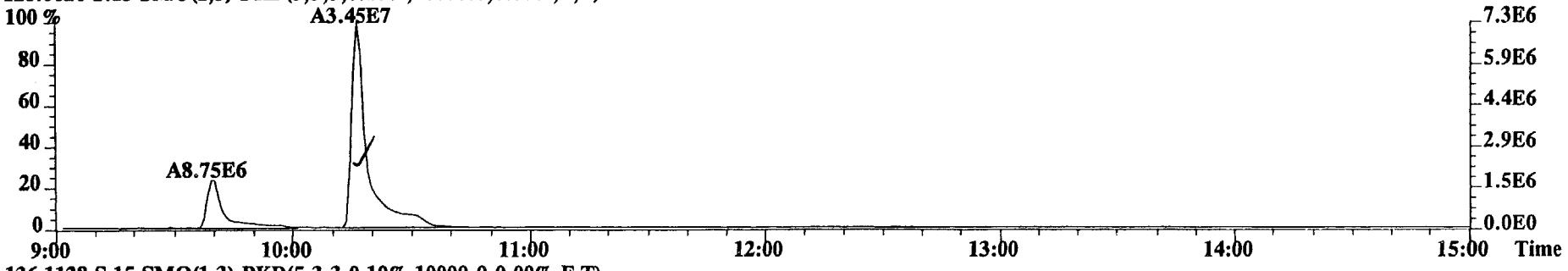
	2644480	2644480
46	2726650	2726650
B	34503700	34503700
100.00	1232280	1232280
54	1739130	1739130
00.00	277614	277614
68	1330820	1330820
00.00	789913	789913
	1873190	1873190
51	1364660	1364660
00.00	482951	482951
65	3405560	3405560
B	8210000	8210000
00.00	0	0
	3850730	3850730
75	4066540	4066540
	8371010	8371010
71	4127020	4127020
	7574150	7574150
60	2088370	2088370
00.00	488503	488503
94	4643390	4643390
100.00	2237330	2237330
	10566300	10566300
80	3844780	3844780
100.00	4574870	4574870
77	7737950	7737950
100.00	4574870	4574870
61	4328970	4328970
100.00	2221630	2221630
100.00	1258740	1258740
57	3782130	3782130
100.00	484100	484100
73	3442170	3442170
100.00	399767	399767
66	1710940	1710940
100.00	0	0
66	4032540	4032540
100.00	1180330	1180330

02-NOV-1998 09:12:25 AM Dioxin Furan Unknown RESULTS

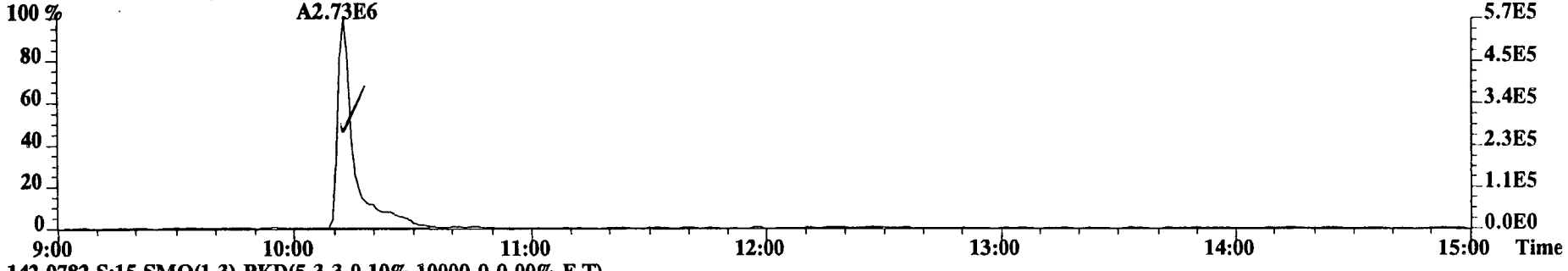
Mass Spec : VG-4 Results : 30OC98V4151.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 30-OCT-98
Data file : 30OC98V4 301802-12 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMP	Rec/ MDL
d10-2-Methylnaphthalene	5288960	1.00	Y	12: 28	Y	1.00	50.00	
d8-Naphthalene	5453300	1.00	Y	10: 12	Y	2.24	23.01	46
Naphthalene	69007400	1.00	Y	10: 16	Y	1.23	1032.91	0.000
2-Methylnaphthalene	2464560	1.00	Y	12: 34	Y	0.56	80.62	0.000
d8-Acenaphthylene	3478260	1.00	Y	15: 29	Y	1.21	27.09	54
Acenaphthylene	555228	1.00	Y	15: 31	Y	0.94	16.91	0.000
d10-Acenaphthene	2661640	1.00	Y	16: 1	Y	0.74	33.79	68
Acenaphthene	1579826	1.00	Y	16: 7	Y	1.25	47.63	0.000
d10-Anthracene	3746380	1.00	Y	20: 56	Y	1.00	50.00	
d10-Fluorene	2729320	1.00	Y	17: 42	Y	1.42	25.64	51
Fluorene	965902	1.00	Y	17: 48	Y	1.16	30.49	0.000
d10-Phenanthrene	6811120	1.00	Y	20: 46	Y	2.81	32.38	65
Phenanthrene	19592620	1.00	Y	20: 51	Y	0.89	321.58	0.000
Anthracene	* No Peak	0.00	N	21: 0	N	0.80	0.00	0.000
d14-Terphenyl	7701460	1.00	Y	26: 1	Y	1.00	50.00	
d10-Fluoranthene	8133080	1.00	Y	24: 37	Y	1.41	37.43	75
Fluoranthene	16742020	1.00	Y	24: 40	Y	1.11	185.16	0.000
d10-Pyrene	8254040	1.00	Y	25: 18	Y	1.52	35.30	71
Pyrene	15148300	1.00	Y	25: 21	Y	1.21	152.30	0.000
d12-Benzo(a)anthracene	4176740	1.00	Y	29: 10	Y	0.90	30.13	60
Benzo(a)anthracene	977006	1.00	Y	29: 14	Y	1.20	19.42	0.000
d12-Chrysene	9286780	1.00	Y	29: 16	Y	1.28	47.13	94
Chrysene	4474660	1.00	Y	29: 21	Y	1.08	44.45	0.000
d12-Benzo(e)pyrene	21132600	1.00	Y	33: 22	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	7689560	1.00	Y	32: 30	Y	0.45	40.09	80
Benzo(b)fluoranthene	9149740	1.00	Y	32: 39	Y	1.17	101.94	0.000
d12-Benzo(k)fluoranthene	15475900	1.00	Y	32: 36	Y	0.95	38.62	77
Benzo(k)fluoranthene	9149740	1.00	Y	32: 39	Y	1.16	50.79	0.000
d12-Benzo(a)pyrene	8657940	1.00	Y	33: 35	Y	0.68	30.27	61
Benzo(e)pyrene	4443260	1.00	Y	33: 28	Y	1.64	31.28	0.000
Benzo(a)pyrene	2517480	1.00	Y	33: 40	Y	1.07	27.12	0.000
d12-Perylene	7564260	1.00	Y	33: 52	Y	0.63	28.40	57
Perylene	968200	1.00	Y	33: 58	Y	1.71	7.47	0.000
d12-Indeno(123-cd)pyrene	6884340	1.00	Y	38: 5	Y	0.44	36.64	73
Indeno(123-cd)pyrene	799534	1.00	Y	38: 12	Y	0.62	18.70	0.000
d14-Dibenz(ah)anthracene	3421880	1.00	Y	38: 9	Y	0.25	32.94	66
Dibenz(ah)anthracene	* No Peak	0.00	N	38: 15	N	1.40	0.00	0.000
d12-Benzo(ghi)perylene	8065080	1.00	Y	39: 14	Y	0.58	32.92	66
Benzo(ghi)perylene	2360660	1.00	Y	39: 23	Y	1.02	28.81	0.000
d10-Fluorene	2729320	1.00	Y	17: 42	Y	1.42	4.54	9
13C-Fluorene	2357220	1.00	Y	17: 47	Y	1.00	86.37	0.000

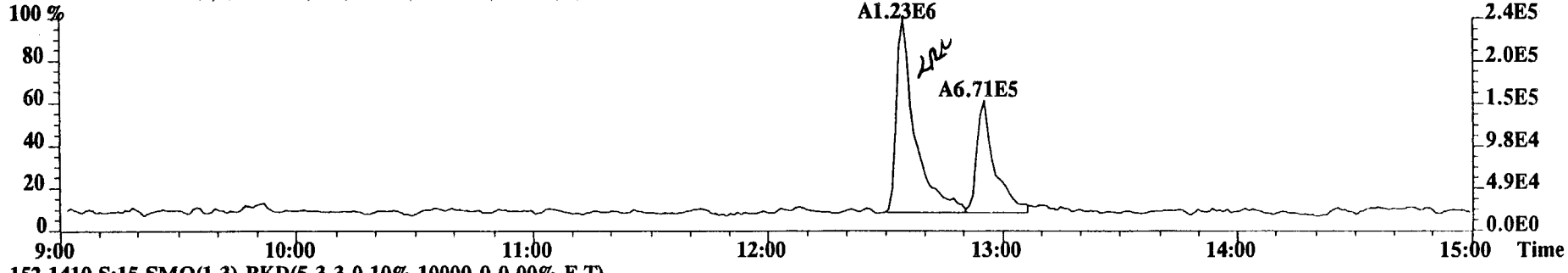
File:30OC98V4 #1-510 Acq:31-OCT-1998 04:11:55 GC EI+ Voltage SIR 70SE
Sample#15 Text:301802-12 :10X DIL. : : : Exp:PAHAIR
128.0626 S:15 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



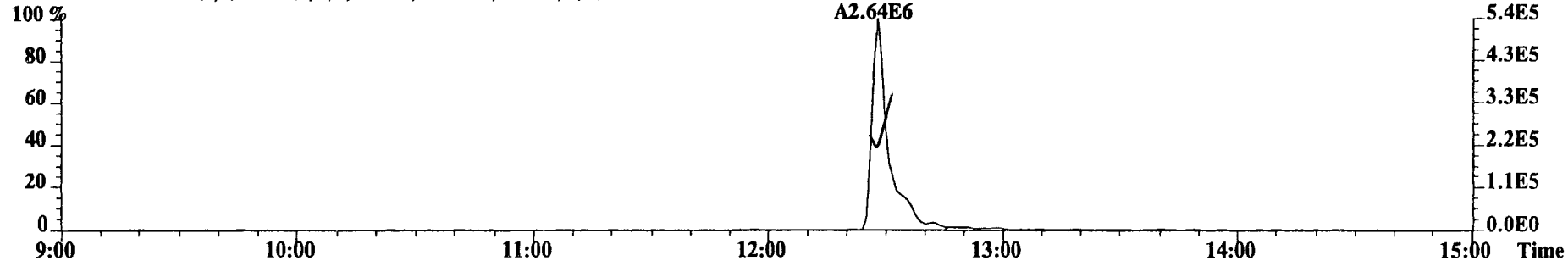
136.1128 S:15 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

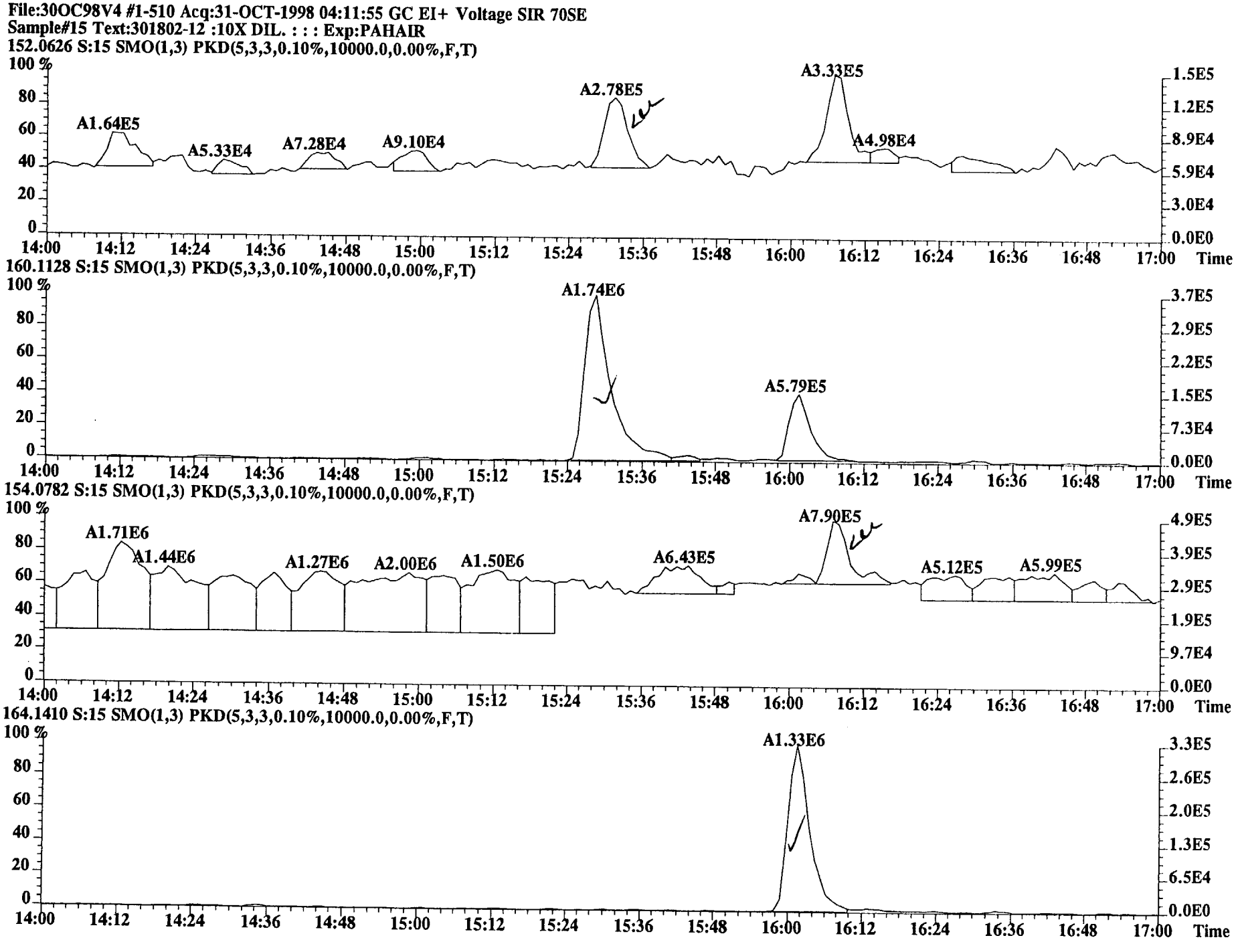


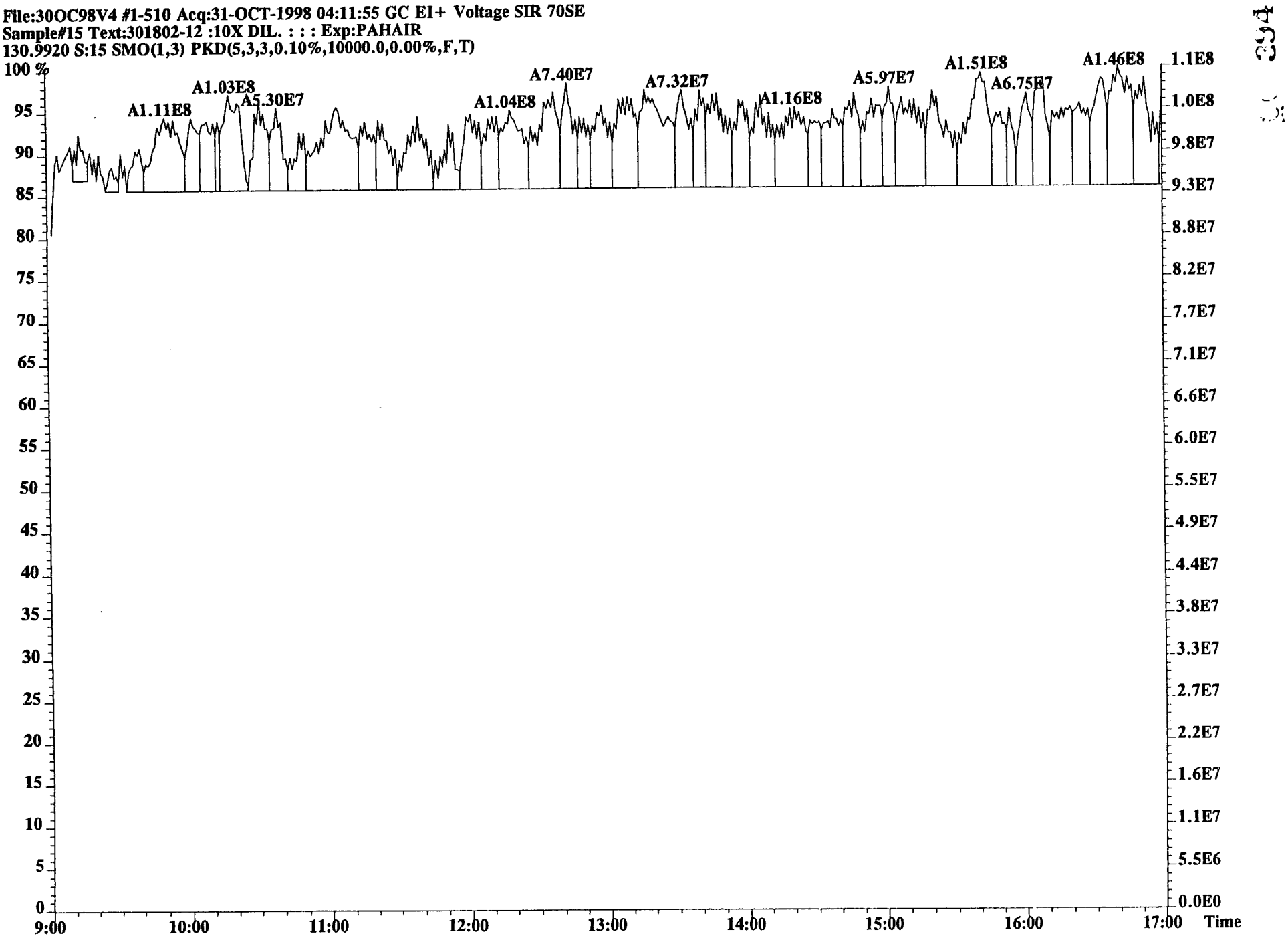
142.0782 S:15 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

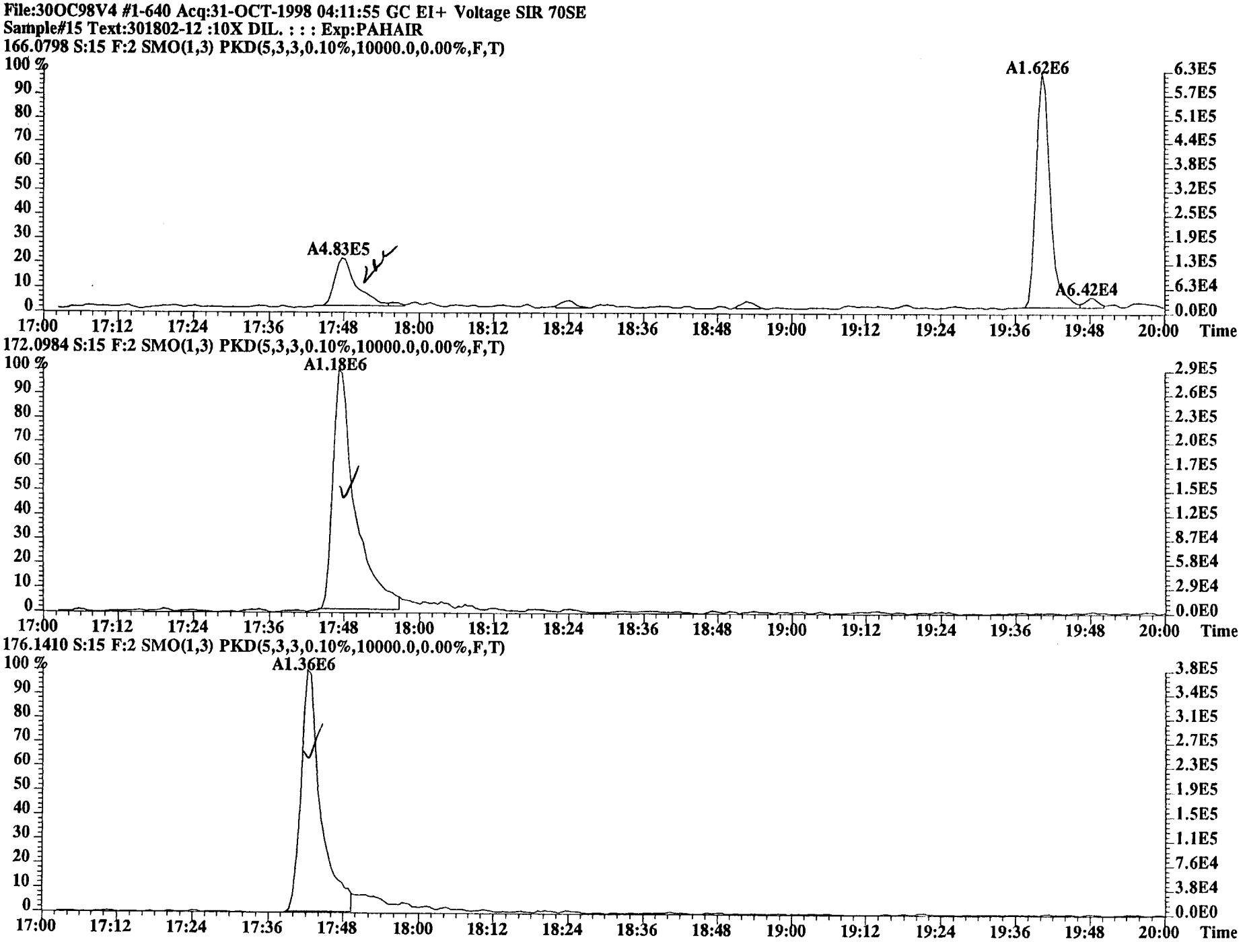


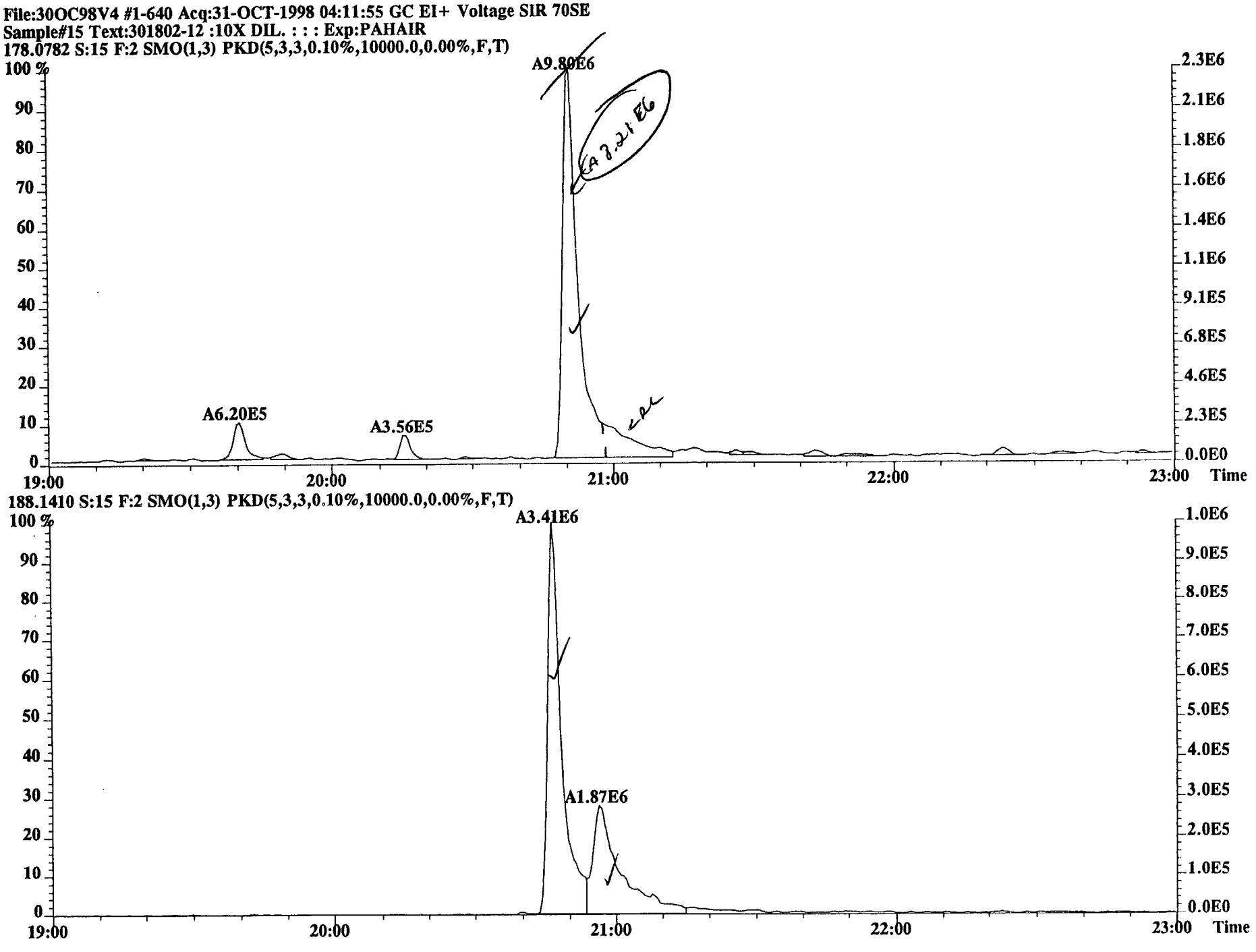
152.1410 S:15 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

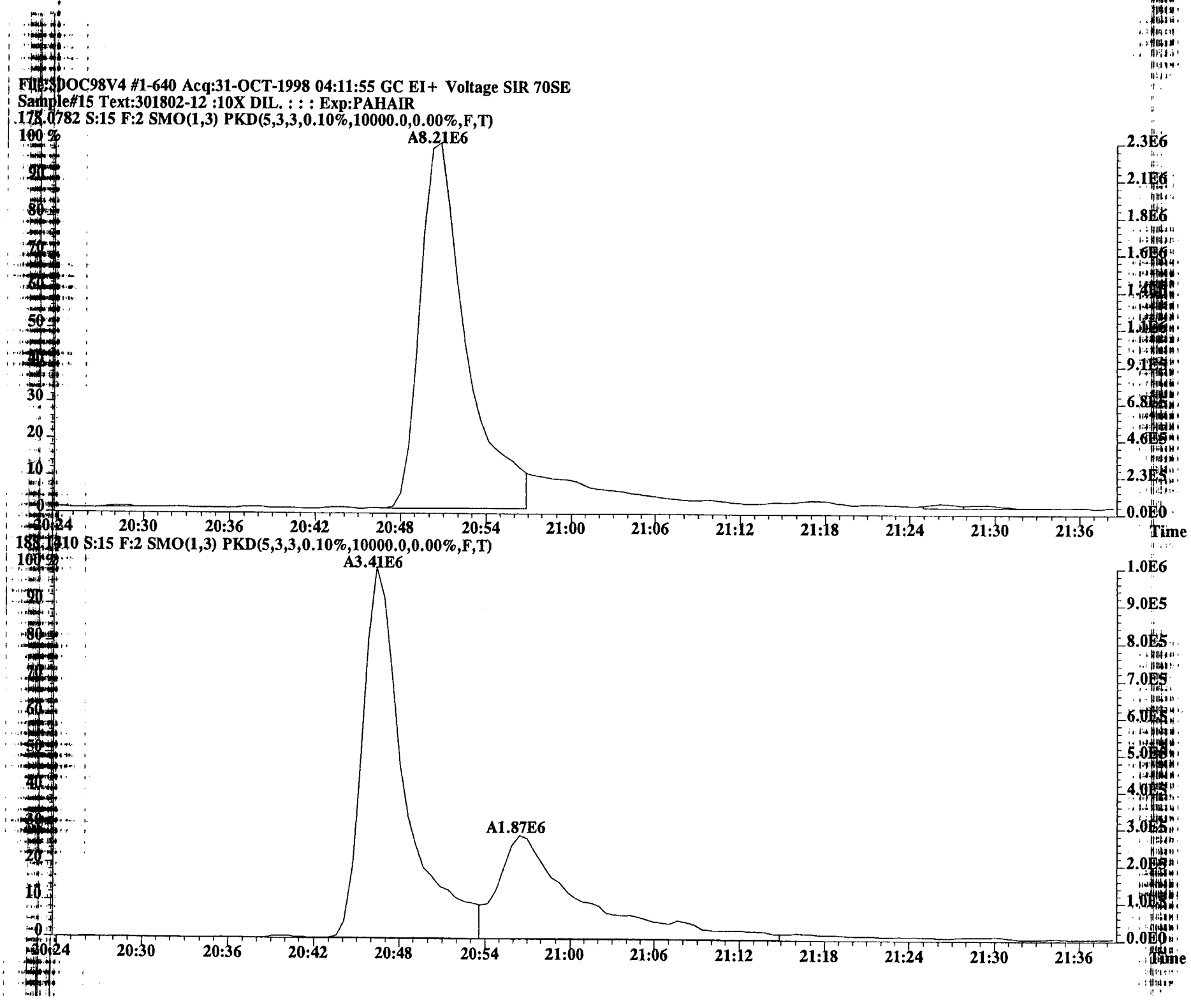


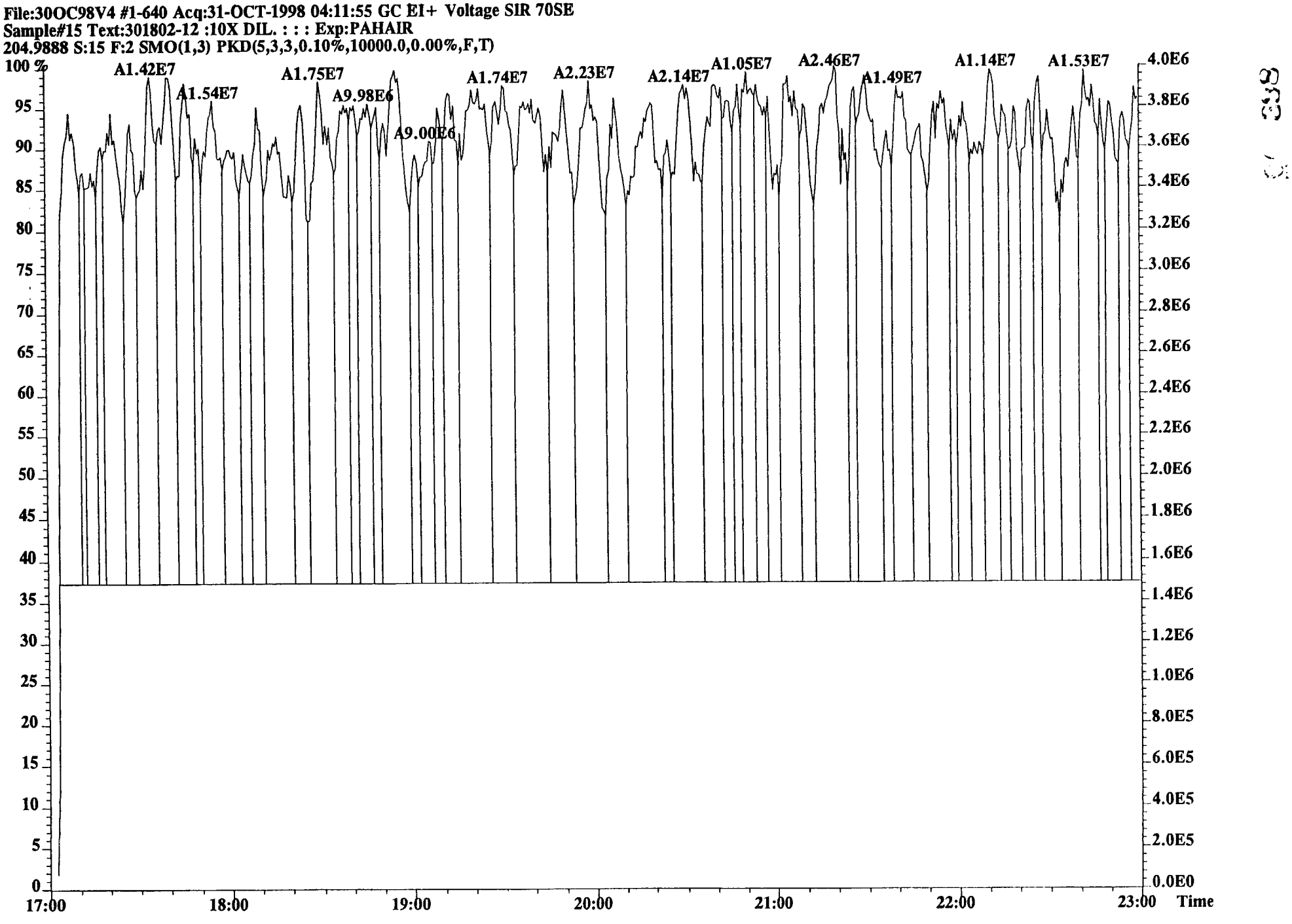

File:30OC98V4 #1-510 Acq:31-OCT-1998 04:11:55 GC EI+ Voltage SIR 70SE
Sample#15 Text:301802-12 :10X DIL. : : : Exp:PAHAIR
152.0626 S:15 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.64E5
A5.33E4
A7.28E4
A9.10E4
A2.78E5
A3.33E5
A4.98E4
160.1128 S:15 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.74E6
A5.79E5
154.0782 S:15 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.71E6
A1.44E6
A1.27E6
A2.00E6
A1.50E6
A6.43E5
A7.90E5
A5.12E5
A5.99E5
164.1410 S:15 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.33E6
100 %
80
60
40
20
0
14:00
14:12
14:24
14:36
14:48
15:00
15:12
15:24
15:36
15:48
16:00
16:12
16:24
16:36
16:48
17:00
Time
1.5E5
1.2E5
8.9E4
5.9E4
3.0E4
0.0E0
3.7E5
2.9E5
2.2E5
1.5E5
7.3E4
0.0E0
4.9E5
3.9E5
2.9E5
1.9E5
9.7E4
0.0E0
3.3E5
2.6E5
2.0E5
1.3E5
6.5E4
0.0E0

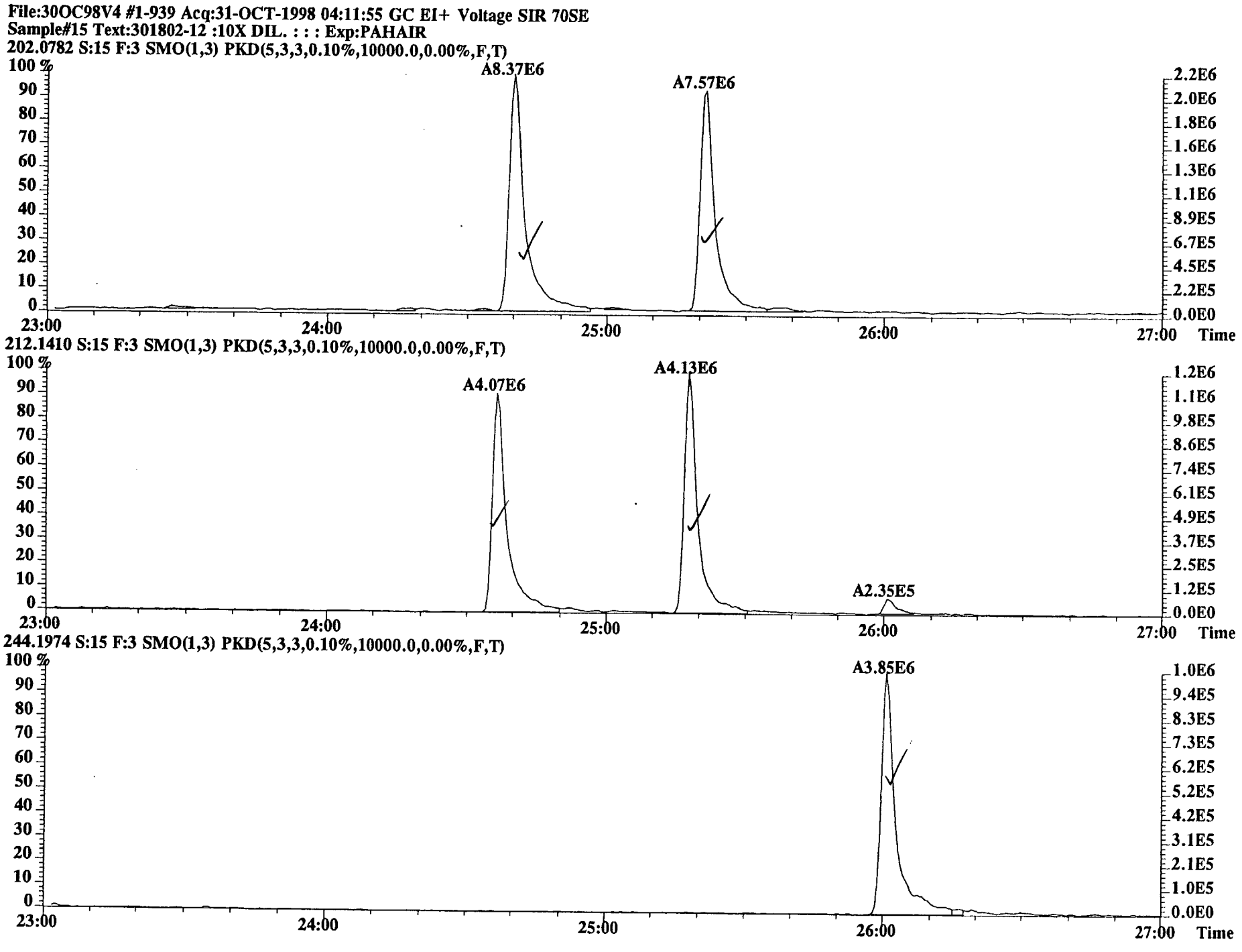

File:30OC98V4 #1-510 Acq:31-OCT-1998 04:11:55 GC EI+ Voltage SIR 70SE
Sample#15 Text:301802-12 :10X DIL. : : : Exp:PAHAIR
130.9920 S:15 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.11E8
A1.03E8
A5.30E7
A1.04E8
A7.40E7
A7.32E7
A1.16E8
A5.97E7
A1.51E8
A6.75E7
A1.46E8
1.1E8
1.0E8
9.8E7
9.3E7
8.8E7
8.2E7
7.7E7
7.1E7
6.6E7
6.0E7
5.5E7
4.9E7
4.4E7
3.8E7
3.3E7
2.7E7
2.2E7
1.6E7
1.1E7
5.5E6
0.0E0
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
Time

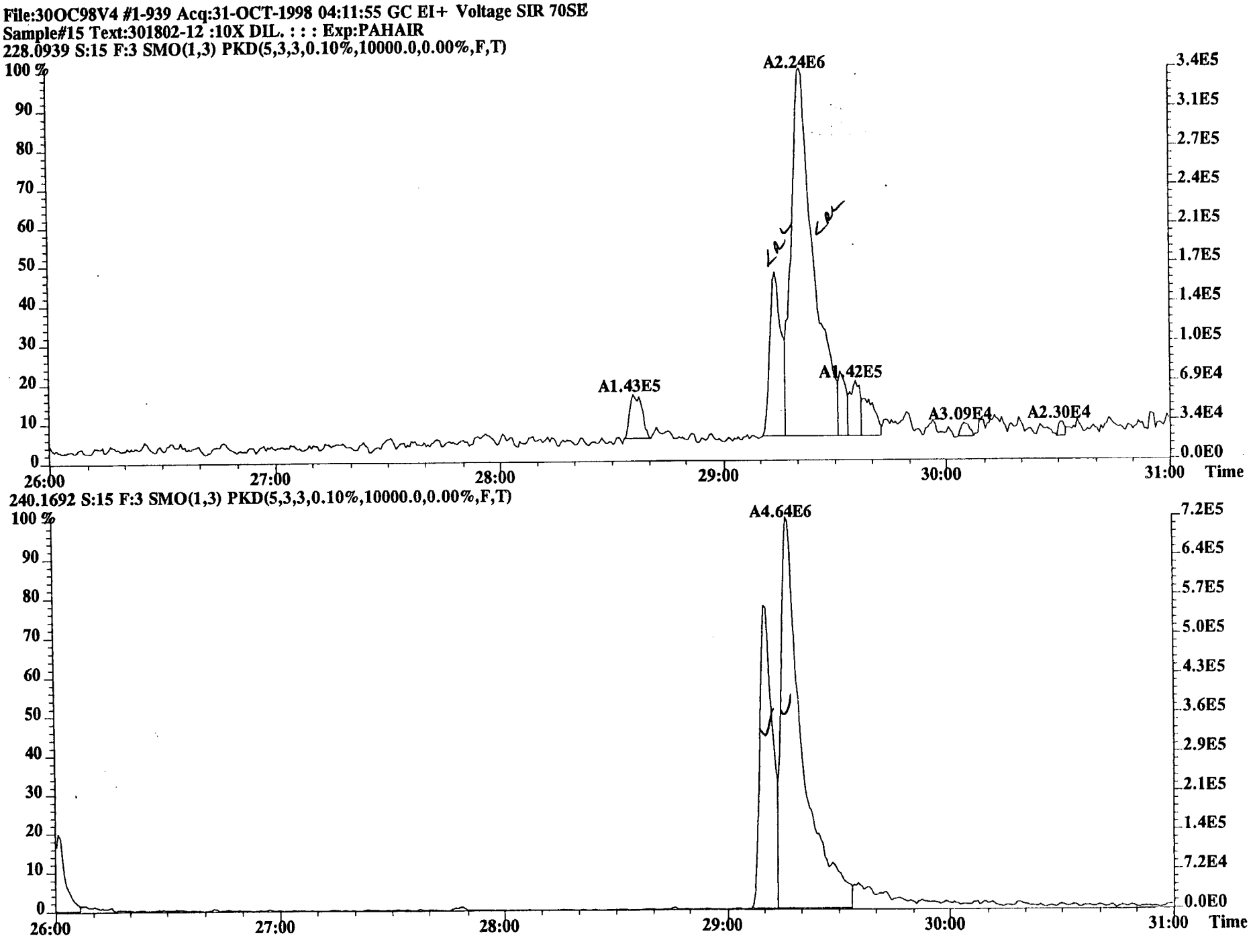

File:30OC98V4 #1-640 Acq:31-OCT-1998 04:11:55 GC EI+ Voltage SIR 70SE
Sample#15 Text:301802-12 :10X DIL. : : : Exp:PAHAIR
166.0798 S:15 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.62E6
A4.83E5
A6.42E4
172.0984 S:15 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.18E6
176.1410 S:15 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.36E6
Time

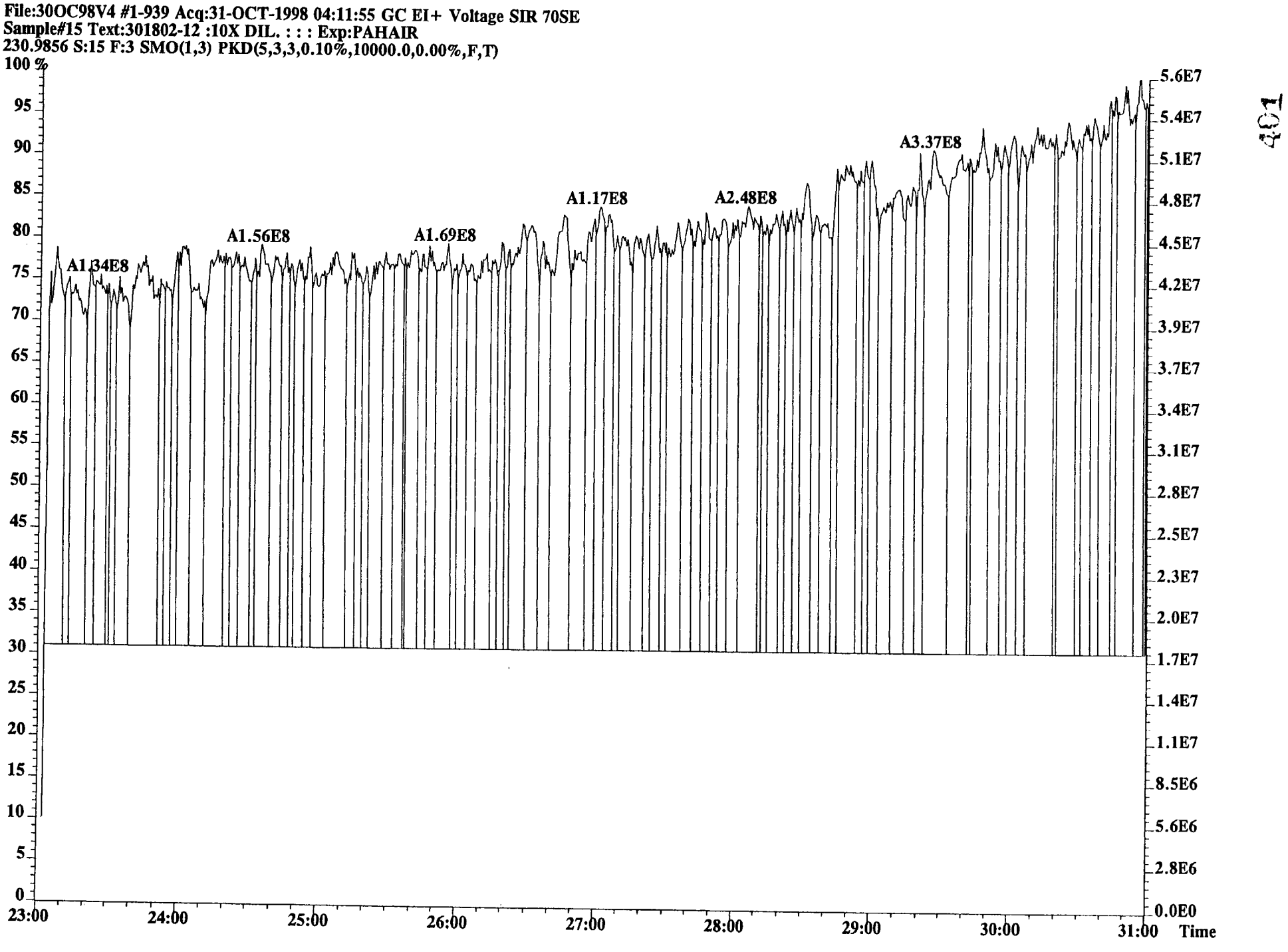

File:30OC98V4 #1-640 Acq:31-OCT-1998 04:11:55 GC EI+ Voltage SIR 70SE
Sample#15 Text:301802-12 :10X DIL. : : : Exp:PAHAIR
178.0782 S:15 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A9.80E6
A6.20E5
A3.56E5
2.3E6
2.1E6
1.8E6
1.6E6
1.4E6
1.1E6
9.1E5
6.8E5
4.6E5
2.3E5
0.0E0
19:00
20:00
21:00
22:00
23:00
Time
188.1410 S:15 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A3.41E6
A1.87E6
1.0E6
9.0E5
8.0E5
7.0E5
6.0E5
5.0E5
4.0E5
3.0E5
2.0E5
1.0E5
0.0E0
19:00
20:00
21:00
22:00
23:00
Time


File:3DOC98V4 #1-640 Acq:31-OCT-1998 04:11:55 GC EI+ Voltage SIR 70SE
Sample#15 Text:301802-12 :10X DIL. : : : Exp:PAHAIR
175.0782 S:15 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.21E6
188.1310 S:15 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.41E6
A1.87E6
Time


File:30OC98V4 #1-640 Acq:31-OCT-1998 04:11:55 GC EI+ Voltage SIR 70SE
Sample#15 Text:301802-12 :10X DIL. : : : Exp:PAHAIR
204.9888 S:15 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.42E7
A1.54E7
A1.75E7
A9.98E6
A9.00E6
A1.74E7
A2.23E7
A2.14E7
A1.05E7
A2.46E7
A1.49E7
A1.14E7
A1.53E7
4.0E6
3.8E6
3.6E6
3.4E6
3.2E6
3.0E6
2.8E6
2.6E6
2.4E6
2.2E6
2.0E6
1.8E6
1.6E6
1.4E6
1.2E6
1.0E6
8.0E5
6.0E5
4.0E5
2.0E5
0.0E0
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

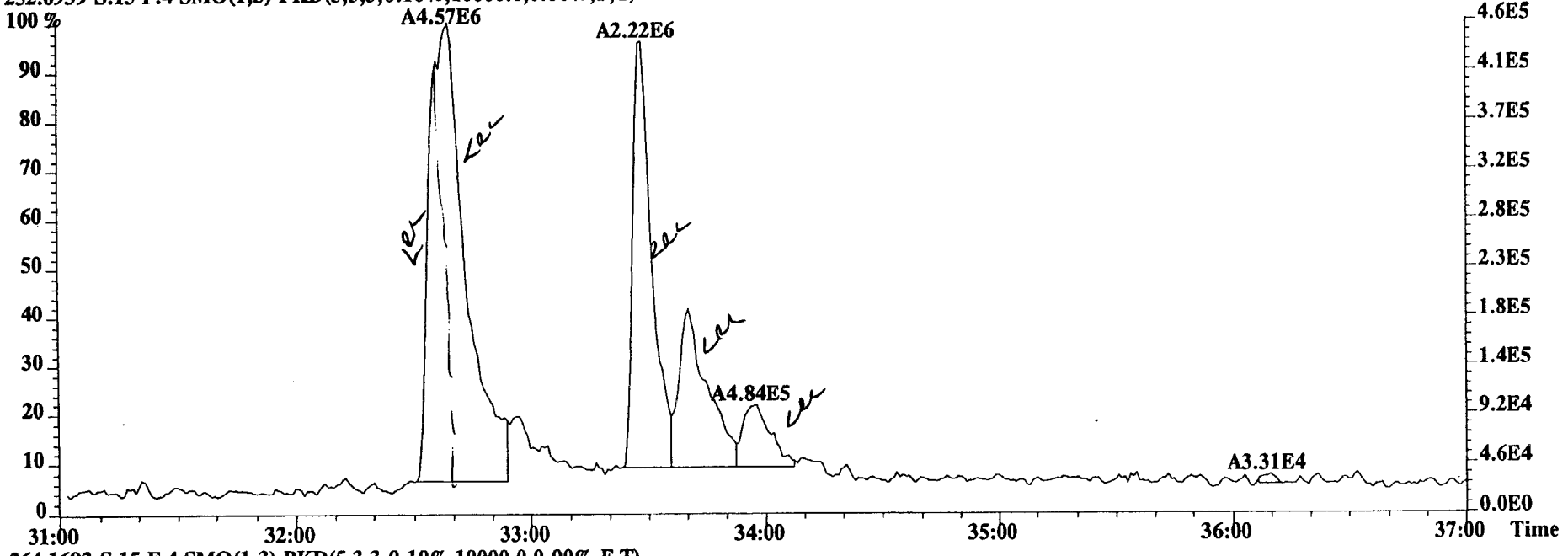

File:30OC98V4 #1-939 Acq:31-OCT-1998 04:11:55 GC EI+ Voltage SIR 70SE
Sample#15 Text:301802-12 :10X DIL. : : : Exp:PAHAIR
202.0782 S:15 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.37E6
A7.57E6
212.1410 S:15 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.07E6
A4.13E6
A2.35E5
244.1974 S:15 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.85E6
100 %
90
80
70
60
50
40
30
20
10
0
23:00
24:00
25:00
26:00
27:00
Time
2.2E6
2.0E6
1.8E6
1.6E6
1.3E6
1.1E6
8.9E5
6.7E5
4.5E5
2.2E5
0.0E0
1.2E6
1.1E6
9.8E5
8.6E5
7.4E5
6.1E5
4.9E5
3.7E5
2.5E5
1.2E5
0.0E0
1.0E6
9.4E5
8.3E5
7.3E5
6.2E5
5.2E5
4.2E5
3.1E5
2.1E5
1.0E5
0.0E0


File:30OC98V4 #1-939 Acq:31-OCT-1998 04:11:55 GC EI+ Voltage SIR 70SE
Sample#15 Text:301802-12 :10X DIL. : : : Exp:PAHAIR
228.0939 S:15 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A2.24E6
A1.43E5
A1.42E5
A3.09E4
A2.30E4
3.4E5
3.1E5
2.7E5
2.4E5
2.1E5
1.7E5
1.4E5
1.0E5
6.9E4
3.4E4
0.0E0
26:00
27:00
28:00
29:00
30:00
31:00
Time
240.1692 S:15 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A4.64E6
7.2E5
6.4E5
5.7E5
5.0E5
4.3E5
3.6E5
2.9E5
2.1E5
1.4E5
7.2E4
0.0E0
26:00
27:00
28:00
29:00
30:00
31:00
Time

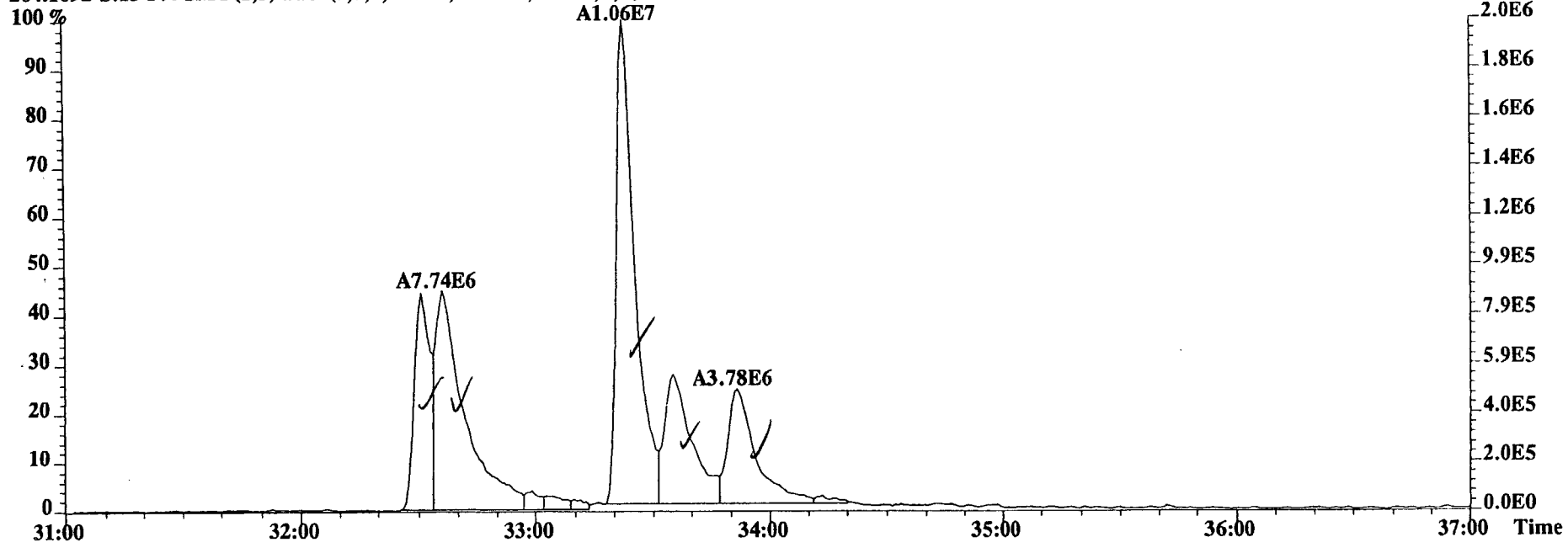

File:30OC98V4 #1-939 Acq:31-OCT-1998 04:11:55 GC EI+ Voltage SIR 70SE
Sample#15 Text:301802-12 :10X DIL. : : : Exp:PAHAIR
230.9856 S:15 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A1.34E8
A1.56E8
A1.69E8
A1.17E8
A2.48E8
A3.37E8
5.6E7
5.4E7
5.1E7
4.8E7
4.5E7
4.2E7
3.9E7
3.7E7
3.4E7
3.1E7
2.8E7
2.5E7
2.3E7
2.0E7
1.7E7
1.4E7
1.1E7
8.5E6
5.6E6
2.8E6
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time

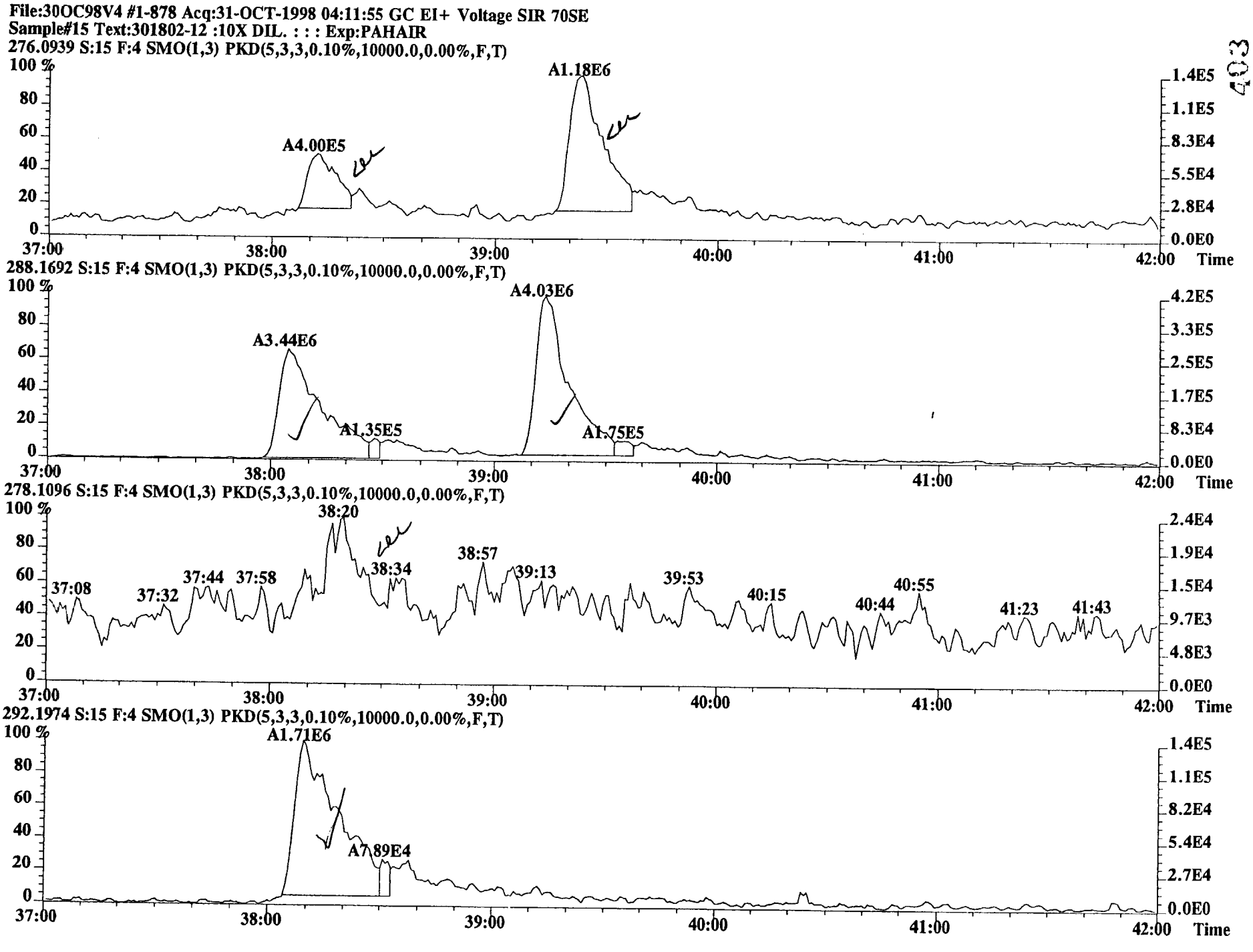
401

File:30OC98V4 #1-878 Acq:31-OCT-1998 04:11:55 GC EI+ Voltage SIR 70SE
Sample#15 Text:301802-12 :10X DIL. : : : Exp:PAHAIR
252.0939 S:15 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

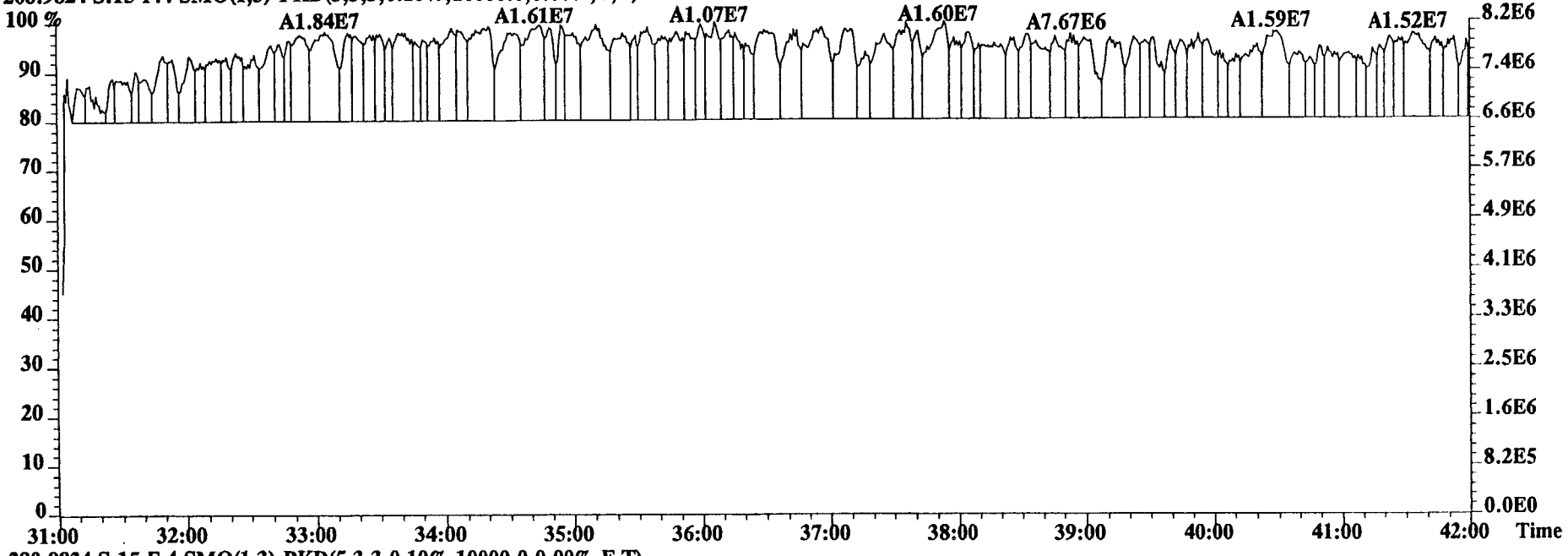


264.1692 S:15 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

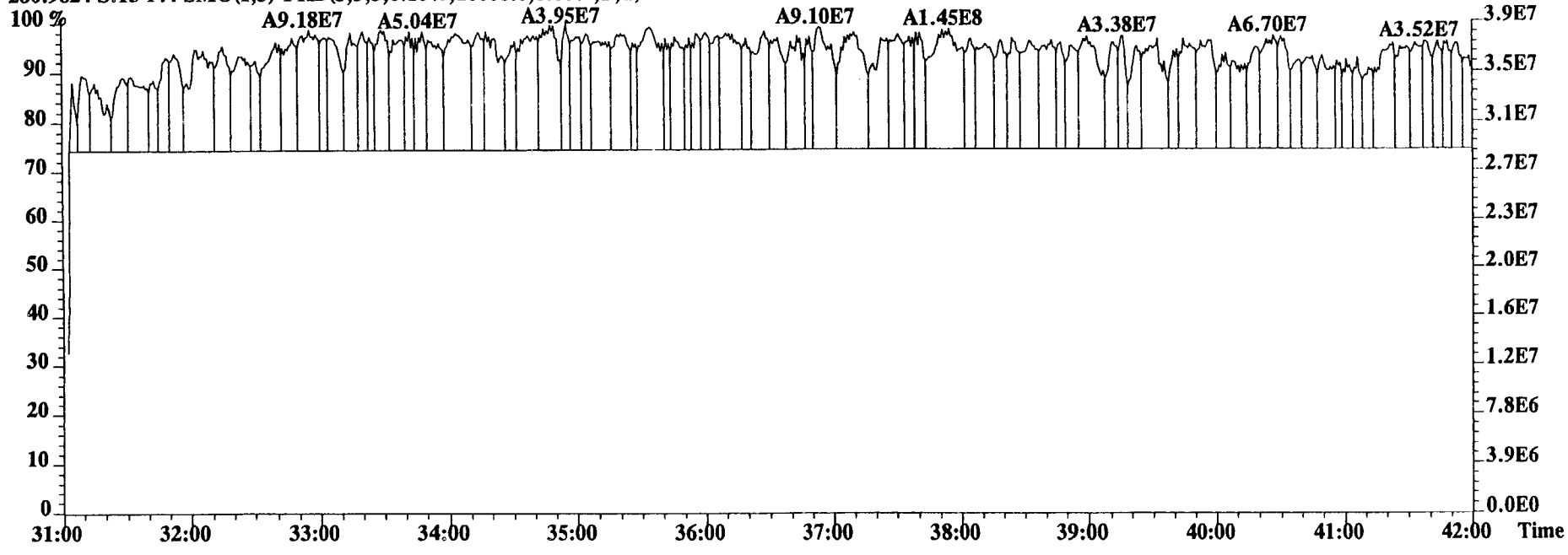



File:30OC98V4 #1-878 Acq:31-OCT-1998 04:11:55 GC EI+ Voltage SIR 70SE
Sample#15 Text:301802-12 :10X DIL. : : : Exp:PAHAIR
276.0939 S:15 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.00E5
A1.18E6
288.1692 S:15 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.44E6
A1.35E5
A4.03E6
A1.75E5
278.1096 S:15 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
37:08
37:32
37:44
37:58
38:20
38:34
38:57
39:13
39:53
40:15
40:44
40:55
41:23
41:43
292.1974 S:15 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.71E6
A7.89E4
Time

File:30OC98V4 #1-878 Acq:31-OCT-1998 04:11:55 GC EI+ Voltage SIR 70SE
Sample#15 Text:301802-12 :10X DIL. : : : Exp:PAHAIR
268.9824 S:15 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



280.9824 S:15 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-U-429-FB
Lab ID: 301802-0013-SA
Matrix: AIRTRAIN Sampled: 25 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	980	ng/sample	--	B
2-Methylnaphthalene	ND	ng/sample	100	
Acenaphthylene	ND	ng/sample	100	
Acenaphthene	ND	ng/sample	100	
Fluorene	ND	ng/sample	100	
Phenanthrene	120	ng/sample	--	B
Anthracene	ND	ng/sample	100	
Fluoranthene	ND	ng/sample	100	
Pyrene	ND	ng/sample	100	
Benzo(a)anthracene	ND	ng/sample	100	
Chrysene	ND	ng/sample	100	
Benzo(b)fluoranthene	ND	ng/sample	100	
Benzo(k)fluoranthene	ND	ng/sample	100	
Benzo(e)pyrene	ND	ng/sample	100	
Benzo(a)pyrene	ND	ng/sample	100	
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
ND = Not Detected

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-U-429-FB
Lab ID: 301802-0013-SA
Matrix: AIRTRAIN
Authorized: 29 SEP 98
Dilution Factor: 1.0

Sampled: 25 SEP 98
Prepared: 03 OCT 98

Received: 29 SEP 98
Analyzed: 31 OCT 98

Internal Standards	% Recovery	
Naphthalene-d8	48	m
Acenaphthylene-d8	63	
Acenaphthene-d10	66	
Fluorene-d10	64	
Phenanthrene-d10	67	
Fluoranthene-d10	83	
Pyrene-d10	80	
Benzo(a)anthracene-d12	61	
Perylene-d12	57	
Indeno(123-cd)pyrene-d12	73	
Chrysene-d12	106	
Benzo(b)fluoranthene-d12	81	
Benzo(k)fluoranthene-d12	89	
Benzo(a)pyrene-d12	65	
Dibenz(a,h)anthracene-d14	77	
Benzo(g,h,i)perylene-d12	73	

Field Surrogates	% Recovery
13C-Fluorene	98

m = Internal Standard recovery is outside method recovery goal.

Reported By: Clark Pickell

Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS

Client Name: Pacific Environmental Services
Client ID: A-429-LB
Lab ID: 301802-0014-SA
Matrix: AIRTRAIN Sampled: 21 SEP 98 Received: 29 SEP 98
Authorized: 29 SEP 98 Prepared: 03 OCT 98 Analyzed: 31 OCT 98
Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Data Qualifiers
Naphthalene	840	ng/sample	--	B
2-Methylnaphthalene	ND	ng/sample	100	
Acenaphthylene	ND	ng/sample	100	
Acenaphthene	ND	ng/sample	100	
Fluorene	ND	ng/sample	100	
Phenanthrene	ND	ng/sample	100	
Anthracene	ND	ng/sample	100	
Fluoranthene	ND	ng/sample	100	
Pyrene	ND	ng/sample	100	
Benzo(a)anthracene	ND	ng/sample	100	
Chrysene	ND	ng/sample	100	
Benzo(b)fluoranthene	ND	ng/sample	100	
Benzo(k)fluoranthene	ND	ng/sample	100	
Benzo(e)pyrene	ND	ng/sample	100	
Benzo(a)pyrene	ND	ng/sample	100	
Perylene	ND	ng/sample	100	
Indeno(1,2,3-cd)pyrene	ND	ng/sample	100	
Dibenz(a,h)anthracene	ND	ng/sample	100	
Benzo(g,h,i)perylene	ND	ng/sample	100	

B = Compound is also detected in the blank.
ND = Not Detected

Reported By: Clark Pickell Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

POLYNUCLEAR AROMATIC HYDROCARBONS
HIGH RESOLUTION GC/MS
Method HRGC/HRMS
(cont.)

Client Name: Pacific Environmental Services
Client ID: A-429-LB
Lab ID: 301802-0014-SA
Matrix: AIRTRAIN
Authorized: 29 SEP 98
Dilution Factor: 1.0

Sampled: 21 SEP 98
Prepared: 03 OCT 98

Received: 29 SEP 98
Analyzed: 31 OCT 98

Internal Standards	% Recovery
Naphthalene-d8	52
Acenaphthylene-d8	51
Acenaphthene-d10	57
Fluorene-d10	69
Phenanthrene-d10	77
Fluoranthene-d10	84
Pyrene-d10	82
Benzo(a)anthracene-d12	56
Perylene-d12	61
Indeno(123-cd)pyrene-d12	64
Chrysene-d12	106
Benzo(b)fluoranthene-d12	76
Benzo(k)fluoranthene-d12	87
Benzo(a)pyrene-d12	65
Dibenz(a,h)anthracene-d14	60
Benzo(g,h,i)perylene-d12	64

Field Surrogates	% Recovery
13C-Fluorene	101

Reported By: Clark Pickell

Approved By: Eric Redman

The cover letter is an integral part of this report.
Rev 230787

04-NOV-1998 06:31:30 PM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4
GC Column : DB-5
Data file : 30OC98V4
Weight : 0.5

Results : 30OC98V4161.RES
Date analyzed : 30-OCT-98
301802-13 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMP	Rec/ MDL	
d10-2-Methylnaphthalene	6982280	1.00	Y	12: 28	Y	1.00	50.00		
d8-Naphthalene	7543540	1.00	Y	10: 12	Y	2.24	24.11	48	m
Naphthalene	90182800	1.00	Y	10: 16	Y	1.23	975.83	B	
2-Methylnaphthalene	3341280	1.00	Y	12: 34	Y	0.56	<RL=100.00		
d8-Acenaphthylene	5337120	1.00	Y	15: 29	Y	1.21	31.49	63	
Acenaphthylene	776366	1.00	Y	15: 31	Y	0.94	<RL=100.00		
d10-Acenaphthene	3454280	1.00	Y	16: 2	Y	0.74	33.22	66	
Acenaphthene	3103040	1.00	Y	16: 9	Y	1.25	<RL=100.00		
d10-Anthracene	4145120	1.00	Y	20: 56	Y	1.00	50.00		
d10-Fluorene	3760600	1.00	Y	17: 42	Y	1.42	31.93	64	
Fluorene	1032322	1.00	Y	17: 48	Y	1.16	<RL=100.00		
d10-Phenanthrene	7745400	1.00	Y	20: 46	Y	2.81	33.28	67	
Phenanthrene	8542160	1.00	Y	20: 51	Y	0.89	123.29	B	
Anthracene	* No Peak	0.00	N	21: 0	N	0.80	<RL=100.00		
d14-Terphenyl	8371620	1.00	Y	26: 1	Y	1.00	50.00		
d10-Fluoranthene	9841480	1.00	Y	24: 37	Y	1.41	41.67	83	
Fluoranthene	5822140	1.00	Y	24: 40	Y	1.11	<RL=100.00		
d10-Pyrene	10117500	1.00	Y	25: 18	Y	1.52	39.80	80	
Pyrene	3920480	1.00	Y	25: 21	Y	1.21	<RL=100.00		
d12-Benzo(a)anthracene	4606660	1.00	Y	29: 10	Y	0.90	30.57	61	
Benzo(a)anthracene	470572	1.00	Y	29: 15	Y	1.20	<RL=100.00		
d12-Chrysene	11376840	1.00	Y	29: 16	Y	1.28	53.12	106	
Chrysene	1856788	1.00	Y	29: 21	Y	1.08	<RL=100.00		
d12-Benzo(e)pyrene	24296200	1.00	Y	33: 22	Y	1.00	50.00		
d12-Benzo(b)fluoranthene	8959640	1.00	Y	32: 30	Y	0.45	40.63	81	
Benzo(b)fluoranthene	3841940	1.00	Y	32: 36	Y	1.17	<RL=100.00		
d12-Benzo(k)fluoranthene	20509600	1.00	Y	32: 36	Y	0.95	44.52	89	
Benzo(k)fluoranthene	3841940	1.00	Y	32: 39	Y	1.16	<RL=100.00		
d12-Benzo(a)pyrene	10607600	1.00	Y	33: 35	Y	0.68	32.26	65	
Benzo(e)pyrene	2017800	1.00	Y	33: 28	Y	1.64	<RL=100.00		
Benzo(a)pyrene	829178	1.00	Y	33: 40	Y	1.07	<RL=100.00		
d12-Perylene	8739940	1.00	Y	33: 52	Y	0.63	28.54	57	
Perylene	152913	1.00	Y	33: 56	Y	1.71	<RL=100.00		
d12-Indeno(123-cd)pyrene	7997080	1.00	Y	38: 5	Y	0.44	36.56	73	
Indeno(123-cd)pyrene	94214	1.00	Y	38: 10	Y	0.62	<RL=100.00		
d14-Dibenz(ah)anthracene	4576220	1.00	Y	38: 9	Y	0.25	38.31	77	
Dibenz(ah)anthracene	* No Peak	0.00	N	38: 15	N	1.40	<RL=100.00		
d12-Benzo(ghi)perylene	10277380	1.00	Y	39: 14	Y	0.58	36.48	73	
Benzo(ghi)perylene	1417142	1.00	Y	39: 21	Y	1.02	<RL=100.00		
d10-Fluorene	3760600	1.00	Y	17: 42	Y	1.00	50.00		
13C-Fluorene	2991860	1.00	Y	17: 47	Y	0.81	49.11	98	

409

11-4-98

0.5

98V4.RRF
Rec/
MDL

	3491140	3491140
48	3771770	3771770
B	45091400	45091400
00.00	1670640	1670640
63	2668560	2668560
00.00	388183	388183
66	1727140	1727140
00.00	1551520	1551520
	2072560	2072560
64	1880300	1880300
00.00	516161	516161
67	3872700	3872700
B	4271080	4271080
00.00	0	0
	4185810	4185810
83	4920740	4920740
00.00	2911070	2911070
80	5058750	5058750
00.00	1960240	1960240
61	2303330	2303330
00.00	235286	235286
106	5688420	5688420
100.00	928394	928394
	12148100	12148100
81	4479820	4479820
00.00	1920970	1920970
89	10254800	10254800
100.00	1920970	1920970
65	5303800	5303800
00.00	1008900	1008900
100.00	414589	414589
57	4369970	4369970
100.00	76457	76457
73	3948540	3948540
00.00	47107	47107
77	2288110	2288110
00.00	0	0
73	5138690	5138690
00.00	708571	708571

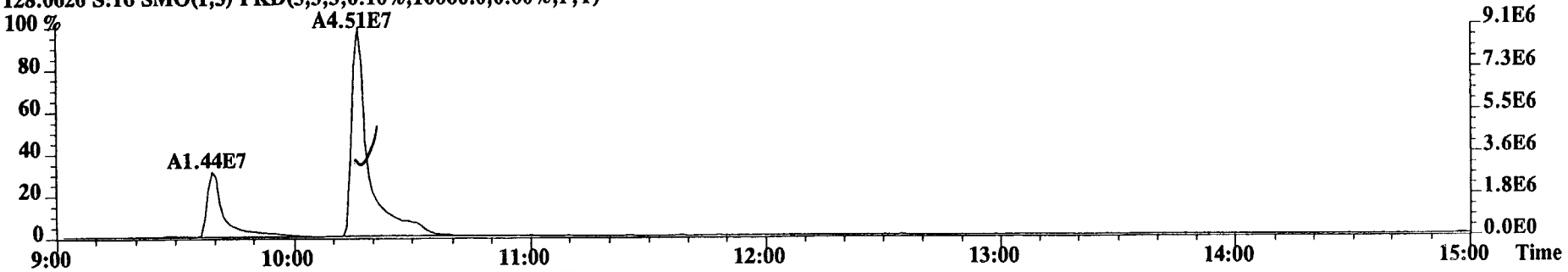
02-NOV-1998 09:15:56 AM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4
GC Column : DB-5
Data file : 30OC98V4
Weight : 0.5

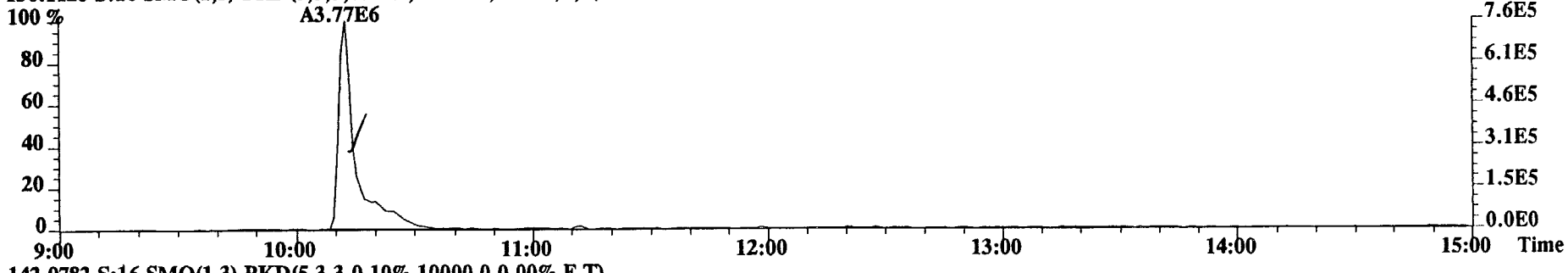
Results : 30OC98V4161.RES : PAHAIR.TRG
Date analyzed : 30-OCT-98
301802-13 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMP	Rec/ MDL
d10-2-Methylnaphthalene	6982280	1.00	Y	12: 28	Y	1.00	50.00	
d8-Naphthalene	7543540	1.00	Y	10: 12	Y	2.24	24.11	48
Naphthalene	90182800	1.00	Y	10: 16	Y	1.23	975.83	0.000
2-Methylnaphthalene	3341280	1.00	Y	12: 34	Y	0.56	79.02	0.000
d8-Acenaphthylene	5337120	1.00	Y	15: 29	Y	1.21	31.49	63
Acenaphthylene	776366	1.00	Y	15: 31	Y	0.94	15.41	0.000
d10-Acenaphthene	3454280	1.00	Y	16: 2	Y	0.74	33.22	66
Acenaphthene	3103040	1.00	Y	16: 9	Y	1.25	72.09	0.000
d10-Anthracene	4145120	1.00	Y	20: 56	Y	1.00	50.00	
d10-Fluorene	3760600	1.00	Y	17: 42	Y	1.42	31.93	64
Fluorene	1032322	1.00	Y	17: 48	Y	1.16	23.65	0.000
d10-Phenanthrene	7745400	1.00	Y	20: 46	Y	2.81	33.28	67
Phenanthrene	8542160	1.00	Y	20: 51	Y	0.89	123.29	0.000
Anthracene	* No Peak	0.00	N	21: 0	N	0.80	0.00	0.000
d14-Terphenyl	8371620	1.00	Y	26: 1	Y	1.00	50.00	
d10-Fluoranthene	9841480	1.00	Y	24: 37	Y	1.41	41.67	83
Fluoranthene	5822140	1.00	Y	24: 40	Y	1.11	53.21	0.000
d10-Pyrene	10117500	1.00	Y	25: 18	Y	1.52	39.80	80
Pyrene	3920480	1.00	Y	25: 21	Y	1.21	32.16	0.000
d12-Benzo(a)anthracene	4606660	1.00	Y	29: 10	Y	0.90	30.57	61
Benzo(a)anthracene	470572	1.00	Y	29: 15	Y	1.20	8.48	0.000
d12-Chrysene	11376840	1.00	Y	29: 16	Y	1.28	53.12	106
Chrysene	1856788	1.00	Y	29: 21	Y	1.08	15.06	0.000
d12-Benzo(e)pyrene	24296200	1.00	Y	33: 22	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	8959640	1.00	Y	32: 30	Y	0.45	40.63	81
Benzo(b)fluoranthene	3841940	1.00	Y	32: 36	Y	1.17	36.74	0.000
d12-Benzo(k)fluoranthene	20509600	1.00	Y	32: 36	Y	0.95	44.52	89
Benzo(k)fluoranthene	3841940	1.00	Y	32: 36	Y	1.16	16.09	0.000
d12-Benzo(a)pyrene	10607600	1.00	Y	33: 35	Y	0.68	32.26	65
Benzo(e)pyrene	2017800	1.00	Y	33: 28	Y	1.64	11.59	0.000
Benzo(a)pyrene	829178	1.00	Y	33: 40	Y	1.07	7.29	0.000
d12-Perylene	8739940	1.00	Y	33: 52	Y	0.63	28.54	57
Perylene	152913	1.00	Y	33: 56	Y	1.71	1.02	0.000
d12-Indeno(123-cd)pyrene	7897080	1.00	Y	38: 5	Y	0.44	36.56	73
Indeno(123-cd)pyrene	94214	1.00	Y	38: 10	Y	0.62	1.92	0.000
d14-Dibenz(ah)anthracene	4576220	1.00	Y	38: 9	Y	0.25	38.31	77
Dibenz(ah)anthracene	* No Peak	0.00	N	38: 15	N	1.40	0.00	0.000
d12-Benzo(ghi)perylene	10277380	1.00	Y	39: 14	Y	0.58	36.48	73
Benzo(ghi)perylene	1417142	1.00	Y	39: 21	Y	1.02	13.57	0.000
d10-Fluorene	3760600	1.00	Y	17: 42	Y	1.42	5.45	11
13C-Fluorene	2991860	1.00	Y	17: 47	Y	1.00	79.56	0.000

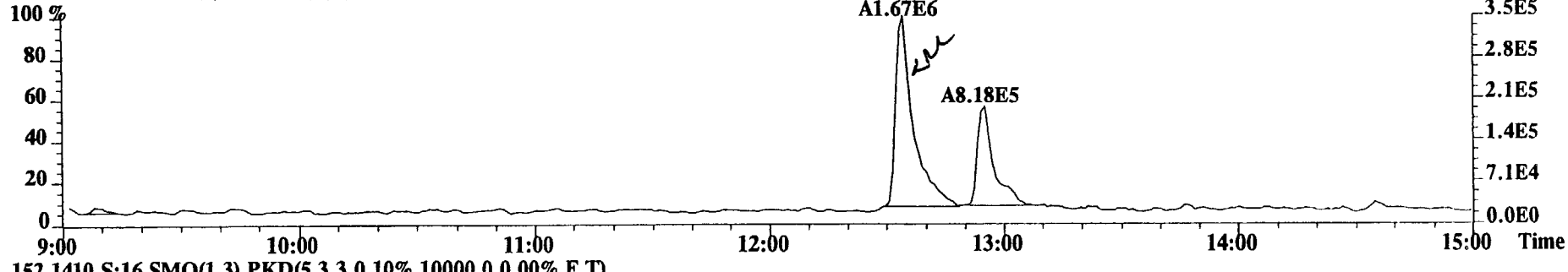
File:30OC98V4 #1-510 Acq:31-OCT-1998 05:00:59 GC EI+ Voltage SIR 70SE
Sample#16 Text:301802-13 :10X DIL. : : : Exp:PAHAIR
128.0626 S:16 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



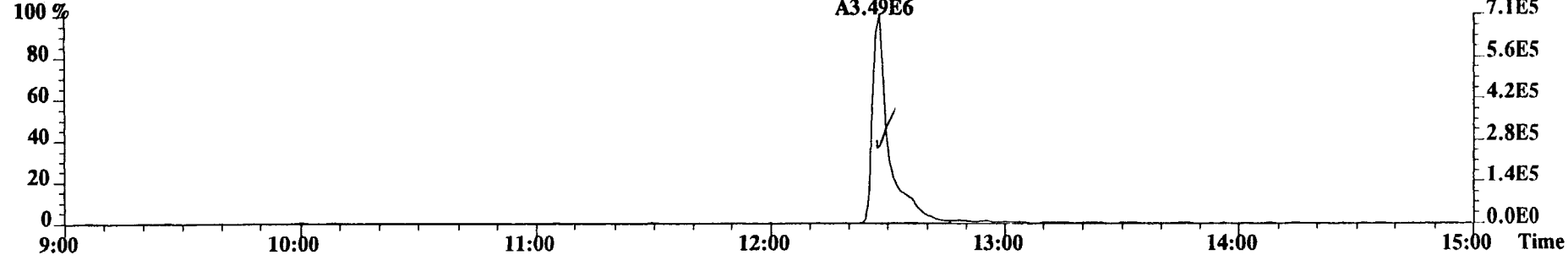
136.1128 S:16 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

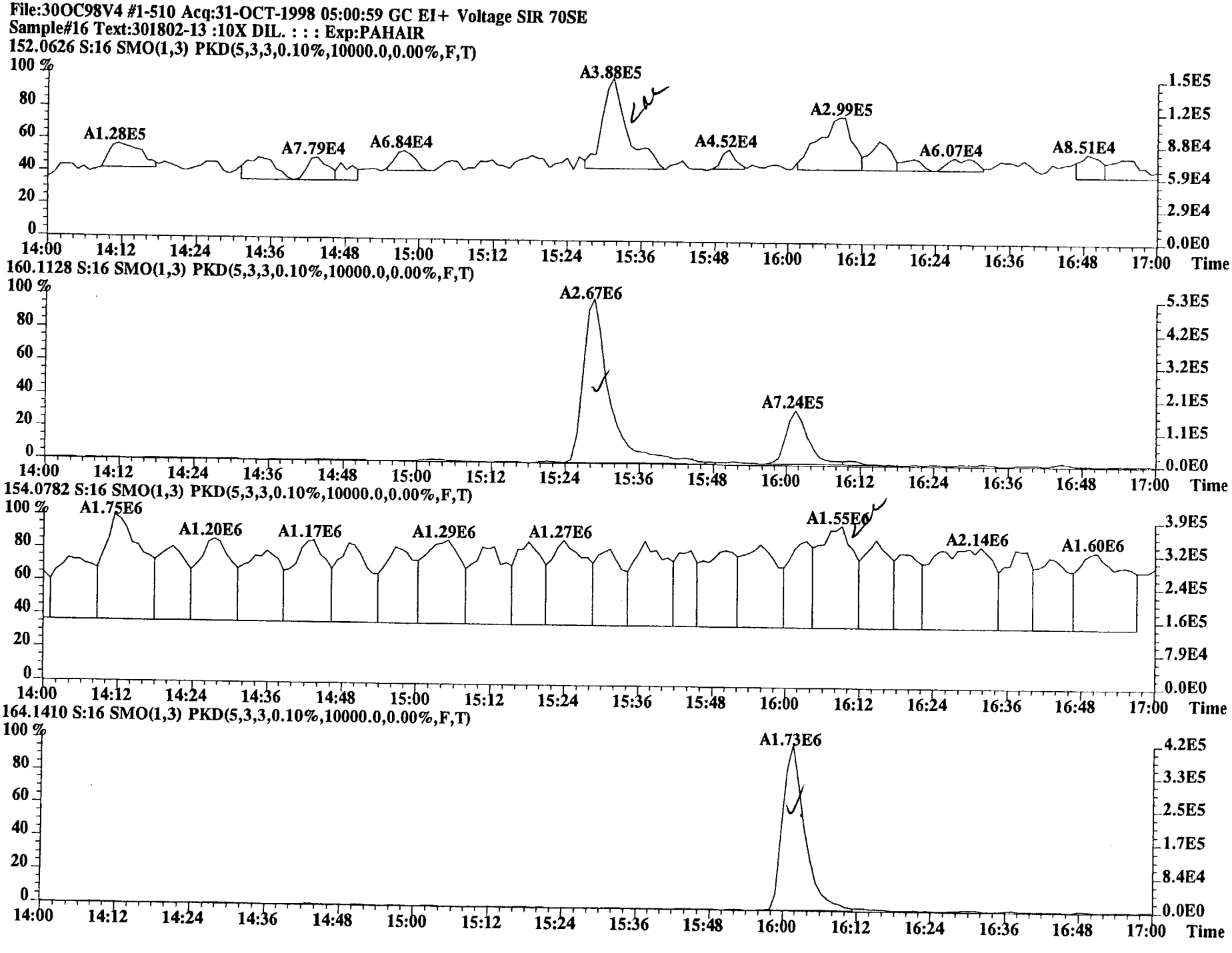


142.0782 S:16 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

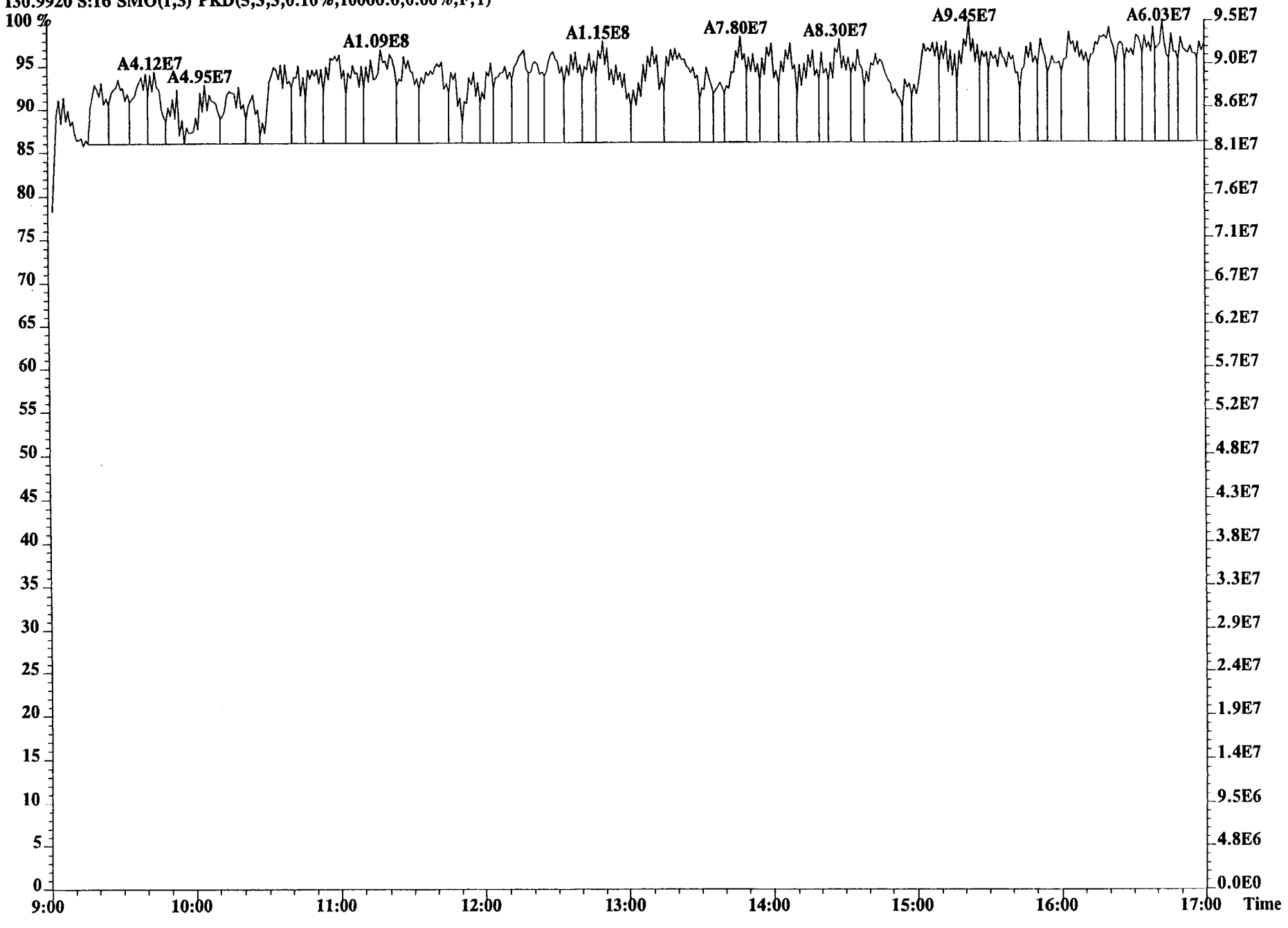


152.1410 S:16 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

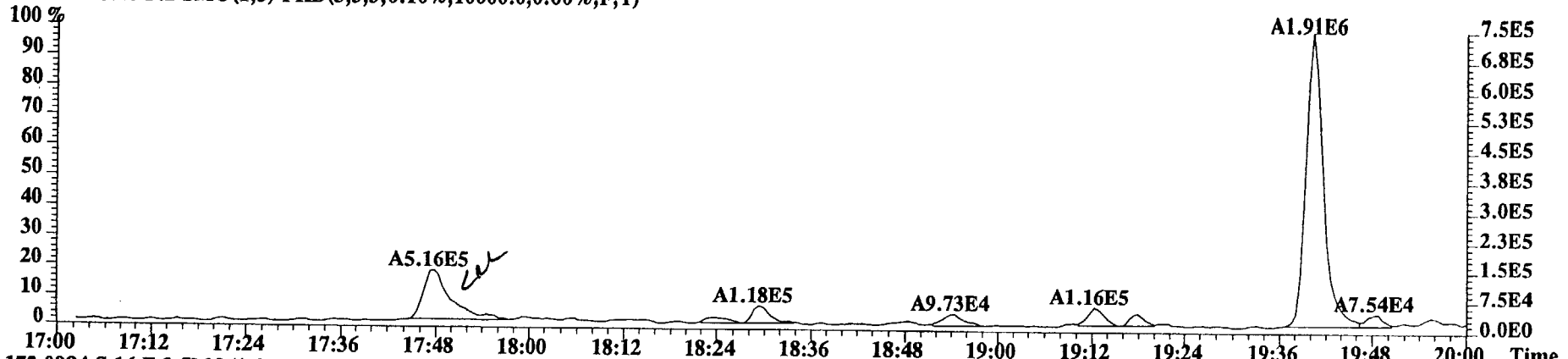



File:30OC98V4 #1-510 Acq:31-OCT-1998 05:00:59 GC EI+ Voltage SIR 70SE
Sample#16 Text:301802-13 :10X DIL. : : : Exp:PAHAIR
152.0626 S:16 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.28E5
A7.79E4
A6.84E4
A3.88E5
A4.52E4
A2.99E5
A6.07E4
A8.51E4
160.1128 S:16 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.67E6
A7.24E5
154.0782 S:16 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.75E6
A1.20E6
A1.17E6
A1.29E6
A1.27E6
A1.55E6
A2.14E6
A1.60E6
164.1410 S:16 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.73E6
100 %
Time

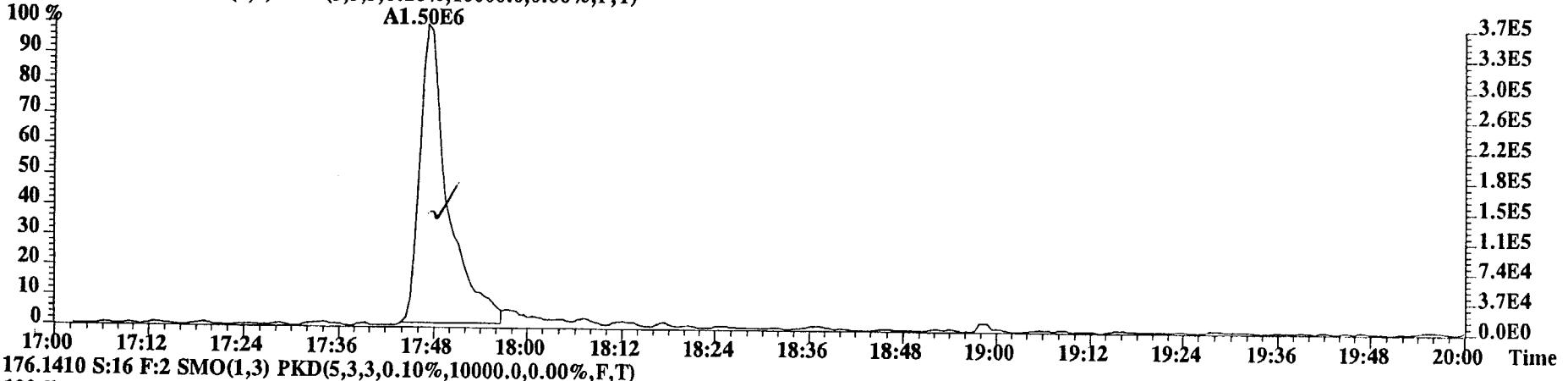
File:30OC98V4 #1-510 Acq:31-OCT-1998 05:00:59 GC EI+ Voltage SIR 70SE
Sample#16 Text:301802-13 :10X DIL. : : : Exp:PAHAIR
130.9920 S:16 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



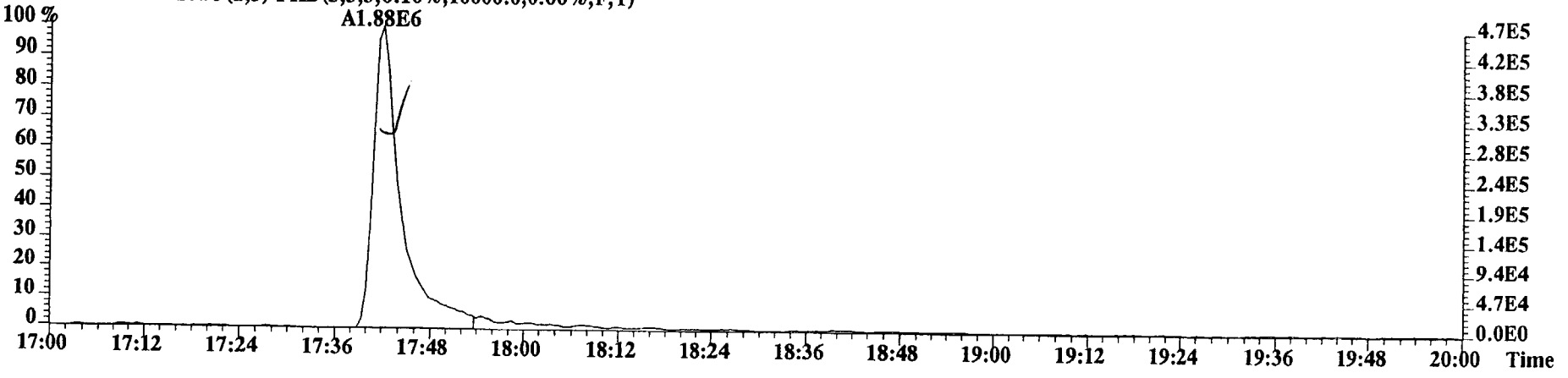
File:30OC98V4 #1-640 Acq:31-OCT-1998 05:00:59 GC EI+ Voltage SIR 70SE
Sample#16 Text:301802-13 :10X DIL. : : : Exp:PAHAIR
166.0798 S:16 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



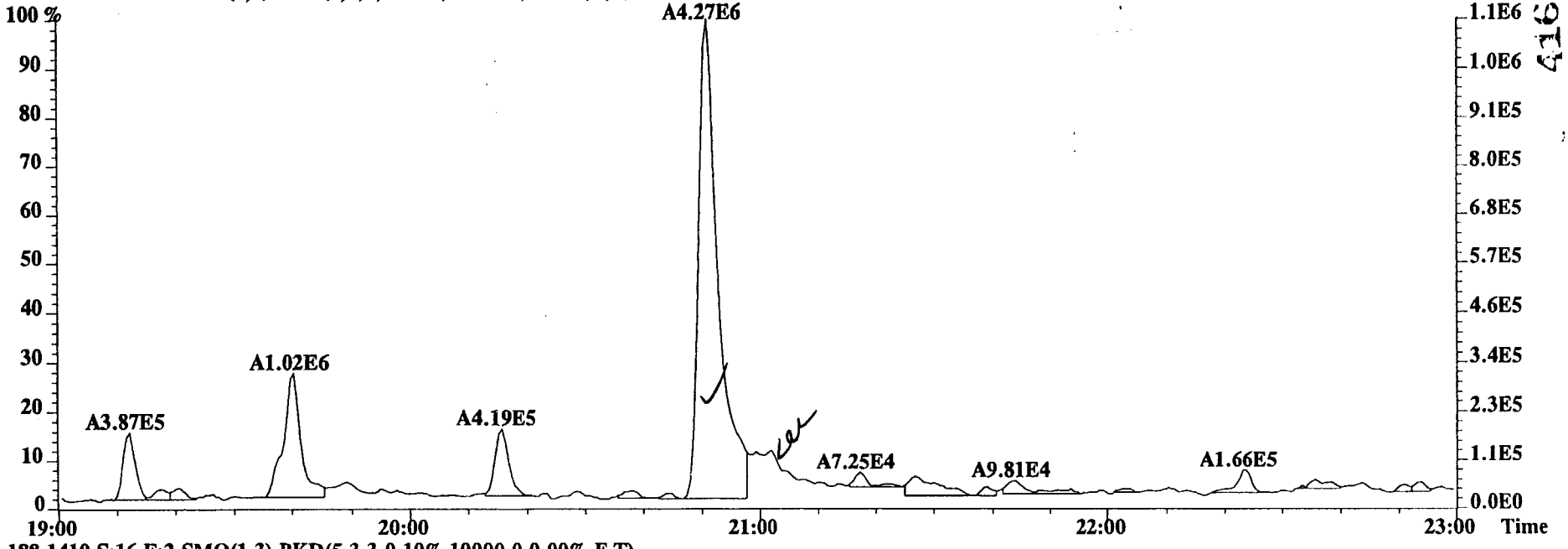
172.0984 S:16 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



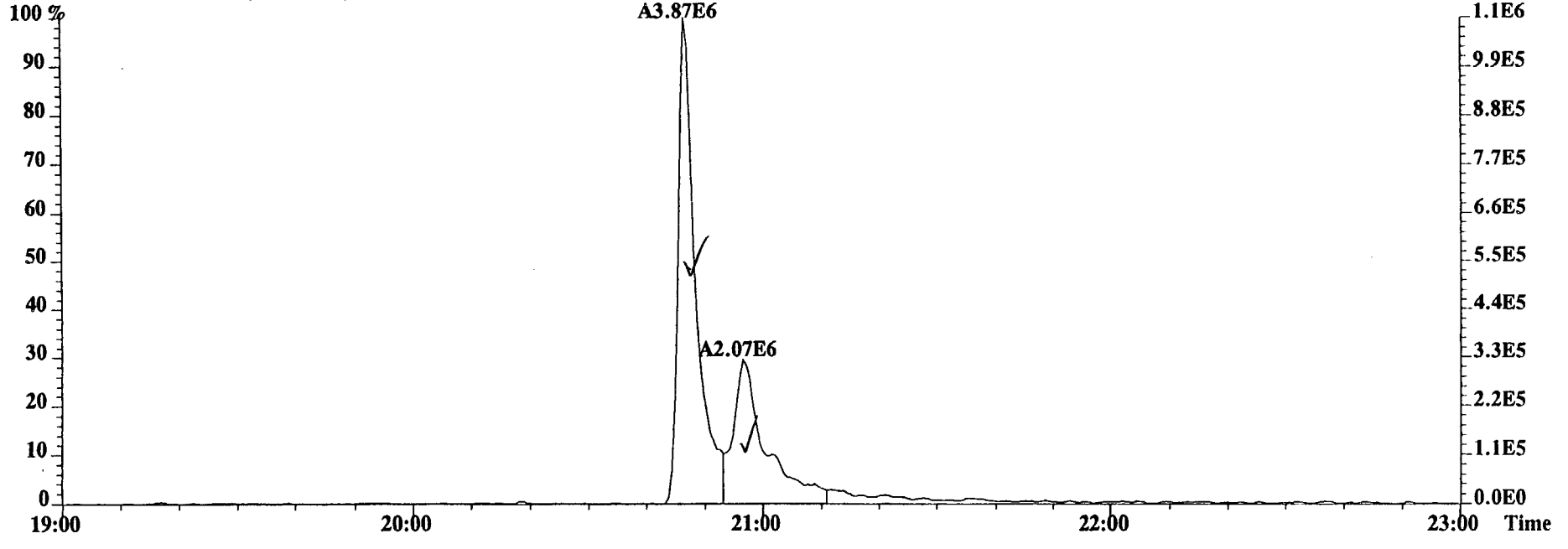
176.1410 S:16 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

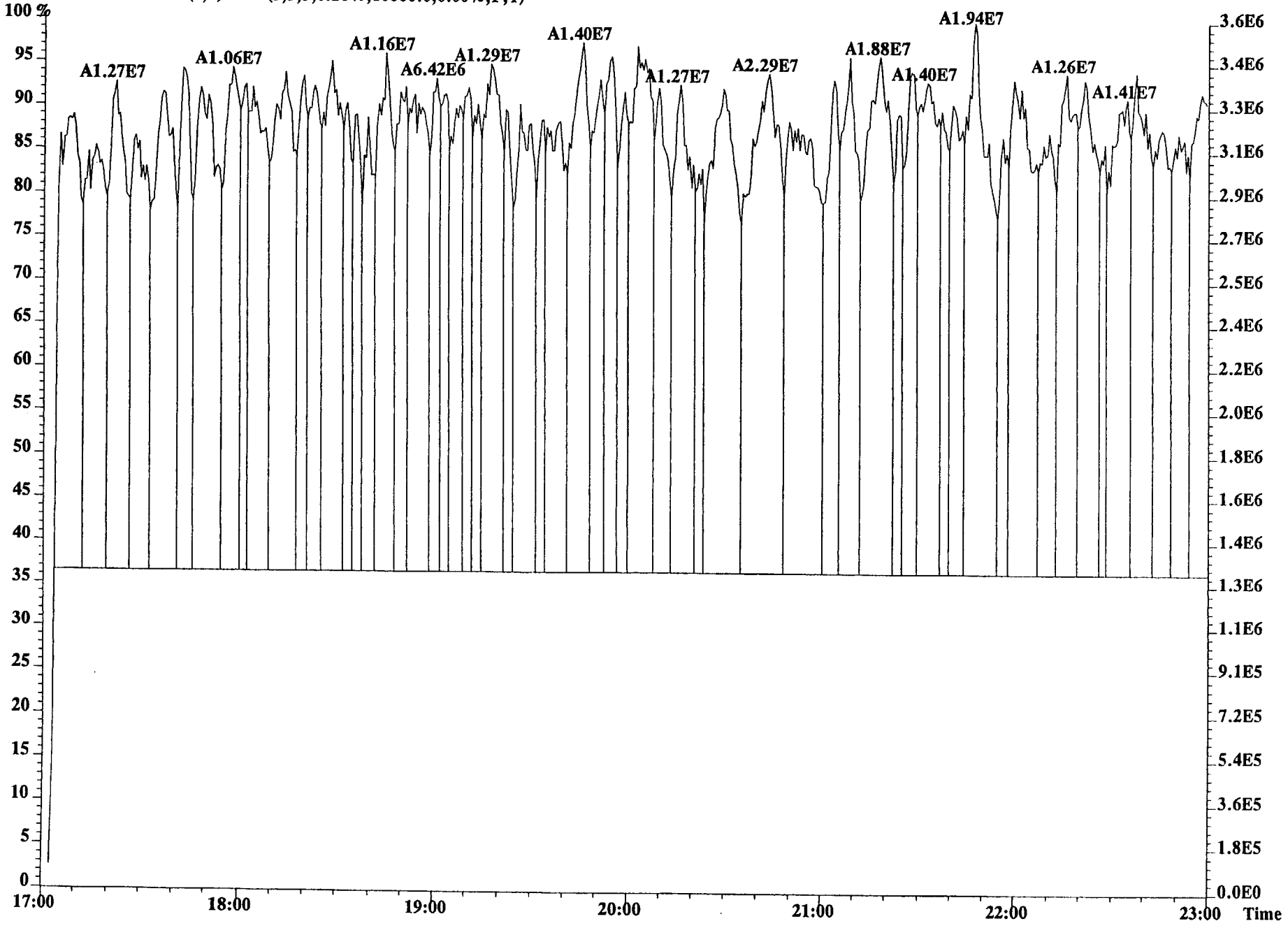


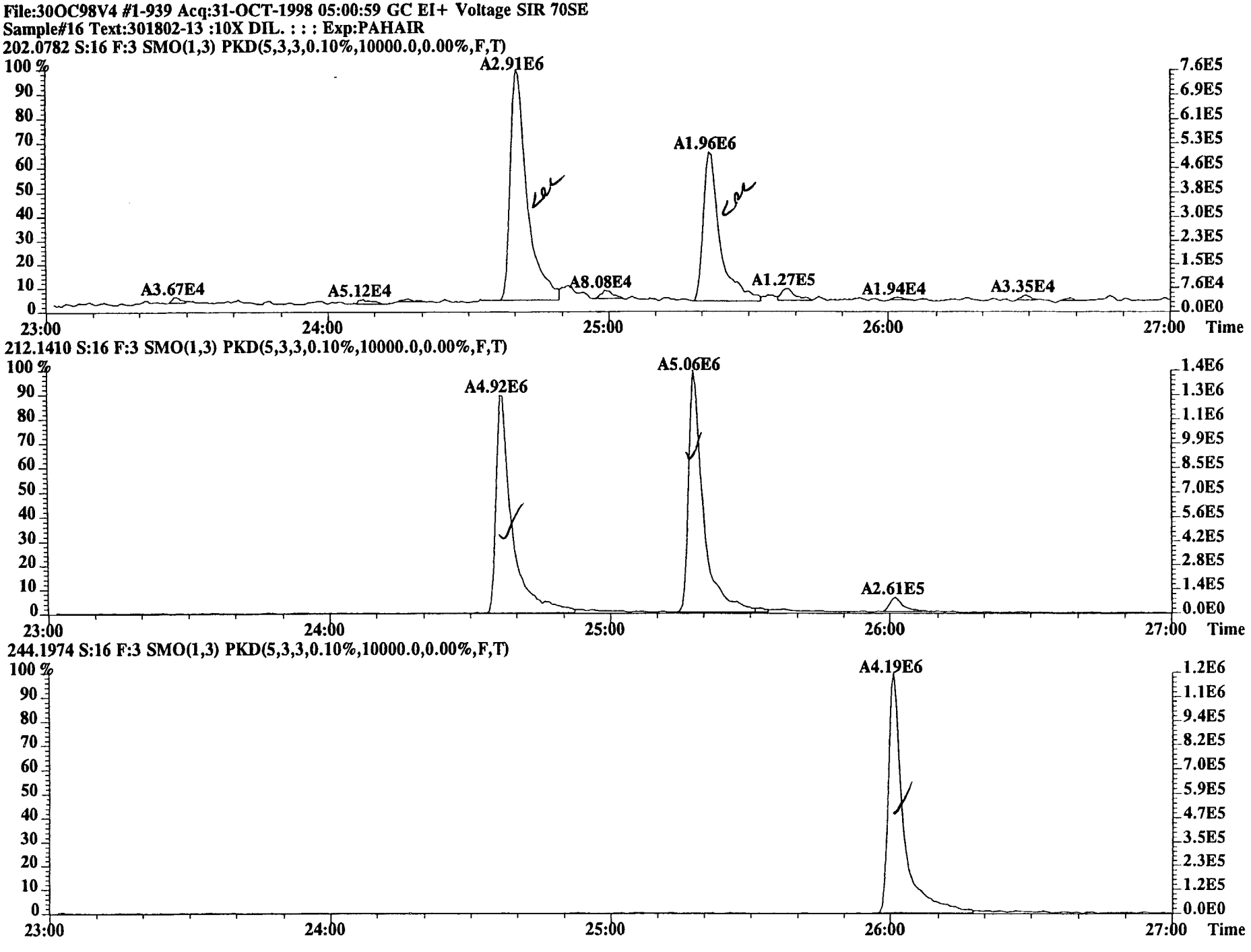
File:30OC98V4 #1-640 Acq:31-OCT-1998 05:00:59 GC EI+ Voltage SIR 70SE
Sample#16 Text:301802-13 :10X DIL. : : : Exp:PAHAIR
178.0782 S:16 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



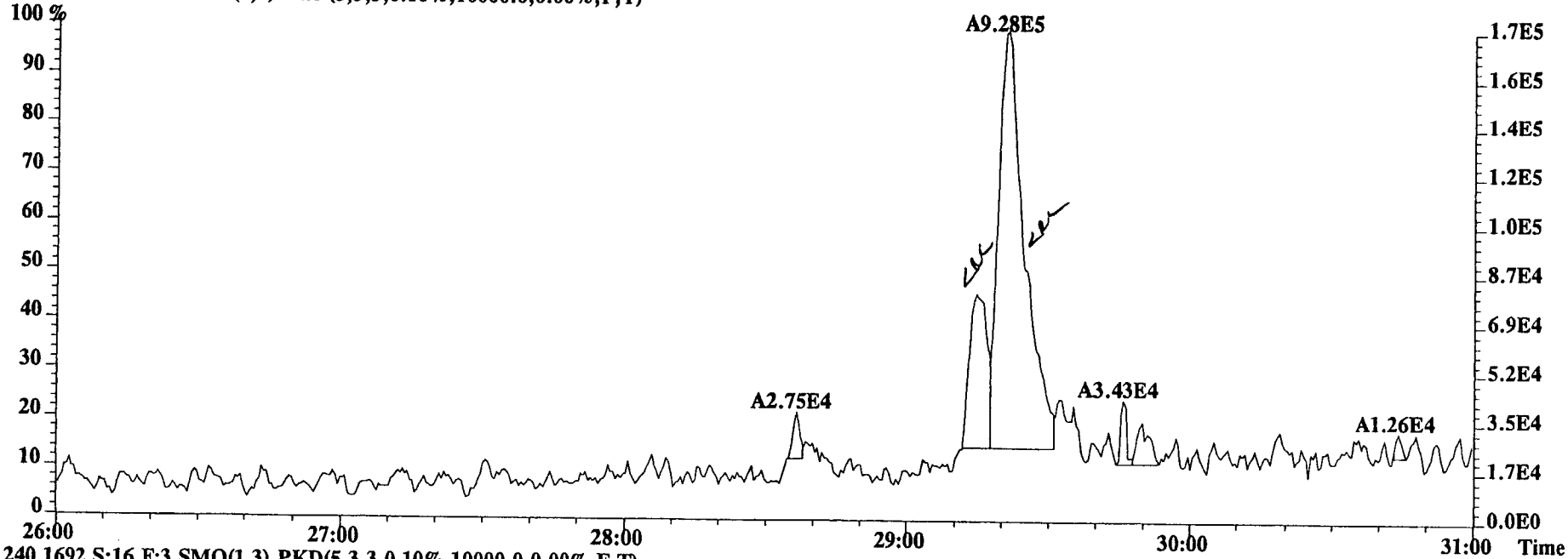
188.1410 S:16 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



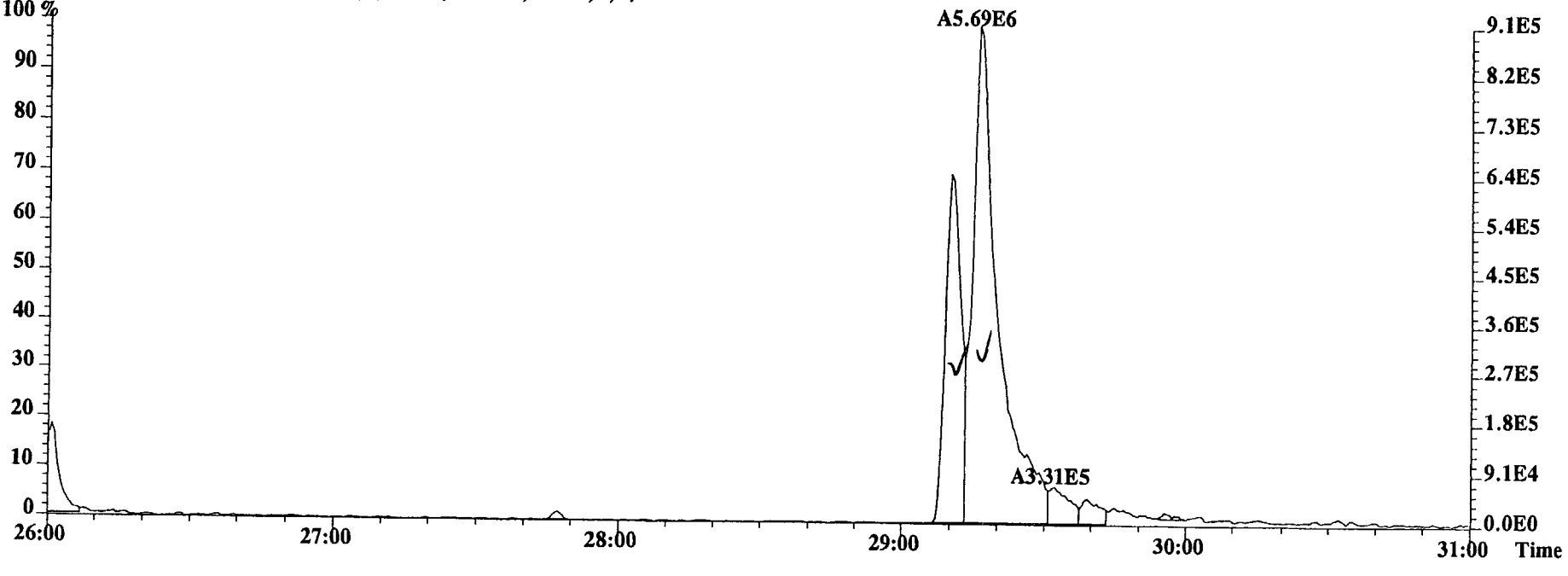

File:30OC98V4 #1-640 Acq:31-OCT-1998 05:00:59 GC EI+ Voltage SIR 70SE
Sample#16 Text:301802-13 :10X DIL. : : : Exp:PAHAIR
204.9888 S:16 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.27E7
A1.06E7
A1.16E7
A6.42E6
A1.29E7
A1.40E7
A1.27E7
A2.29E7
A1.88E7
A1.40E7
A1.94E7
A1.26E7
A1.41E7
3.6E6
3.4E6
3.3E6
3.1E6
2.9E6
2.7E6
2.5E6
2.4E6
2.2E6
2.0E6
1.8E6
1.6E6
1.4E6
1.3E6
1.1E6
9.1E5
7.2E5
5.4E5
3.6E5
1.8E5
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

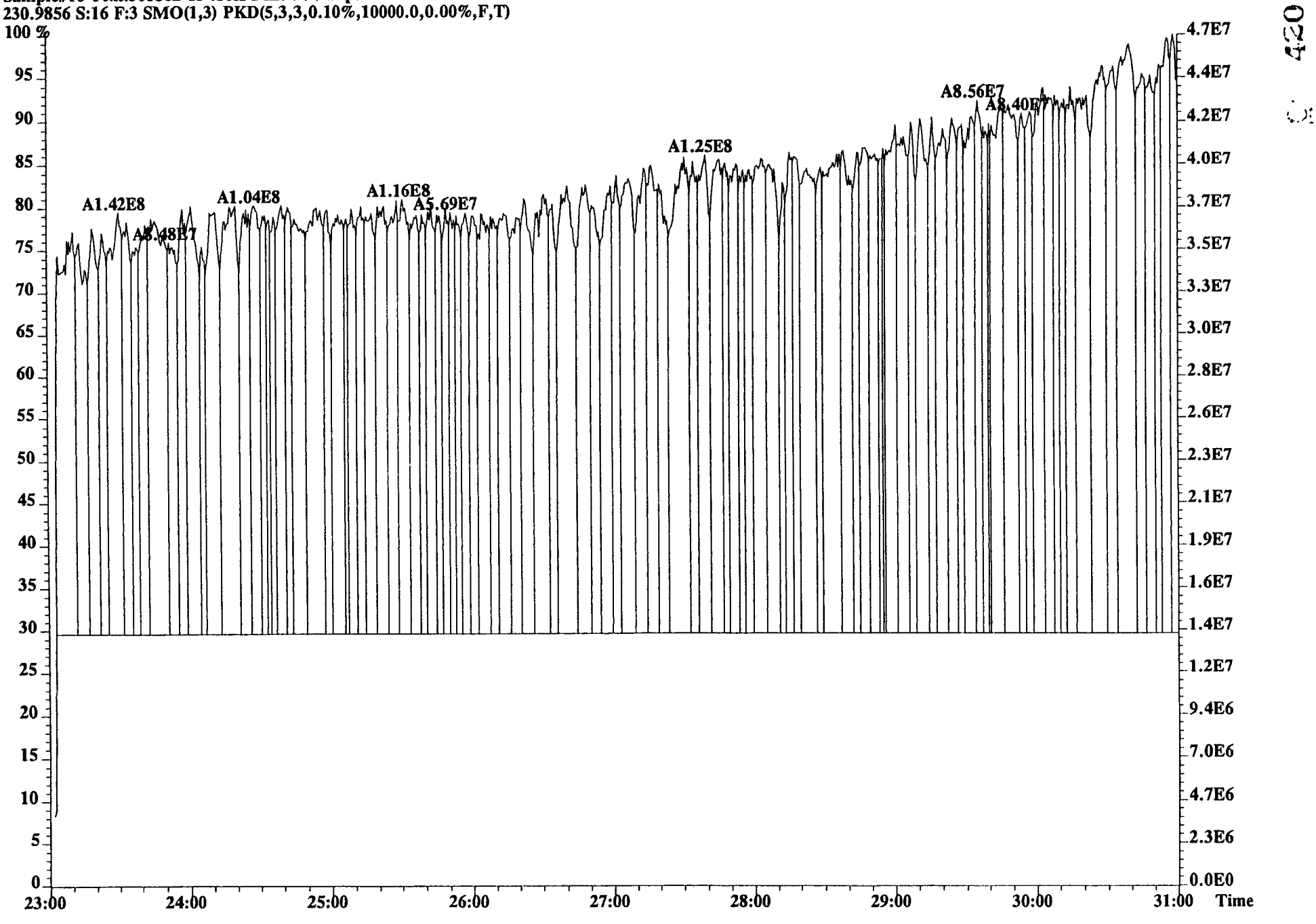

File:30OC98V4 #1-939 Acq:31-OCT-1998 05:00:59 GC EI+ Voltage SIR 70SE
Sample#16 Text:301802-13 :10X DIL. : : : Exp:PAHAIR
202.0782 S:16 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.91E6
A1.96E6
A3.67E4
A5.12E4
A8.08E4
A1.27E5
A1.94E4
A3.35E4
212.1410 S:16 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.92E6
A5.06E6
A2.61E5
244.1974 S:16 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.19E6
100 %
90
80
70
60
50
40
30
20
10
0
23:00
24:00
25:00
26:00
27:00
Time
7.6E5
6.9E5
6.1E5
5.3E5
4.6E5
3.8E5
3.0E5
2.3E5
1.5E5
7.6E4
0.0E0
1.4E6
1.3E6
1.1E6
9.9E5
8.5E5
7.0E5
5.6E5
4.2E5
2.8E5
1.4E5
0.0E0
1.2E6
1.1E6
9.4E5
8.2E5
7.0E5
5.9E5
4.7E5
3.5E5
2.3E5
1.2E5
0.0E0

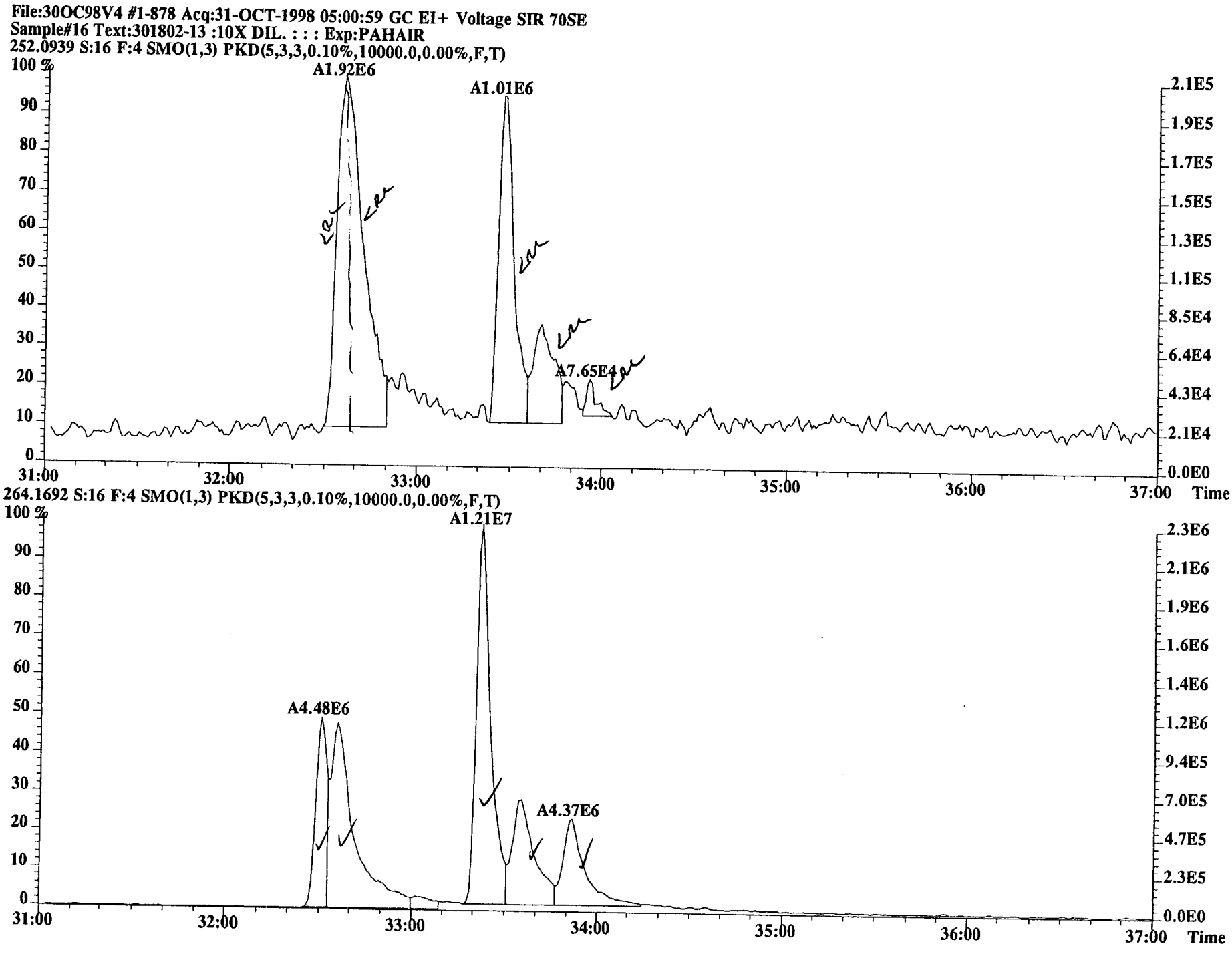
File:30OC98V4 #1-939 Acq:31-OCT-1998 05:00:59 GC EI+ Voltage SIR 70SE
Sample#16 Text:301802-13 :10X DIL. : : : Exp:PAHAIR
228.0939 S:16 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

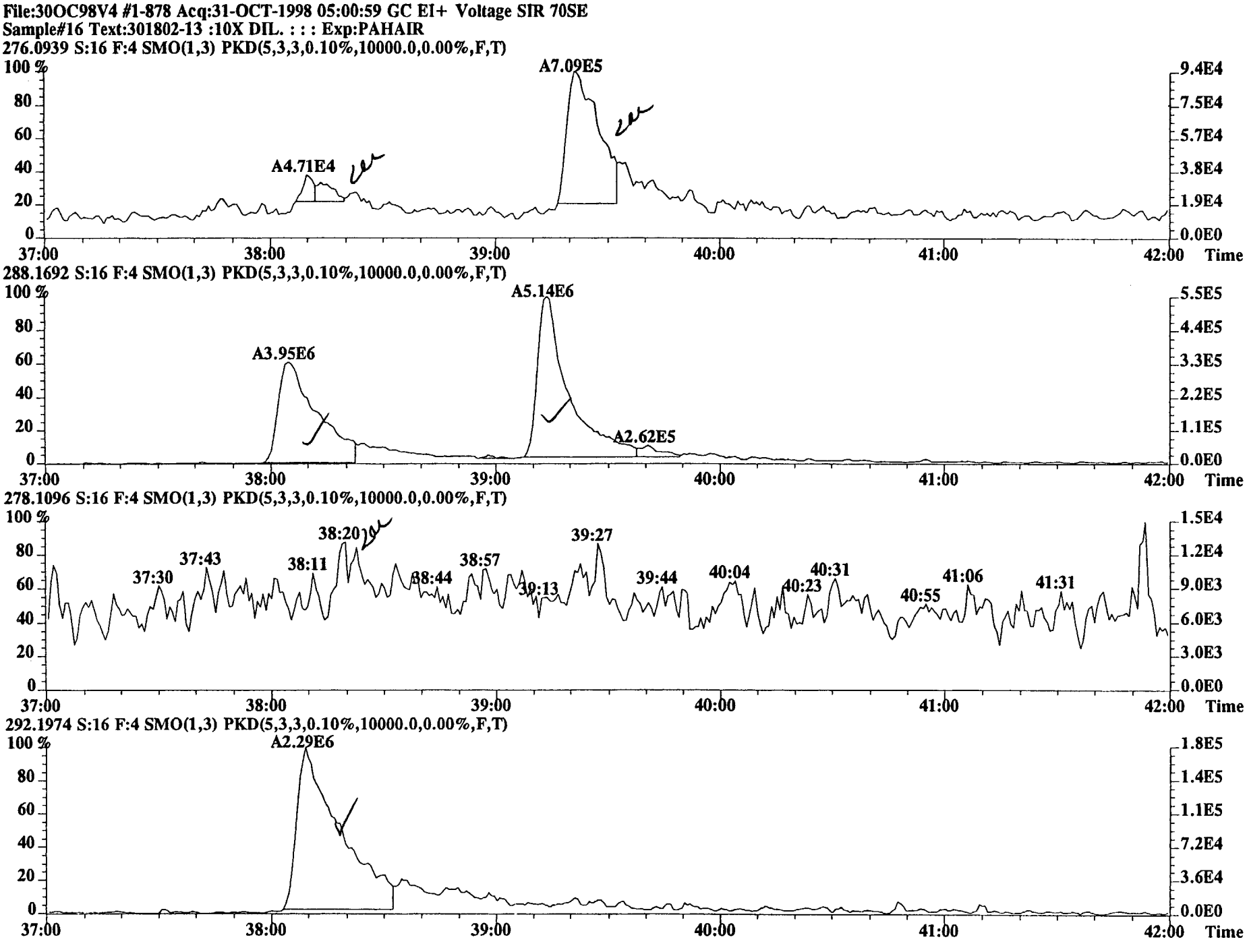


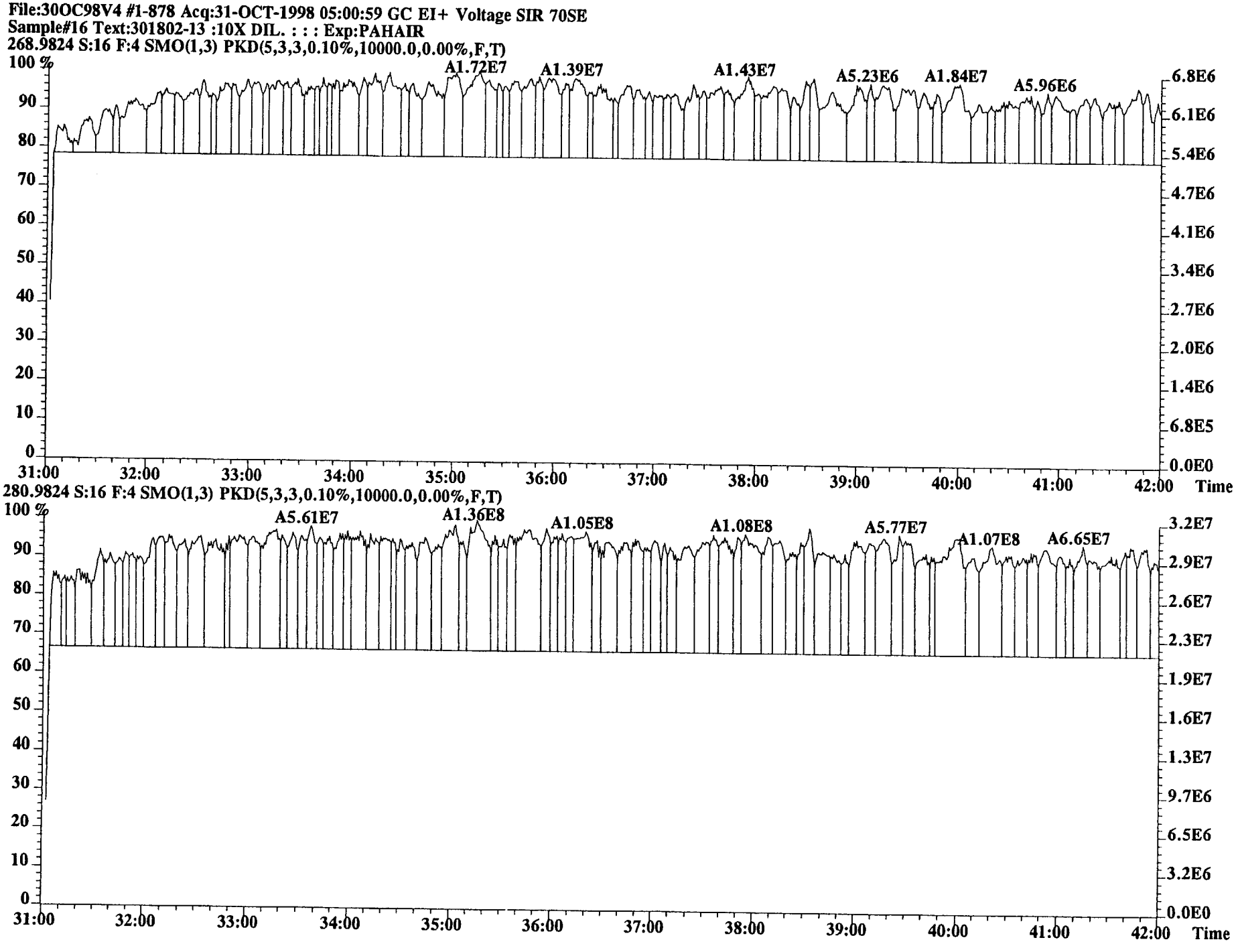
240.1692 S:16 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)




File:30OC98V4 #1-939 Acq:31-OCT-1998 05:00:59 GC EI+ Voltage SIR 70SE
Sample#16 Text:301802-13 :10X DIL. : : : Exp:PAHAIR
230.9856 S:16 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.42E8
A1.04E8
A1.16E8
A5.69E7
A1.25E8
A8.56E7
A8.40E7
4.7E7
4.4E7
4.2E7
4.0E7
3.7E7
3.5E7
3.3E7
3.0E7
2.8E7
2.6E7
2.3E7
2.1E7
1.9E7
1.6E7
1.4E7
1.2E7
9.4E6
7.0E6
4.7E6
2.3E6
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time


File:30OC98V4 #1-878 Acq:31-OCT-1998 05:00:59 GC EI+ Voltage SIR 70SE
Sample#16 Text:301802-13 :10X DIL. : : : Exp:PAHAIR
252.0939 S:16 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.92E6
A1.01E6
A7.65E4
264.1692 S:16 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.21E7
A4.48E6
A4.37E6
Time


File:30OC98V4 #1-878 Acq:31-OCT-1998 05:00:59 GC EI+ Voltage SIR 70SE
Sample#16 Text:301802-13 :10X DIL. : : : Exp:PAHAIR
276.0939 S:16 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.09E5
A4.71E4
288.1692 S:16 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A5.14E6
A3.95E6
A2.62E5
278.1096 S:16 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
38:20
39:27
37:43
38:11
37:30
38:57
38:44
39:13
39:44
40:04
40:31
40:23
40:55
41:06
41:31
292.1974 S:16 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.29E6
100 %
80
60
40
20
0
37:00
38:00
39:00
40:00
41:00
42:00
Time
9.4E4
7.5E4
5.7E4
3.8E4
1.9E4
0.0E0
5.5E5
4.4E5
3.3E5
2.2E5
1.1E5
1.5E4
1.2E4
9.0E3
6.0E3
3.0E3
1.8E5
1.4E5
1.1E5
7.2E4
3.6E4


File:30OC98V4 #1-878 Acq:31-OCT-1998 05:00:59 GC EI+ Voltage SIR 70SE
Sample#16 Text:301802-13 :10X DIL. : : : Exp:PAHAIR
268.9824 S:16 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.72E7
A1.39E7
A1.43E7
A5.23E6
A1.84E7
A5.96E6
6.8E6
6.1E6
5.4E6
4.7E6
4.1E6
3.4E6
2.7E6
2.0E6
1.4E6
6.8E5
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time
280.9824 S:16 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A5.61E7
A1.36E8
A1.05E8
A1.08E8
A5.77E7
A1.07E8
A6.65E7
3.2E7
2.9E7
2.6E7
2.3E7
1.9E7
1.6E7
1.3E7
9.7E6
6.5E6
3.2E6
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time

423

04-NOV-1998 06:39:37 PM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4 Results : 300C98V4171.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 30-OCT-98
Data file : 300C98V4 301802-14 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMP	Rec/ MDL
d10-2-Methylnaphthalene	5685740	1.00	Y	12: 28	Y	1.00	50.00	
d8-Naphthalene	6638940	1.00	Y	10: 12	Y	2.24	26.06	52
Naphthalene	68232000	1.00	Y	10: 16	Y	1.23	838.91	B
2-Methylnaphthalene	2281260	1.00	Y	12: 34	Y	0.56	<RL=100.00	
d8-Acenaphthylene	3503460	1.00	Y	15: 28	Y	1.21	25.38	51
Acenaphthylene	795420	1.00	Y	15: 31	Y	0.94	<RL=100.00	
d10-Acenaphthene	2401500	1.00	Y	16: 1	Y	0.74	28.36	57
Acenaphthene	2678860	1.00	Y	16: 8	Y	1.25	<RL=100.00	
d10-Anthracene	3069780	1.00	Y	20: 57	Y	1.00	50.00	
d10-Fluorene	3021600	1.00	Y	17: 43	Y	1.42	34.64	69
Fluorene	* No Peak	0.00	N	17: 49	N	1.16	<RL=100.00	
d10-Phenanthrene	6628280	1.00	Y	20: 47	Y	2.81	38.45	77
Phenanthrene	5920000	1.00	Y	20: 51	Y	0.89	<RL=100.00	
Anthracene	* No Peak	0.00	N	21: 1	N	0.80	<RL=100.00	
d14-Terphenyl	6833340	1.00	Y	26: 1	Y	1.00	50.00	
d10-Fluoranthene	8104240	1.00	Y	24: 37	Y	1.41	42.03	84
Fluoranthene	2461920	1.00	Y	24: 41	Y	1.11	<RL=100.00	
d10-Pyrene	8492000	1.00	Y	25: 18	Y	1.52	40.93	82
Pyrene	1667360	1.00	Y	25: 22	Y	1.21	<RL=100.00	
d12-Benzo(a)anthracene	3454960	1.00	Y	29: 11	Y	0.90	28.09	56
Benzo(a)anthracene	49906	1.00	Y	29: 18	Y	1.20	<RL=100.00	
d12-Chrysene	9265380	1.00	Y	29: 17	Y	1.28	53.00	106
Chrysene	111607	1.00	Y	29: 21	Y	1.08	<RL=100.00	
d12-Benzo(e)pyrene	22229200	1.00	Y	33: 22	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	7676980	1.00	Y	32: 31	Y	0.45	38.05	76
Benzo(b)fluoranthene	272806	1.00	Y	32: 36	Y	1.17	<RL=100.00	
d12-Benzo(k)fluoranthene	18343580	1.00	Y	32: 36	Y	0.95	43.52	87
Benzo(k)fluoranthene	272806	1.00	Y	32: 36	Y	1.16	<RL=100.00	
d12-Benzo(a)pyrene	9845640	1.00	Y	33: 35	Y	0.68	32.73	65
Benzo(e)pyrene	321448	1.00	Y	33: 29	Y	1.64	<RL=100.00	
Benzo(a)pyrene	* No Peak	0.00	N	33: 38	N	1.07	<RL=100.00	
d12-Perylene	8587120	1.00	Y	33: 51	Y	0.63	30.65	61
Perylene	* No Peak	0.00	N	33: 55	N	1.71	<RL=100.00	
d12-Indeno(123-cd)pyrene	6284360	1.00	Y	38: 5	Y	0.44	31.80	64
Indeno(123-cd)pyrene	* No Peak	0.00	N	38: 8	N	0.62	<RL=100.00	
d14-Dibenz(ah)anthracene	3260000	1.00	Y	38: 5	Y	0.25	29.83	60
Dibenz(ah)anthracene	* No Peak	0.00	N	38: 15	N	1.40	<RL=100.00	
d12-Benzo(ghi)perylene	8282640	1.00	Y	39: 14	Y	0.58	32.14	64
Benzo(ghi)perylene	* No Peak	0.00	N	39: 21	N	1.02	<RL=100.00	
d10-Fluorene	3021600	1.00	Y	17: 43	Y	1.00	50.00	
13C-Fluorene	2471900	1.00	Y	17: 48	Y	0.81	50.50	101

424

11 4-98

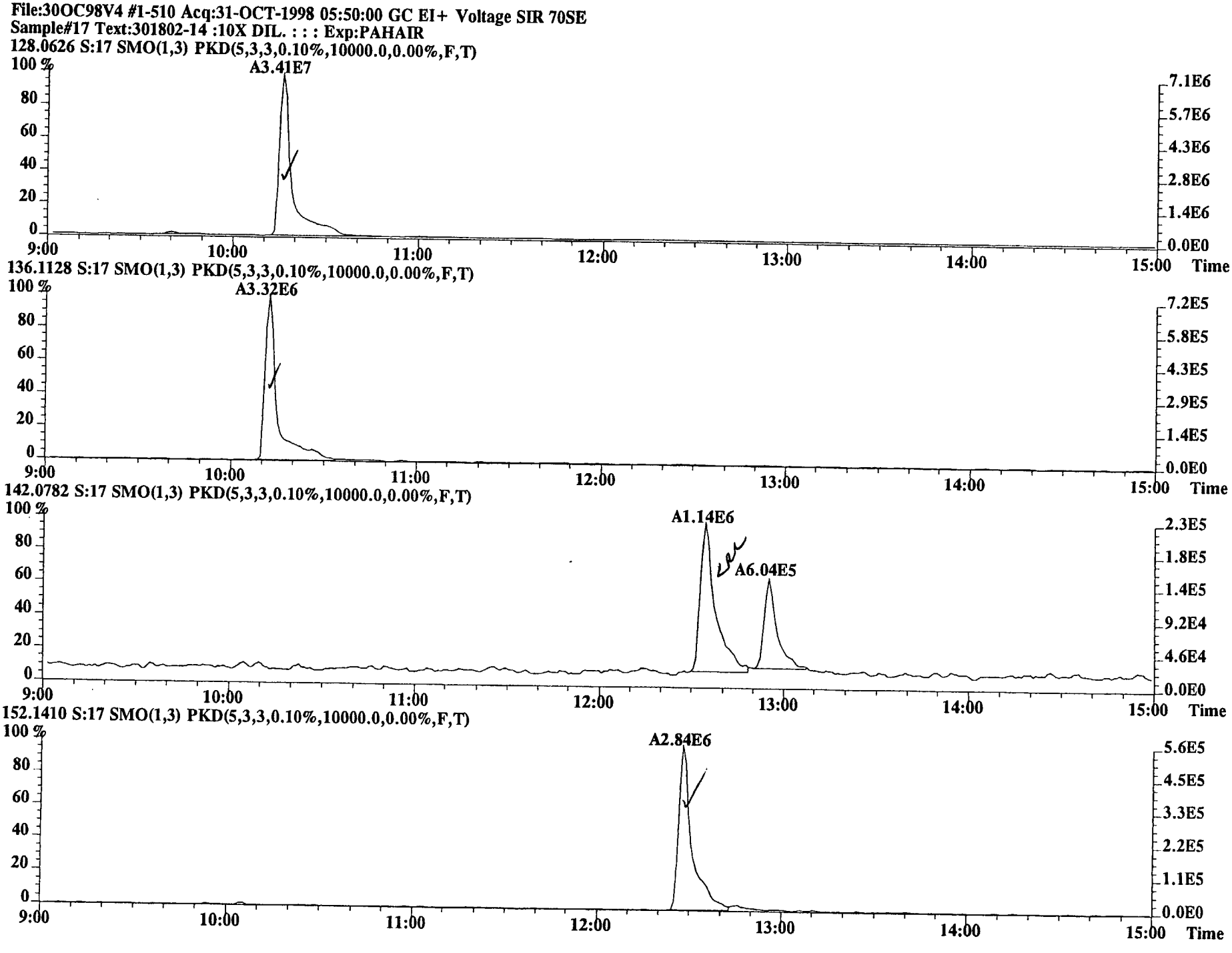
	0.5	
98V4.RRF		
Rec/ MDL		
	2842870	2842870
52	3319470	3319470
B	34116000	34116000
100.00	1140630	1140630
51	1751730	1751730
100.00	397710	397710
57	1200750	1200750
100.00	1339430	1339430
	1534890	1534890
69	1510800	1510800
100.00	0	0
77	3314140	3314140
100.00	2960000	2960000
100.00	0	0
	3416670	3416670
84	4052120	4052120
100.00	1230960	1230960
82	4246000	4246000
100.00	833680	833680
56	1727480	1727480
100.00	24953	24953
106	4632690	4632690
100.00	55803	55803
	11114600	11114600
76	3838490	3838490
100.00	136403	136403
87	9171790	9171790
100.00	136403	136403
65	4922820	4922820
100.00	160724	160724
100.00	0	0
61	4293560	4293560
100.00	0	0
64	3142180	3142180
100.00	0	0
60	1630000	1630000
100.00	0	0
64	4141320	4141320
100.00	0	0

02-NOV-1998 09:19:24 AM Dioxin Furan Unknown RESULTS

Mass Spec : VG-4
GC Column : DB-5
Data file : 30OC98V4
Weight : 0.5

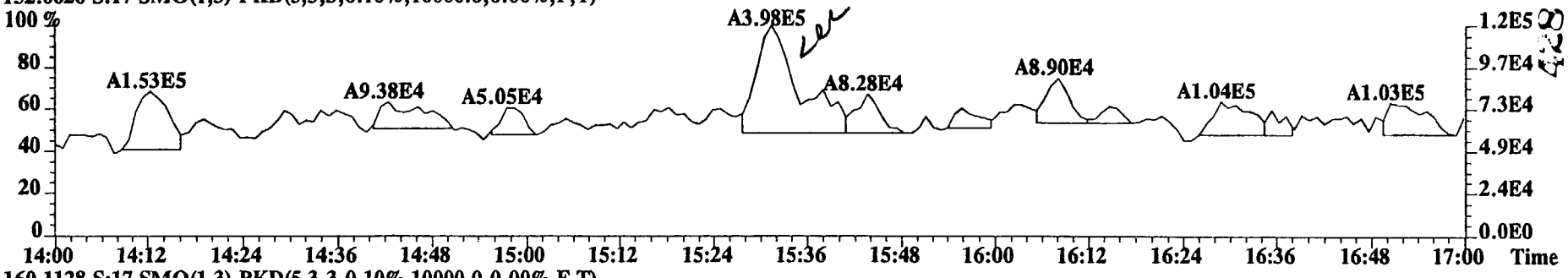
Results : 30OC98V4171.RES : PAHAIR.TRG
Date analyzed : 30-OCT-98
301802-14 :10X DIL. : : : Ex Cal : PAHAIR102998V4.R

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg/ SAMP	Rec/ MDL
d10-2-Methylnaphthalene	5685740	1.00	Y	12: 28	Y	1.00	50.00	
d8-Naphthalene	6638940	1.00	Y	10: 12	Y	2.24	26.06	52
Naphthalene	68232000	1.00	Y	10: 16	Y	1.23	838.91	0.000
2-Methylnaphthalene	2281260	1.00	Y	12: 34	Y	0.56	61.30	0.000
d8-Acenaphthylene	3503460	1.00	Y	15: 28	Y	1.21	25.38	51
Acenaphthylene	795420	1.00	Y	15: 31	Y	0.94	24.05	0.000
d10-Acenaphthene	2401500	1.00	Y	16: 1	Y	0.74	28.36	57
Acenaphthene	2678860	1.00	Y	16: 8	Y	1.25	89.52	0.000
d10-Anthracene	3069780	1.00	Y	20: 57	Y	1.00	50.00	
d10-Fluorene	3021600	1.00	Y	17: 43	Y	1.42	34.64	69
Fluorene	* No Peak	0.00	N	17: 49	N	1.16	0.00	0.000
d10-Phenanthrene	6628280	1.00	Y	20: 47	Y	2.81	38.45	77
Phenanthrene	6636760	1.00	Y	20: 51	Y	0.89	111.94	0.000
Anthracene	* No Peak	0.00	N	21: 1	N	0.80	0.00	0.000
d14-Terphenyl	6833340	1.00	Y	26: 1	Y	1.00	50.00	
d10-Fluoranthene	8104240	1.00	Y	24: 37	Y	1.41	42.03	84
Fluoranthene	2461920	1.00	Y	24: 41	Y	1.11	27.32	0.000
d10-Pyrene	8492000	1.00	Y	25: 18	Y	1.52	40.93	82
Pyrene	1667360	1.00	Y	25: 22	Y	1.21	16.29	0.000
d12-Benzo(a)anthracene	3454960	1.00	Y	29: 11	Y	0.90	28.09	56
Benzo(a)anthracene	49906	1.00	Y	29: 18	Y	1.20	1.20	0.000
d12-Chrysene	9265380	1.00	Y	29: 17	Y	1.28	53.00	106
Chrysene	111607	1.00	Y	29: 21	Y	1.08	1.11	0.000
d12-Benzo(e)pyrene	22229200	1.00	Y	33: 22	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	7676980	1.00	Y	32: 31	Y	0.45	38.05	76
Benzo(b)fluoranthene	272806	1.00	Y	32: 36	Y	1.17	3.04	0.000
d12-Benzo(k)fluoranthene	18343580	1.00	Y	32: 36	Y	0.95	43.52	87
Benzo(k)fluoranthene	272806	1.00	Y	32: 36	Y	1.16	1.28	0.000
d12-Benzo(a)pyrene	9845640	1.00	Y	33: 35	Y	0.68	32.73	65
Benzo(e)pyrene	321448	1.00	Y	33: 29	Y	1.64	1.99	0.000
Benzo(a)pyrene	* No Peak	0.00	N	33: 38	N	1.07	0.00	0.000
d12-Perylene	8587120	1.00	Y	33: 51	Y	0.63	30.65	61
Perylene	* No Peak	0.00	N	33: 55	N	1.71	0.00	0.000
d12-Indeno(123-cd)pyrene	6284360	1.00	Y	38: 5	Y	0.44	31.80	64
Indeno(123-cd)pyrene	* No Peak	0.00	N	38: 8	N	0.62	0.00	0.000
d14-Dibenz(ah)anthracene	* No Peak	0.00	N	38: 5	Y	0.25	0.00	0
Dibenz(ah)anthracene	* No Peak	0.00	N	38: 15	N	1.40	*NoINoIs	
d12-Benzo(ghi)perylene	8282640	1.00	Y	39: 14	Y	0.58	32.14	64
Benzo(ghi)perylene	* No Peak	0.00	N	39: 21	N	1.02	0.00	0.000
d10-Fluorene	3021600	1.00	Y	17: 43	Y	1.42	4.78	10
13C-Fluorene	2471900	1.00	Y	17: 48	Y	1.00	81.81	0.000

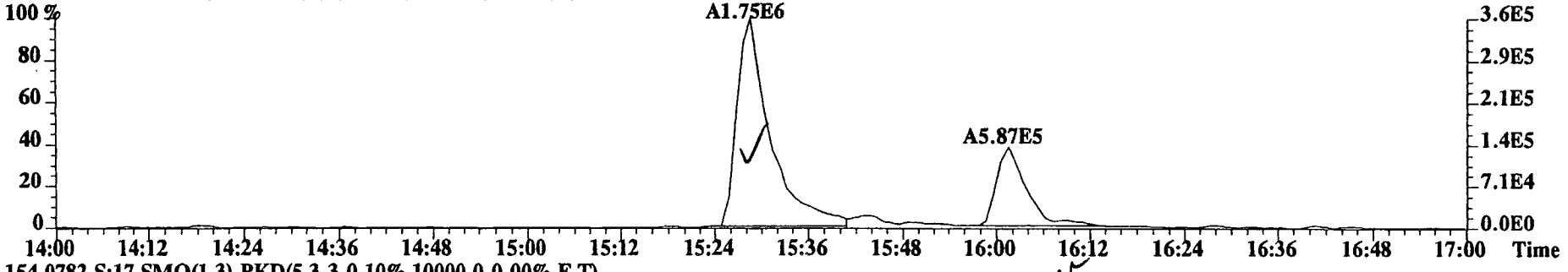

File:30OC98V4 #1-510 Acq:31-OCT-1998 05:50:00 GC EI+ Voltage SIR 70SE
Sample#17 Text:301802-14 :10X DIL. : : : Exp:PAHAIR
128.0626 S:17 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.41E7
136.1128 S:17 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.32E6
142.0782 S:17 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.14E6
A6.04E5
152.1410 S:17 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.84E6
100 %
80
60
40
20
0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
Time
7.1E6
5.7E6
4.3E6
2.8E6
1.4E6
0.0E0
7.2E5
5.8E5
4.3E5
2.9E5
1.4E5
0.0E0
2.3E5
1.8E5
1.4E5
9.2E4
4.6E4
0.0E0
5.6E5
4.5E5
3.3E5
2.2E5
1.1E5
0.0E0

427

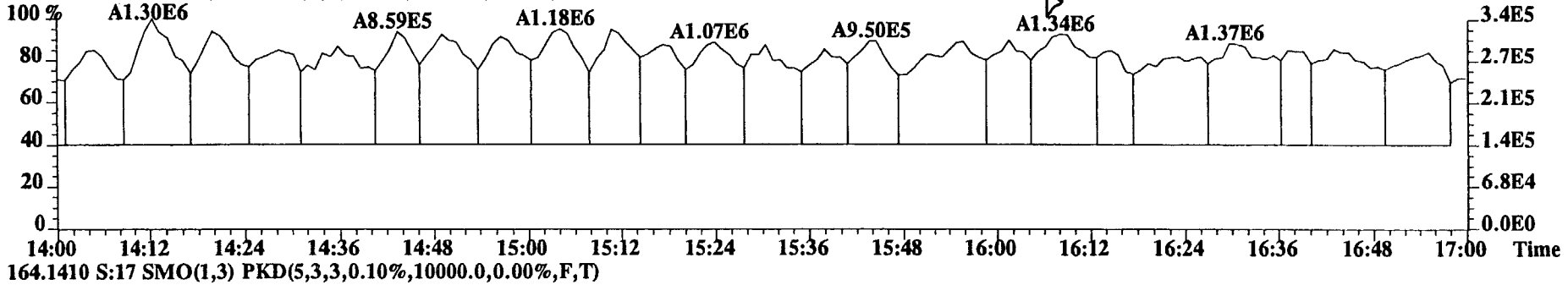
File:30OC98V4 #1-510 Acq:31-OCT-1998 05:50:00 GC EI+ Voltage SIR 70SE
Sample#17 Text:301802-14 :10X DIL. : : : Exp:PAHAIR
152.0626 S:17 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



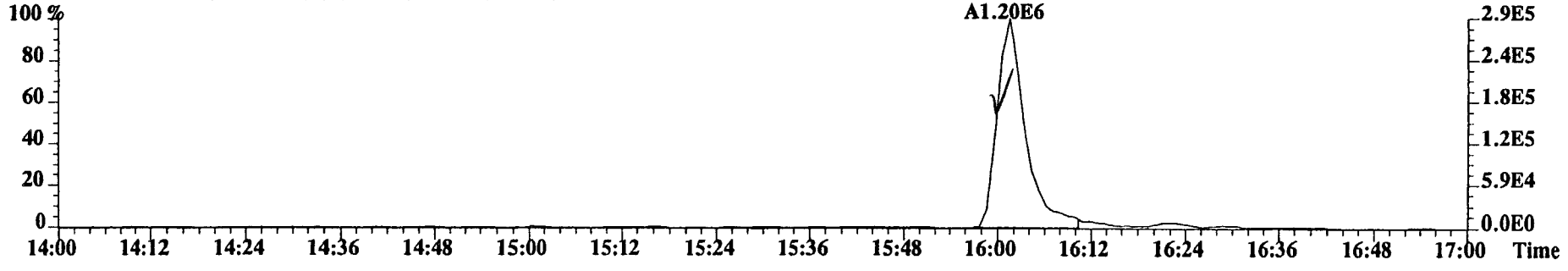
160.1128 S:17 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

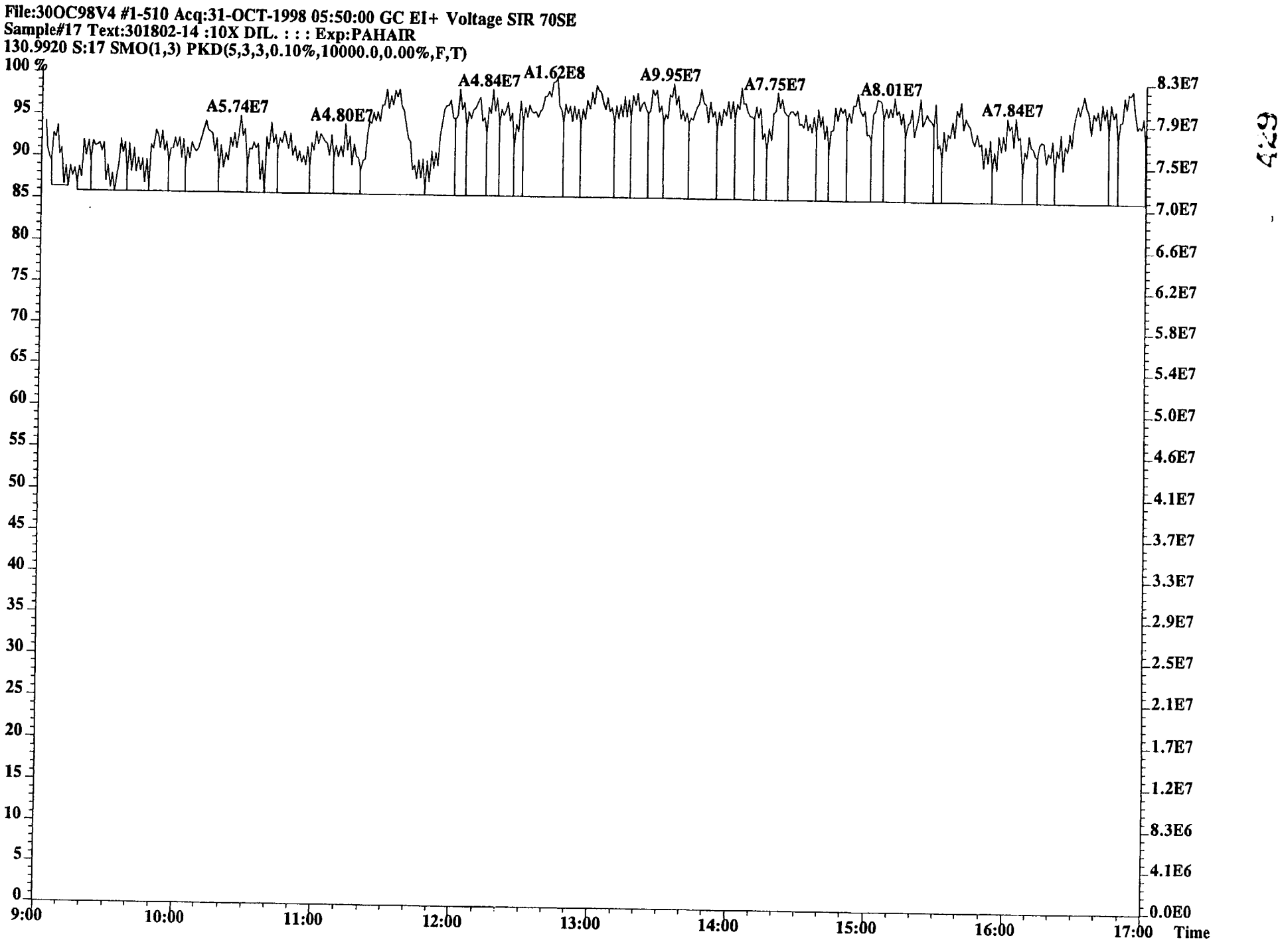


154.0782 S:17 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

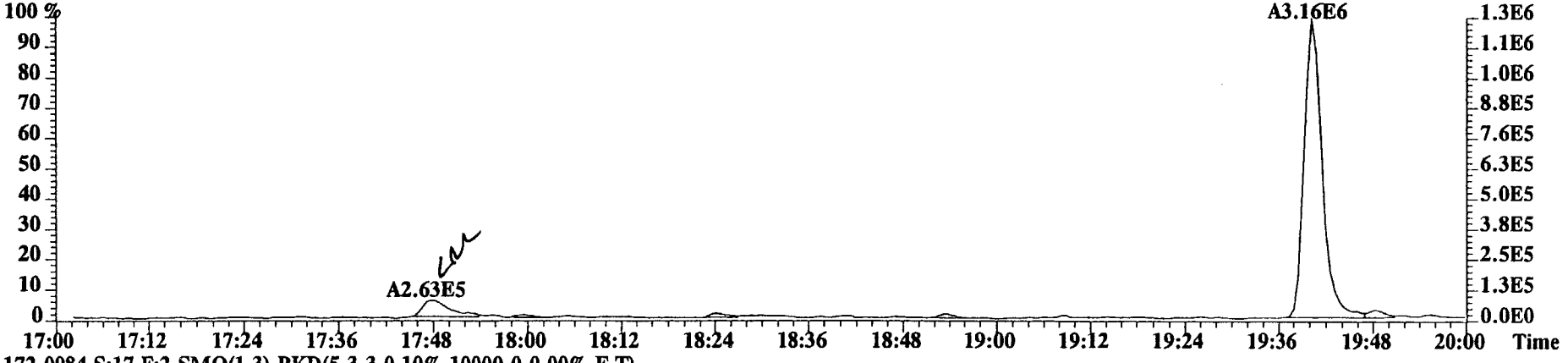


164.1410 S:17 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

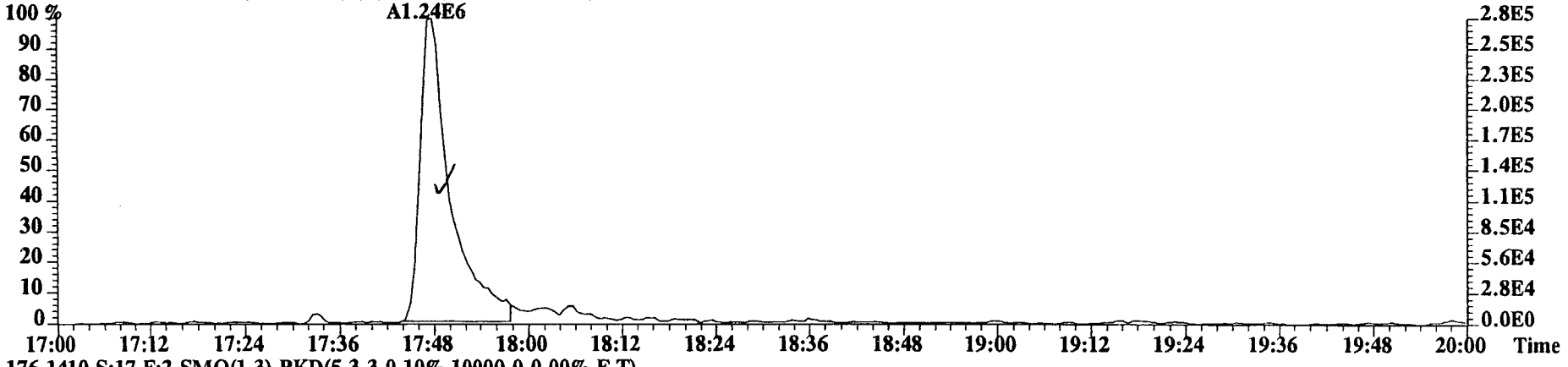



File:30OC98V4 #1-510 Acq:31-OCT-1998 05:50:00 GC EI+ Voltage SIR 70SE
Sample#17 Text:301802-14 :10X DIL. : : : Exp:PAHAIR
130.9920 S:17 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A5.74E7
A4.80E7
A4.84E7
A1.62E8
A9.95E7
A7.75E7
A8.01E7
A7.84E7
8.3E7
7.9E7
7.5E7
7.0E7
6.6E7
6.2E7
5.8E7
5.4E7
5.0E7
4.6E7
4.1E7
3.7E7
3.3E7
2.9E7
2.5E7
2.1E7
1.7E7
1.2E7
8.3E6
4.1E6
0.0E0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
Time

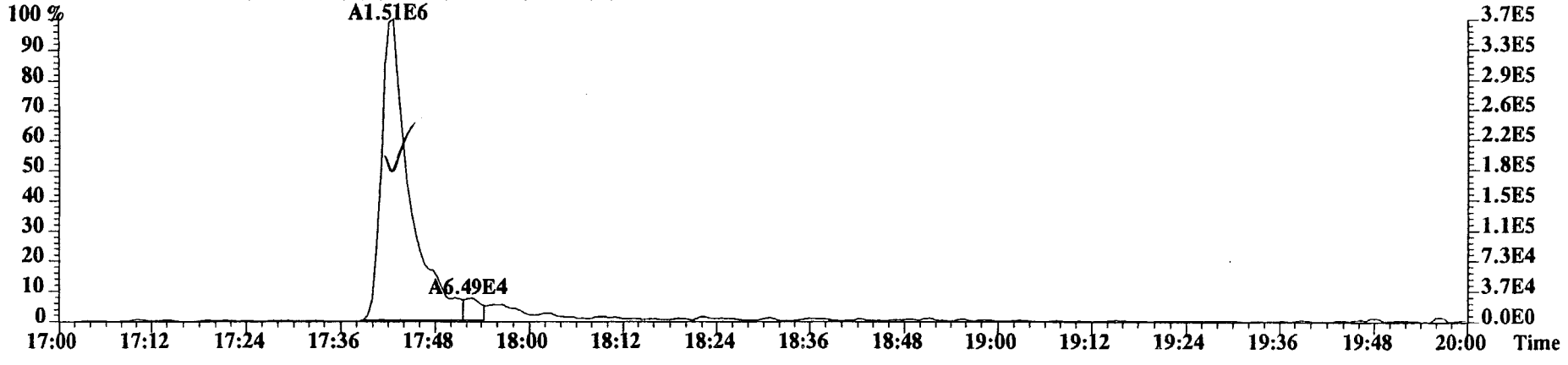
File:30OC98V4 #1-640 Acq:31-OCT-1998 05:50:00 GC EI+ Voltage SIR 70SE
Sample#17 Text:301802-14 :10X DIL. : : : Exp:PAHAIR
166.0798 S:17 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



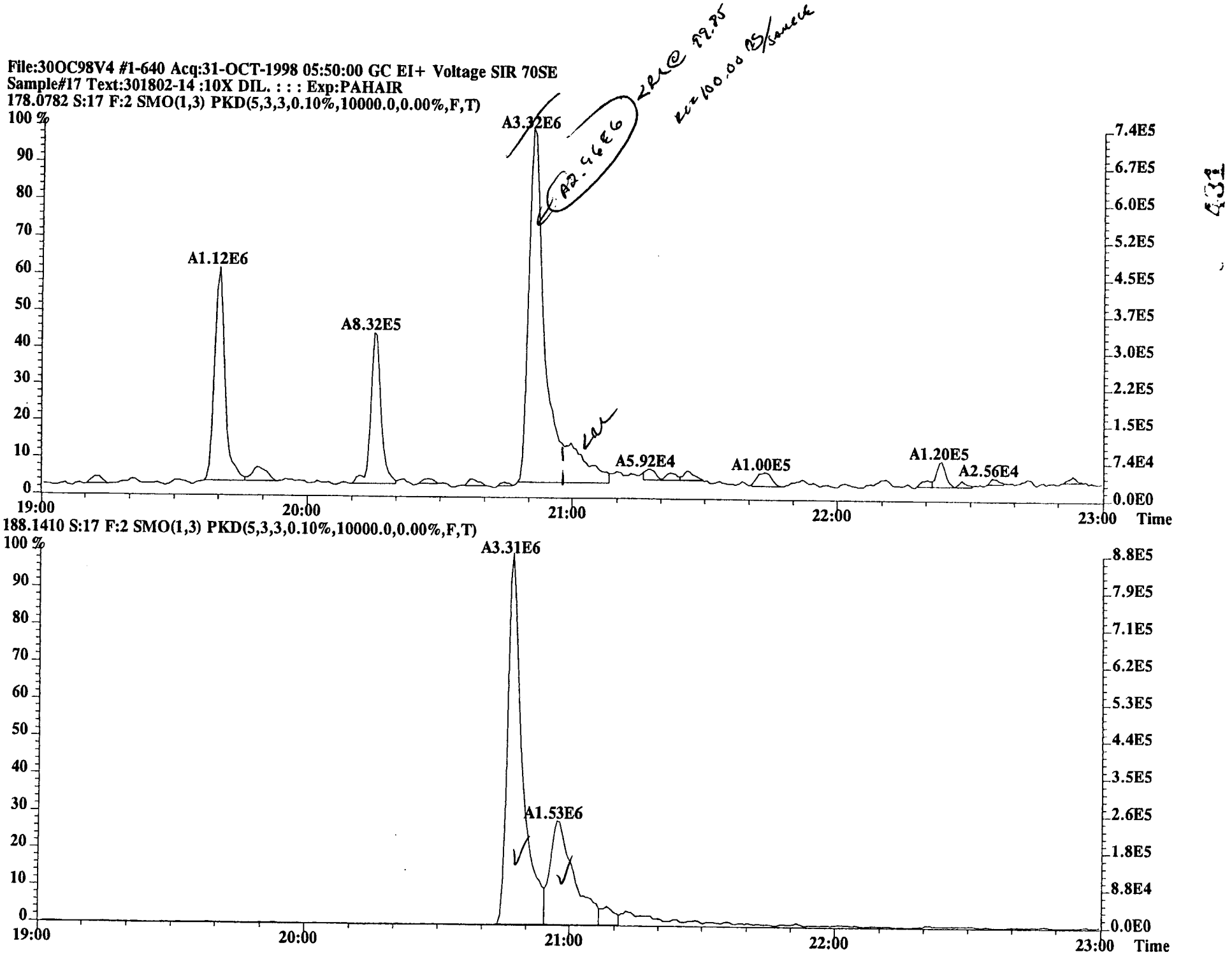
172.0984 S:17 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



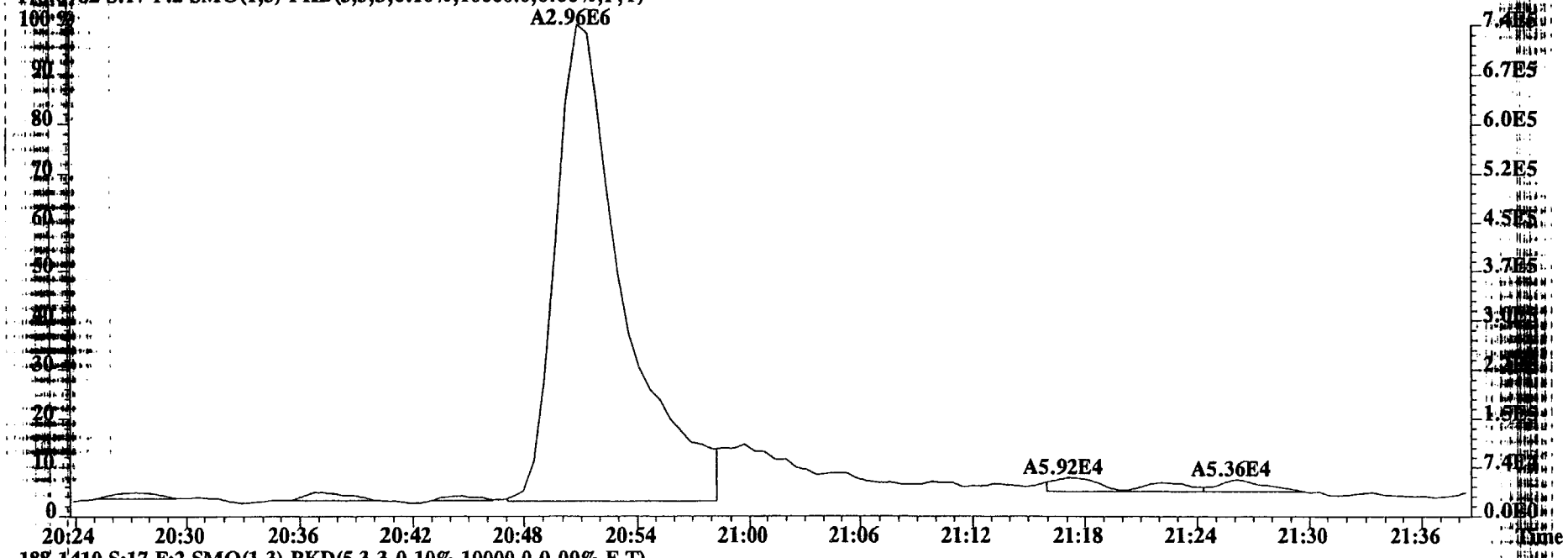
176.1410 S:17 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



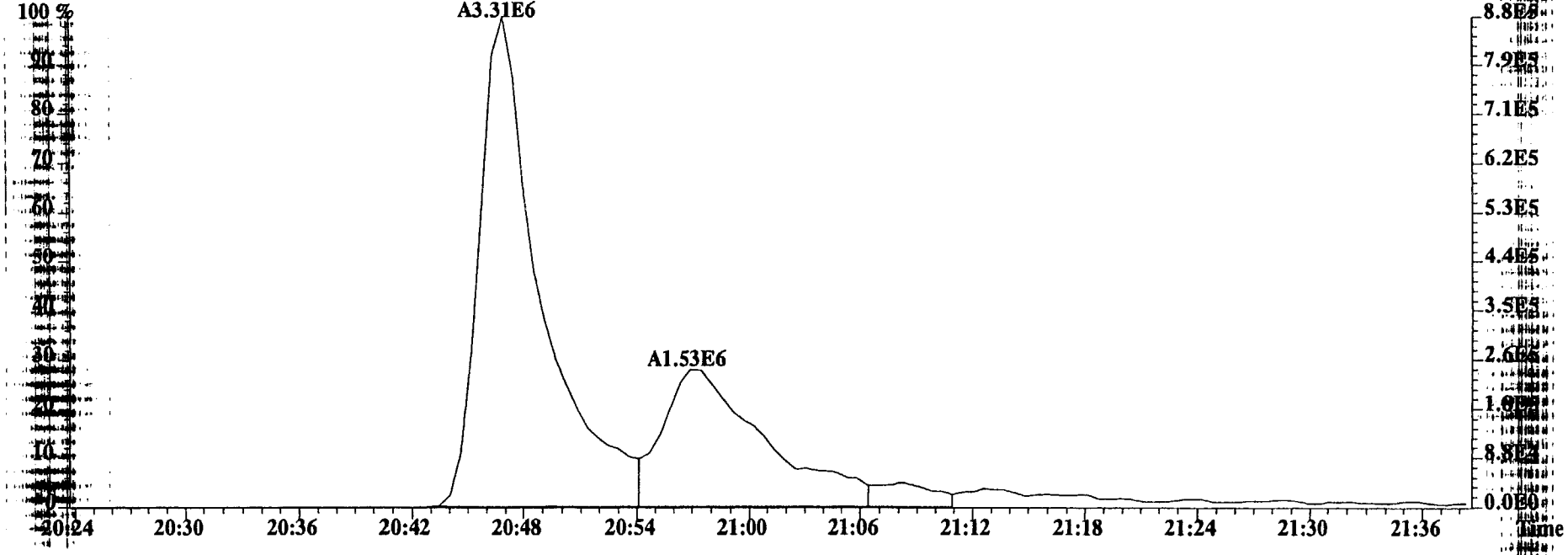
430

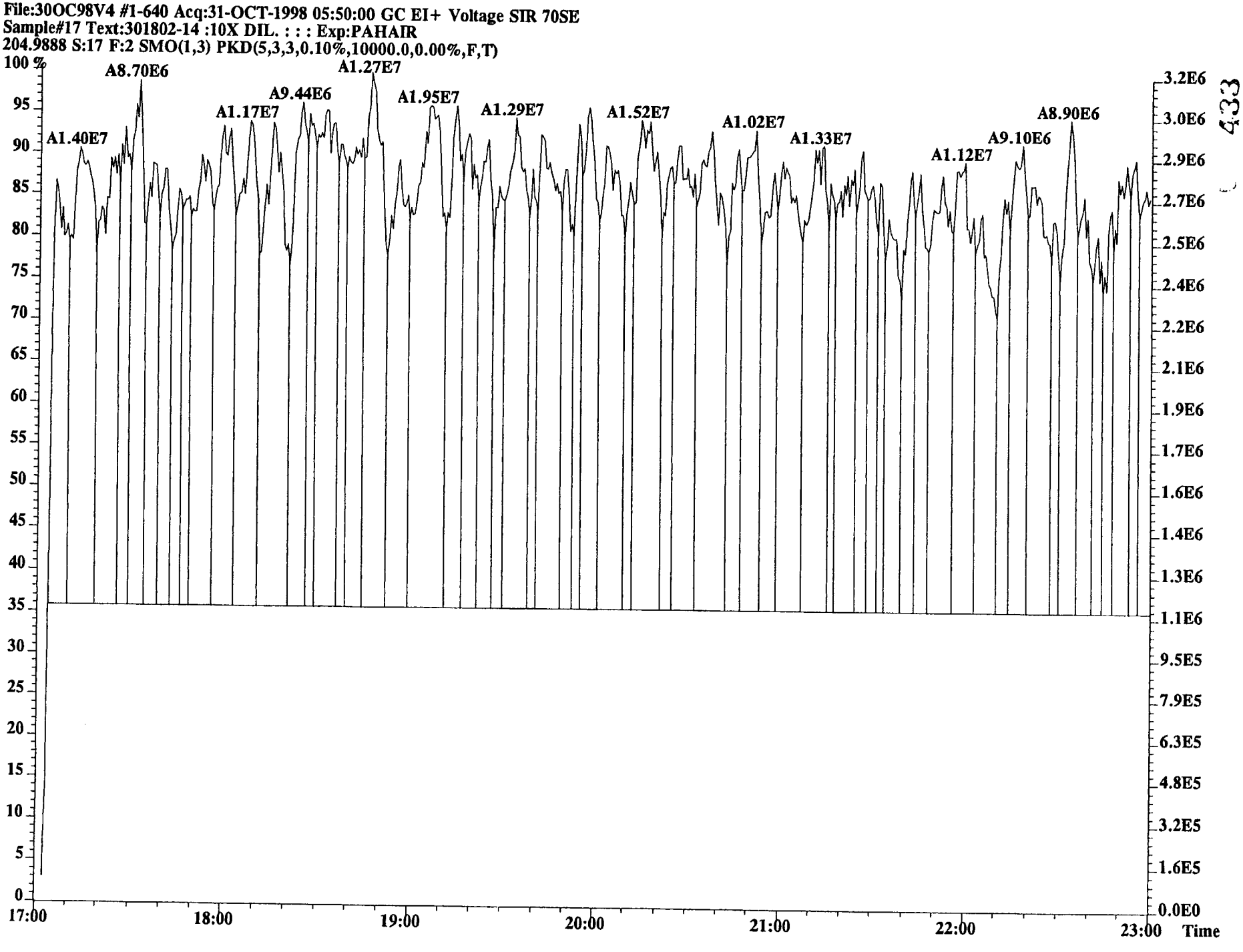

File:30OC98V4 #1-640 Acq:31-OCT-1998 05:50:00 GC EI+ Voltage SIR 70SE
Sample#17 Text:301802-14 :10X DIL. : : : Exp:PAHAIR
178.0782 S:17 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A3.32E6
A1.12E6
A8.32E5
A5.92E4
A1.00E5
A1.20E5
A2.56E4
7.4E5
6.7E5
6.0E5
5.2E5
4.5E5
3.7E5
3.0E5
2.2E5
1.5E5
7.4E4
0.0E0
19:00
20:00
21:00
22:00
23:00
Time
188.1410 S:17 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A3.31E6
A1.53E6
8.8E5
7.9E5
7.1E5
6.2E5
5.3E5
4.4E5
3.5E5
2.6E5
1.8E5
8.8E4
0.0E0
19:00
20:00
21:00
22:00
23:00
Time

File:30OC98V4 #1-640 Acq:31-OCT-1998 05:50:00 GC EI+ Voltage SIR 70SE
Sample#17 Text:301802-14 :10X DIL. : : : Exp:PAHAIR
178.0782 S:17 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

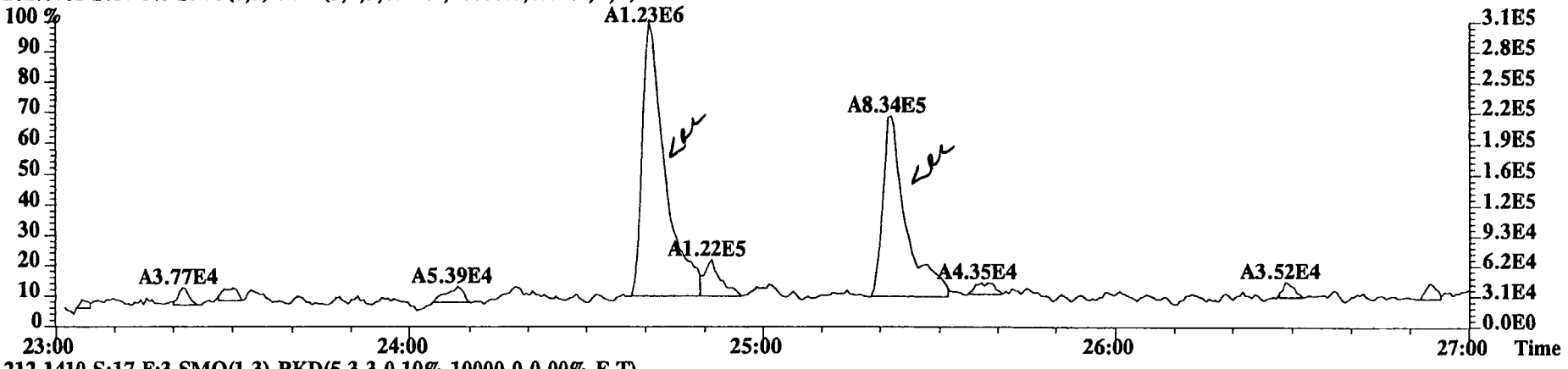


188.1410 S:17 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

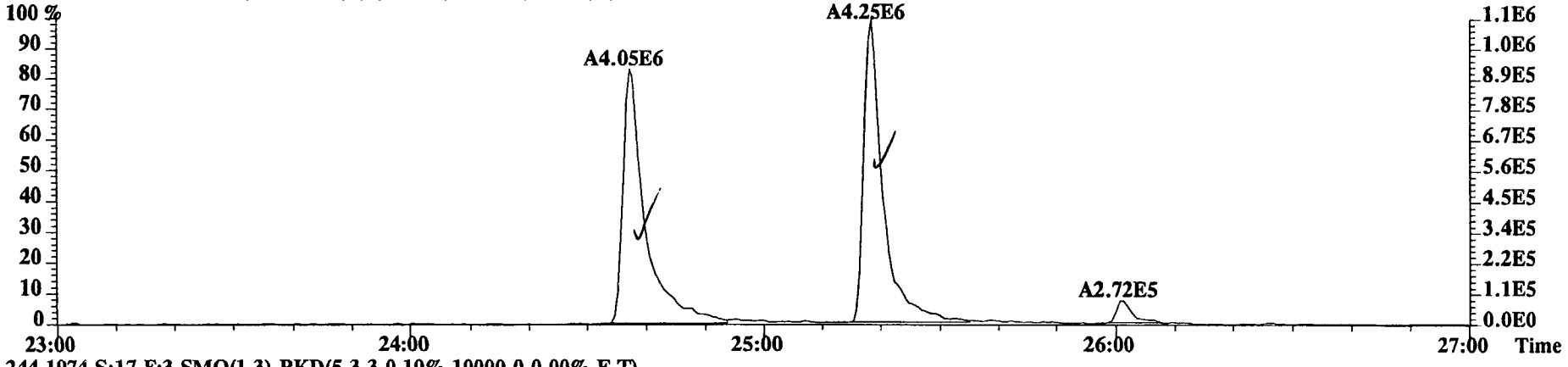



File:30OC98V4 #1-640 Acq:31-OCT-1998 05:50:00 GC EI+ Voltage SIR 70SE
Sample#17 Text:301802-14 :10X DIL. : : : Exp:PAHAIR
204.9888 S:17 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.40E7
A8.70E6
A1.17E7
A9.44E6
A1.27E7
A1.95E7
A1.29E7
A1.52E7
A1.02E7
A1.33E7
A1.12E7
A9.10E6
A8.90E6
3.2E6
3.0E6
2.9E6
2.7E6
2.5E6
2.4E6
2.2E6
2.1E6
1.9E6
1.7E6
1.6E6
1.4E6
1.3E6
1.1E6
9.5E5
7.9E5
6.3E5
4.8E5
3.2E5
1.6E5
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

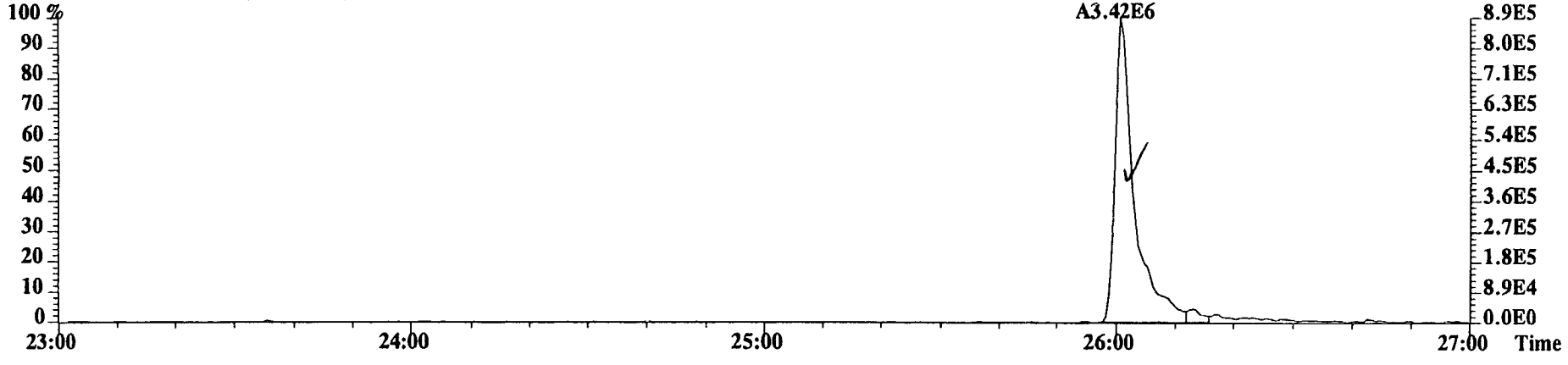
File:30OC98V4 #1-939 Acq:31-OCT-1998 05:50:00 GC EI+ Voltage SIR 70SE
Sample#17 Text:301802-14 :10X DIL. : : : Exp:PAHAIR
202.0782 S:17 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



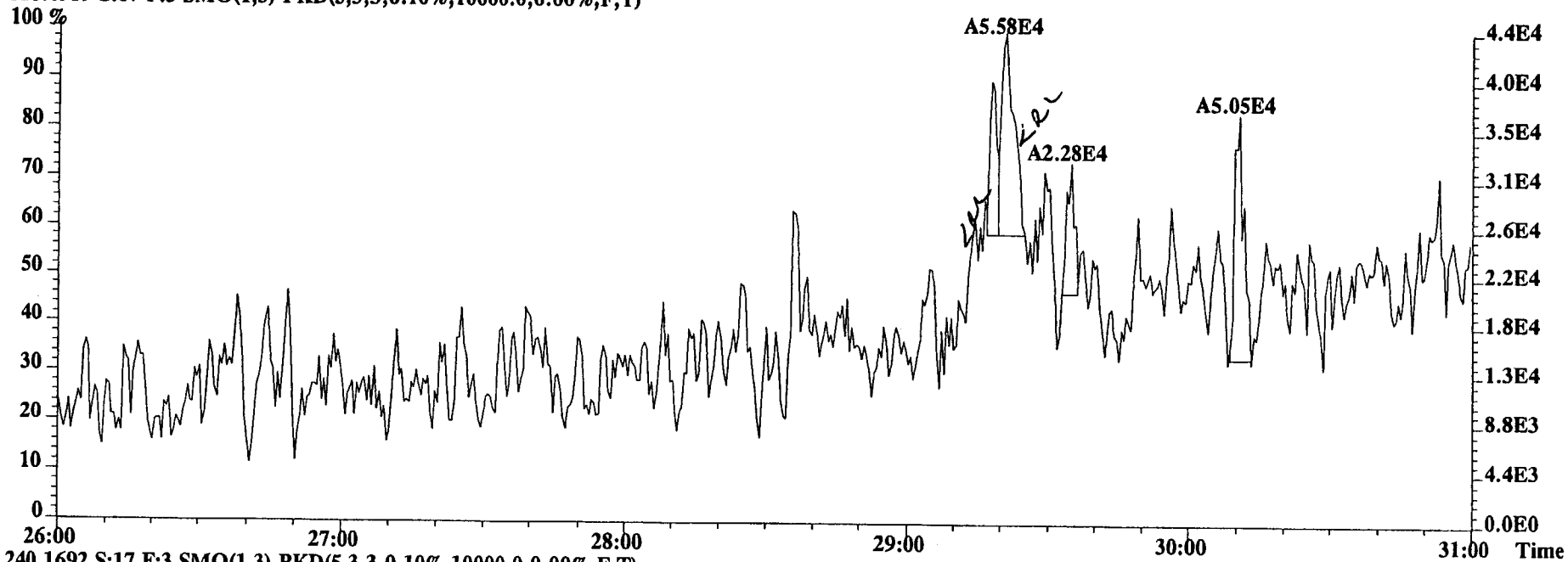
212.1410 S:17 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



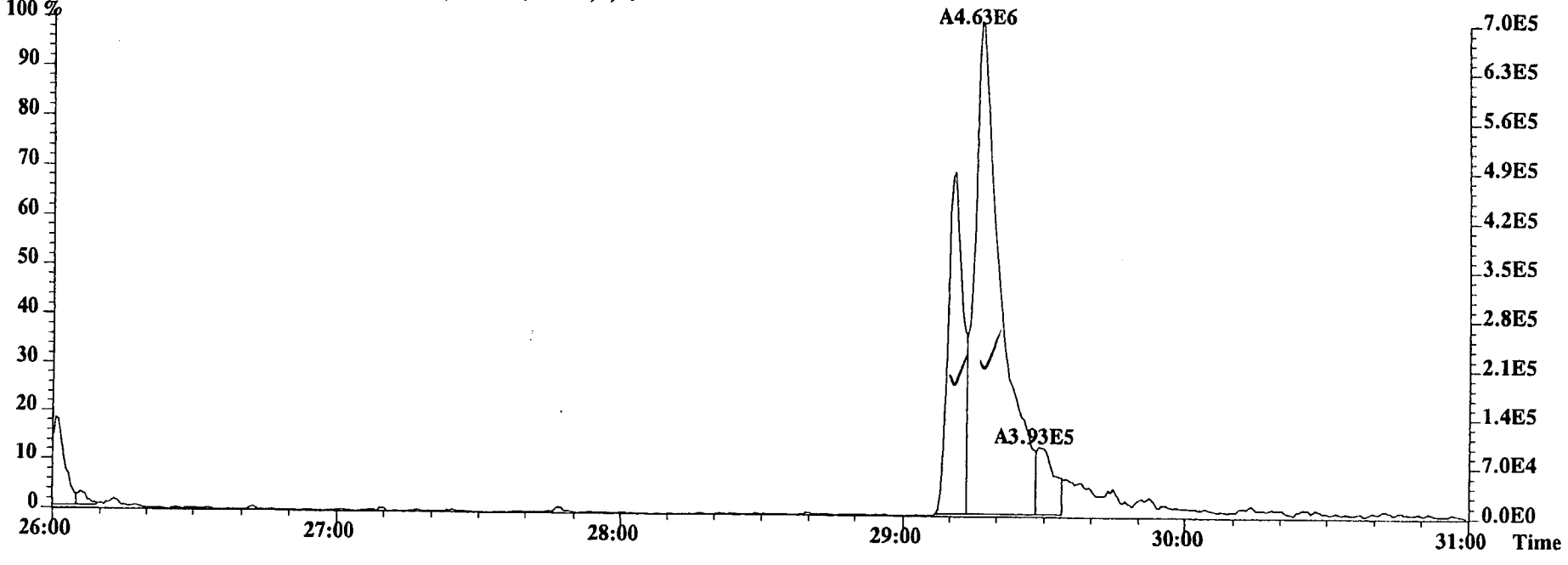
244.1974 S:17 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



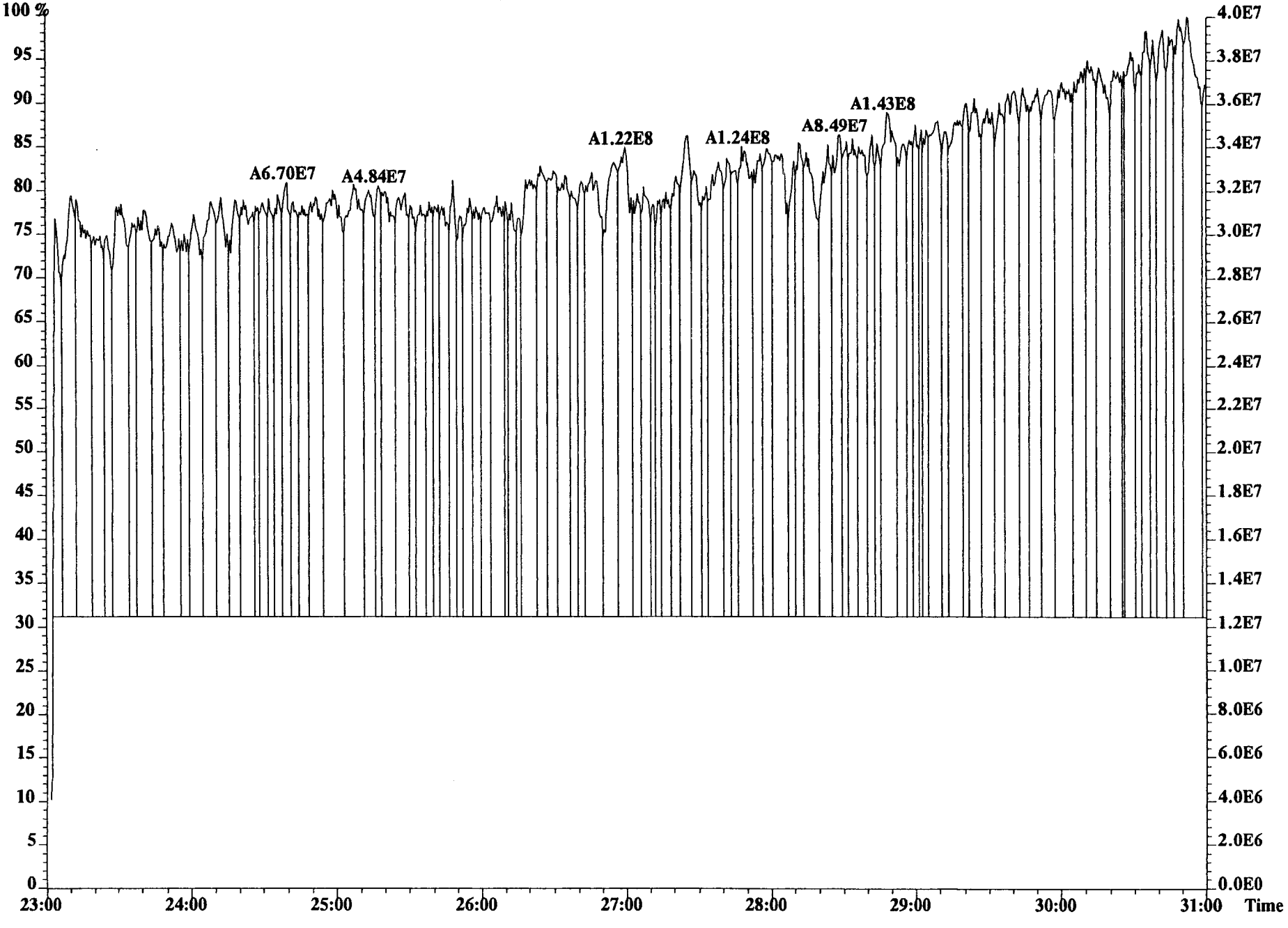
File:30OC98V4 #1-939 Acq:31-OCT-1998 05:50:00 GC EI+ Voltage SIR 70SE
Sample#17 Text:301802-14 :10X DIL. : : : Exp:PAHAIR
228.0939 S:17 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

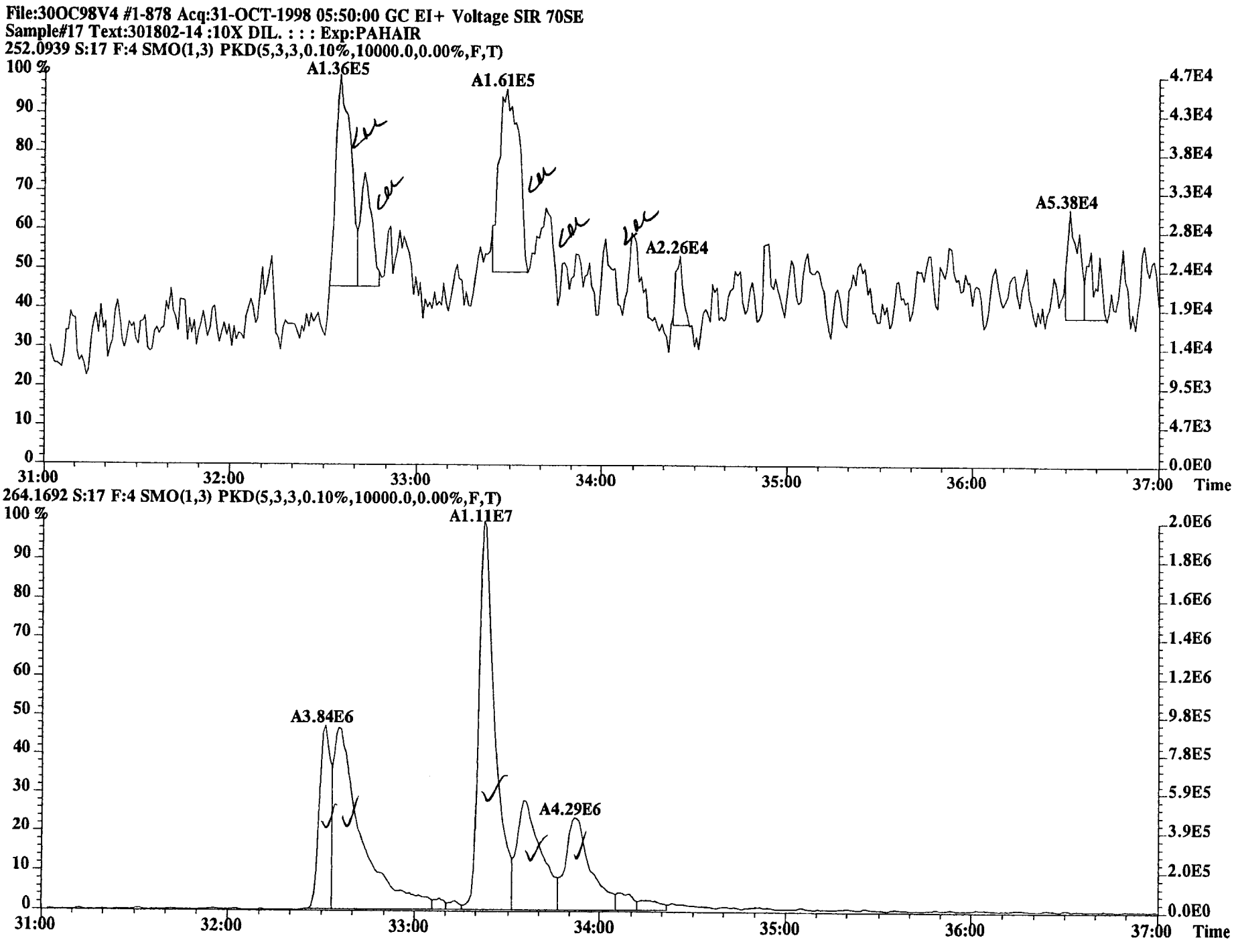


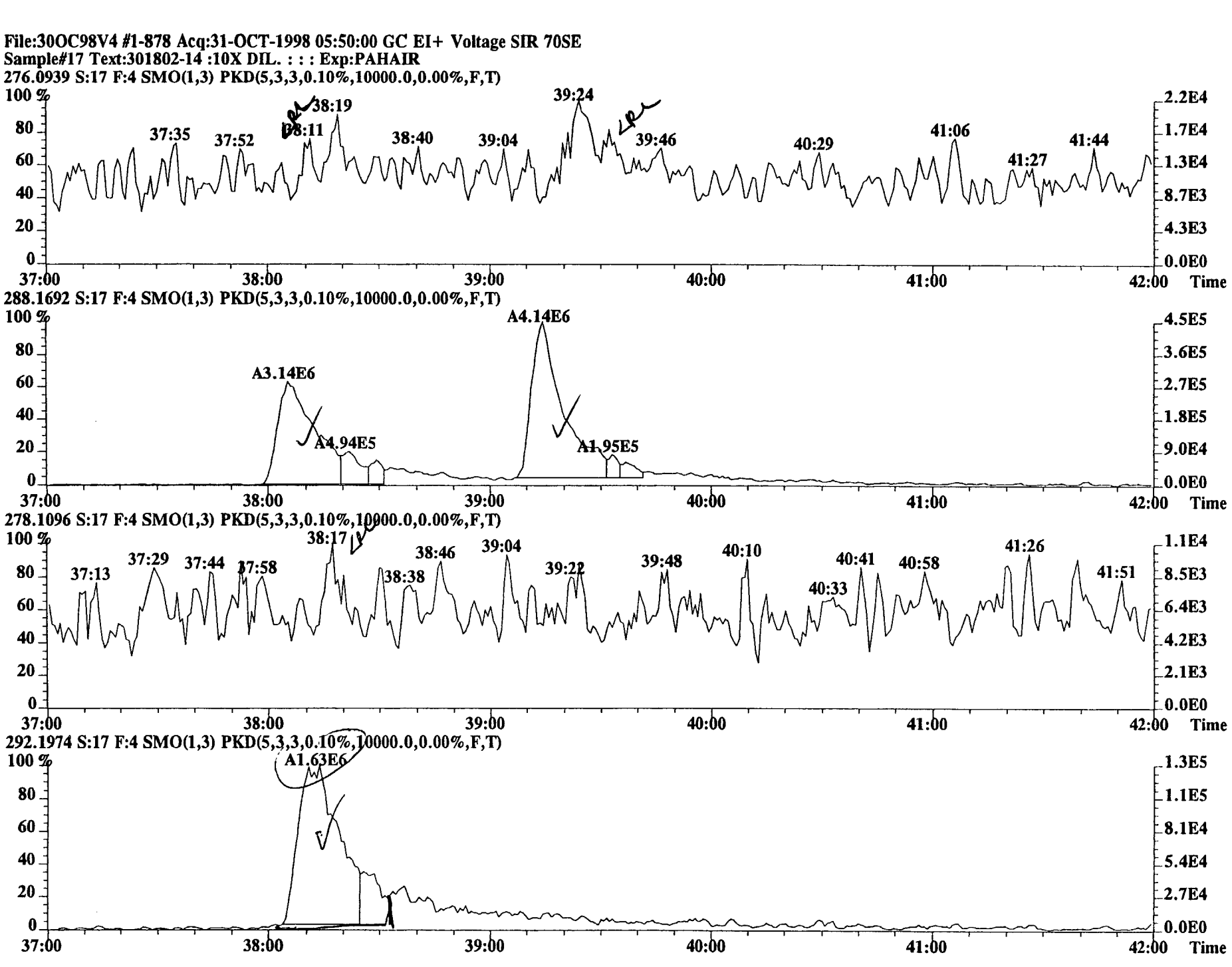
240.1692 S:17 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



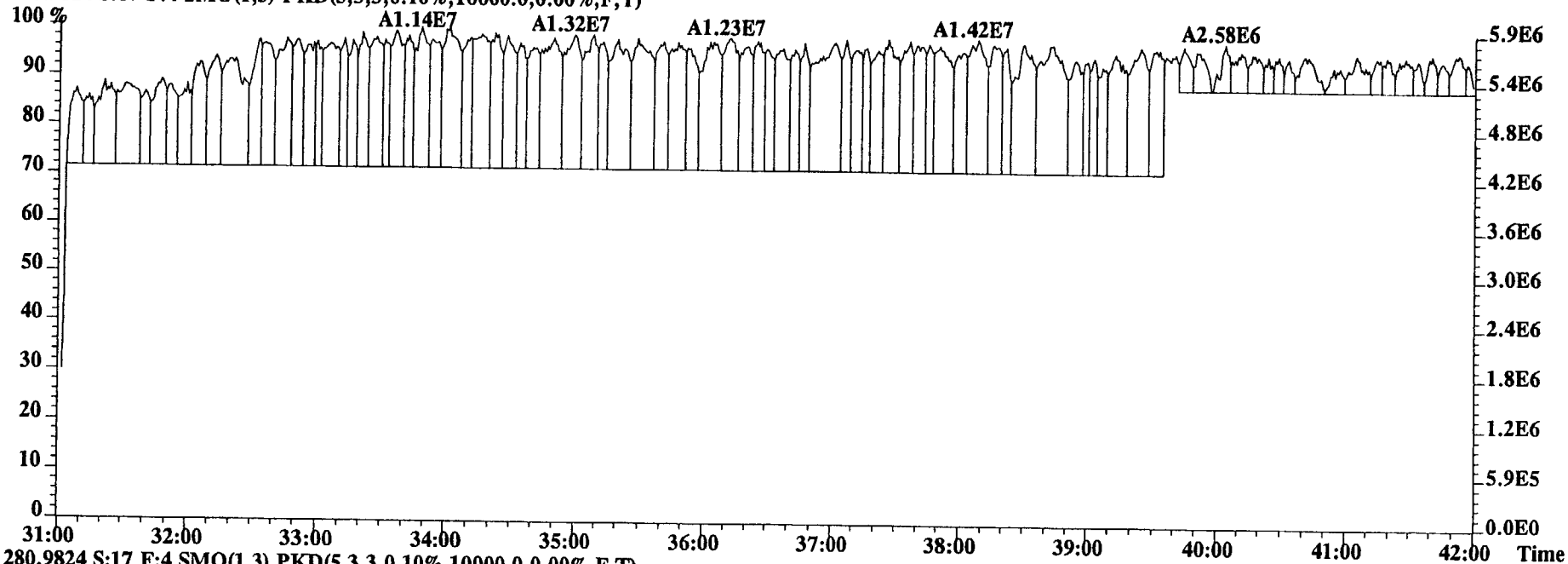
File:30OC98V4 #1-939 Acq:31-OCT-1998 05:50:00 GC EI+ Voltage SIR 70SE
Sample#17 Text:301802-14 :10X DIL. : : : Exp:PAHAIR
230.9856 S:17 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



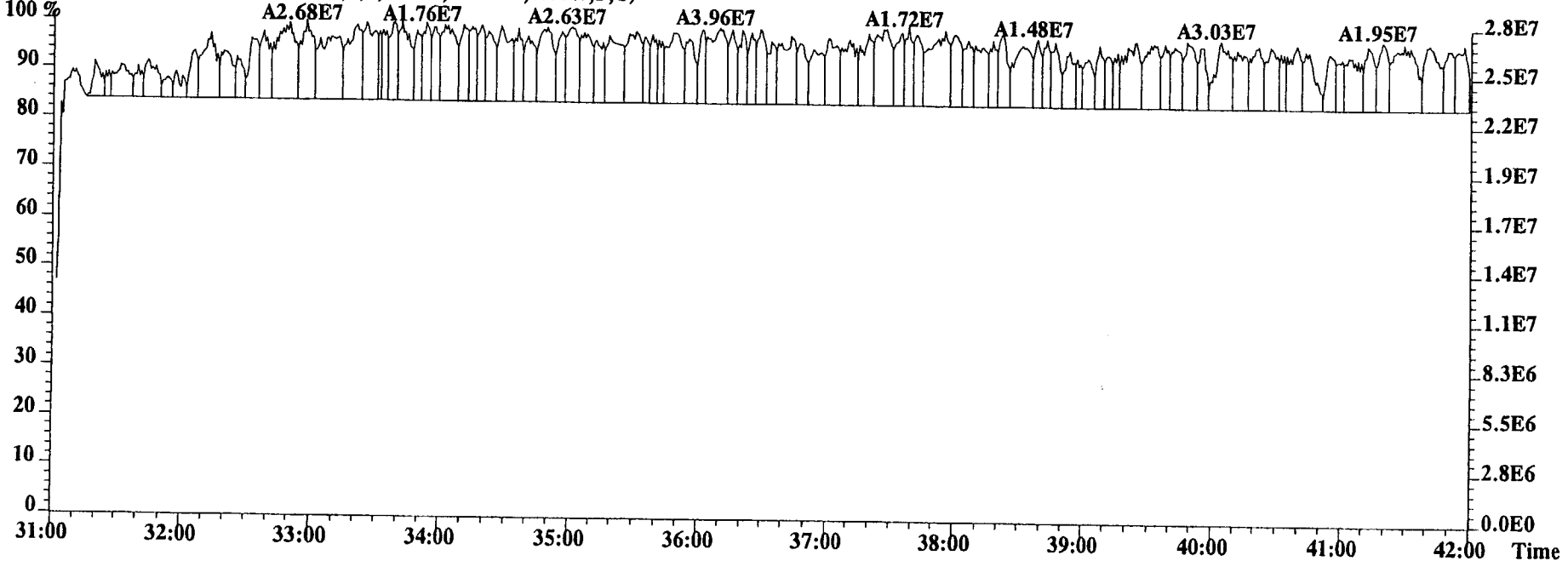

File:30OC98V4 #1-878 Acq:31-OCT-1998 05:50:00 GC EI+ Voltage SIR 70SE
Sample#17 Text:301802-14 :10X DIL. : : : Exp:PAHAIR
252.0939 S:17 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.36E5
A1.61E5
A5.38E4
A2.26E4
4.7E4
4.3E4
3.8E4
3.3E4
2.8E4
2.4E4
1.9E4
1.4E4
9.5E3
4.7E3
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
Time
264.1692 S:17 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.11E7
A3.84E6
A4.29E6
2.0E6
1.8E6
1.6E6
1.4E6
1.2E6
9.8E5
7.8E5
5.9E5
3.9E5
2.0E5
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
Time


File:30OC98V4 #1-878 Acq:31-OCT-1998 05:50:00 GC EI+ Voltage SIR 70SE
Sample#17 Text:301802-14 :10X DIL. : : : Exp:PAHAIR
276.0939 S:17 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
80
60
40
20
0
37:35
37:52
38:19
38:11
38:40
39:04
39:24
39:46
40:29
41:06
41:27
41:44
2.2E4
1.7E4
1.3E4
8.7E3
4.3E3
0.0E0
37:00
38:00
39:00
40:00
41:00
42:00
Time
288.1692 S:17 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A3.14E6
A4.94E5
A4.14E6
A1.95E5
4.5E5
3.6E5
2.7E5
1.8E5
9.0E4
0.0E0
278.1096 S:17 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
37:13
37:29
37:44
37:58
38:17
38:38
38:46
39:04
39:22
39:48
40:10
40:33
40:41
40:58
41:26
41:51
1.1E4
8.5E3
6.4E3
4.2E3
2.1E3
0.0E0
292.1974 S:17 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.63E6
1.3E5
1.1E5
8.1E4
5.4E4
2.7E4
0.0E0

File:30OC98V4 #1-878 Acq:31-OCT-1998 05:50:00 GC EI+ Voltage SIR 70SE
Sample#17 Text:301802-14 :10X DIL. : : : Exp:PAHAIR
268.9824 S:17 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



280.9824 S:17 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



Laboratory Control Sample

LABORATORY CONTROL SAMPLE REPORT
Advanced Technology Group - High Resolution
Project: 301802

Category: PAH-HR-AIR PAH by HRGC/HRMS
Test: PAH-HR-AIR
Matrix: AIR
QC Lot: 03 OCT 98-A QC Run: 02 NOV 98-A
Concentration Units: ng/sample

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits	
Naphthalene	100	90	90	50-150	B
2-Methylnaphthalene	100	100	103	50-150	B
Acenaphthylene	100	100	102	50-150	
Acenaphthene	100	92	92	50-150	
Fluorene	100	77	77	50-150	a
Phenanthrene	100	81	81	50-150	B
Anthracene	100	78	78	50-150	
Fluoranthene	100	80	80	50-150	
Pyrene	100	64	64	50-150	
Benzo(a)anthracene	100	87	87	50-150	
Chrysene	100	77	77	50-150	
Benzo(b)fluoranthene	100	76	76	50-150	
Benzo(k)fluoranthene	100	66	66	50-150	
Benzo(e)pyrene	100	73	73	50-150	
Benzo(a)pyrene	100	68	68	50-150	
Perylene	100	79	79	50-150	
Indeno(1,2,3-cd)pyrene	100	90	90	50-150	
Dibenz(a,h)anthracene	100	76	76	50-150	
Benzo(g,h,i)perylene	100	88	88	50-150	
Naphthalene-d8	50	27	53	50-150	
Acenaphthylene-d8	50	31	63	50-150	
Acenaphthene-d10	50	31	61	50-150	
Fluorene-d10	50	28	55	50-150	
Phenanthrene-d10	50	38	75	50-150	
Fluoranthene-d10	50	24	48	50-150	#
Pyrene-d10	50	26	52	50-150	
Benzo(a)anthracene-d12	50	31	62	50-150	
Chrysene-d12	50	43	85	50-150	
Benzo(b)fluoranthene-d12	50	36	71	50-150	
Benzo(k)fluoranthene-d12	50	44	88	50-150	
Benzo(a)pyrene-d12	50	45	91	50-150	
Perylene-d12	50	32	65	50-150	
Indeno(123-cd)pyrene-d12	50	59	117	50-150	
Dibenz(a,h)anthracene-d14	50	56	112	50-150	
Benzo(g,h,i)perylene-d12	50	54	109	50-150	

# = Outside of control limits.
a = See narrative.
B = Compound is also detected in the blank.

Calculations are performed before rounding to avoid round-off errors in calculated results.

Mass Spec : VG-4
GC Column : DB-5
Data file : 02NO98V4
Weight : 0.5

Results : 02NO98V4041.RES
Date analyzed : 02-NOV-98
301802-1LC--LCS : ...:0. Ex Cal : PAHAIR102998V4.R

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	ng/ TRAIN	Rec/ MDL
d10-2-Methylnaphthalene	89598000	1.00	Y	12: 27	Y	1.00	50.00	
d8-Naphthalene	107117000	1.00	Y	10: 12	Y	2.24	26.68	53
Naphthalene	118374400	1.00	Y	10: 16	Y	1.23	90.20	B
2-Methylnaphthalene	61891400	1.00	Y	12: 34	Y	0.56	103.08	B
d8-Acenaphthylene	68496200	1.00	Y	15: 28	Y	1.21	31.49	63
Acenaphthylene	65663400	1.00	Y	15: 30	Y	0.94	101.55	
d10-Acenaphthene	40966600	1.00	Y	16: 1	Y	0.74	30.70	61
Acenaphthene	46770000	1.00	Y	16: 8	Y	1.25	91.62	
d10-Anthracene	58228800	1.00	Y	20: 55	Y	1.00	50.00	
d10-Fluorene	41693800	1.00	Y	17: 41	Y	1.42	25.20	50
Fluorene	14768940	1.00	Y	17: 47	Y	1.16	-	SEE RT
d10-Phenanthrene	122660000	1.00	Y	20: 46	Y	2.81	37.51	75
Phenanthrene	89036600	1.00	Y	20: 50	Y	0.89	81.15	B
Anthracene	76921400	1.00	Y	20: 58	Y	0.80	78.35	
d14-Terphenyl	153815400	1.00	Y	26: 0	Y	1.00	50.00	
d10-Fluoranthene	104468400	1.00	Y	24: 36	Y	1.41	24.07	48
Fluoranthene	92516200	1.00	Y	24: 40	Y	1.11	79.66	
d10-Pyrene	122108200	1.00	Y	25: 17	Y	1.52	26.15	52
Pyrene	94184600	1.00	Y	25: 21	Y	1.21	64.01	
d12-Benzo(a)anthracene	85849400	1.00	Y	29: 8	Y	0.90	31.01	62
Benzo(a)anthracene	89463200	1.00	Y	29: 12	Y	1.20	86.52	
d12-Chrysene	167547800	1.00	Y	29: 15	Y	1.28	42.58	85
Chrysene	139077000	1.00	Y	29: 20	Y	1.08	76.58	
d12-Benzo(e)pyrene	196315600	1.00	Y	33: 21	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	63555600	1.00	Y	32: 28	Y	0.45	35.67	71
Benzo(b)fluoranthene	56218200	1.00	Y	32: 33	Y	1.17	75.78	
d12-Benzo(k)fluoranthene	163542600	1.00	Y	32: 34	Y	0.95	43.94	88
Benzo(k)fluoranthene	126261400	1.00	Y	32: 37	Y	1.16	66.32	
d12-Benzo(a)pyrene	120445000	1.00	Y	33: 32	Y	0.68	45.33	91
Benzo(e)pyrene	144201000	1.00	Y	33: 26	Y	1.64	72.97	
Benzo(a)pyrene	87870600	1.00	Y	33: 37	Y	1.07	68.06	
d12-Perylene	80068200	1.00	Y	33: 49	Y	0.63	32.36	65
Perylene	109039400	1.00	Y	33: 55	Y	1.71	79.47	
d12-Indeno(123-cd)pyrene	102411400	1.00	Y	38: 0	Y	0.44	58.68	117
Indeno(123-cd)pyrene	57000000	1.00	Y	38: 7	Y	0.62	89.63	
d14-Dibenz(ah)anthracene	53816800	1.00	Y	38: 5	Y	0.25	55.76	112
Dibenz(ah)anthracene	57461000	1.00	Y	38: 14	Y	1.40	76.07	
d12-Benzo(ghi)perylene	123655400	1.00	Y	39: 12	Y	0.58	54.33	109
Benzo(ghi)perylene	110815600	1.00	Y	39: 21	Y	1.02	88.20	

11-4-98
448

0.5

98V4.RRF

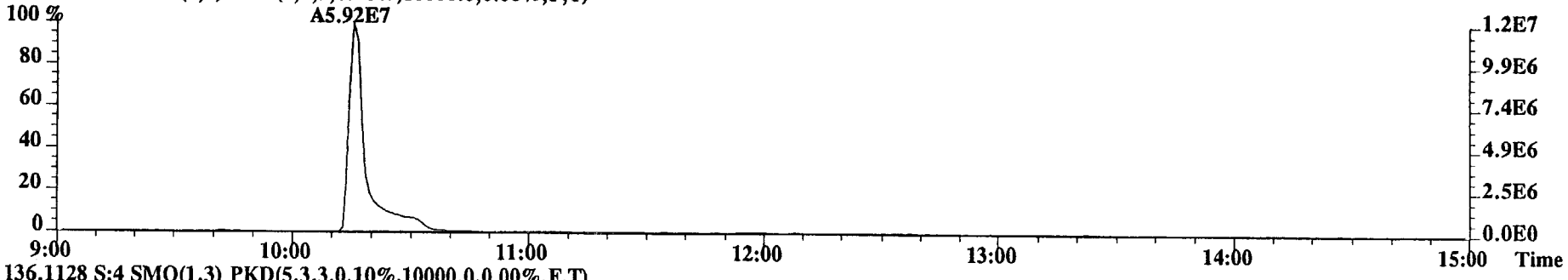
Rec/ MDL		
	44799000	44799000
53	53558500	53558500
B	59187200	59187200
B	30945700	30945700
63	34248100	34248100
	32831700	32831700
61	20483300	20483300
	23385000	23385000
	29114400	29114400
50	20846900	20846900
SEE	7384470	7384470
RI		
75	61330000	61330000
B	44518300	44518300
	38460700	38460700
	76907700	76907700
48	52234200	52234200
	46258100	46258100
52	61054100	61054100
	47092300	47092300
62	42924700	42924700
	44731600	44731600
85	83773900	83773900
	69538500	69538500
	98157800	98157800
71	31777800	31777800
	28109100	28109100
88	81771300	81771300
	63130700	63130700
91	60222500	60222500
	72100500	72100500
	43935300	43935300
65	40034100	40034100
	54519700	54519700
117	51205700	51205700
	28500000	28500000
112	26908400	26908400
	28730500	28730500
109	61827700	61827700
	55407800	55407800

03-NOV-1998 08:11:46 AM 429AIR Unknown RESULTS

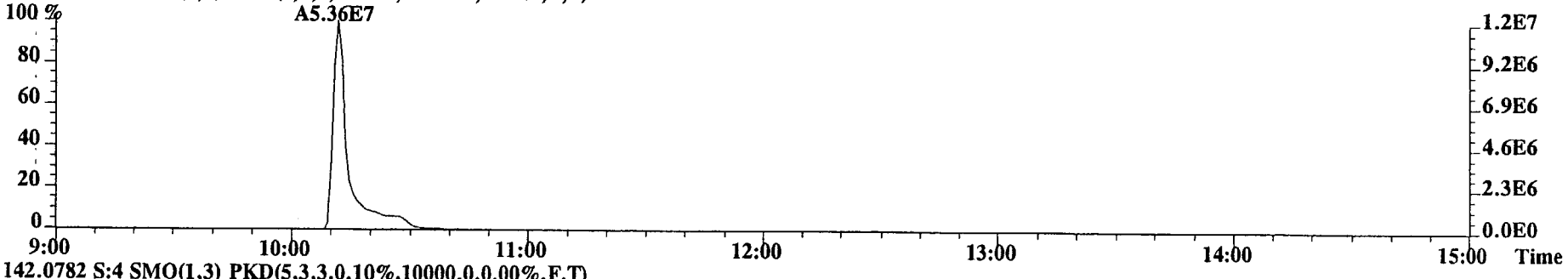
Mass Spec : VG-4 Results : 02NO98V4041.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 02-NOV-98
Data file : 02NO98V4 301802-1LC :LCS : : : :0. Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	ng/ TRAIN	Rec/ MDL
d10-2-Methylnaphthalene	89598000	1.00	Y	12: 27	Y	1.00	50.00	
d8-Naphthalene	107117000	1.00	Y	10: 12	Y	2.24	26.68	53
Naphthalene	118374400	1.00	Y	10: 16	Y	1.23	90.20	0.000
2-Methylnaphthalene	61891400	1.00	Y	12: 34	Y	0.56	103.08	0.000
d8-Acenaphthylene	68496200	1.00	Y	15: 28	Y	1.21	31.49	63
Acenaphthylene	65663400	1.00	Y	15: 30	Y	0.94	101.55	0.000
d10-Acenaphthene	40966600	1.00	Y	16: 1	Y	0.74	30.70	61
Acenaphthene	46770000	1.00	Y	16: 8	Y	1.25	91.62	0.000
d10-Anthracene	58228800	1.00	Y	20: 55	Y	1.00	50.00	
d10-Fluorene	41693800	1.00	Y	17: 41	Y	1.42	25.20	50
Fluorene	14768940	1.00	Y	17: 47	Y	1.16	30.52	0.000
d10-Phenanthrene	122660000	1.00	Y	20: 46	Y	2.81	37.51	75
Phenanthrene	89036600	1.00	Y	20: 50	Y	0.89	81.15	0.000
Anthracene	76921400	1.00	Y	20: 58	Y	0.80	78.35	0.000
d14-Terphenyl	153815400	1.00	Y	26: 0	Y	1.00	50.00	
d10-Fluoranthene	104468400	1.00	Y	24: 36	Y	1.41	24.07	48
Fluoranthene	92516200	1.00	Y	24: 40	Y	1.11	79.66	0.000
d10-Pyrene	122108200	1.00	Y	25: 17	Y	1.52	26.15	52
Pyrene	94184600	1.00	Y	25: 21	Y	1.21	64.01	0.000
d12-Benzo(a)anthracene	85849400	1.00	Y	29: 8	Y	0.90	31.01	62
Benzo(a)anthracene	89463200	1.00	Y	29: 12	Y	1.20	86.52	0.000
d12-Chrysene	167547800	1.00	Y	29: 15	Y	1.28	42.58	85
Chrysene	139077000	1.00	Y	29: 20	Y	1.08	76.58	0.000
d12-Benzo(e)pyrene	196315600	1.00	Y	33: 21	Y	1.00	50.00	
d12-Benzo(b)fluoranthene	63555600	1.00	Y	32: 28	Y	0.45	35.67	71
Benzo(b)fluoranthene	56218200	1.00	Y	32: 33	Y	1.17	75.78	0.000
d12-Benzo(k)fluoranthene	163542600	1.00	Y	32: 34	Y	0.95	43.94	88
Benzo(k)fluoranthene	126261400	1.00	Y	32: 37	Y	1.16	66.32	0.000
d12-Benzo(a)pyrene	120445000	1.00	Y	33: 32	Y	0.68	45.33	91
Benzo(e)pyrene	144201000	1.00	Y	33: 26	Y	1.64	72.97	0.000
Benzo(a)pyrene	87870600	1.00	Y	33: 37	Y	1.07	68.06	0.000
d12-Perylene	80068200	1.00	Y	33: 49	Y	0.63	32.36	65
Perylene	109039400	1.00	Y	33: 55	Y	1.71	79.47	0.000
d12-Indeno(123-cd)pyrene	102411400	1.00	Y	38: 0	Y	0.44	58.68	117
Indeno(123-cd)pyrene	88304000	1.00	Y	38: 7	Y	0.62	138.86	0.000
d14-Dibenz(ah)anthracene	53816800	1.00	Y	38: 5	Y	0.25	55.76	112
Dibenz(ah)anthracene	57461000	1.00	Y	38: 14	Y	1.40	76.07	0.000
d12-Benzo(ghi)perylene	123655400	1.00	Y	39: 12	Y	0.58	54.33	109
Benzo(ghi)perylene	110815600	1.00	Y	39: 21	Y	1.02	88.20	0.000
d10-Fluorene	41693800	1.00	Y	17: 41	Y	1.42	7.47	15
13C-Fluorene	117709	1.00	Y	17: 42	Y	1.00	0.28	0.000

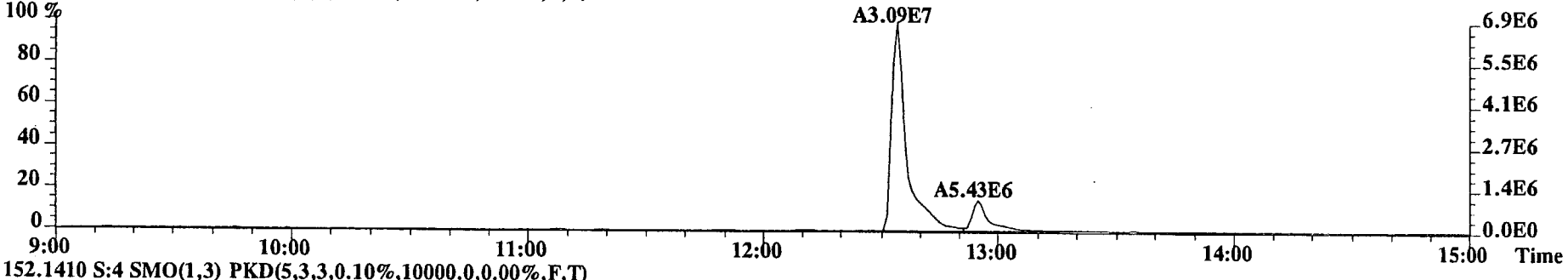
File:02NO98V4 #1-510 Acq: 2-NOV-1998 15:40:28 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
128.0626 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



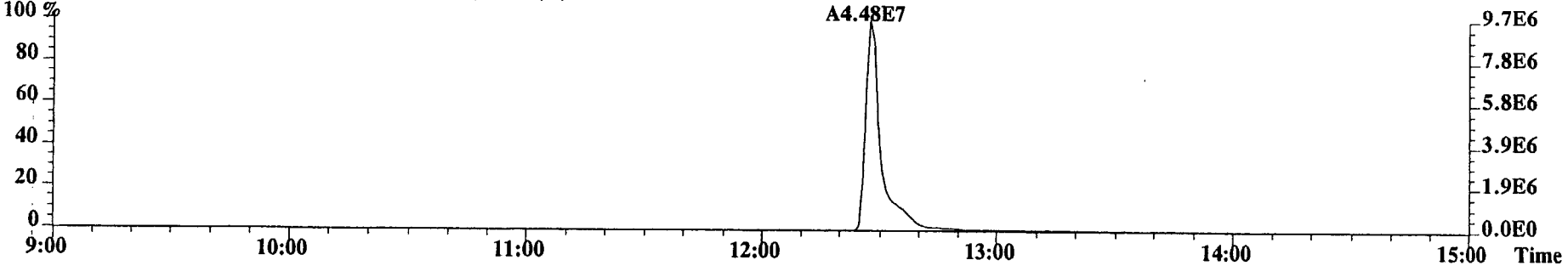
136.1128 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



142.0782 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

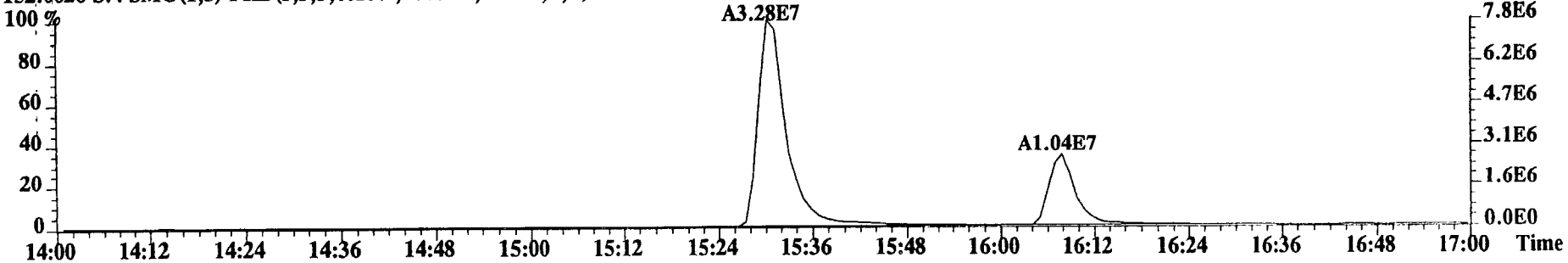


152.1410 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

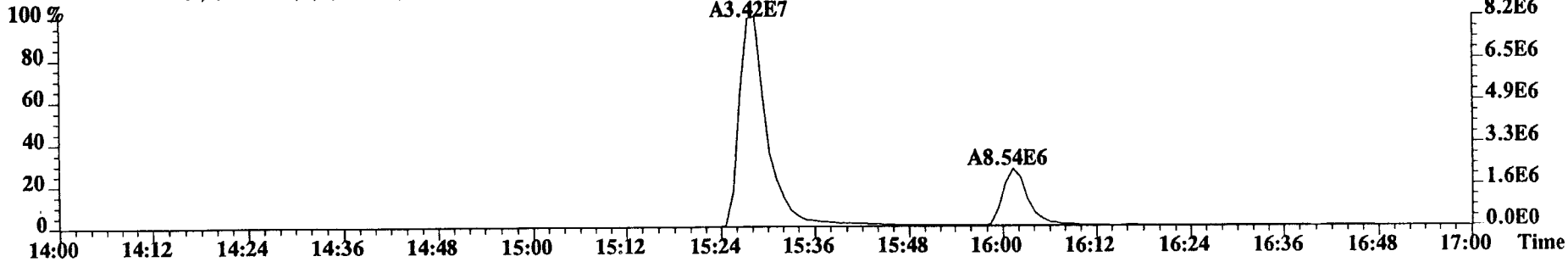


File:02NO98V4 #1-510 Acq: 2-NOV-1998 15:40:28 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR

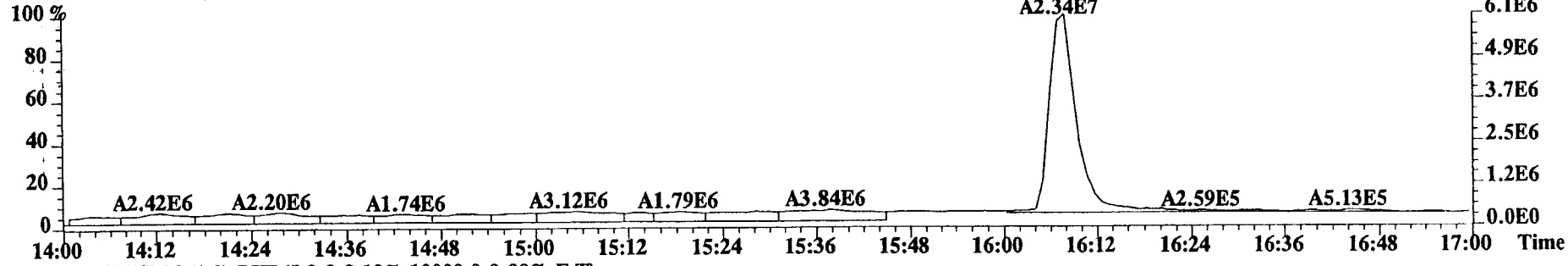
152.0626 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



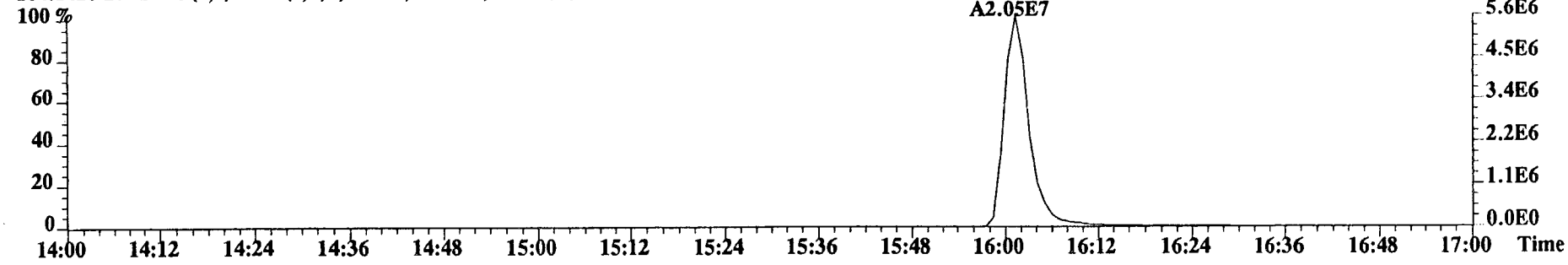
160.1128 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



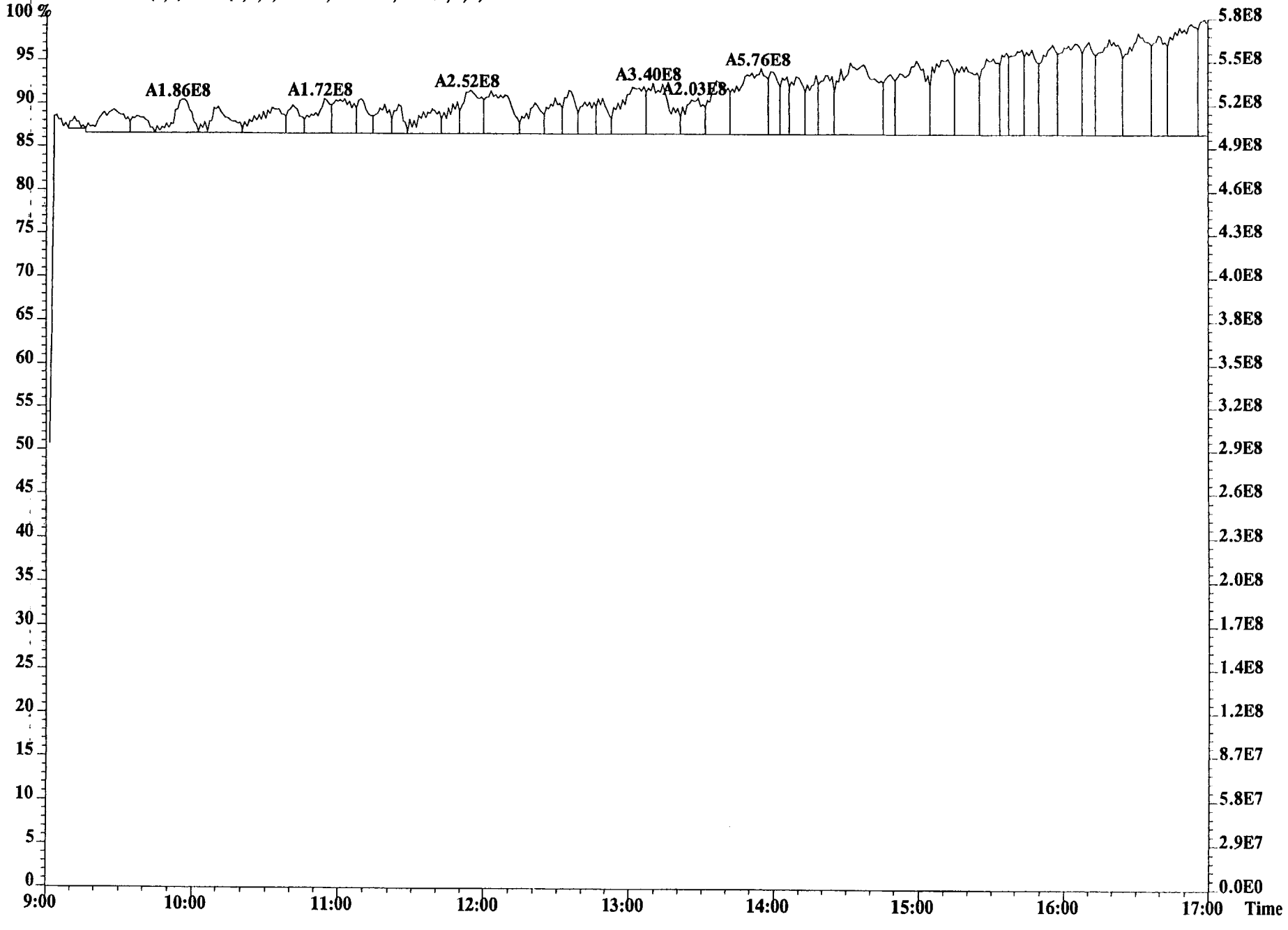
154.0782 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



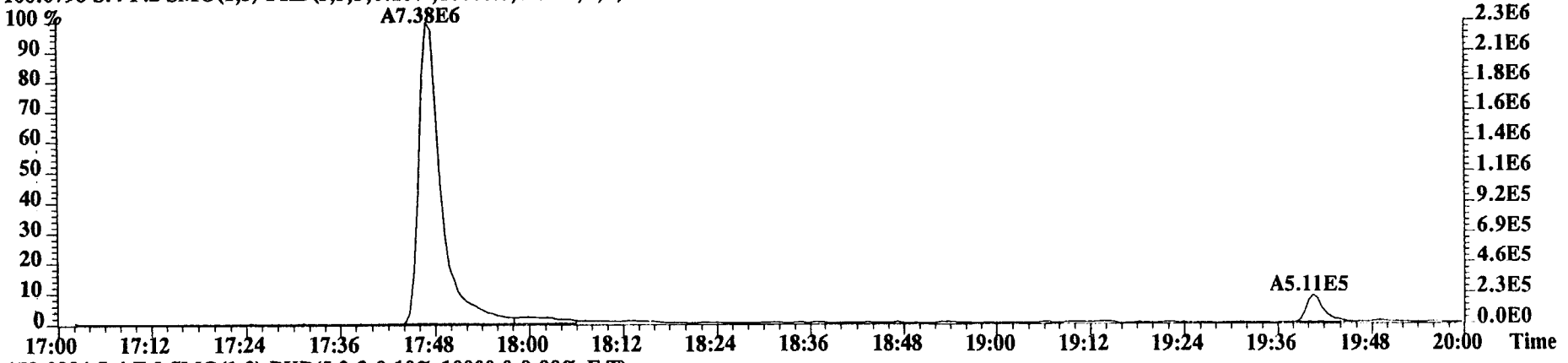
164.1410 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



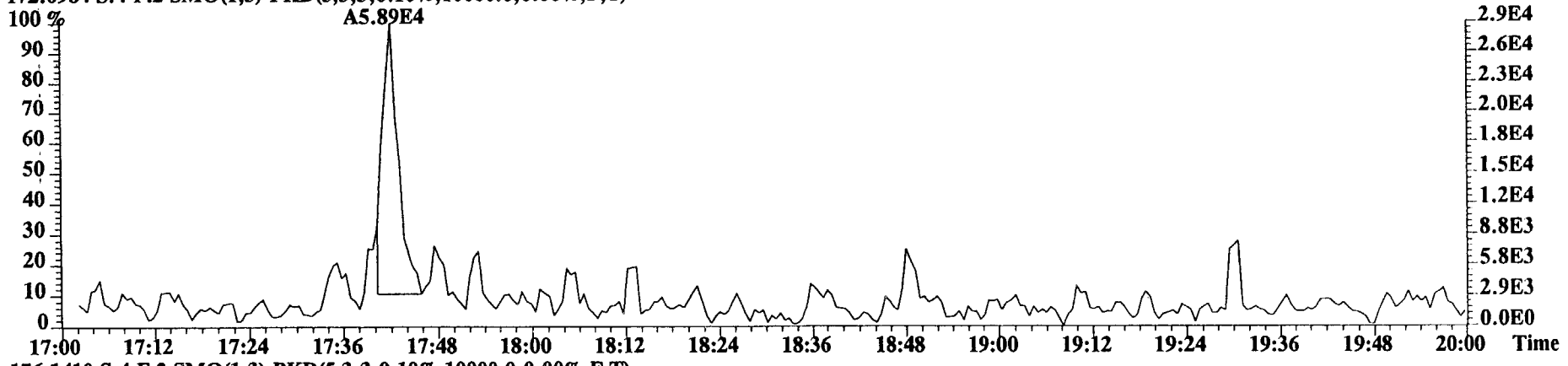
File:02NO98V4 #1-510 Acq: 2-NOV-1998 15:40:28 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
130.9920 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



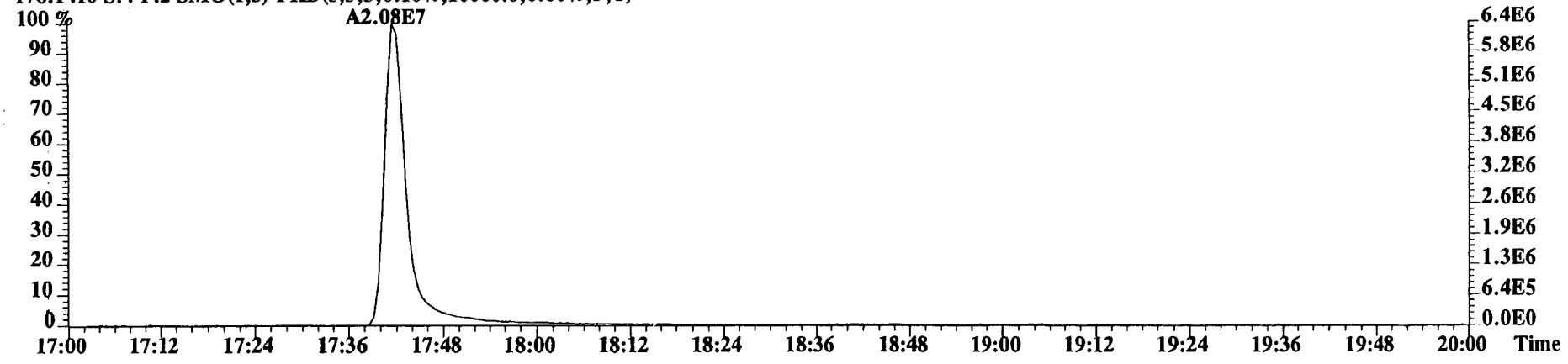
File:02NO98V4 #1-641 Acq: 2-NOV-1998 15:40:28 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
166.0798 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



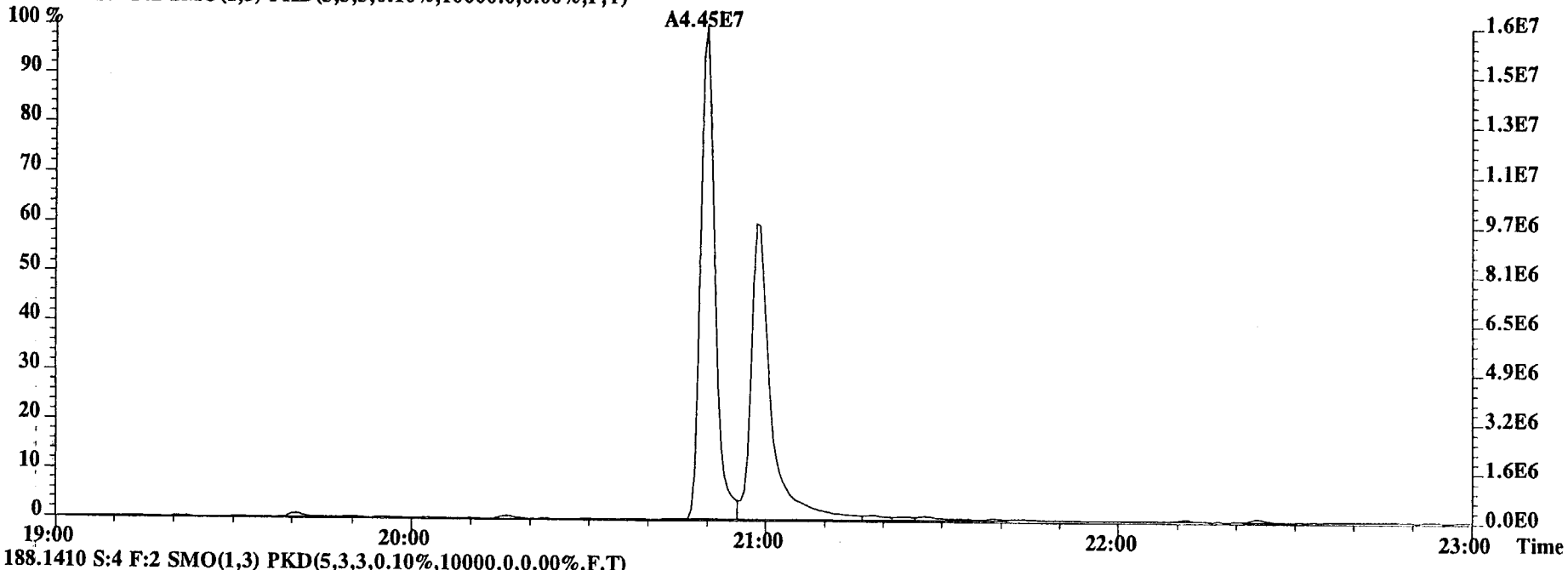
172.0984 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



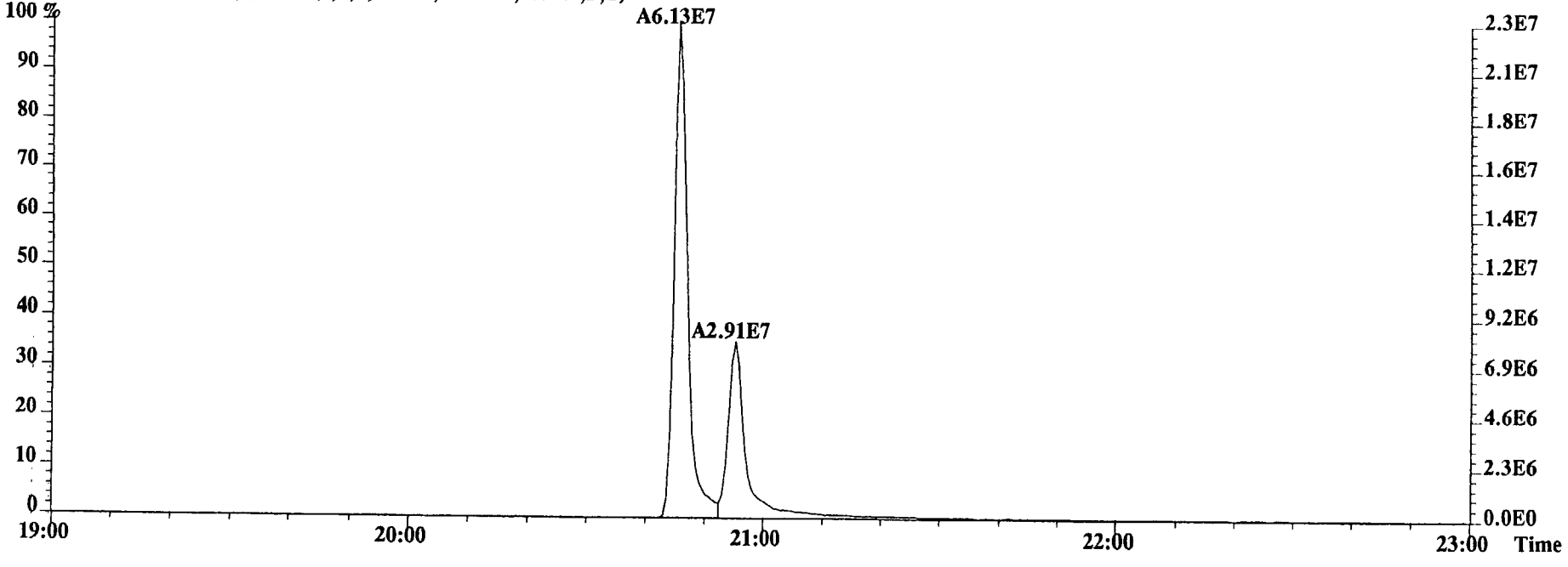
176.1410 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

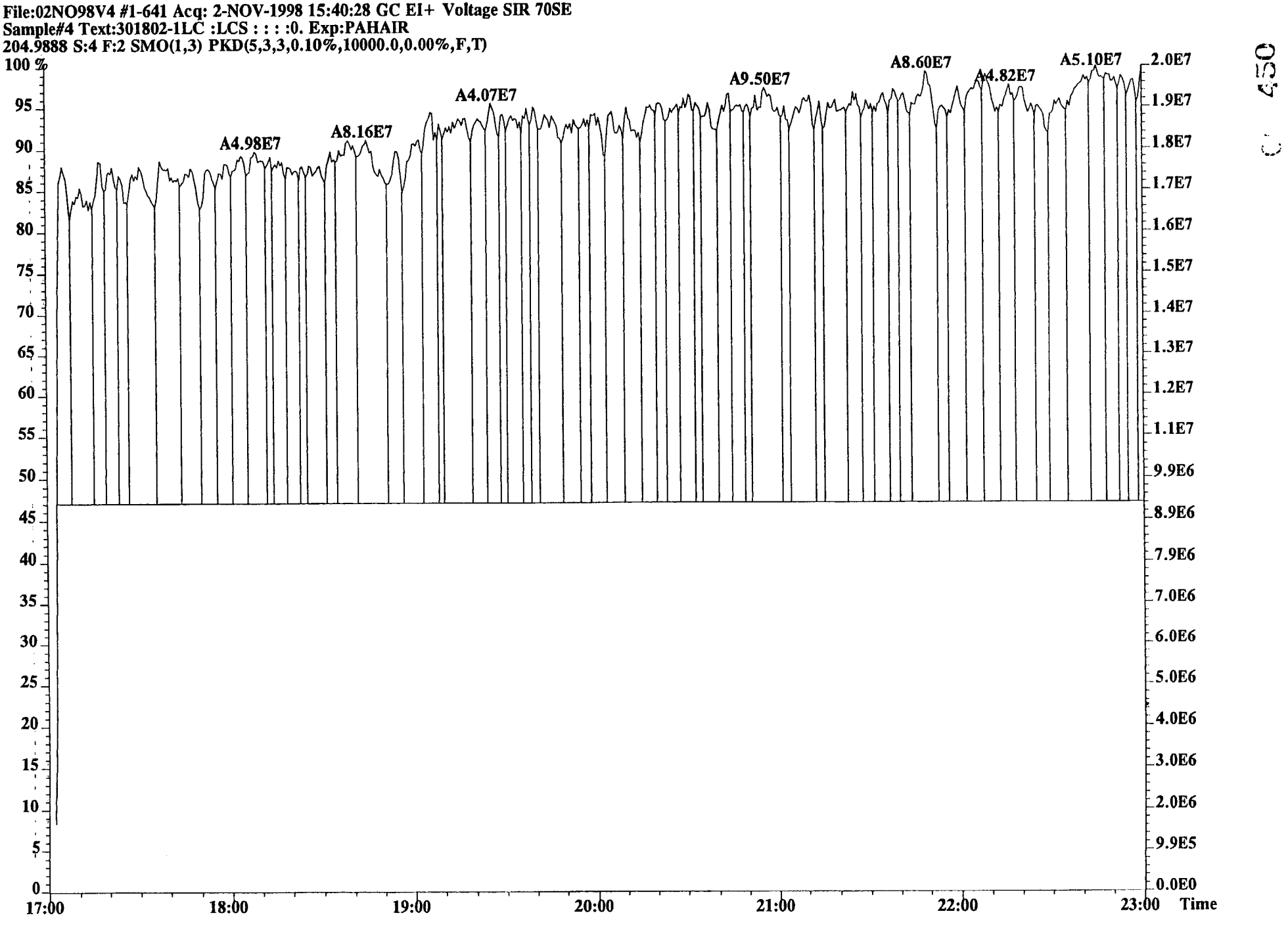


File:02NO98V4 #1-641 Acq: 2-NOV-1998 15:40:28 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
178.0782 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

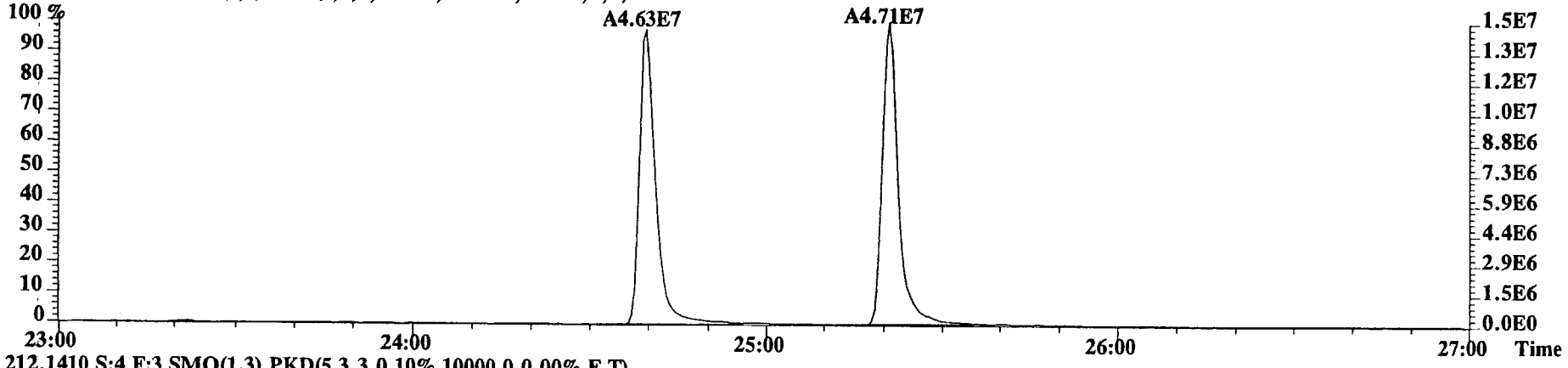


188.1410 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

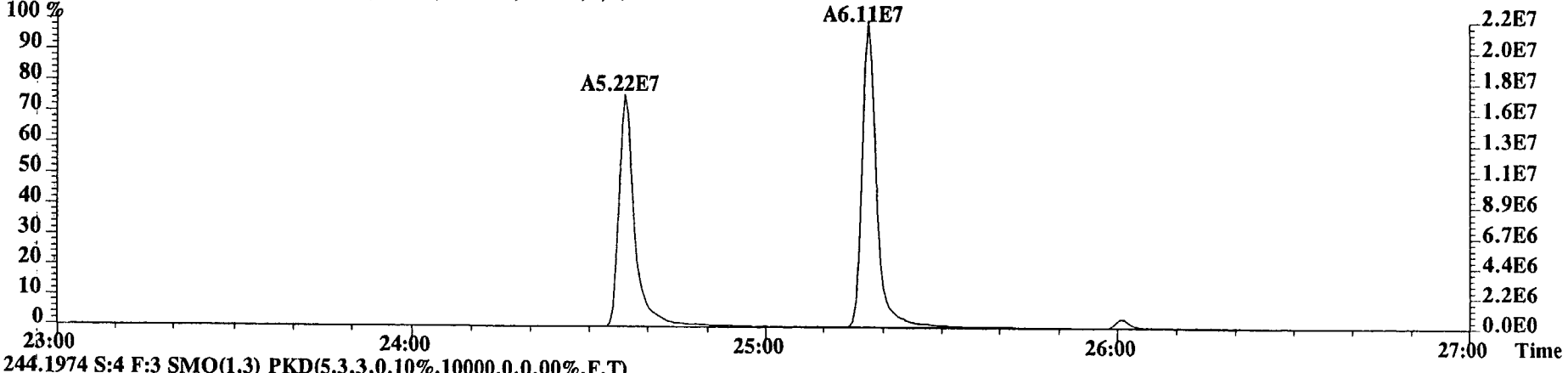



File:02NO98V4 #1-641 Acq: 2-NOV-1998 15:40:28 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
204.9888 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A4.98E7
A8.16E7
A4.07E7
A9.50E7
A8.60E7
A4.82E7
A5.10E7
2.0E7
1.9E7
1.8E7
1.7E7
1.6E7
1.5E7
1.4E7
1.3E7
1.2E7
1.1E7
9.9E6
8.9E6
7.9E6
7.0E6
6.0E6
5.0E6
4.0E6
3.0E6
2.0E6
9.9E5
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

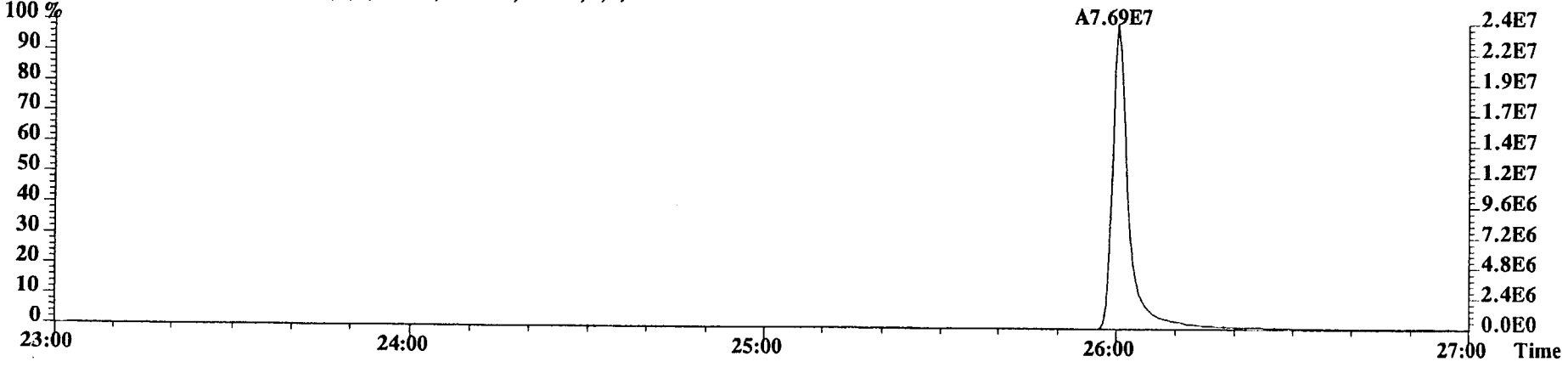
File:02NO98V4 #1-938 Acq: 2-NOV-1998 15:40:28 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
202.0782 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



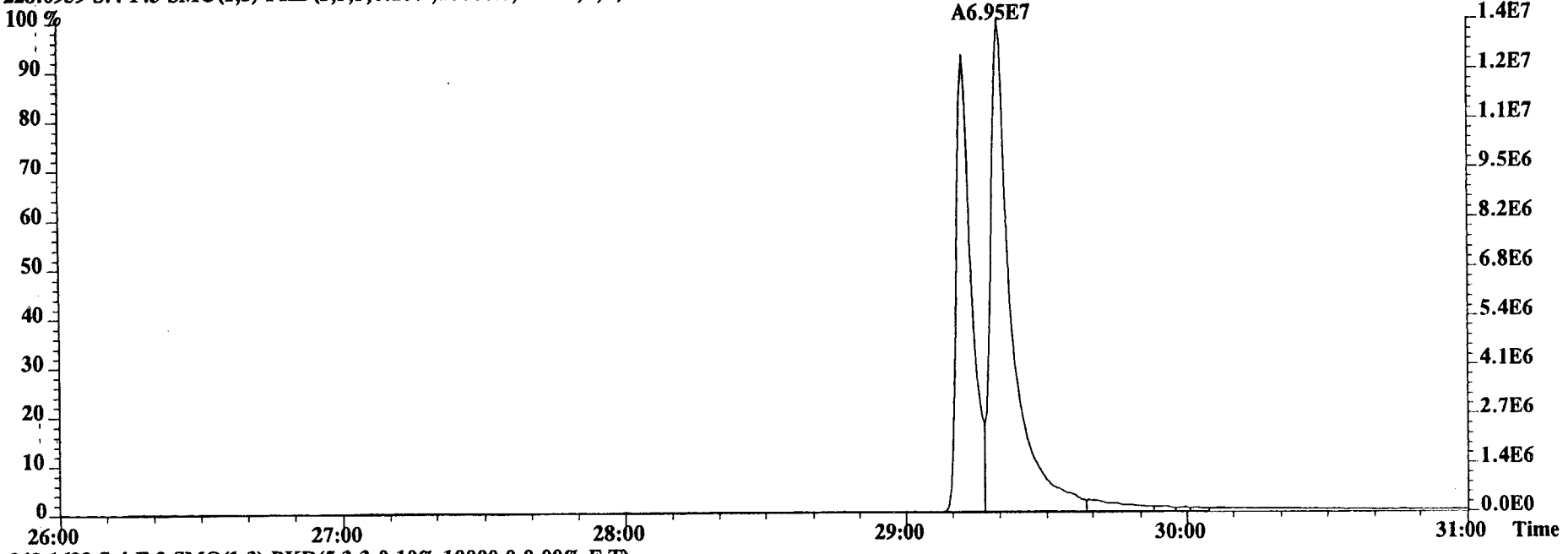
212.1410 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



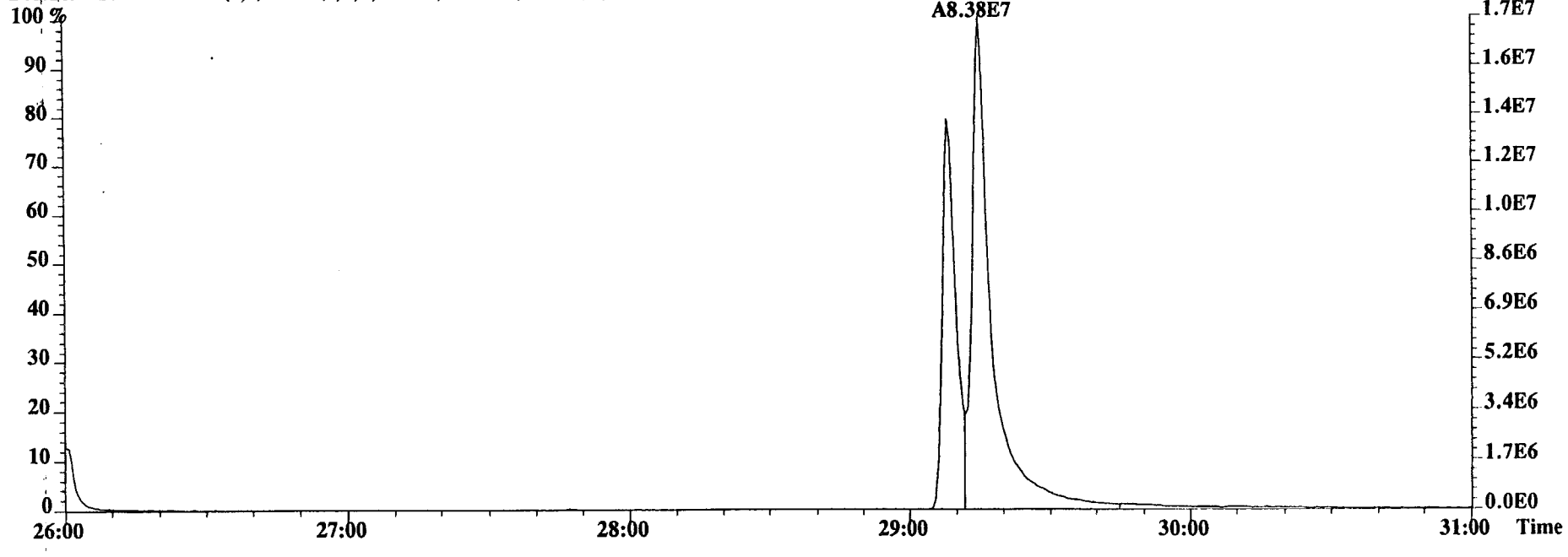
244.1974 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

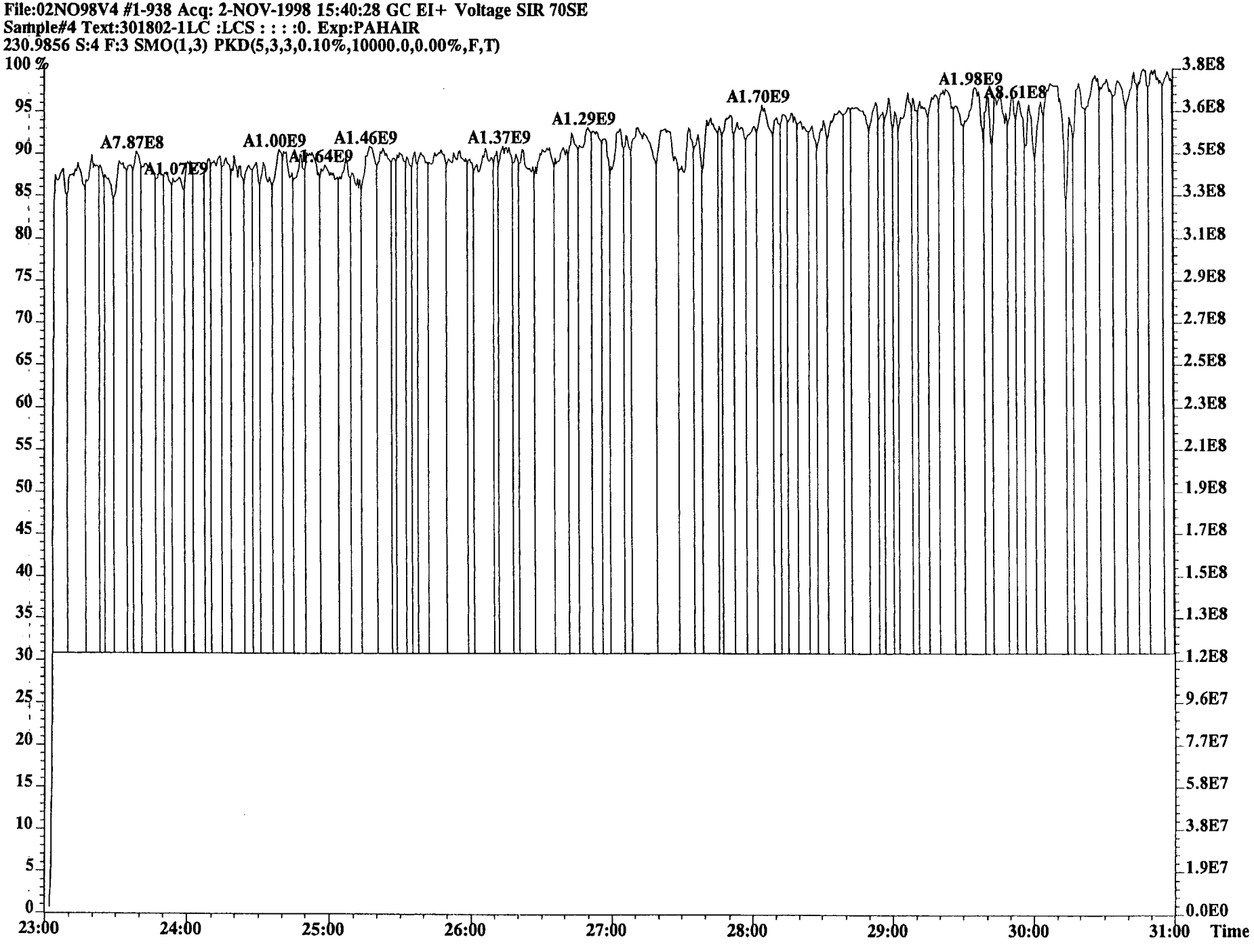


File:02NO98V4 #1-938 Acq: 2-NOV-1998 15:40:28 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
228.0939 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

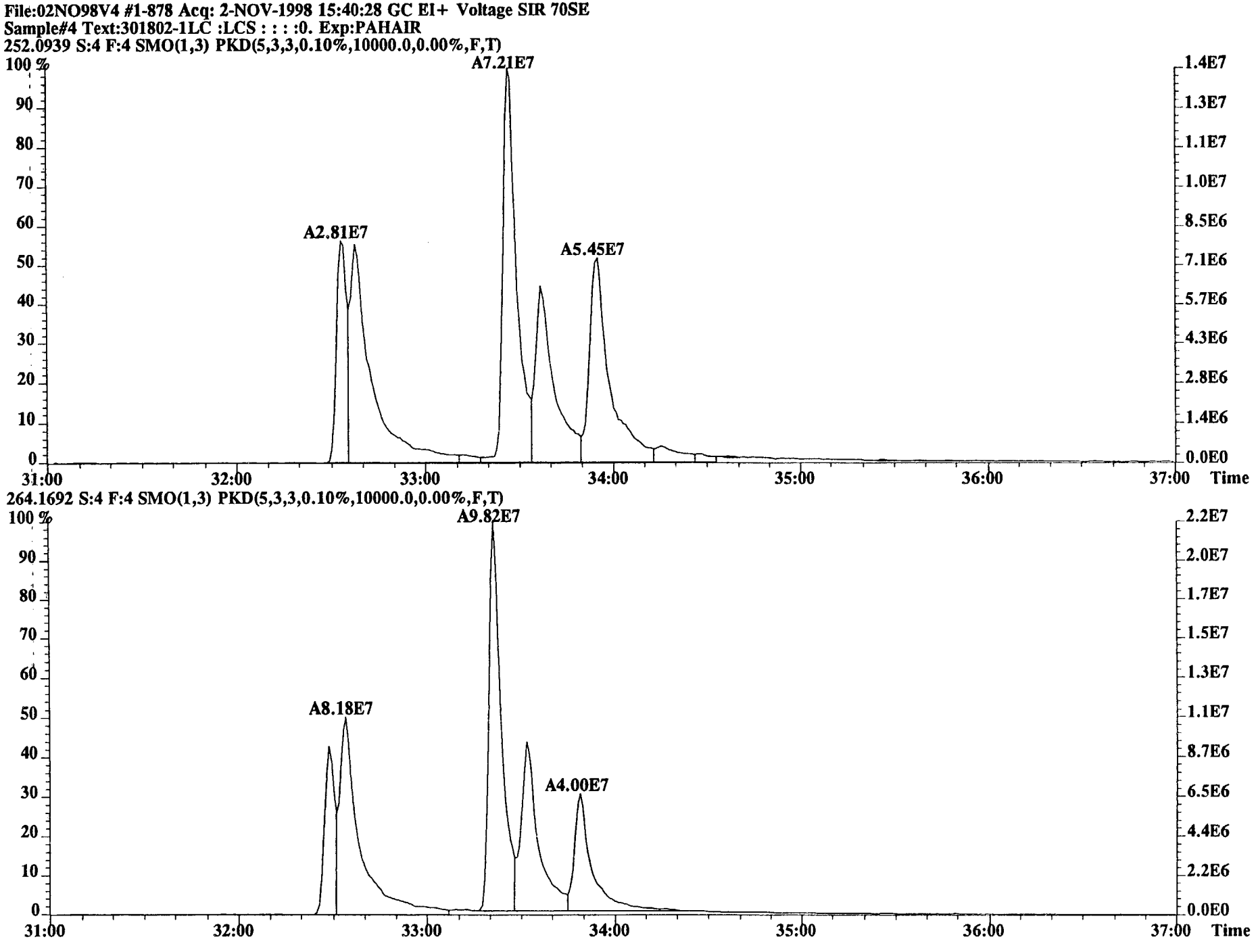


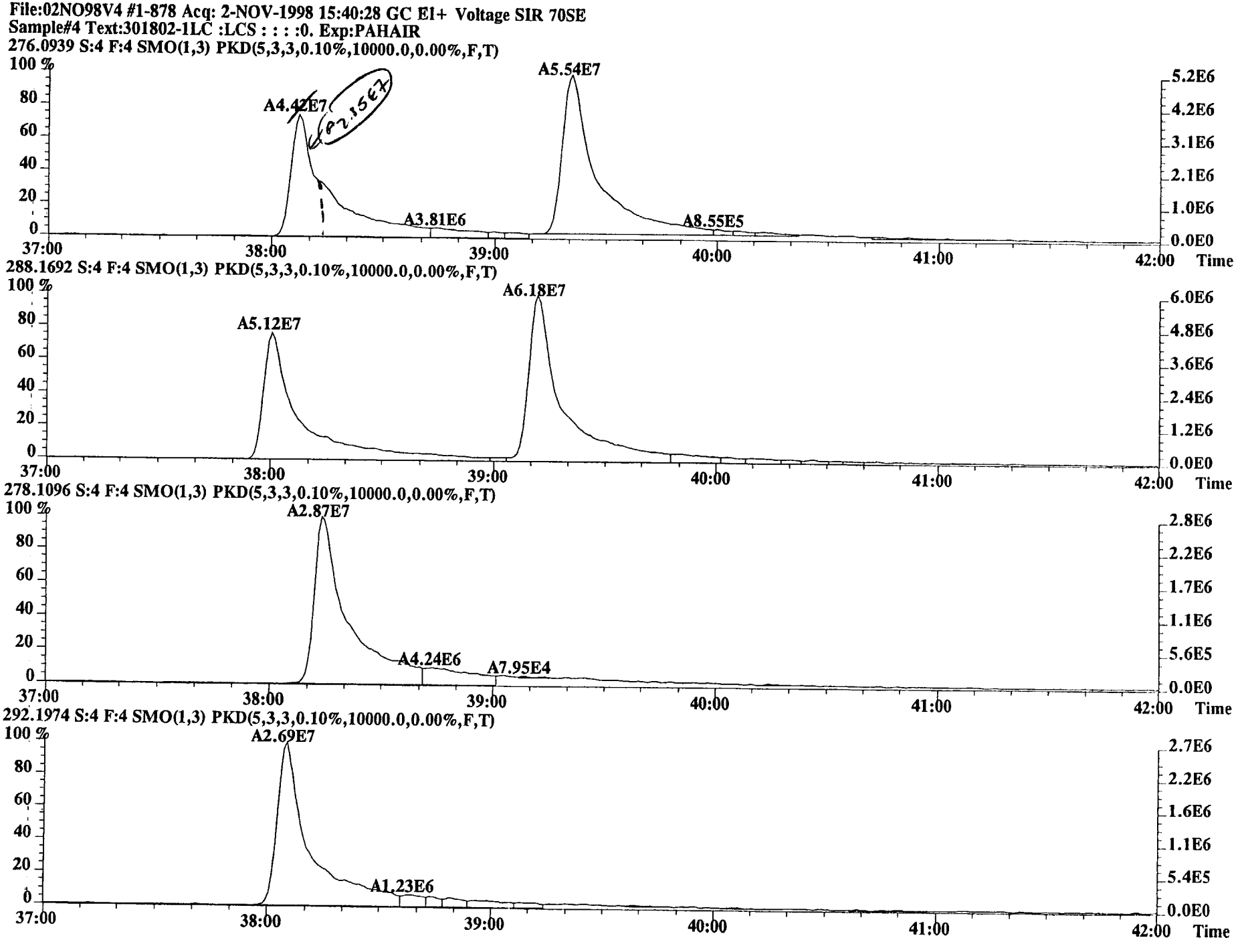
240.1692 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



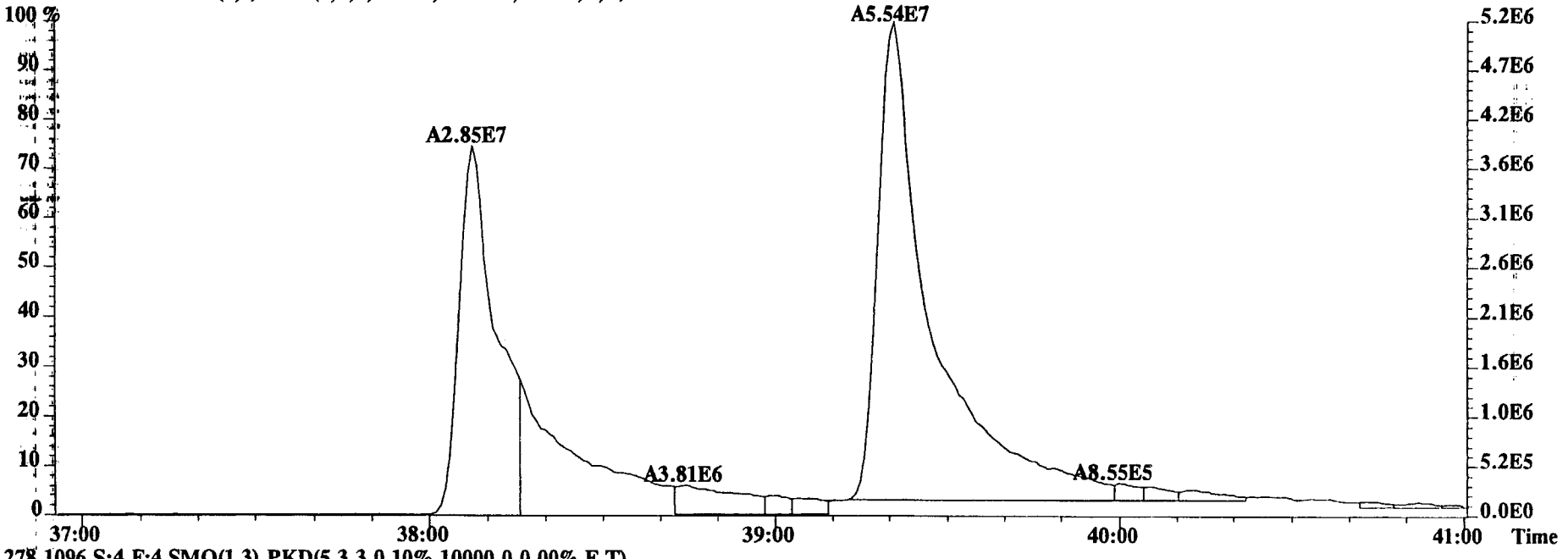

File:02NO98V4 #1-938 Acq: 2-NOV-1998 15:40:28 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
230.9856 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A7.87E8
A1.07E9
A1.00E9
A1.64E9
A1.46E9
A1.37E9
A1.29E9
A1.70E9
A1.98E9
A8.61E8
3.8E8
3.6E8
3.5E8
3.3E8
3.1E8
2.9E8
2.7E8
2.5E8
2.3E8
2.1E8
1.9E8
1.7E8
1.5E8
1.3E8
1.2E8
9.6E7
7.7E7
5.8E7
3.8E7
1.9E7
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time

453

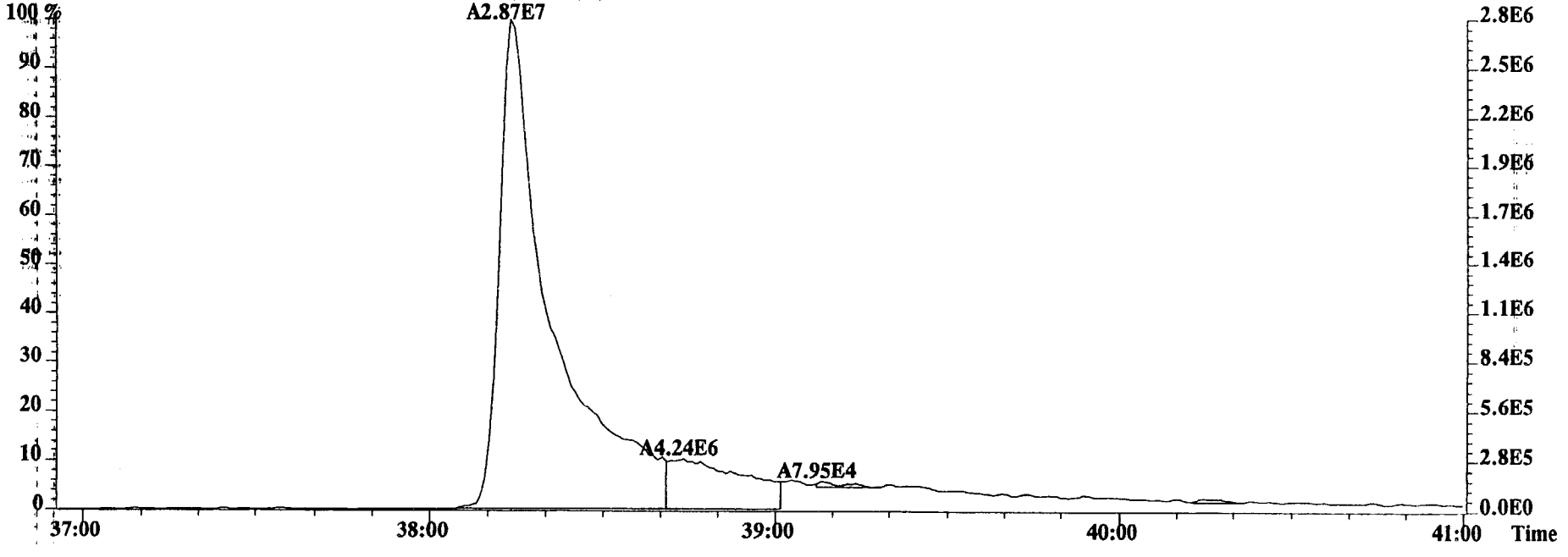

File:02NO98V4 #1-878 Acq: 2-NOV-1998 15:40:28 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
252.0939 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.21E7
A2.81E7
A5.45E7
264.1692 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A9.82E7
A8.18E7
A4.00E7
Time


File:02NO98V4 #1-878 Acq: 2-NOV-1998 15:40:28 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
276.0939 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.42E7
A5.54E7
A3.81E6
A8.55E5
288.1692 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A5.12E7
A6.18E7
278.1096 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.87E7
A4.24E6
A7.95E4
292.1974 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.69E7
A1.23E6
100 %
80
60
40
20
0
37:00
38:00
39:00
40:00
41:00
42:00
Time
5.2E6
4.2E6
3.1E6
2.1E6
1.0E6
0.0E0
6.0E6
4.8E6
3.6E6
2.4E6
1.2E6
0.0E0
2.8E6
2.2E6
1.7E6
1.1E6
5.6E5
0.0E0
2.7E6
2.2E6
1.6E6
1.1E6
5.4E5
0.0E0

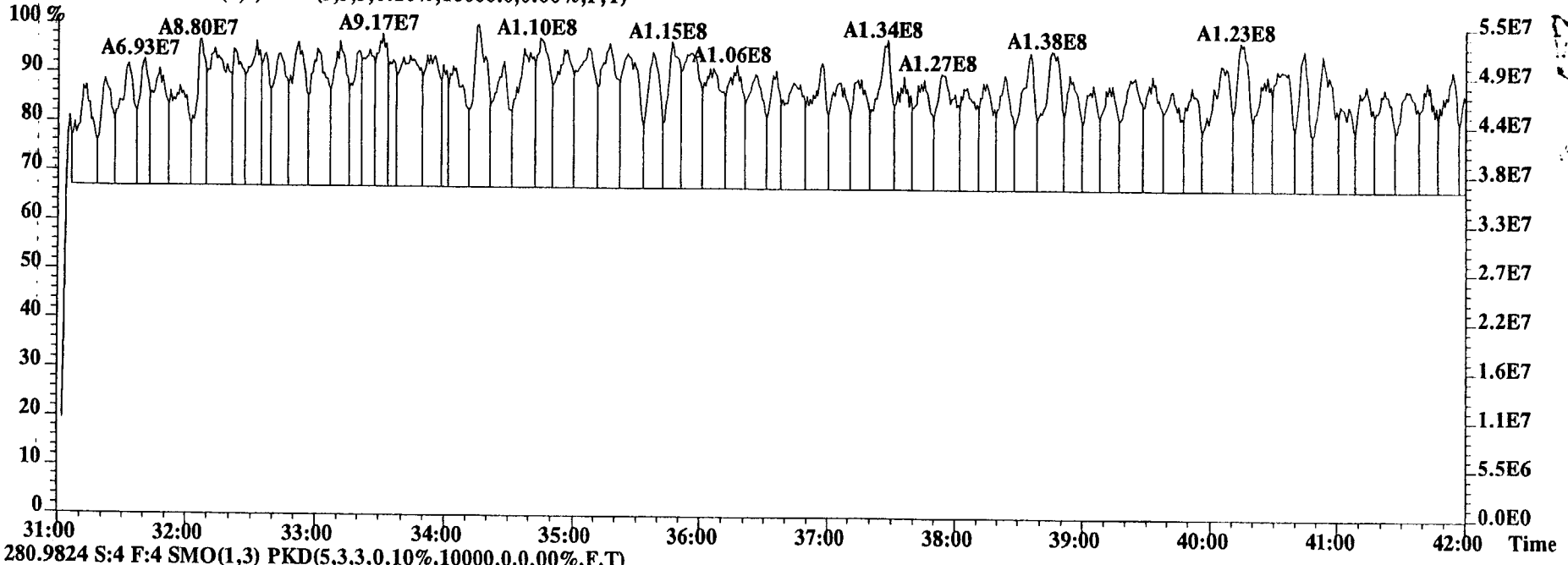
File:02NO98V4 #1-878 Acq: 2-NOV-1998 15:40:28 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
276.0939 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



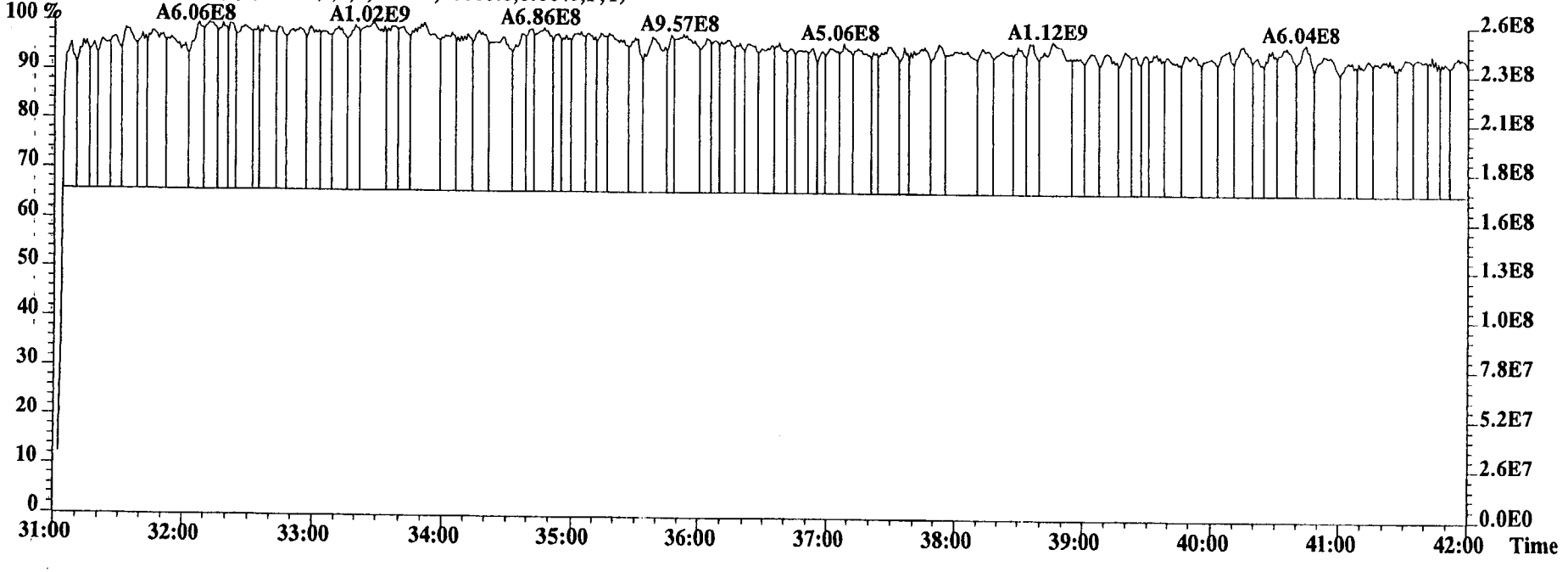
278.1096 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



File:02NO98V4 #1-878 Acq: 2-NOV-1998 15:40:28 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
268.9824 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



280.9824 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



Mass Spec : VG-4 Results : 03NO98V4041.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 03-NOV-98
Data file : 03NO98V4 301802-1LC LCS : 0 Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	ng/ TRAIN	Rec/ MDL
d10-Anthracene	23399000	1.00	Y	20: 54	Y	1.00	50.00	
d10-Fluorene	18381380	1.00	Y	17: 41	Y	1.42	27.64	55
Fluorene	16485420	1.00	Y	17: 47	Y	1.16	77.28	

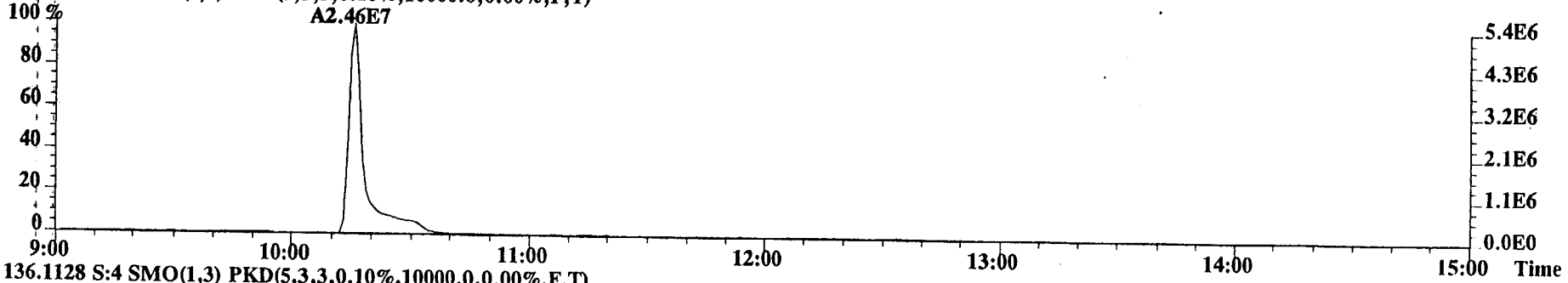
11-4-98
CR

	0.5	
98V4.RRF		
Rec/ MDL		
	11699500	11699500
55	9190690	9190690
	8242710	8242710

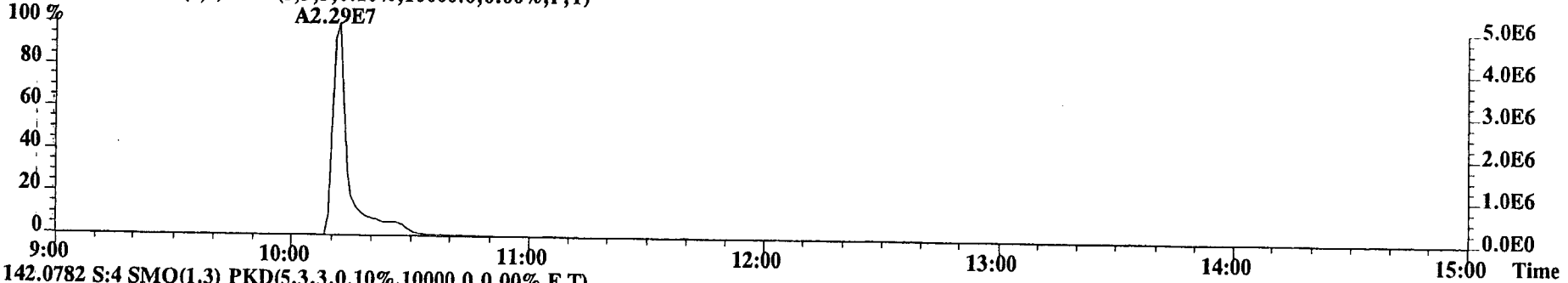
Mass Spec : VG-4 Results : 03NO98V4041.RES : PAHAIR.TRG
GC Column : DB-5 Date analyzed : 03-NOV-98
Data file : 03NO98V4 301802-1LC :LCS : : : :0. Ex Cal : PAHAIR102998V4.R
Weight : 0.5

Name	Total Response	Isotope Ratio	R. T. mm:ss	RRF	ng/ TRAIN	Rec/ MDL
d10-2-Methylnaphthalene	37412400	1.00 Y	12: 27 Y	1.00	50.00	
d8-Naphthalene	45879400	1.00 Y	10: 12 Y	2.24	27.36	55
Naphthalene	49271800	1.00 Y	10: 16 Y	1.23	87.66	0.000
2-Methylnaphthalene	24274600	1.00 Y	12: 34 Y	0.56	94.39	0.000
d8-Acenaphthylene	31094800	1.00 Y	15: 27 Y	1.21	34.24	68
Acenaphthylene	27737000	1.00 Y	15: 30 Y	0.94	94.49	0.000
d10-Acenaphthene	18919580	1.00 Y	16: 1 Y	0.74	33.96	68
Acenaphthene	18287420	1.00 Y	16: 7 Y	1.25	77.57	0.000
d10-Anthracene	23399000	1.00 Y	20: 54 Y	1.00	50.00	
d10-Fluorene	18381380	1.00 Y	17: 41 Y	1.42	27.64	55
Fluorene	16485420	1.00 Y	17: 47 Y	1.16	77.28	0.000
d10-Phenanthrene	50645000	1.00 Y	20: 45 Y	2.81	38.55	77
Phenanthrene	39571800	1.00 Y	20: 49 Y	0.89	87.35	0.000
Anthracene	31133200	1.00 Y	20: 58 Y	0.80	76.80	0.000
d14-Terphenyl	52179400	1.00 Y	26: 0 Y	1.00	50.00	
d10-Fluoranthene	44489600	1.00 Y	24: 36 Y	1.41	30.22	60
Fluoranthene	44720600	1.00 Y	24: 39 Y	1.11	90.41	0.000
d10-Pyrene	46858200	1.00 Y	25: 17 Y	1.52	29.58	59
Pyrene	48076200	1.00 Y	25: 20 Y	1.21	85.14	0.000
d12-Benzo(a)anthracene	19295560	1.00 Y	29: 8 Y	0.90	20.54	41
Benzo(a)anthracene	21313600	1.00 Y	29: 12 Y	1.20	91.70	0.000
d12-Chrysene	46687000	1.00 Y	29: 14 Y	1.28	34.97	70
Chrysene	39673800	1.00 Y	29: 20 Y	1.08	78.40	0.000
d12-Benzo(e)pyrene	48654800	1.00 Y	33: 20 Y	1.00	50.00	
d12-Benzo(b)fluoranthene	14420380	1.00 Y	32: 28 Y	0.45	32.65	65
Benzo(b)fluoranthene	13157600	1.00 Y	32: 33 Y	1.17	78.17	0.000
d12-Benzo(k)fluoranthene	36534000	1.00 Y	32: 33 Y	0.95	39.60	79
Benzo(k)fluoranthene	38188200	1.00 Y	32: 37 Y	1.16	89.79	0.000
d12-Benzo(a)pyrene	32661600	1.00 Y	33: 31 Y	0.68	49.60	99
Benzo(e)pyrene	41321000	1.00 Y	33: 26 Y	1.64	77.10	0.000
Benzo(a)pyrene	26617200	1.00 Y	33: 36 Y	1.07	76.02	0.000
d12-Perylene	22493800	1.00 Y	33: 48 Y	0.63	36.68	73
Perylene	31782200	1.00 Y	33: 54 Y	1.71	82.45	0.000
d12-Indeno(123-cd)pyrene	16088940	1.00 Y	37: 59 Y	0.44	37.19	74
Indeno(123-cd)pyrene	15325920	1.00 Y	38: 6 Y	0.62	153.40	0.000
d14-Dibenz(ah)anthracene	6846840	1.00 Y	38: 3 Y	0.25	28.62	57
Dibenz(ah)anthracene	9119460	1.00 Y	38: 13 Y	1.40	94.90	0.000
d12-Benzo(ghi)perylene	19645600	1.00 Y	39: 10 Y	0.58	34.83	70
Benzo(ghi)perylene	21834400	1.00 Y	39: 19 Y	1.02	109.39	0.000
d10-Fluorene	18381380	1.00 Y	17: 41 Y	1.42	13.29	27
13C-Fluorene	* No Peak	0.00 N	17: 46 N	1.00	0.00	0.000

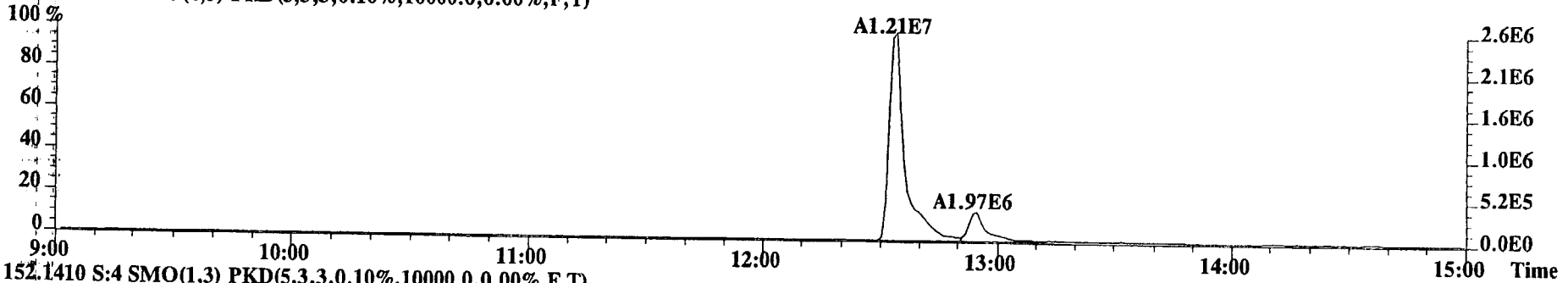
File:03NO98V4 #1-510 Acq: 3-NOV-1998 13:08:10 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
128.0626 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



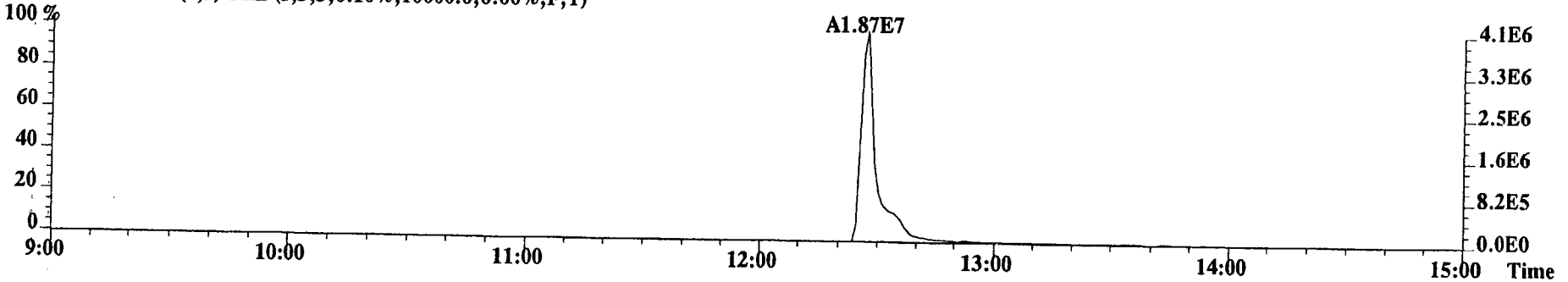
136.1128 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



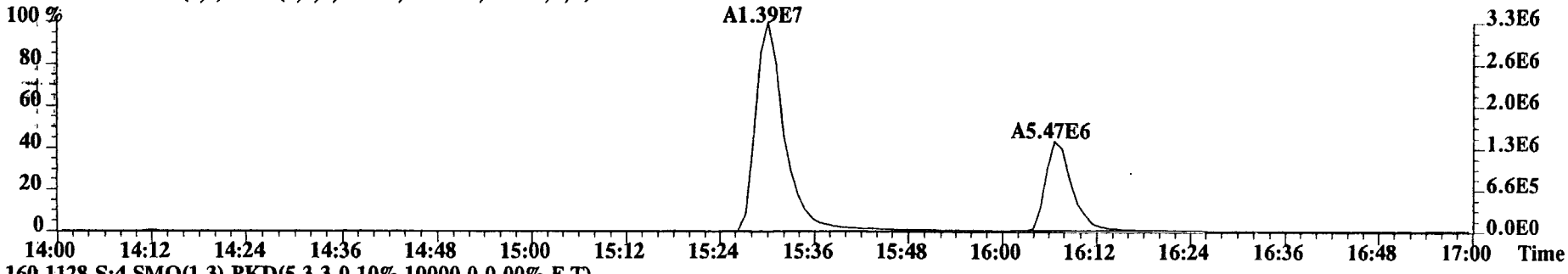
142.0782 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

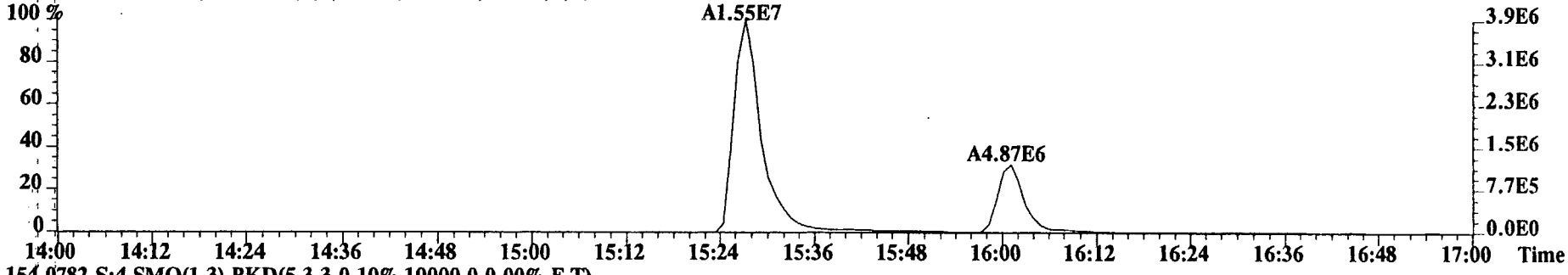


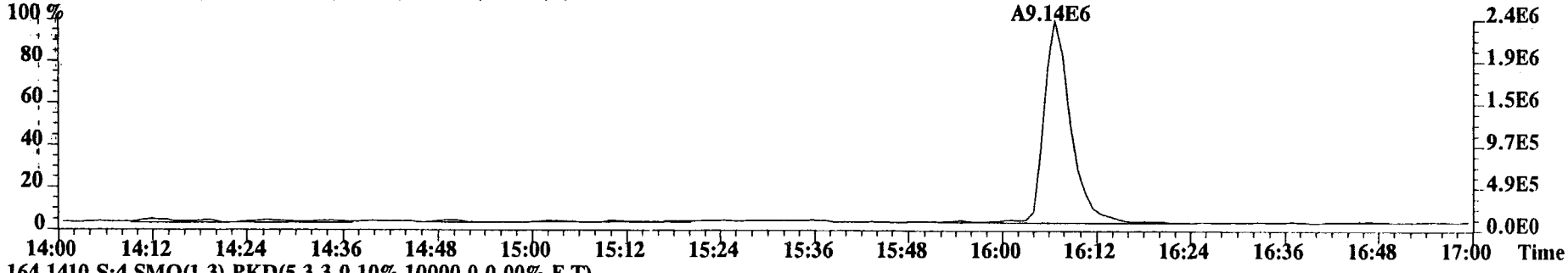
152.1410 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

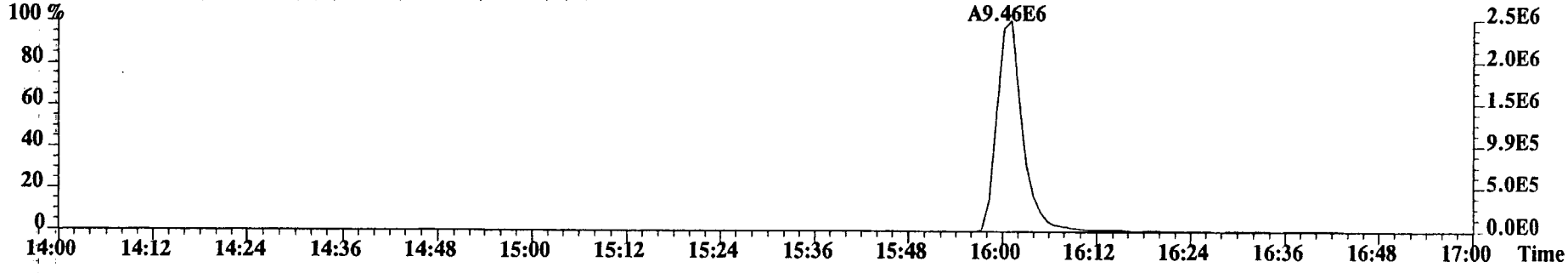


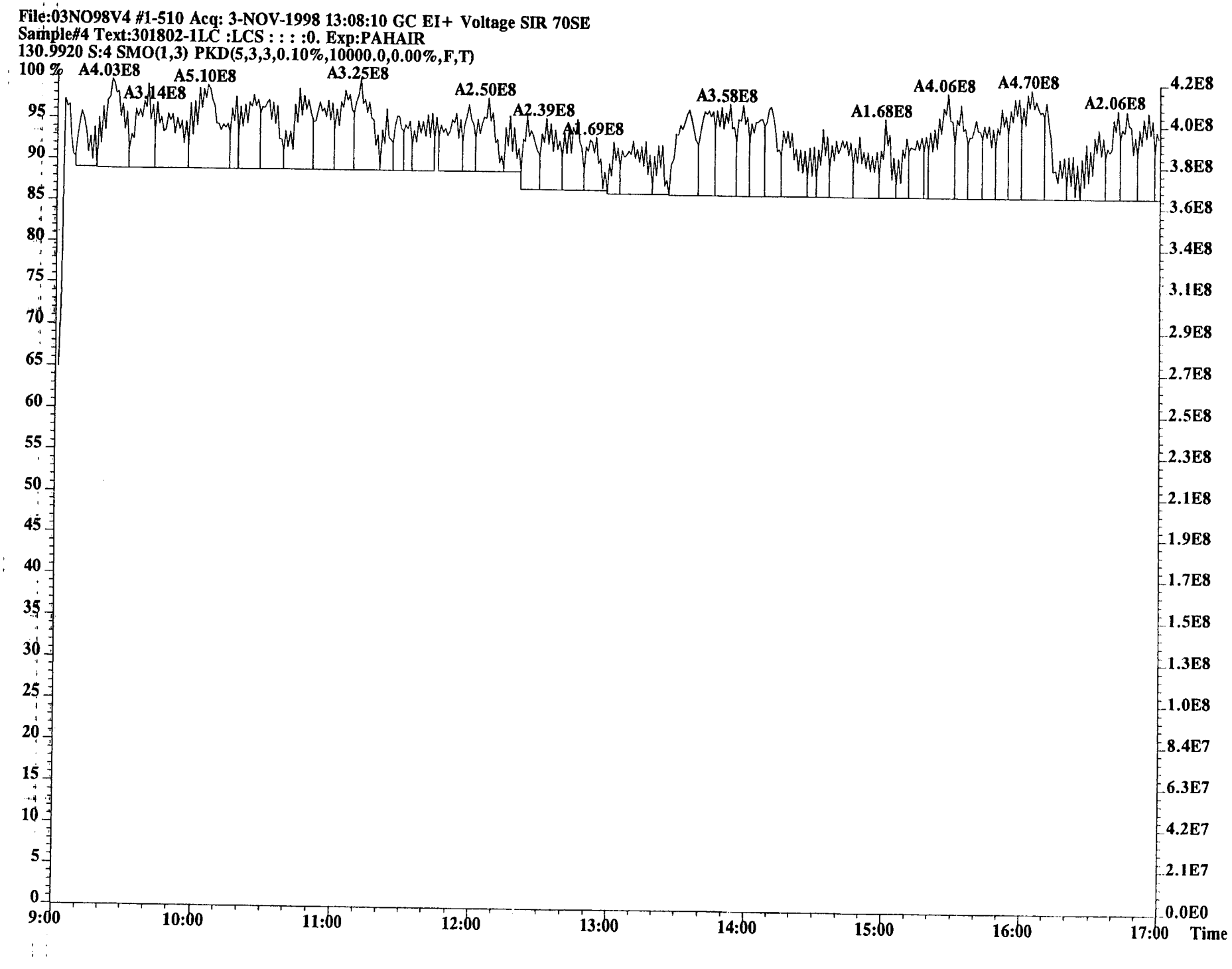
File:03NO98V4 #1-510 Acq: 3-NOV-1998 13:08:10 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR





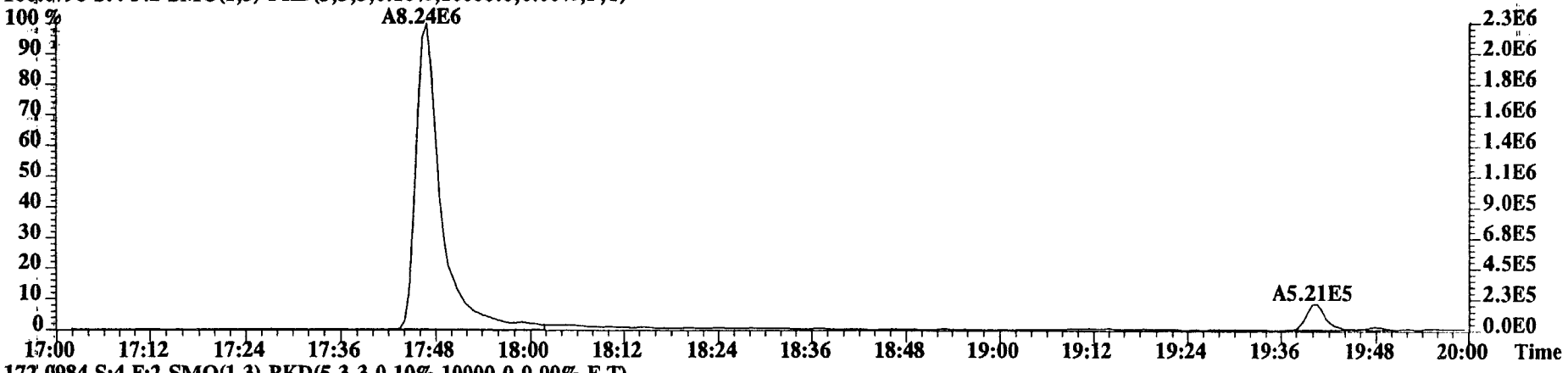




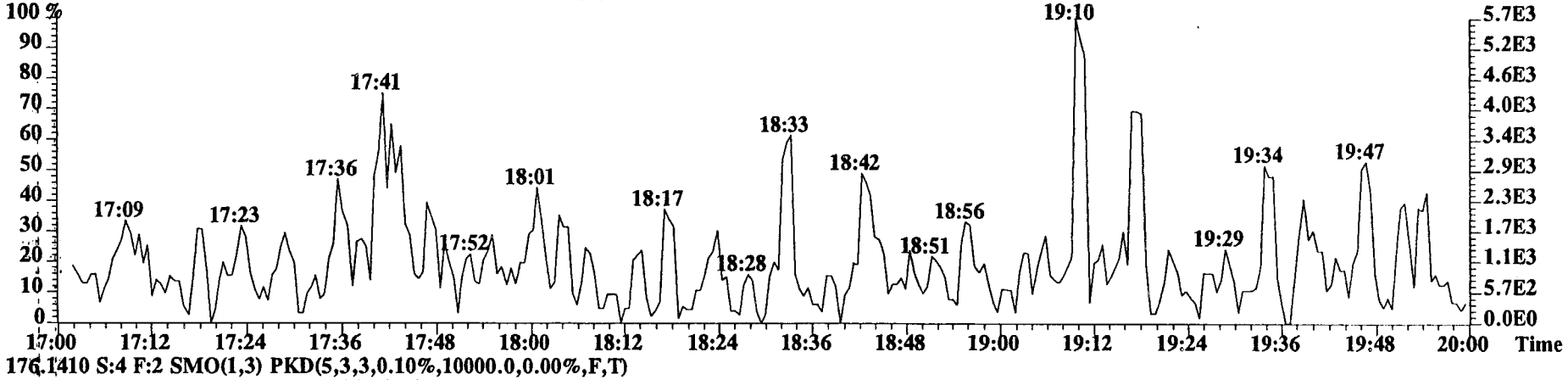

File:03NO98V4 #1-510 Acq: 3-NOV-1998 13:08:10 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
130.9920 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A4.03E8
A3.14E8
A5.10E8
A3.25E8
A2.50E8
A2.39E8
A1.69E8
A3.58E8
A1.68E8
A4.06E8
A4.70E8
A2.06E8
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
4.2E8
4.0E8
3.8E8
3.6E8
3.4E8
3.1E8
2.9E8
2.7E8
2.5E8
2.3E8
2.1E8
1.9E8
1.7E8
1.5E8
1.3E8
1.0E8
8.4E7
6.3E7
4.2E7
2.1E7
0.0E0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
Time

463

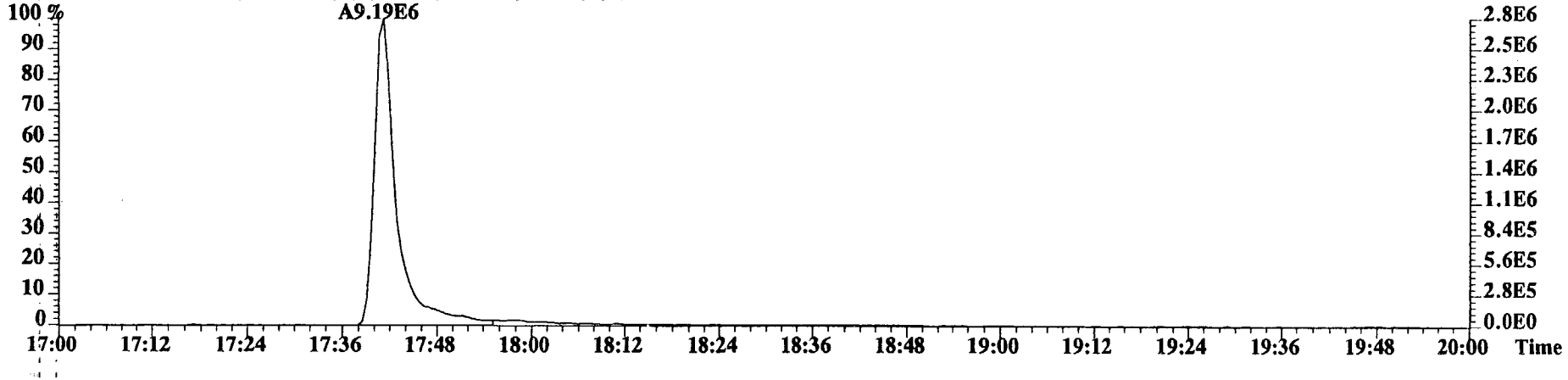
File:03NO98V4 #1-641 Acq: 3-NOV-1998 13:08:10 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
166.0798 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

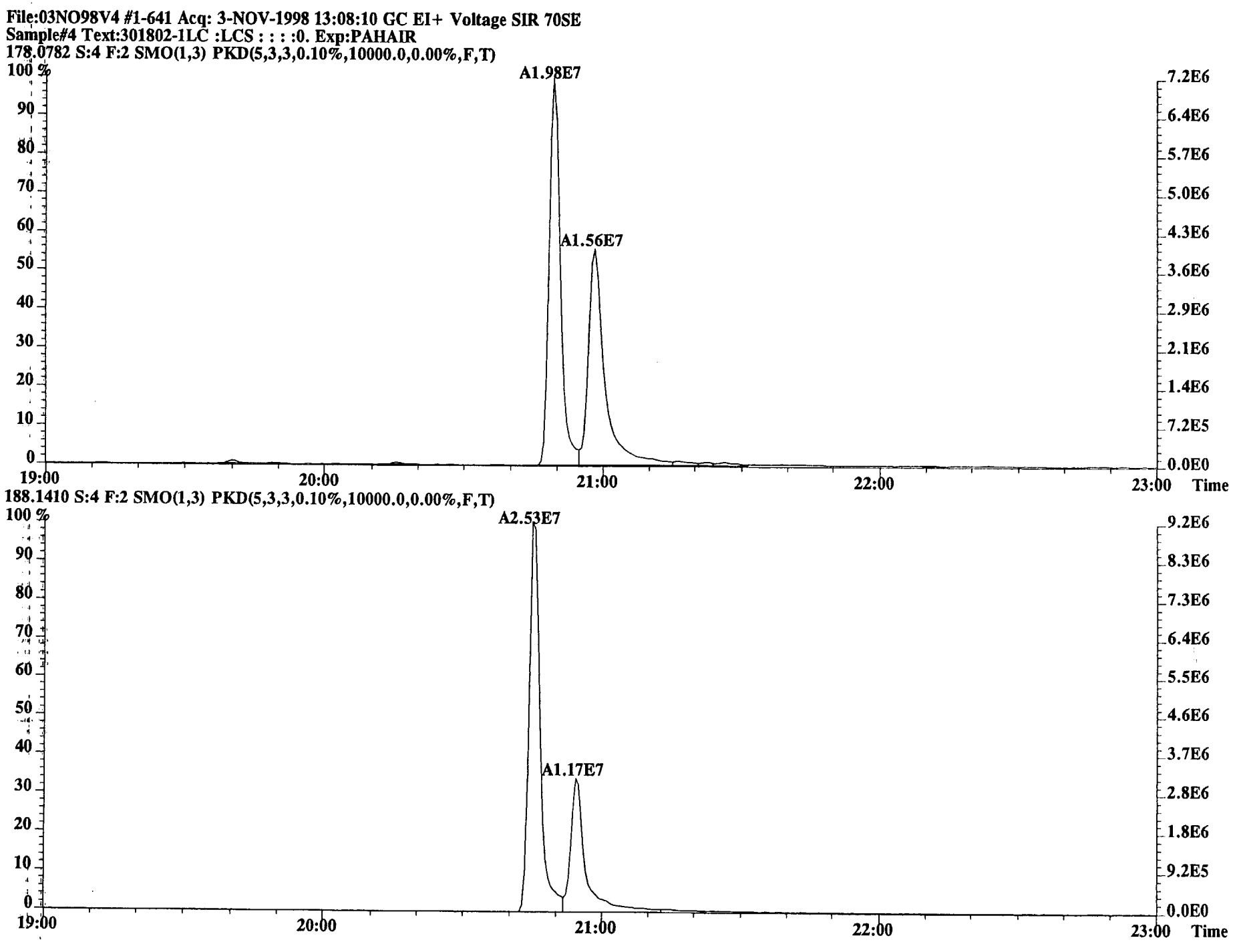


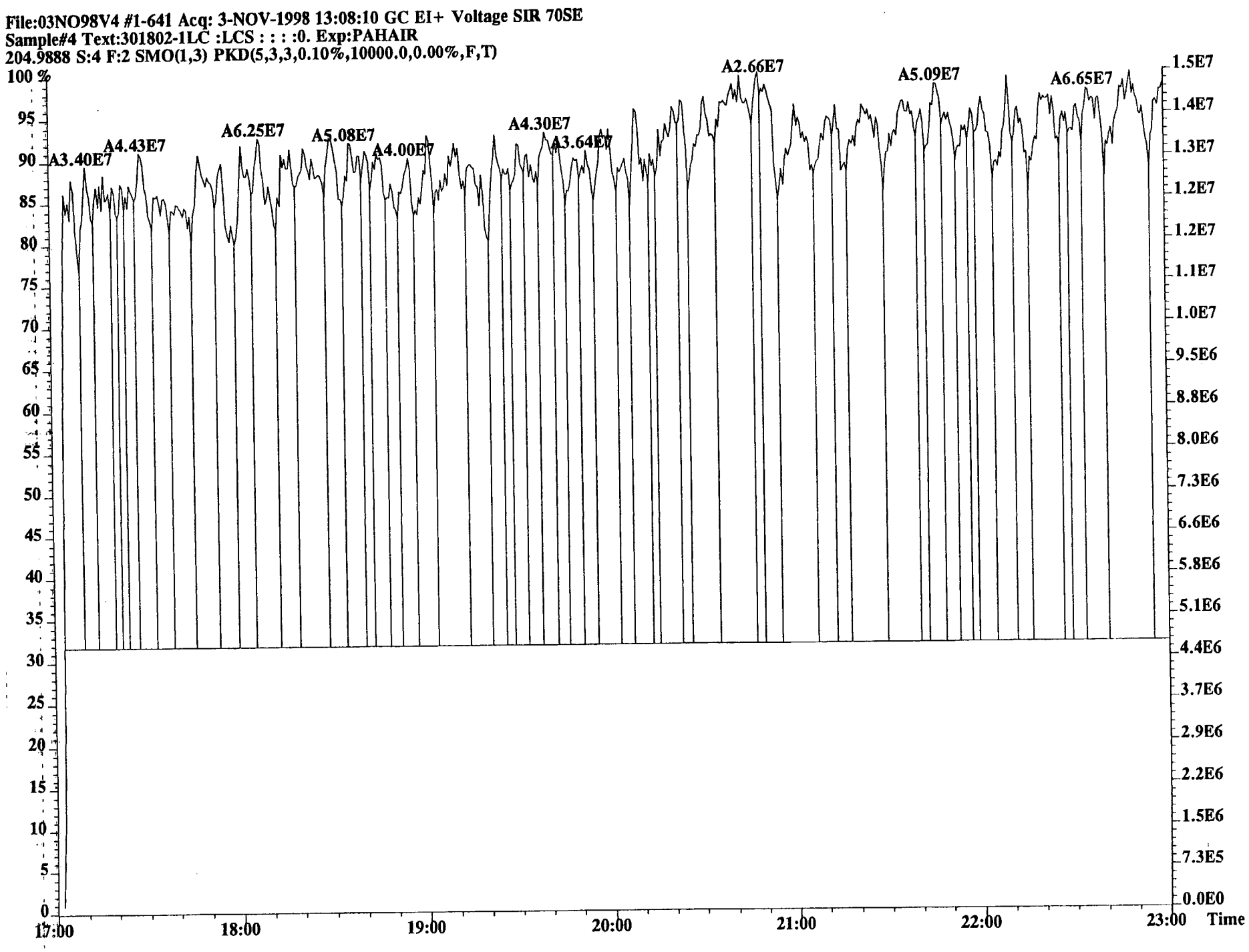
172.0984 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

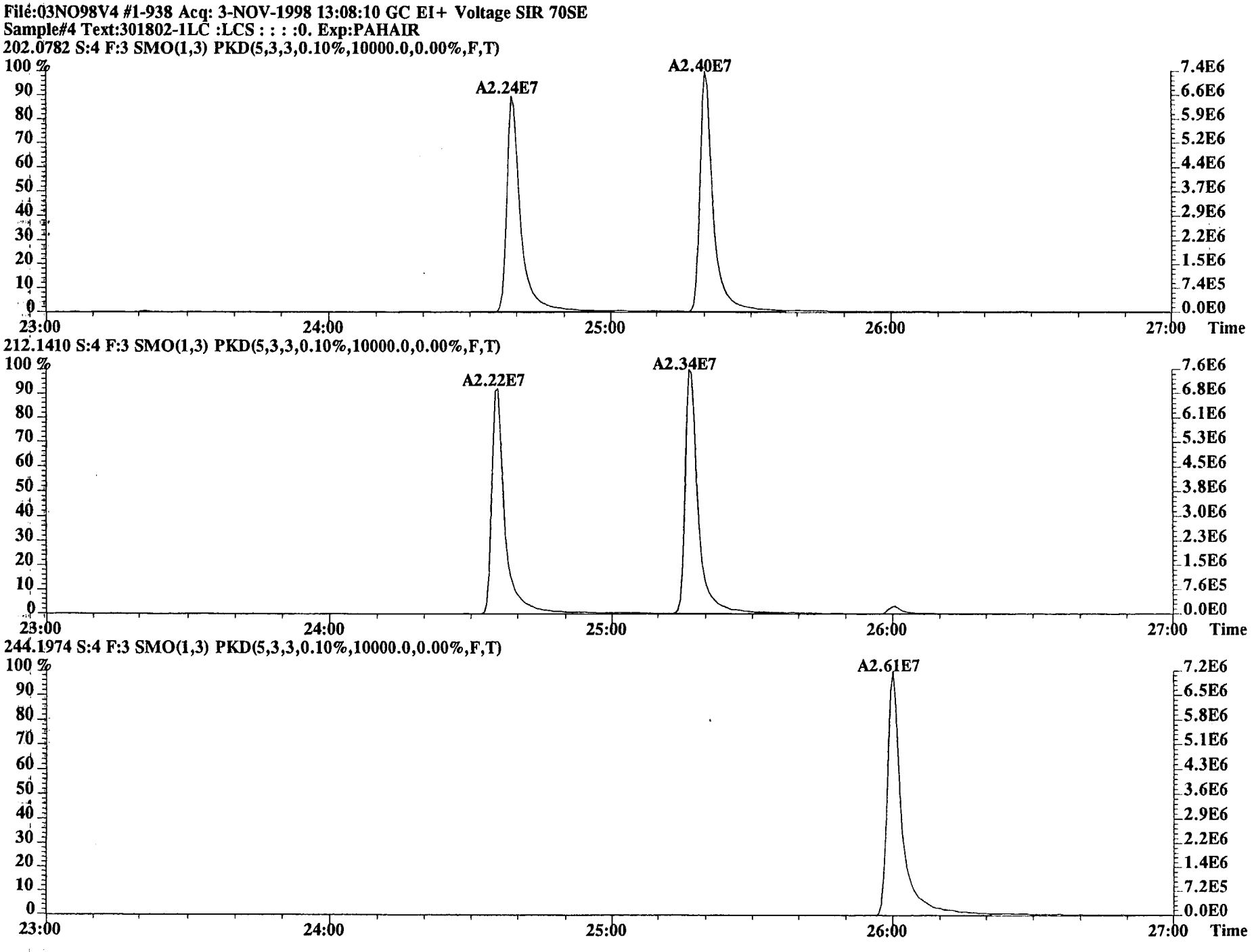


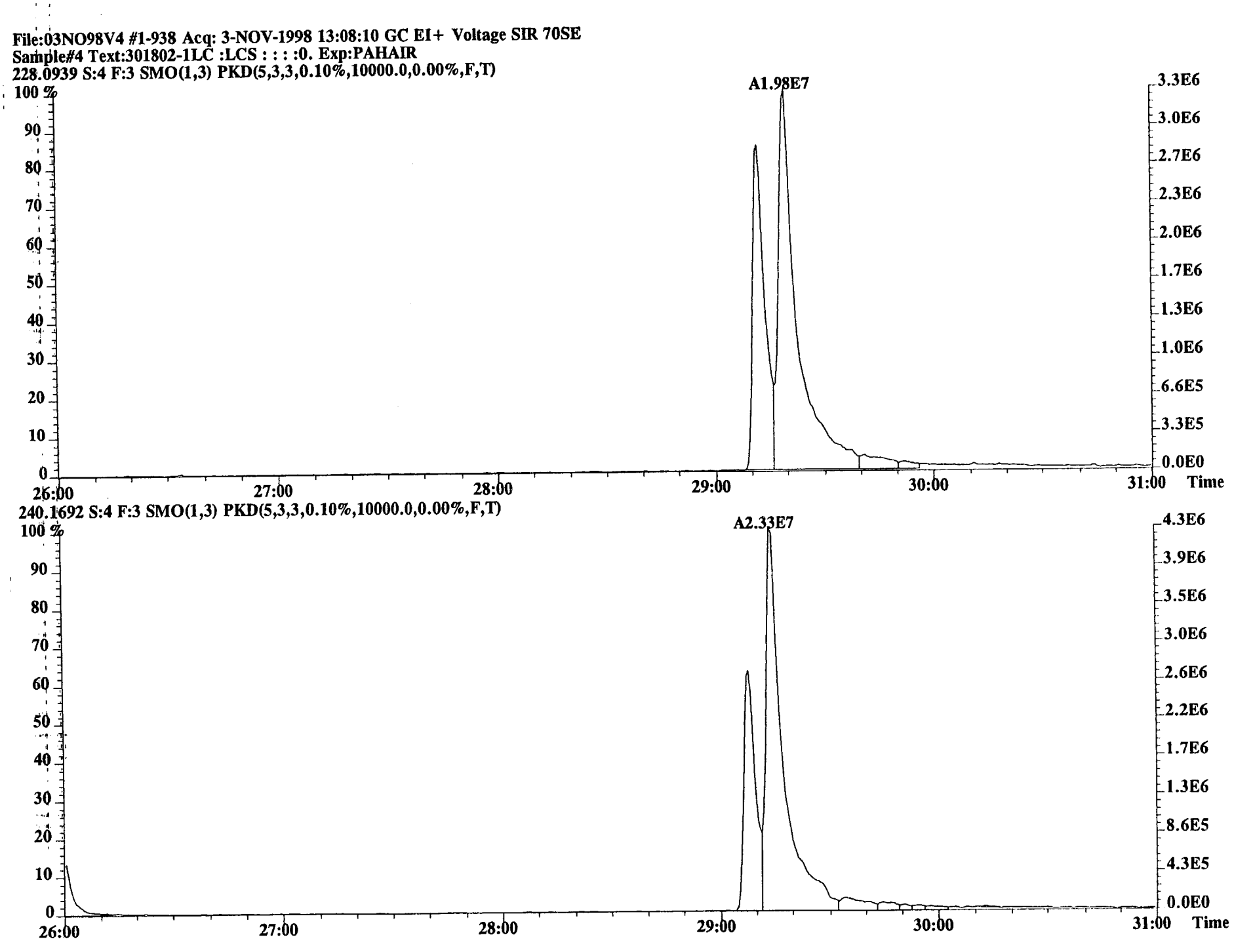
176.1410 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



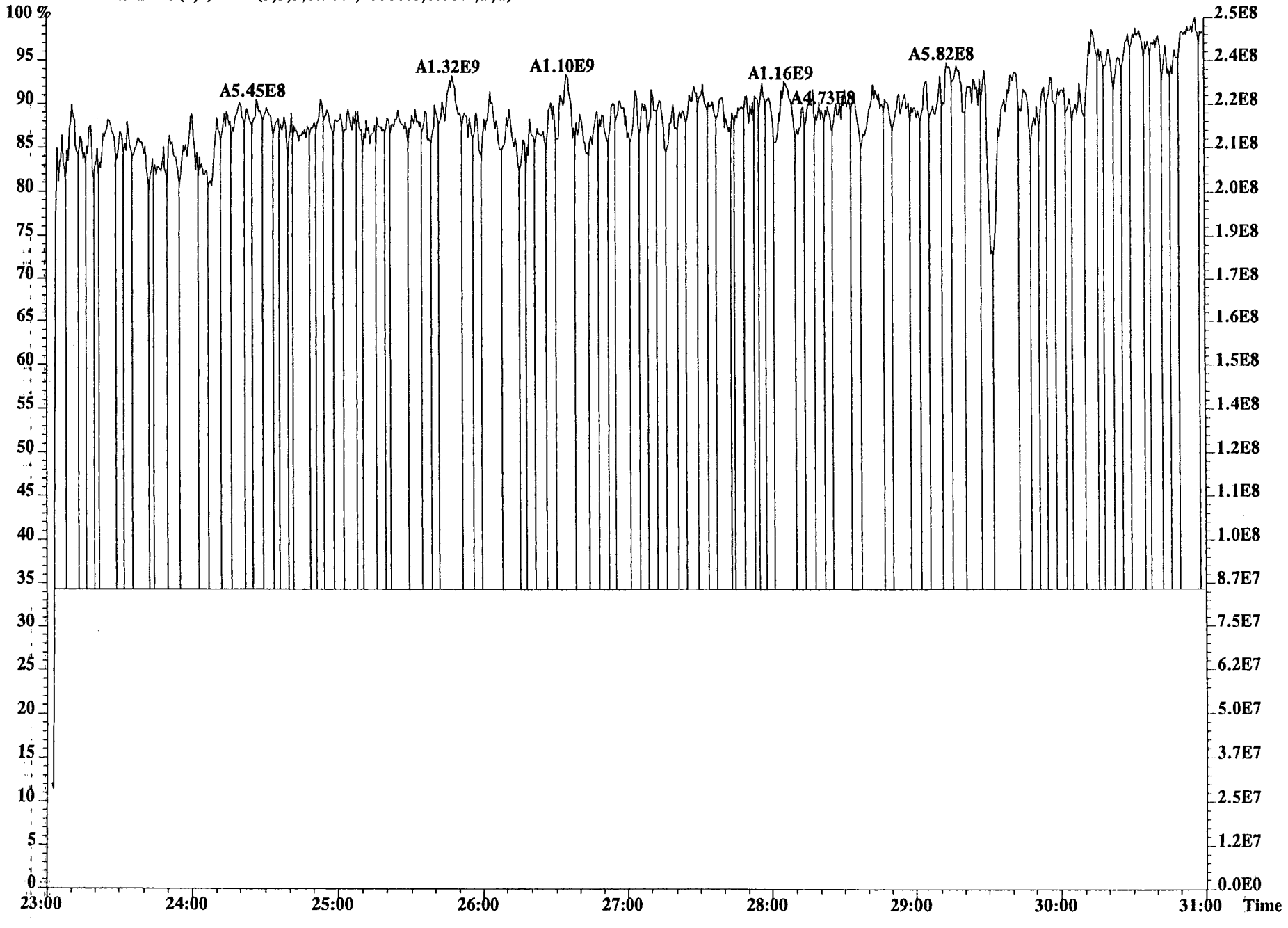

File:03NO98V4 #1-641 Acq: 3-NOV-1998 13:08:10 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
178.0782 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.98E7
A1.56E7
188.1410 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.53E7
A1.17E7
100 %
90
80
70
60
50
40
30
20
10
0
19:00
20:00
21:00
22:00
23:00
Time
7.2E6
6.4E6
5.7E6
5.0E6
4.3E6
3.6E6
2.9E6
2.1E6
1.4E6
7.2E5
0.0E0
9.2E6
8.3E6
7.3E6
6.4E6
5.5E6
4.6E6
3.7E6
2.8E6
1.8E6
9.2E5
0.0E0


File:03NO98V4 #1-641 Acq: 3-NOV-1998 13:08:10 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
204.9888 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A3.40E7
A4.43E7
A6.25E7
A5.08E7
A4.00E7
A4.30E7
A3.64E7
A2.66E7
A5.09E7
A6.65E7
1.5E7
1.4E7
1.3E7
1.2E7
1.2E7
1.1E7
1.0E7
9.5E6
8.8E6
8.0E6
7.3E6
6.6E6
5.8E6
5.1E6
4.4E6
3.7E6
2.9E6
2.2E6
1.5E6
7.3E5
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

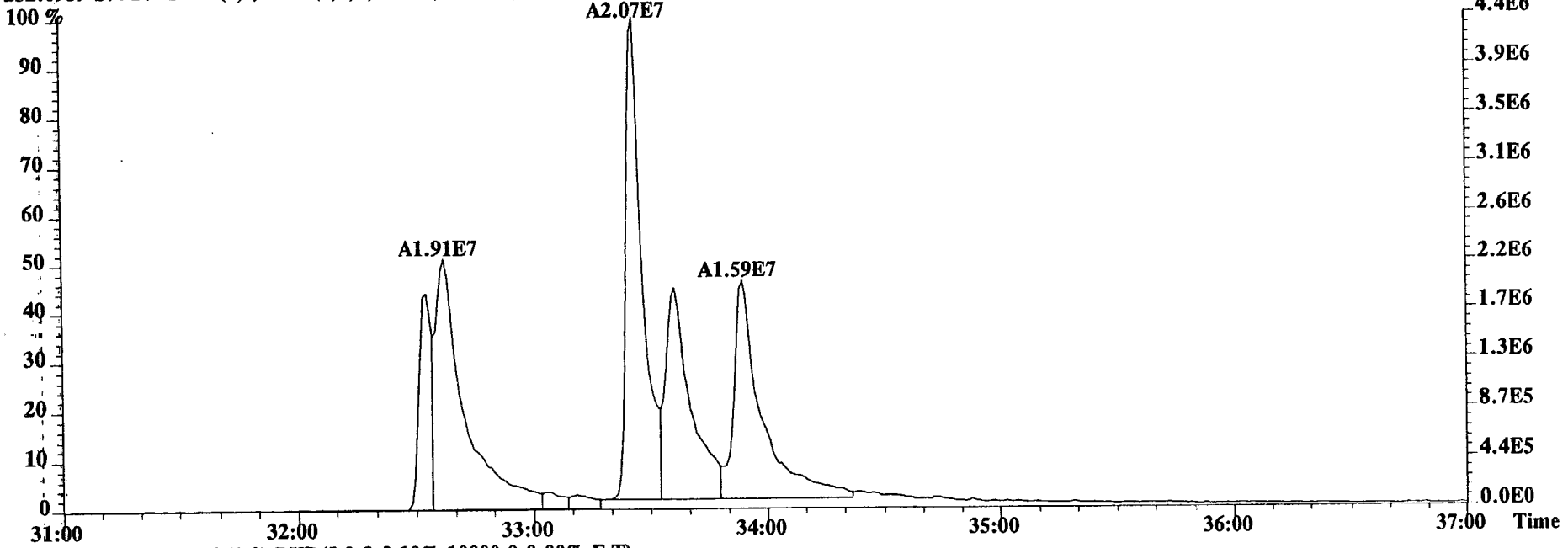

File:03NO98V4 #1-938 Acq: 3-NOV-1998 13:08:10 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
202.0782 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.24E7
A2.40E7
212.1410 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.22E7
A2.34E7
244.1974 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.61E7
100 %
90
80
70
60
50
40
30
20
10
0
23:00
24:00
25:00
26:00
27:00
Time
7.4E6
6.6E6
5.9E6
5.2E6
4.4E6
3.7E6
2.9E6
2.2E6
1.5E6
7.4E5
0.0E0
7.6E6
6.8E6
6.1E6
5.3E6
4.5E6
3.8E6
3.0E6
2.3E6
1.5E6
7.6E5
0.0E0
7.2E6
6.5E6
5.8E6
5.1E6
4.3E6
3.6E6
2.9E6
2.2E6
1.4E6
7.2E5
0.0E0


File:03NO98V4 #1-938 Acq: 3-NOV-1998 13:08:10 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
228.0939 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.98E7
240.1692 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.33E7
Time

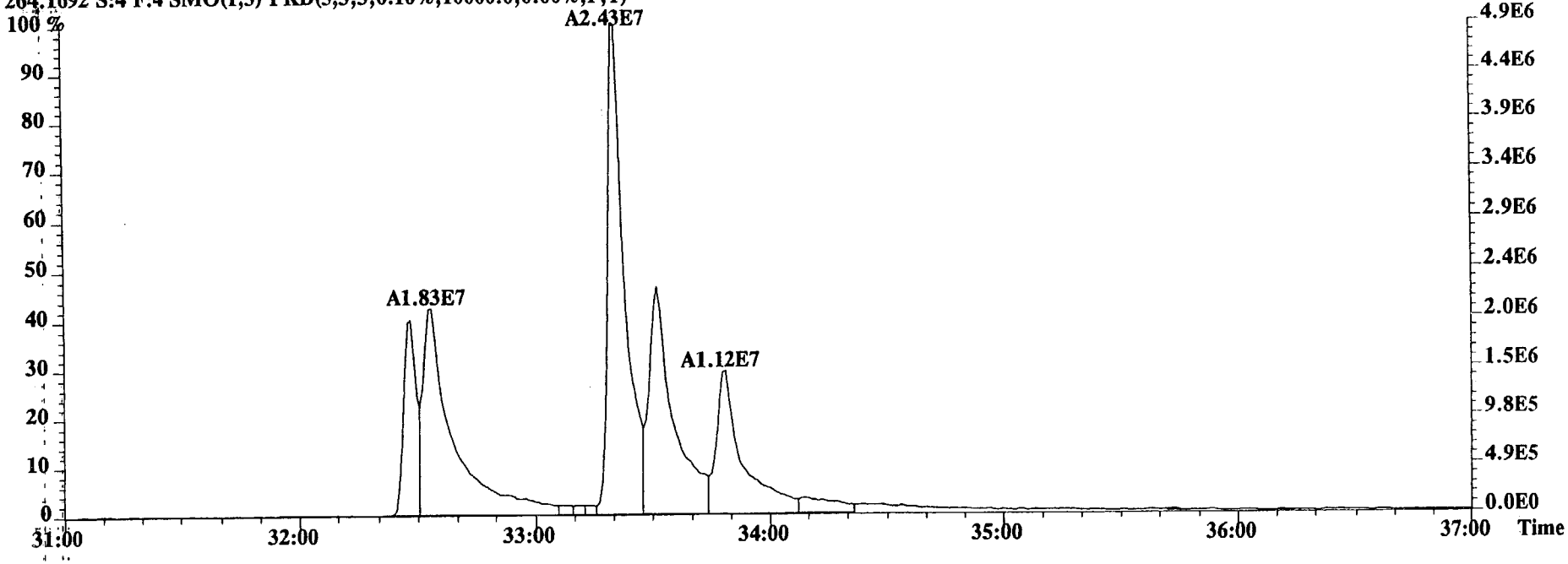
File:03NO98V4 #1-938 Acq: 3-NOV-1998 13:08:10 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
230.9856 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



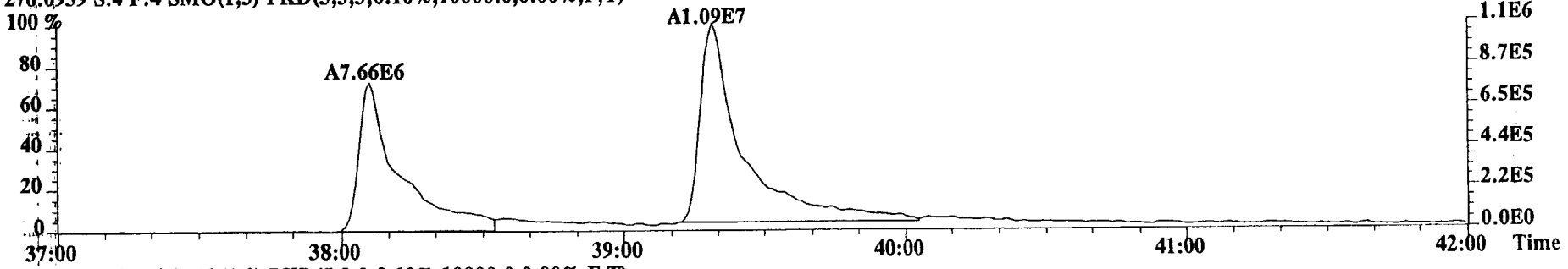
File:03NO98V4 #1-878 Acq: 3-NOV-1998 13:08:10 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
252.0939 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



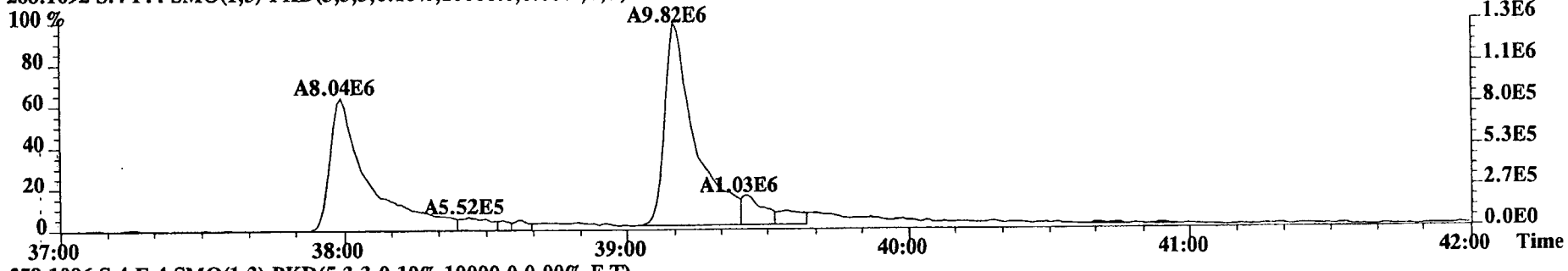
264.1692 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



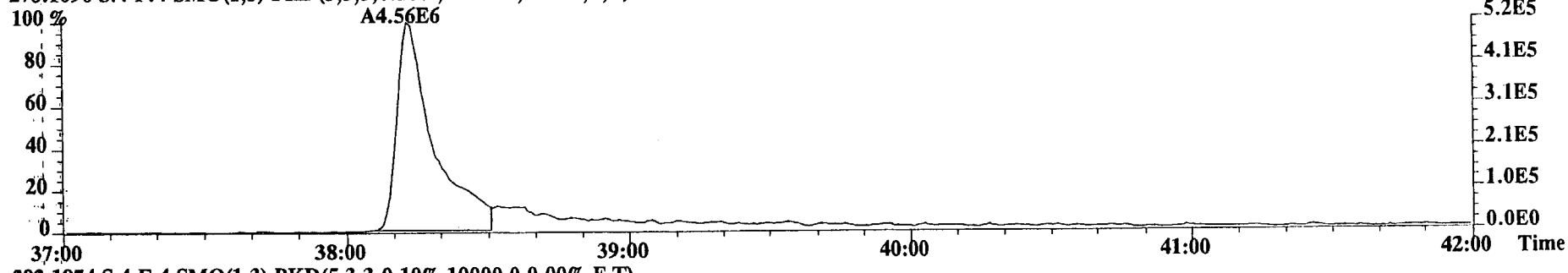
File:03NO98V4 #1-878 Acq: 3-NOV-1998 13:08:10 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
276.0939 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



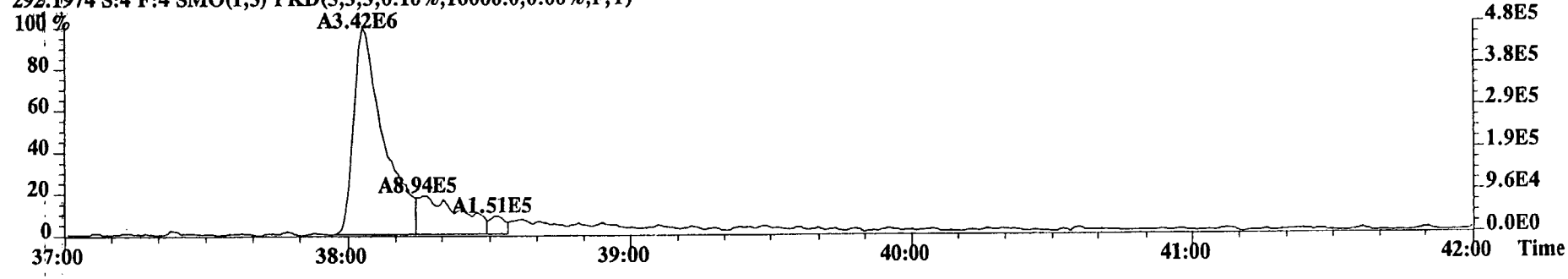
288.1692 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

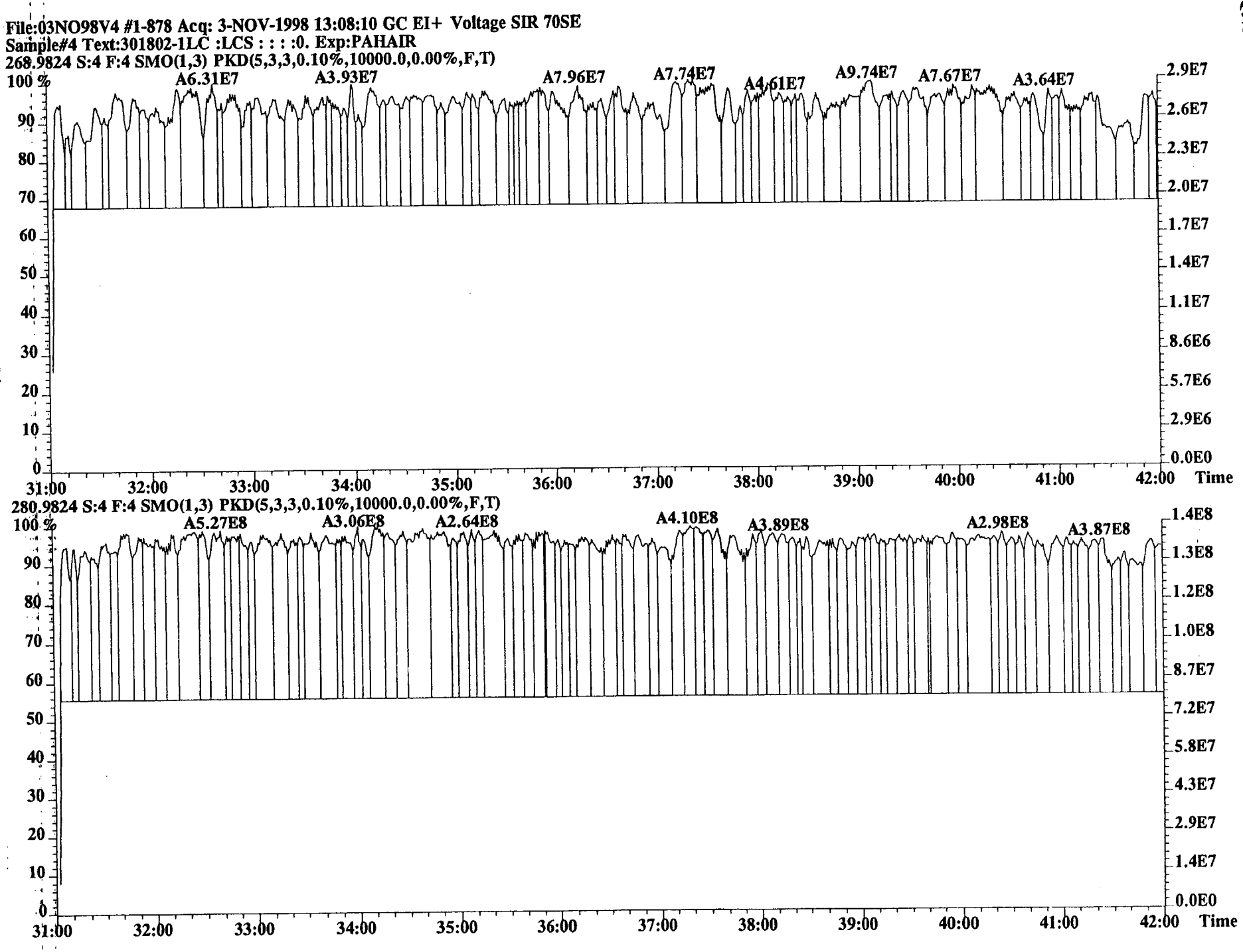


278.1096 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



292.1974 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)




File:03NO98V4 #1-878 Acq: 3-NOV-1998 13:08:10 GC EI+ Voltage SIR 70SE
Sample#4 Text:301802-1LC :LCS : : : :0. Exp:PAHAIR
268.9824 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A6.31E7
A3.93E7
A7.96E7
A7.74E7
A4.61E7
A9.74E7
A7.67E7
A3.64E7
Time
280.9824 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A5.27E8
A3.06E8
A2.64E8
A4.10E8
A3.89E8
A2.98E8
A3.87E8
Time

Initial Calibration

Quanterra
Environmental Services

QUANTERRA INCORPORATED

West Sacramento

Initial Calibration Checklist
High Resolution

d14-Terphenyl = RS

ICAL ID PAHXATR102998V4.RRF → PAHAIR102998V4.RRF Method ID 429-AIR

Dibenzo(e)Pyrene = RS

Column ID DB-5 Instrument ID VG-4

STD ID's 265-04A,B,D,E,956-64 Multiplier Setting 350

Analyzed By SMA Date Analyzed 10-29-98

Prepared By SMA/AM Date Prepared 10-30-98

Reviewed By Jeri Stone Date Reviewed 11/3/98

ANALYSIS OF ICAL	INITIATED	REVIEWED
Curve summary present?	✓	✓
CS1-CS5, CPSM, solvent blank present?	✓/NA	✓/NA
Copy of logfile present?	✓	✓
CPSM Blow-up/Static resolution check present?	NA/✓	NA/✓
Target file RT's correct?	✓	✓
%RSD ~~RRF~~s within method-specified limits?	✓	✓
Signal-to-noise criteria met?	✓	✓
Isotopic ratios within limits?	NA	NA
High point free of saturation?	✓	✓
Chromatographic windows correct?	✓	✓
CPSM valley < 25%?	NA	NA
Manual reintegrations checked and hardcopies included?	✓	✓

COMMENTS: The curve was processed twice because the d14 Terphenyl RS Peak Saturated in the Solid train and liquid fraction samples. ~~Using d12 Benzo(e)Pyrene as Recovery St instead of d14 Terphenyl.~~

*Method 8290: %RSD ≤ 20% for natives, ≤ 30% for labelled analytes; S/N ≥ 10
Method 1613A: %CV≤ 35% (See Table 7, Method 1613A); S/N ≥ 10
Method 23: %RSD ≤ values specified in Table 5, Method 23; S/N > 2.5
PAH: %RSD ≤ 30% for natives and labelled compounds; S/N ≥ 10
PCB: %RSD ≤ 25% for natives, ≤ 30% for labelled compounds; S/N ≥ 2.5
NCASI 551: %RSD ≤ 20% for natives and labelled compounds; ≥ 5
DBD/DBF: %RSD ≤ 30% for natives and labelled compounds; S/N ≥ 10

QA-384 NE 2/97

02-NOV-1998 07:31:36 AM

Dioxin Furan CALIBRATION TABLE

Mass Spec : VG-4
GC Column : DB-5
265-04A,B,D,E,956-64

File name : PAHAIR102998V4.RRF
Date analyzed : 29-OCT-98

(RS = d14 - Terphenyl)

Mult.: 350

INITIAL CALIBRATION CURVE

		Mean	S.D.	%RSD	1	2	3	4	5	6	7	8	9	10
d8-Naphthalene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				185.11	205.87	228.31	244.46	256.61					
	RRF	2.24	0.289	12.900	1.85	2.06	2.28	2.44	2.57					
Naphthalene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				13.76	61.93	113.47	231.43	609.70					
	RRF	1.23	0.094	7.707	1.38	1.24	1.13	1.16	1.22					
2-Methylnaphthalene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				6.91	29.85	51.39	97.93	255.67					
	RRF	0.56	0.084	14.909	0.69	0.60	0.51	0.49	0.51					
d8-Acenaphthylene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				131.95	128.38	114.60	122.45	109.50					
	RRF	1.21	0.093	7.696	1.32	1.28	1.15	1.22	1.10					
Acenaphthylene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				9.55	48.30	90.68	178.19	500.84					
	RRF	0.94	0.045	4.773	0.95	0.97	0.91	0.89	1.00					
d10-Acenaphthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				83.11	77.72	76.15	77.96	57.36					
	RRF	0.74	0.099	13.310	0.83	0.78	0.76	0.78	0.57					
Acenaphthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				10.98	62.63	151.76	215.88	641.50					
	RRF	1.25	0.177	14.178	1.10	1.25	1.52	1.08	1.28					
d10-Fluorene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				153.24	135.78	140.61	141.09	139.72					
	RRF	1.42	0.066	4.625	1.53	1.36	1.41	1.41	1.40					
Fluorene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				8.53	58.18	117.21	249.15	684.13					
	RRF	1.16	0.191	16.420	0.85	1.16	1.17	1.25	1.37					
d10-Phenanthrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				308.98	263.63	276.27	272.04	282.87					
	RRF	2.81	0.173	6.145	3.09	2.64	2.76	2.72	2.83					
Phenanthrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				9.70	46.13	81.87	168.14	460.23					
	RRF	0.89	0.063	7.028	0.97	0.92	0.82	0.84	0.92					
Anthracene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				8.13	42.20	77.06	153.96	402.42					
	RRF	0.80	0.031	3.901	0.81	0.84	0.77	0.77	0.80					
d10-Fluoranthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				118.94	136.07	145.72	150.34	154.31					
	RRF	1.41	0.141	10.009	1.19	1.36	1.46	1.50	1.54					
Fluoranthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				14.14	55.12	99.77	200.49	521.18					
	RRF	1.11	0.174	15.653	1.41	1.10	1.00	1.00	1.04					
d10-Pyrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				129.03	143.24	158.81	161.45	166.55					
	RRF	1.52	0.154	10.160	1.29	1.43	1.59	1.61	1.67					
Pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				16.74	59.11	104.58	204.18	551.22					
	RRF	1.21	0.269	22.353	1.67	1.18	1.05	1.02	1.10					

02-NOV-1998 07:31:39 AM

Dioxin Furan CALIBRATION TABLE

File name : PAHAIR102998V4.RRF
Date analyzed : 29-OCT-98

Mass Spec : VG-4
GC Column : DB-5
265-04A,B,D,E,956-64

Mult.: 350

INITIAL CALIBRATION CURVE

		Mean	S.D.	%RSD	1	2	3	4	5	6	7	8	9	10
d12-Benzo(a)anthracene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				68.20	70.96	127.65	89.95	93.26					
	RRF	0.90	0.238	26.446	0.68	0.71	1.28	0.90	0.93					
Benzo(a)anthracene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				11.85	64.84	102.61	234.26	671.78					
	RRF	1.20	0.124	10.269	1.18	1.30	1.03	1.17	1.34					
d12-Chrysene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				109.94	119.85	127.65	136.79	145.35					
	RRF	1.28	0.139	10.855	1.10	1.20	1.28	1.37	1.45					
Chrysene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				10.44	56.47	102.61	215.75	571.04					
	RRF	1.08	0.051	4.716	1.04	1.13	1.03	1.08	1.14					
d12-Benzo(b)fluoranthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				41.05	45.84	49.22	45.10	45.72					
	RRF	0.45	0.029	6.414	0.41	0.46	0.49	0.45	0.46					
Benzo(b)fluoranthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				12.56	61.73	95.82	228.66	622.27					
	RRF	1.17	0.125	10.717	1.26	1.23	0.96	1.14	1.24					
d12-Benzo(k)fluoranthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				91.66	94.95	96.52	94.09	96.82					
	RRF	0.95	0.021	2.203	0.92	0.95	0.97	0.94	0.97					
Benzo(k)fluoranthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				12.71	63.16	119.14	210.18	522.11					
	RRF	1.16	0.111	9.525	1.27	1.26	1.19	1.05	1.04					
d12-Benzo(a)pyrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				65.24	66.86	69.56	67.87	68.82					
	RRF	0.68	0.017	2.504	0.65	0.67	0.70	0.68	0.69					
Benzo(e)pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				18.05	89.03	157.16	302.58	767.23					
	RRF	1.64	0.140	8.557	1.80	1.78	1.57	1.51	1.53					
Benzo(a)pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				11.71	60.46	102.44	200.46	476.32					
	RRF	1.07	0.112	10.437	1.17	1.21	1.02	1.00	0.95					
d12-Perylene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				64.89	58.55	68.21	62.00	61.45					
	RRF	0.63	0.037	5.829	0.65	0.59	0.68	0.62	0.61					
Perylene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				16.93	98.08	162.24	324.02	835.41					
	RRF	1.71	0.142	8.297	1.69	1.96	1.62	1.62	1.67					
d12-Indeno(123-cd)pyrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				44.86	44.54	44.08	43.39	45.40					
	RRF	0.44	0.008	1.722	0.45	0.45	0.44	0.43	0.45					
Indeno(123-cd)pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				5.85	35.13	60.26	127.89	287.53					
	RRF	0.62	0.052	8.352	0.59	0.70	0.60	0.64	0.58					
d14-Dibenz(ah)anthracene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				20.73	24.39	25.35	26.10	26.33					
	RRF	0.25	0.023	9.286	0.21	0.24	0.25	0.26	0.26					

02-NOV-1998 07:31:43 AM

Mass Spec : VG-4
GC Column : DB-5
265-04A,B,D,E,956-64

Mult.: 350

Dioxin Furan CALIBRATION TABLE

File name : PAHAIR102998V4.RRF
Date analyzed : 29-OCT-98

INITIAL CALIBRATION CURVE

		Mean	S.D.	%RSD	1	2	3	4	5	6	7	8	9	10
Dibenz(ah)anthracene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				12.92	69.25	143.15	281.33	751.34					
	RRF	1.40	0.077	5.452	1.29	1.38	1.43	1.41	1.50					
d12-Benzo(ghi)perylene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				59.24	54.17	59.73	58.78	57.94					
	RRF	0.58	0.022	3.838	0.59	0.54	0.60	0.59	0.58					
Benzo(ghi)perylene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				8.58	51.44	109.18	211.25	522.58					
	RRF	1.02	0.091	8.984	0.86	1.03	1.09	1.06	1.05					
	Amount				0	0	0	0	0					
	RF													
	RRF	0	0	0										

02-NOV-1998 07:15:45 AM Dioxin Furan Ical RESULTS

Mass Spec : VG-4 Results : 290C98V4011.RES : PAHAIRCAL1.TRG
GC Column : DB-5 Date analyzed : 29-OCT-98
Data file : 290C98V4 ST1029 :CS-1 :265-04A : : Ex
Weight : 1

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg	Rec/ MDL
d10-2-Methylnaphthalene	148835400	1.00	Y	12: 28	Y	-1.00	100.00	
d8-Naphthalene	275504000	1.00	Y	10: 13	Y	1.85	100.00	
Naphthalene	37899400	1.00	Y	10: 17	Y	1.38	10.00	0.000
2-Methylnaphthalene	19033020	1.00	Y	12: 35	Y	0.69	10.00	0.000
d8-Acenaphthylene	196391000	1.00	Y	15: 28	Y	1.32	100.00	
Acenaphthylene	18748260	1.00	Y	15: 31	Y	0.95	10.00	0.000
d10-Acenaphthene	123692800	1.00	Y	16: 2	Y	0.83	100.00	
Acenaphthene	13580000	1.00	Y	16: 9	Y	1.10	10.00	0.000
d10-Anthracene	101404200	1.00	Y	20: 56	Y	0.00	100.00	
d10-Fluorene	155386800	1.00	Y	17: 42	Y	1.53	100.00	
Fluorene	13251380	1.00	Y	17: 48	Y	0.85	10.00	0.000
d10-Phenanthrene	313320000	1.00	Y	20: 47	Y	3.09	100.00	
Phenanthrene	30392400	1.00	Y	20: 51	Y	0.97	10.00	0.000
Anthracene	25466000	1.00	Y	20: 59	Y	0.81	10.00	0.000
d14-Terphenyl	252508000	1.00	Y	26: 1	Y	-1.00	100.00	
d10-Fluoranthene	300334000	1.00	Y	24: 37	Y	1.19	100.00	
Fluoranthene	42464400	1.00	Y	24: 41	Y	1.41	10.00	0.000
d10-Pyrene	325812000	1.00	Y	25: 19	Y	1.29	100.00	
Pyrene	54540800	1.00	Y	25: 22	Y	1.67	10.00	0.000
d12-Benzo(a)anthracene	172200000	1.00	Y	29: 9	Y	0.68	100.00	
Benzo(a)anthracene	20400000	1.00	Y	29: 14	Y	1.18	10.00	0.000
d12-Chrysene	277600000	1.00	Y	29: 16	Y	1.10	100.00	
Chrysene	28968600	1.00	Y	29: 22	Y	1.04	10.00	0.000
d12-Benzo(e)pyrene	365008000	1.00	Y	33: 23	Y	0.00	100.00	
d12-Benzo(b)fluoranthene	149834000	1.00	Y	32: 31	Y	0.41	100.00	
Benzo(b)fluoranthene	18813720	1.00	Y	32: 35	Y	1.26	10.00	0.000
d12-Benzo(k)fluoranthene	334554000	1.00	Y	32: 36	Y	0.92	100.00	
Benzo(k)fluoranthene	42523000	1.00	Y	32: 40	Y	1.27	10.00	0.000
d12-Benzo(a)pyrene	238134000	1.00	Y	33: 34	Y	0.65	100.00	
Benzo(e)pyrene	42973400	1.00	Y	33: 29	Y	1.80	10.00	0.000
Benzo(a)pyrene	27895800	1.00	Y	33: 40	Y	1.17	10.00	0.000
d12-Perylene	236860000	1.00	Y	33: 51	Y	0.65	100.00	
Perylene	40100200	1.00	Y	33: 57	Y	1.69	10.00	0.000
d12-Indeno(123-cd)pyrene	163754400	1.00	Y	38: 4	Y	0.45	100.00	
Indeno(123-cd)pyrene	9580000	1.00	Y	38: 11	Y	0.59	10.00	0.000
d14-Dibenz(ah)anthracene	75669400	1.00	Y	38: 8	Y	0.21	100.00	
Dibenz(ah)anthracene	9775940	1.00	Y	38: 18	Y	1.29	10.00	0.000
d12-Benzo(ghi)perylene	216222000	1.00	Y	39: 16	Y	0.59	100.00	
Benzo(ghi)perylene	18553180	1.00	Y	39: 24	Y	0.86	10.00	0.000
d10-Fluorene								
13C-Fluorene								

02-NOV-1998 07:21:36 AM Dioxin Furan Ical RESULTS

Mass Spec : VG-4 Results : 29OC98V4021.RES : PAHAIRCAL2.TRG
GC Column : DB-5 Date analyzed : 29-OCT-98
Data file : 29OC98V4 ST1029A :CS-2 :265-04B : Ex
Weight : 1

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg		Rec/ MDL
d10-2-Methylnaphthalene	144594000	1.00	Y	12: 29	Y	0.00	100.00		
d8-Naphthalene	297670000	1.00	Y	10: 13	Y	2.06	100.00		
Naphthalene	184351200	1.00	Y	10: 18	Y	1.24	50.00		0.000
2-Methylnaphthalene	88865000	1.00	Y	12: 35	Y	0.60	50.00		0.000
d8-Acenaphthylene	185629600	1.00	Y	15: 29	Y	1.28	100.00		
Acenaphthylene	89660600	1.00	Y	15: 31	Y	0.97	50.00		0.000
d10-Acenaphthene	112381800	1.00	Y	16: 3	Y	0.78	100.00		
Acenaphthene	70386000	1.00	Y	16: 9	Y	1.25	50.00		0.000
d10-Anthracene	124663000	1.00	Y	20: 56	Y	0.00	100.00		
d10-Fluorene	169272600	1.00	Y	17: 42	Y	1.36	100.00		
Fluorene	98489600	1.00	Y	17: 48	Y	1.16	50.00		0.000
d10-Phenanthrene	328644000	1.00	Y	20: 46	Y	2.64	100.00		
Phenanthrene	151615400	1.00	Y	20: 51	Y	0.92	50.00		0.000
Anthracene	138689600	1.00	Y	21: 0	Y	0.84	50.00		0.000
d14-Terphenyl	262974000	1.00	Y	26: 1	Y	-1.00	100.00		
d10-Fluoranthene	357818000	1.00	Y	24: 37	Y	1.36	100.00		
Fluoranthene	197230800	1.00	Y	24: 41	Y	1.10	50.00		0.000
d10-Pyrene	376684000	1.00	Y	25: 19	Y	1.43	100.00		
Pyrene	222652000	1.00	Y	25: 22	Y	1.18	50.00		0.000
d12-Benzo(a)anthracene	186600000	1.00	Y	29: 9	Y	0.71	100.00		
Benzo(a)anthracene	121000000	1.00	Y	29: 14	Y	1.30	50.00		0.000
d12-Chrysene	315180000	1.00	Y	29: 16	Y	1.20	100.00		
Chrysene	177982400	1.00	Y	29: 21	Y	1.13	50.00		0.000
d12-Benzo(e)pyrene	405140000	1.00	Y	33: 23	Y	0.00	100.00		
d12-Benzo(b)fluoranthene	185717200	1.00	Y	32: 30	Y	0.46	100.00		
Benzo(b)fluoranthene	114642400	1.00	Y	32: 35	Y	1.23	50.00		0.000
d12-Benzo(k)fluoranthene	384662000	1.00	Y	32: 35	Y	0.95	100.00		
Benzo(k)fluoranthene	242954000	1.00	Y	32: 39	Y	1.26	50.00		0.000
d12-Benzo(a)pyrene	270860000	1.00	Y	33: 34	Y	0.67	100.00		
Benzo(e)pyrene	241154000	1.00	Y	33: 28	Y	1.78	50.00		0.000
Benzo(a)pyrene	163755600	1.00	Y	33: 39	Y	1.21	50.00		0.000
d12-Perylene	237192000	1.00	Y	33: 51	Y	0.59	100.00		
Perylene	232648000	1.00	Y	33: 56	Y	1.96	50.00		0.000
d12-Indeno(123-cd)pyrene	180449600	1.00	Y	38: 3	Y	0.45	100.00		
Indeno(123-cd)pyrene	63400000	1.00	Y	38: 11	Y	0.70	50.00		0.000
d14-Dibenz(ah)anthracene	98818400	1.00	Y	38: 8	Y	0.24	100.00		
Dibenz(ah)anthracene	68429800	1.00	Y	38: 17	Y	1.38	50.00		0.000
d12-Benzo(ghi)perylene	219460000	1.00	Y	39: 15	Y	0.54	100.00		
Benzo(ghi)perylene	112888400	1.00	Y	39: 23	Y	1.03	50.00		0.000
d10-Fluorene									
13C-Fluorene									

02-NOV-1998 07:24:53 AM Dioxin Furan Ical RESULTS

Mass Spec : VG-4 Results : 29OC98V4031.RES : PAHAIRCAL3.TRG
GC Column : DB-5 Date analyzed : 29-OCT-98
Data file : 29OC98V4 ST1029B :CS-3 :956-64 : : Ex
Weight : 1

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg	Rec/ MDL
d10-2-Methylnaphthalene	114074600	1.00	Y	12: 29	Y	0.00	100.00	
d8-Naphthalene	260448000	1.00	Y	10: 14	Y	2.28	100.00	
Naphthalene	295542000	1.00	Y	10: 18	Y	1.13	100.00	0.000
2-Methylnaphthalene	133833200	1.00	Y	12: 35	Y	0.51	100.00	0.000
d8-Acenaphthylene	130728800	1.00	Y	15: 29	Y	1.15	100.00	
Acenaphthylene	118542800	1.00	Y	15: 32	Y	0.91	100.00	0.000
d10-Acenaphthene	86872800	1.00	Y	16: 2	Y	0.76	100.00	
Acenaphthene	131835000	1.00	Y	16: 9	Y	1.52	100.00	0.000
d10-Anthracene	105259600	1.00	Y	20: 56	Y	0.00	100.00	
d10-Fluorene	148006200	1.00	Y	17: 42	Y	1.41	100.00	
Fluorene	173478200	1.00	Y	17: 48	Y	1.17	100.00	0.000
d10-Phenanthrene	290800000	1.00	Y	20: 47	Y	2.76	100.00	
Phenanthrene	238078000	1.00	Y	20: 51	Y	0.82	100.00	0.000
Anthracene	224086000	1.00	Y	21: 0	Y	0.77	100.00	0.000
d14-Terphenyl	209112000	1.00	Y	26: 2	Y	0.00	100.00	
d10-Fluoranthene	304722000	1.00	Y	24: 37	Y	1.46	100.00	
Fluoranthene	304036000	1.00	Y	24: 41	Y	1.00	100.00	0.000
d10-Pyrene	332100000	1.00	Y	25: 19	Y	1.59	100.00	
Pyrene	347310000	1.00	Y	25: 22	Y	1.05	100.00	0.000
d12-Benzo(a)anthracene	165200000	1.00	Y	29: 10	Y	0.79	100.00	
Benzo(a)anthracene	191600000	1.00	Y	29: 14	Y	1.16	100.00	0.000
d12-Chrysene	266934000	1.00	Y	29: 16	Y	1.28	100.00	
Chrysene	273900000	1.00	Y	29: 21	Y	1.03	100.00	0.000
d12-Benzo(e)pyrene	378748000	1.00	Y	33: 23	Y	1.00	100.00	
d12-Benzo(b)fluoranthene	186411000	1.00	Y	32: 30	Y	0.49	100.00	
Benzo(b)fluoranthene	178619200	1.00	Y	32: 34	Y	0.96	100.00	0.000
d12-Benzo(k)fluoranthene	365566000	1.00	Y	32: 35	Y	0.97	100.00	
Benzo(k)fluoranthene	435526000	1.00	Y	32: 40	Y	1.19	100.00	0.000
d12-Benzo(a)pyrene	263446000	1.00	Y	33: 34	Y	0.70	100.00	
Benzo(e)pyrene	414020000	1.00	Y	33: 28	Y	1.57	100.00	0.000
Benzo(a)pyrene	269874000	1.00	Y	33: 39	Y	1.02	100.00	0.000
d12-Perylene	258348000	1.00	Y	33: 50	Y	0.68	100.00	
Perylene	419148000	1.00	Y	33: 56	Y	1.62	100.00	0.000
d12-Indeno(123-cd)pyrene	166952200	1.00	Y	38: 3	Y	0.44	100.00	
Indeno(123-cd)pyrene	100600000	1.00	Y	38: 10	Y	0.60	100.00	0.000
d14-Dibenz(ah)anthracene	96020800	1.00	Y	38: 7	Y	0.25	100.00	
Dibenz(ah)anthracene	137450400	1.00	Y	38: 17	Y	1.43	100.00	0.000
d12-Benzo(ghi)perylene	226218000	1.00	Y	39: 15	Y	0.60	100.00	
Benzo(ghi)perylene	246996000	1.00	Y	39: 24	Y	1.09	100.00	0.000

d10-Fluorene
13C-Fluorene

02-NOV-1998 07:27:43 AM Dioxin Furan Ical RESULTS

Mass Spec : VG-4
GC Column : DB-5
Data file : 29OC98V4
Weight : 1

Results : 29OC98V4041.RES : PAHAIRCAL4.TRG
Date analyzed : 29-OCT-98

ST1029C :CS-4 :265-04D : Ex

Name	Total Response	Isotope Ratio	R. T. mm:ss	RRF	pg	Rec/ MDL
d10-2-Methylnaphthalene	110362600	1.00 Y	12: 29 Y	0.00	100.00	
d8-Naphthalene	269792000	1.00 Y	10: 13 Y	2.44	100.00	
Naphthalene	624376000	1.00 Y	10: 17 Y	1.16	200.00	0.000
2-Methylnaphthalene	264208000	1.00 Y	12: 36 Y	0.49	200.00	0.000
d8-Acenaphthylene	135138000	1.00 Y	15: 29 Y	1.22	100.00	
Acenaphthylene	240808000	1.00 Y	15: 32 Y	0.89	200.00	0.000
d10-Acenaphthene	86040200	1.00 Y	16: 3 Y	0.78	100.00	
Acenaphthene	185743400	1.00 Y	16: 8 Y	1.08	200.00	0.000
d10-Anthracene	115226400	1.00 Y	20: 56 Y	0.00	100.00	
d10-Fluorene	162568800	1.00 Y	17: 43 Y	1.41	100.00	
Fluorene	405042000	1.00 Y	17: 48 Y	1.25	200.00	0.000
d10-Phenanthrene	313460000	1.00 Y	20: 46 Y	2.72	100.00	
Phenanthrene	527064000	1.00 Y	20: 51 Y	0.84	200.00	0.000
Anthracene	482604000	1.00 Y	21: 0 Y	0.77	200.00	0.000
d14-Terphenyl	215450000	1.00 Y	26: 1 Y	-1.00	100.00	
d10-Fluoranthene	323902000	1.00 Y	24: 37 Y	1.50	100.00	
Fluoranthene	649384000	1.00 Y	24: 41 Y	1.00	200.00	0.000
d10-Pyrene	347844000	1.00 Y	25: 18 Y	1.61	100.00	
Pyrene	710224000	1.00 Y	25: 22 Y	1.02	200.00	0.000
d12-Benzo(a)anthracene	193800000	1.00 Y	29: 9 Y	0.90	100.00	
Benzo(a)anthracene	454000000	1.00 Y	29: 14 Y	1.17	200.00	0.000
d12-Chrysene	294720000	1.00 Y	29: 16 Y	1.37	100.00	
Chrysene	635846000	1.00 Y	29: 21 Y	1.08	200.00	0.000
d12-Benzo(e)pyrene	486608000	1.00 Y	33: 23 Y	0.00	100.00	
d12-Benzo(b)fluoranthene	219440000	1.00 Y	32: 30 Y	0.45	100.00	
Benzo(b)fluoranthene	501770000	1.00 Y	32: 35 Y	1.14	200.00	0.000
d12-Benzo(k)fluoranthene	457832000	1.00 Y	32: 35 Y	0.94	100.00	
Benzo(k)fluoranthene	962282000	1.00 Y	32: 39 Y	1.05	200.00	0.000
d12-Benzo(a)pyrene	330262000	1.00 Y	33: 33 Y	0.68	100.00	
Benzo(e)pyrene	999302000	1.00 Y	33: 28 Y	1.51	200.00	0.000
Benzo(a)pyrene	662030000	1.00 Y	33: 38 Y	1.00	200.00	0.000
d12-Perylene	301714000	1.00 Y	33: 50 Y	0.62	100.00	
Perylene	977600000	1.00 Y	33: 56 Y	1.62	200.00	0.000
d12-Indeno(123-cd)pyrene	211120000	1.00 Y	38: 3 Y	0.43	100.00	
Indeno(123-cd)pyrene	270000000	1.00 Y	38: 9 Y	0.64	200.00	0.000
d14-Dibenz(ah)anthracene	127016600	1.00 Y	38: 7 Y	0.26	100.00	
Dibenz(ah)anthracene	357340000	1.00 Y	38: 16 Y	1.41	200.00	0.000
d12-Benzo(ghi)perylene	286042000	1.00 Y	39: 15 Y	0.59	100.00	
Benzo(ghi)perylene	604252000	1.00 Y	39: 23 Y	1.06	200.00	0.000
d10-Fluorene						
13C-Fluorene						

02-NOV-1998 07:30:42 AM Dioxin Furan Ical RESULTS

Mass Spec : VG-4 Results : 29OC98V4051.RES : PAHAIRCAL5.TRG
GC Column : DB-5 Date analyzed : 29-OCT-98
Data file : 29OC98V4 ST1029D :CS-5 :265-04E : Ex
Weight : 1

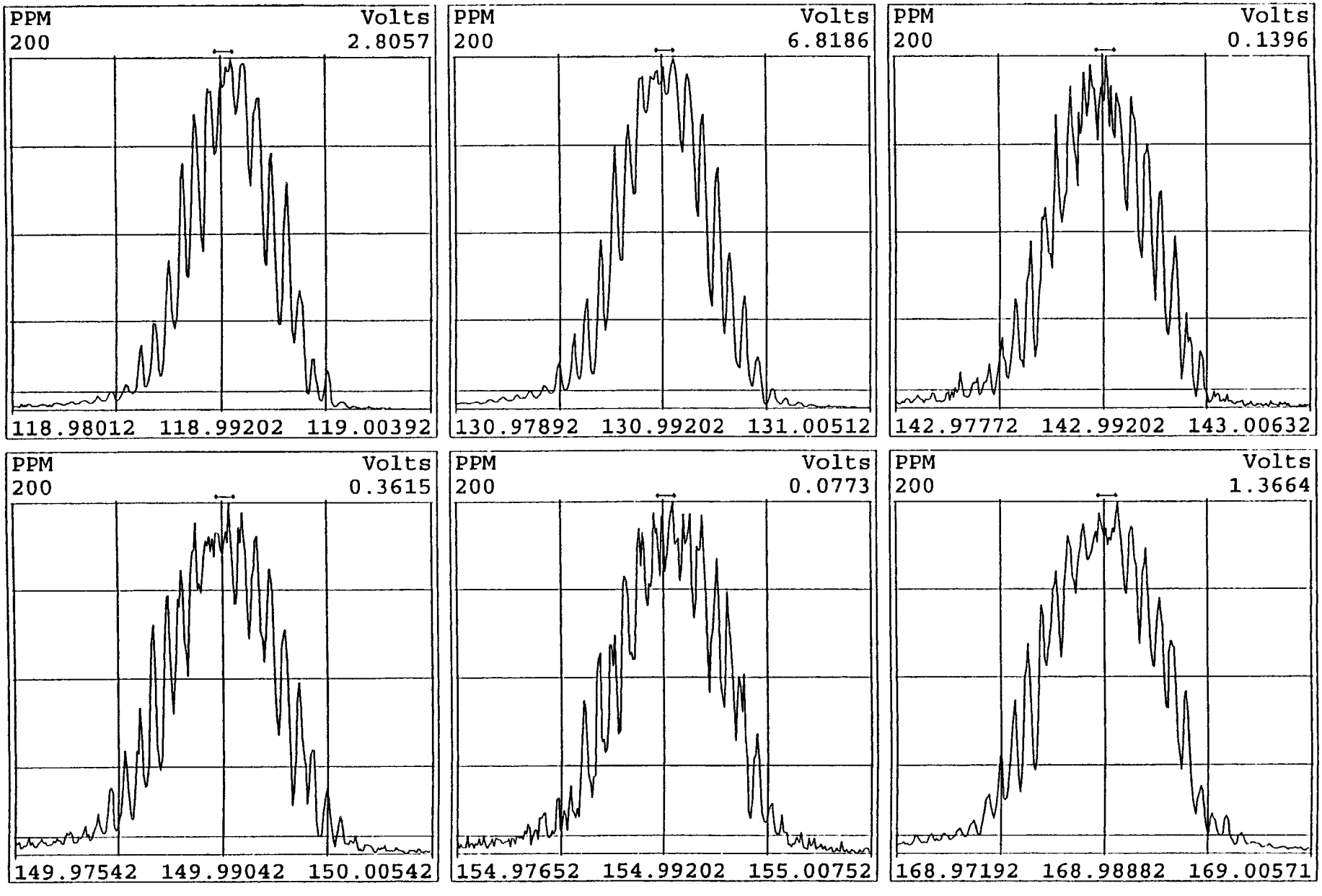
Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg	Rec/ MDL
d10-2-Methylnaphthalene	100692000	1.00	Y	12: 29	Y	0.00	100.00	
d8-Naphthalene	258386000	1.00	Y	10: 13	Y	2.57	100.00	
Naphthalene	1575386000	1.00	Y	10: 17	Y	1.22	500.00	0.000
2-Methylnaphthalene	660610000	1.00	Y	12: 35	Y	0.51	500.00	0.000
d8-Acenaphthylene	110257800	1.00	Y	15: 29	Y	1.10	100.00	
Acenaphthylene	552216000	1.00	Y	15: 32	Y	1.00	500.00	0.000
d10-Acenaphthene	57758000	1.00	Y	16: 3	Y	0.57	100.00	
Acenaphthene	370516000	1.00	Y	16: 8	Y	1.28	500.00	0.000
d10-Anthracene	108354400	1.00	Y	20: 56	Y	0.00	100.00	
d10-Fluorene	151395800	1.00	Y	17: 43	Y	1.40	100.00	
Fluorene	1035738000	1.00	Y	17: 48	Y	1.37	500.00	0.000
d10-Phenanthrene	306504000	1.00	Y	20: 46	Y	2.83	100.00	
Phenanthrene	1410624000	1.00	Y	20: 51	Y	0.92	500.00	0.000
Anthracene	1233428000	1.00	Y	20: 59	Y	0.80	500.00	0.000
d14-Terphenyl	209728000	1.00	Y	26: 1	Y	-1.00	100.00	
d10-Fluoranthene	323622000	1.00	Y	24: 37	Y	1.54	100.00	
Fluoranthene	1686640000	1.00	Y	24: 40	Y	1.04	500.00	0.000
d10-Pyrene	349310000	1.00	Y	25: 18	Y	1.67	100.00	
Pyrene	1925462000	1.00	Y	25: 22	Y	1.10	500.00	0.000
d12-Benzo(a)anthracene	195600000	1.00	Y	29: 9	Y	0.93	100.00	
Benzo(a)anthracene	1314000000	1.00	Y	29: 14	Y	1.34	500.00	0.000
d12-Chrysene	304846000	1.00	Y	29: 15	Y	1.45	100.00	
Chrysene	1740792000	1.00	Y	29: 20	Y	1.14	500.00	0.000
d12-Benzo(e)pyrene	502582000	1.00	Y	33: 23	Y	0.00	100.00	
d12-Benzo(b)fluoranthene	229792000	1.00	Y	32: 30	Y	0.46	100.00	
Benzo(b)fluoranthene	1429934000	1.00	Y	32: 35	Y	1.24	500.00	0.000
d12-Benzo(k)fluoranthene	486600000	1.00	Y	32: 35	Y	0.97	100.00	
Benzo(k)fluoranthene	2540580000	1.00	Y	32: 39	Y	1.04	500.00	0.000
d12-Benzo(a)pyrene	345868000	1.00	Y	33: 33	Y	0.69	100.00	
Benzo(e)pyrene	2653600000	1.00	Y	33: 28	Y	1.53	500.00	0.000
Benzo(a)pyrene	1647428000	1.00	Y	33: 38	Y	0.95	500.00	0.000
d12-Perylene	308836000	1.00	Y	33: 50	Y	0.61	100.00	
Perylene	2580040000	1.00	Y	33: 56	Y	1.67	500.00	0.000
d12-Indeno(123-cd)pyrene	228154000	1.00	Y	38: 3	Y	0.45	100.00	
Indeno(123-cd)pyrene	656000000	1.00	Y	38: 9	Y	0.58	500.00	0.000
d14-Dibenz(ah)anthracene	132353000	1.00	Y	38: 6	Y	0.26	100.00	
Dibenz(ah)anthracene	994422000	1.00	Y	38: 16	Y	1.50	500.00	0.000
d12-Benzo(ghi)perylene	291198000	1.00	Y	39: 14	Y	0.58	100.00	
Benzo(ghi)perylene	1521730000	1.00	Y	39: 22	Y	1.05	500.00	0.000
d10-Fluorene								
13C-Fluorene								

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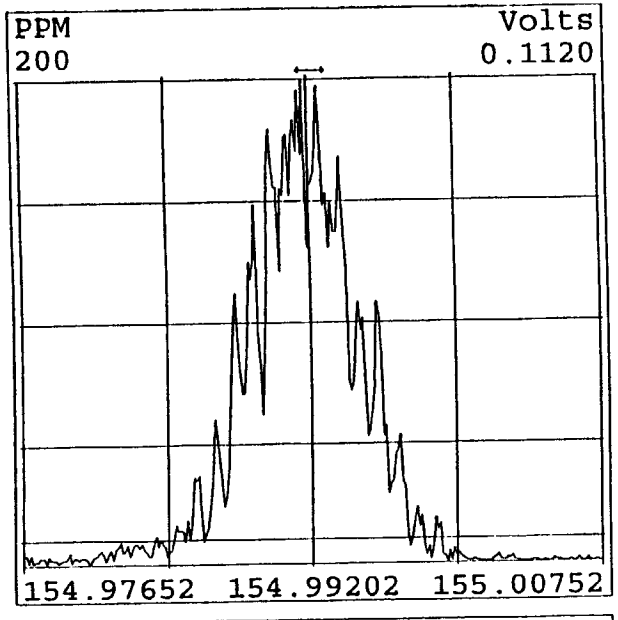
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29OC98V4	1	ST1029	CS-1	265-04A			1
29OC98V4	2	ST1029A	CS-2	265-04B			1
29OC98V4	3	ST1029B	CS-3	956-64			1
29OC98V4	4	ST1029C	CS-4	265-04D			1
29OC98V4	5	ST1029D	CS-5	265-04E			1
29OC98V4	6	SB1029A	Solvent Blank	C-8			1
29OC98V4	7	ST1029E	CS-3	956-64			1
29OC98V4	8	SB1029B	Solvent Blank	C-8			1
29OC98V4	9	302050-1MB	METHOD BLANK	AIR	PAH	VSE-25	0.333
29OC98V4	10	302050-1LC	LCS				0.333
29OC98V4	11	302050-1BA	METHOD BLANK				0.333
29OC98V4	12	302050-1LA	LCS				0.333
29OC98V4	13	302050-2	CLXTP				0.333
29OC98V4	14	302050-4	CLXTR				0.333
29OC98V4	15	302050-6	CLXTW				0.333
29OC98V4	16	302050-8	CLXVO				0.333
29OC98V4	17	302050-1	CLXTM				0.333
29OC98V4	18	302050-3	CLXTQ				0.333
29OC98V4	19	302050-5	CLXTV				0.333
29OC98V4	20	302050-7	CLXTX				0.333
29OC98V4	21	301802-1	10X DIL.	AIR	PAH	VSE-26	0.50
29OC98V4	22	301802-2	10X DIL.				0.50
29OC98V4	23	301802-3	10X DIL.				0.50
29OC98V4	24	SB1029C	Solvent Blank	C-8			1
29OC98V4	25	ST1029F	CS-3	956-64			1
29OC98V4	26	SB1029D	Solvent Blank	C-8			1
29OC98V4	27	301802-1MB	METHOD BLANK	AIR	PAH	VSE-26	0.50
29OC98V4	28	301802-1LC	LCS				0.50
29OC98V4	29	301802-4	10X DIL.				0.50
29OC98V4	30	301802-5	10X DIL.				0.50
29OC98V4	31	301802-6	10X DIL.				0.50
29OC98V4	32	301802-7	10X DIL.				0.50
29OC98V4	33	301802-8	10X DIL.				0.50
29OC98V4	34	301802-9	10X DIL.				0.50
29OC98V4	35	301802-10	10X DIL.				0.50
29OC98V4	36	301802-11	10X DIL.				0.50
29OC98V4	37	301802-12	10X DIL.				0.50
29OC98V4	38	301802-13	10X DIL.				0.50
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29OC98V4	41						
29OC98V4	42						
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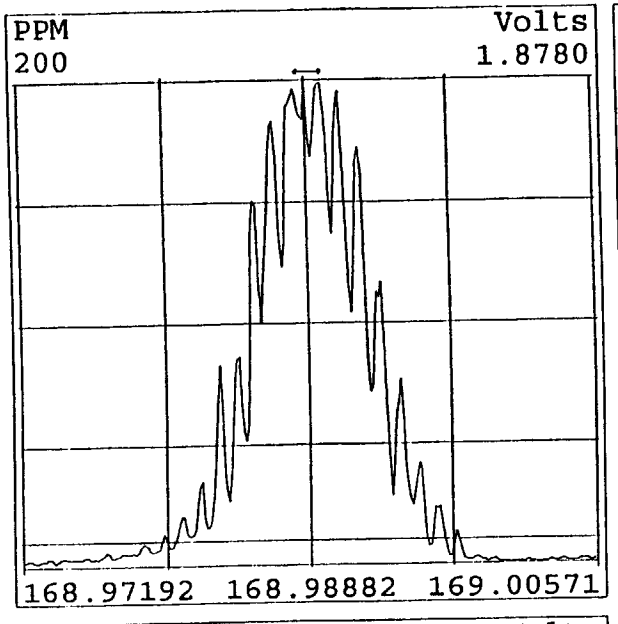
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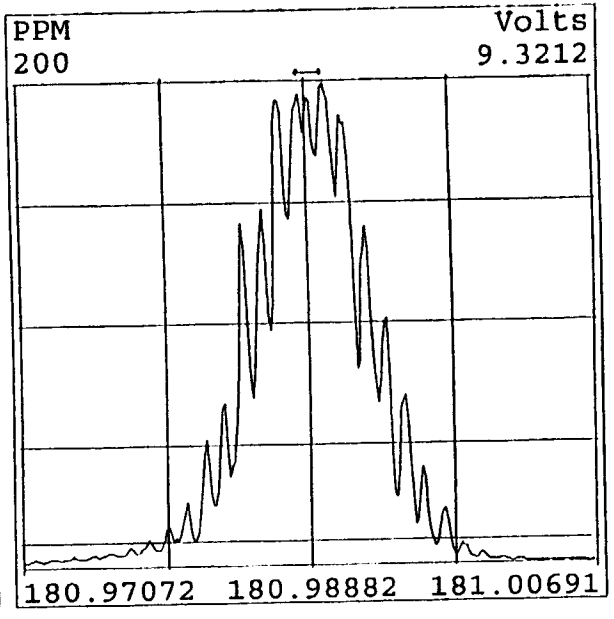
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Experiment:PAHAIR Function:1 Reference:PFK

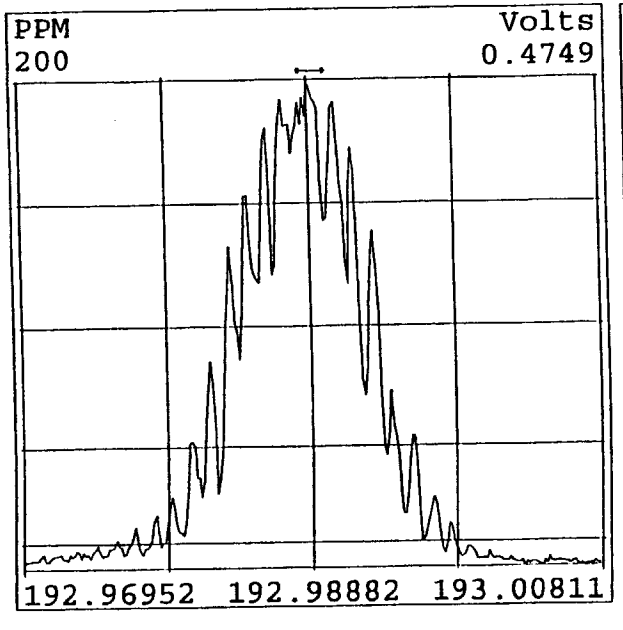


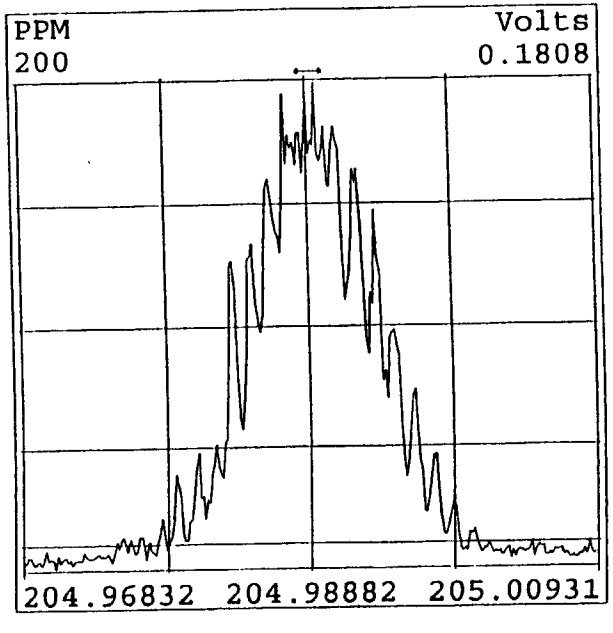
Peak Locate Examination:29-OCT-1998:15:23 File:29OC98V4
Experiment:PAHAIR Function:2 Reference:PFK



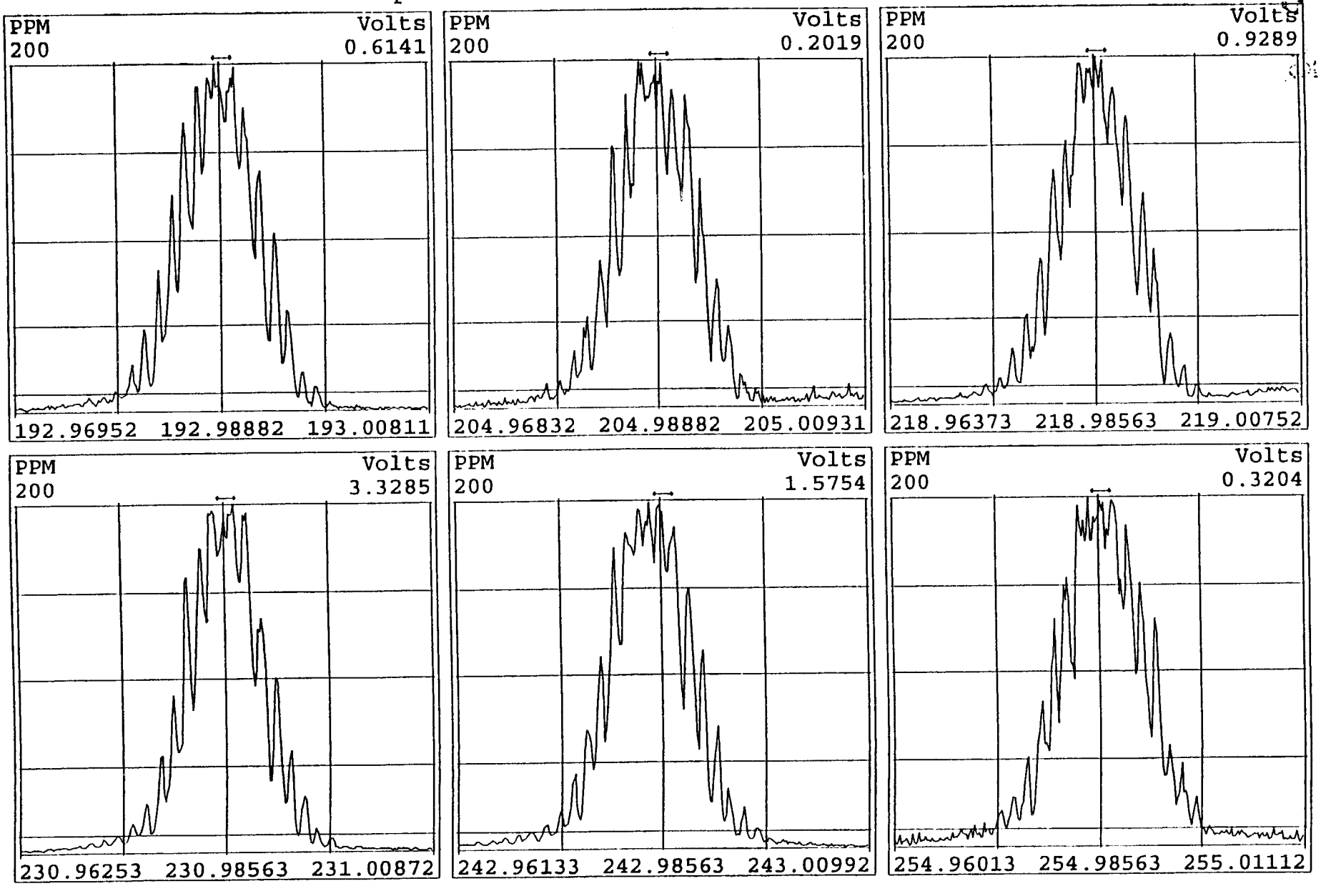




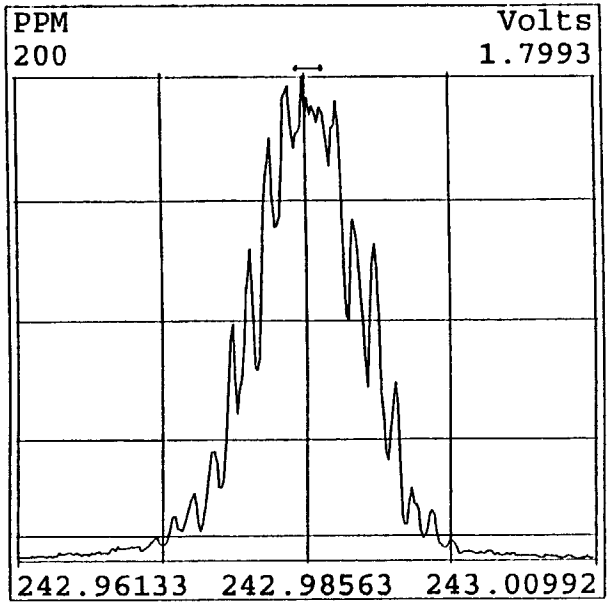


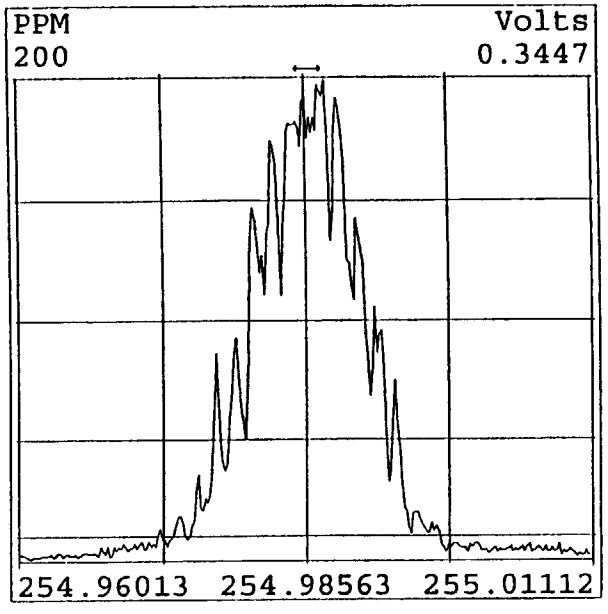


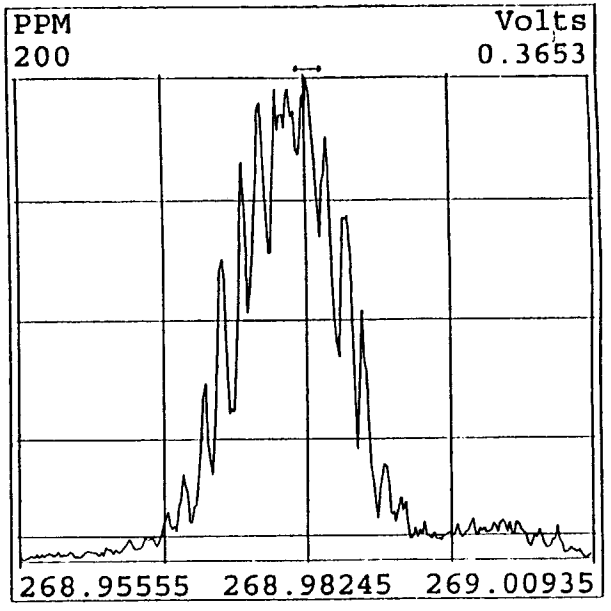
Peak Locate Examination:29-OCT-1998:15:24 File:29OC98V4
Experiment:PAHAIR Function:3 Reference:PFK

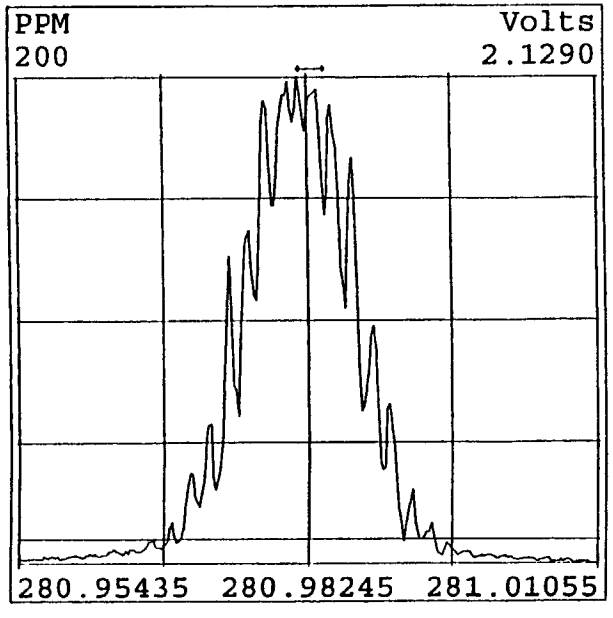


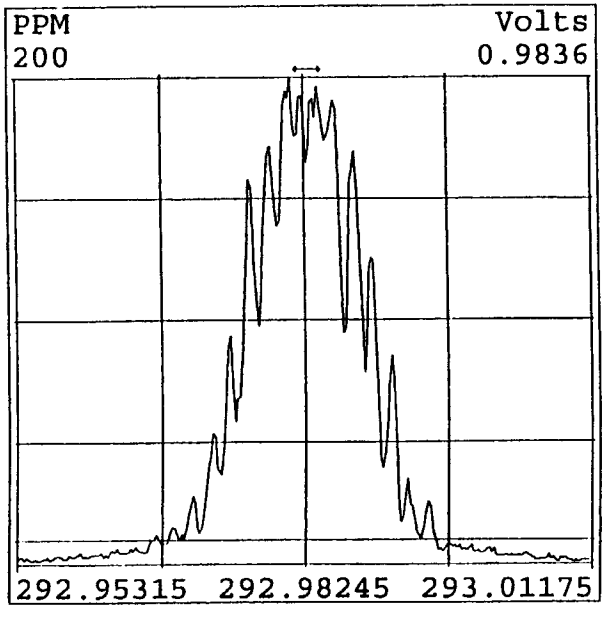
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Experiment:PAHAIR Function:4 Reference:PFK

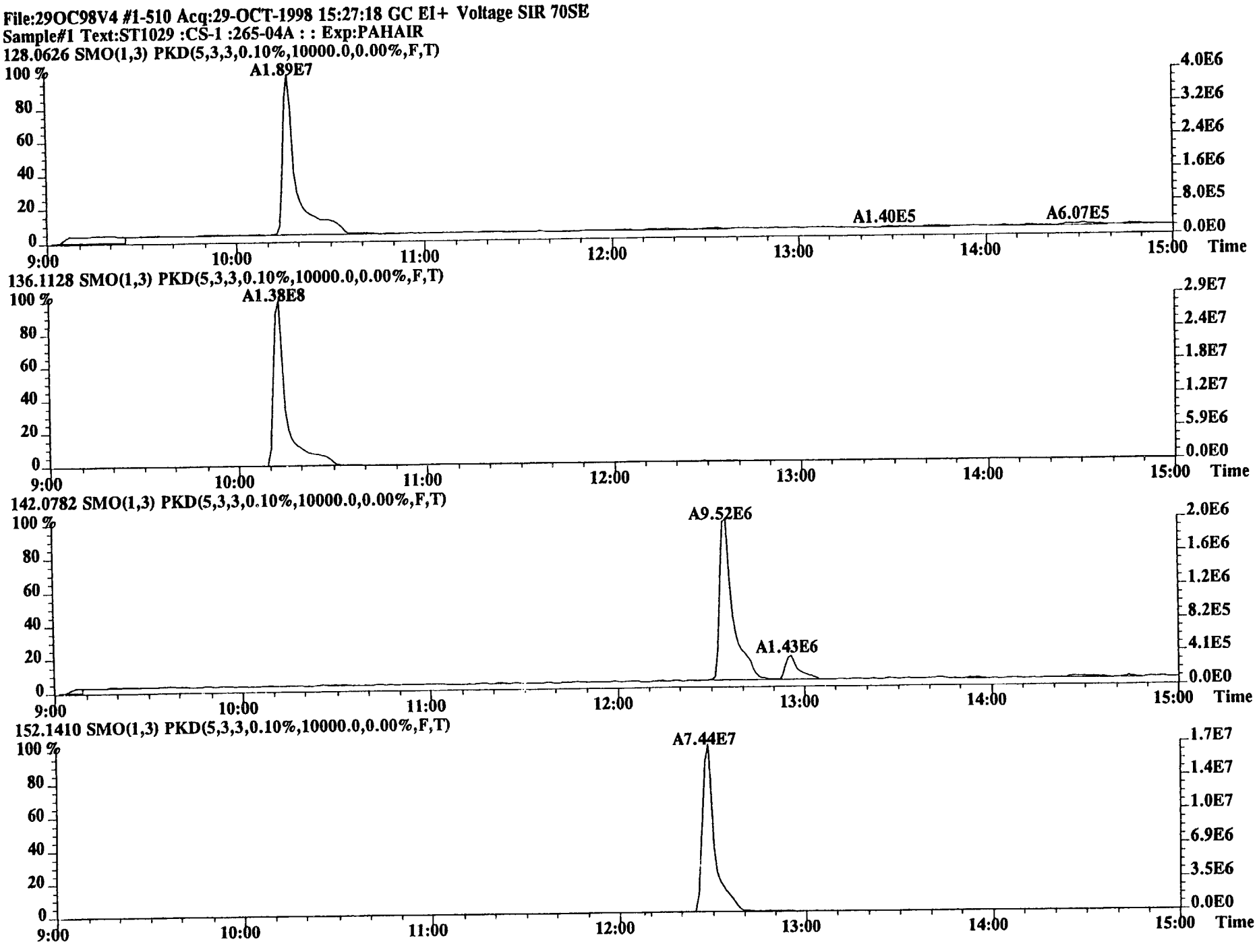




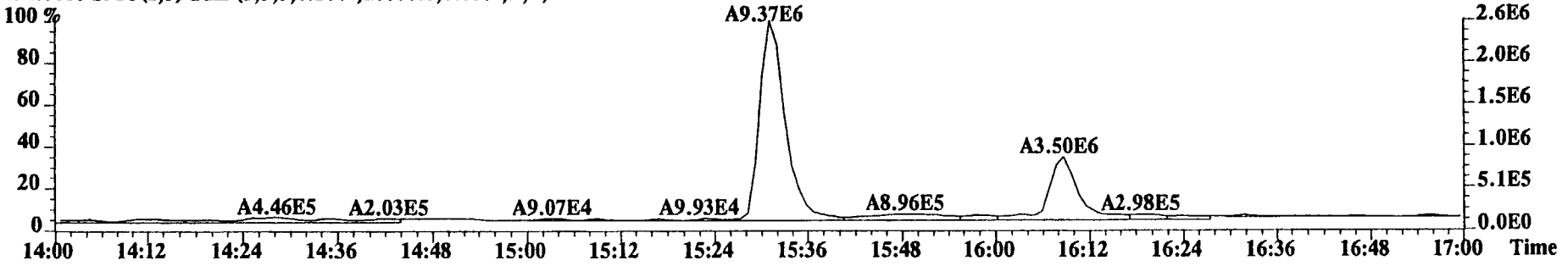




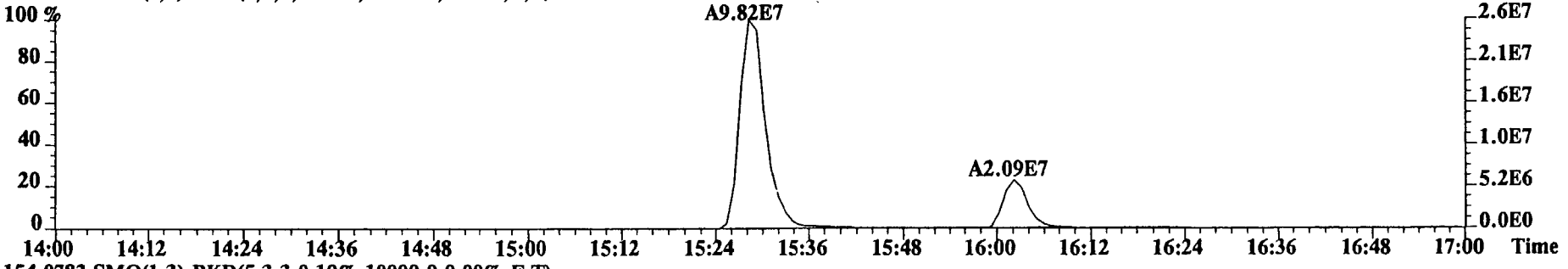



File:29OC98V4 #1-510 Acq:29-OCT-1998 15:27:18 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1029 :CS-1 :265-04A : : Exp:PAHAIR
128.0626 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.89E7
A1.40E5
A6.07E5
136.1128 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.38E8
142.0782 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A9.52E6
A1.43E6
152.1410 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.44E7
100 %
80
60
40
20
0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
Time
4.0E6
3.2E6
2.4E6
1.6E6
8.0E5
0.0E0
2.9E7
2.4E7
1.8E7
1.2E7
5.9E6
2.0E6
1.6E6
1.2E6
8.2E5
4.1E5
1.7E7
1.4E7
1.0E7
6.9E6
3.5E6

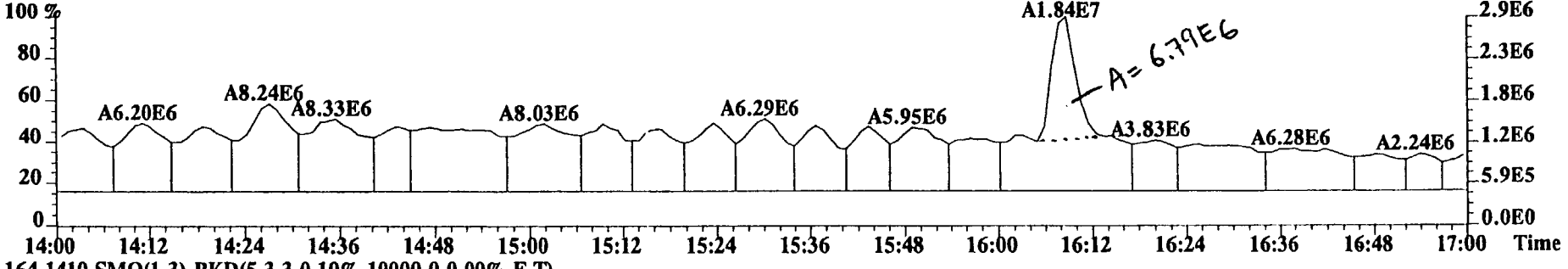
File:29OC98V4 #1-510 Acq:29-OCT-1998 15:27:18 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1029 :CS-1 :265-04A : : Exp:PAHAIR
152.0626 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



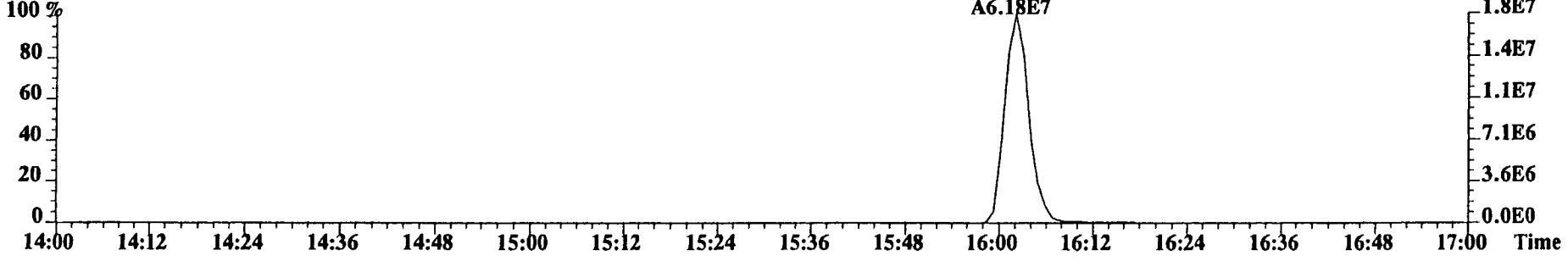
160.1128 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

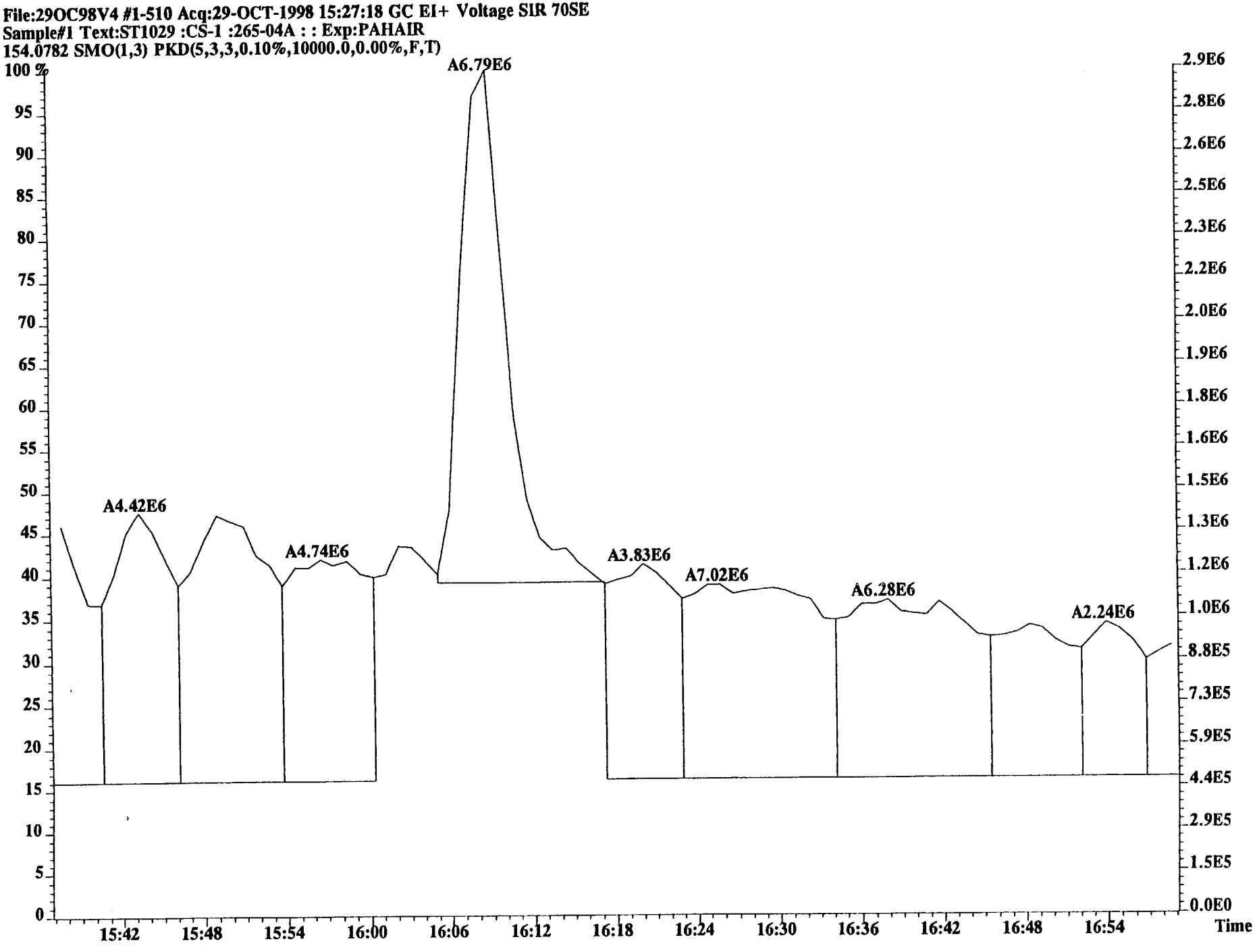


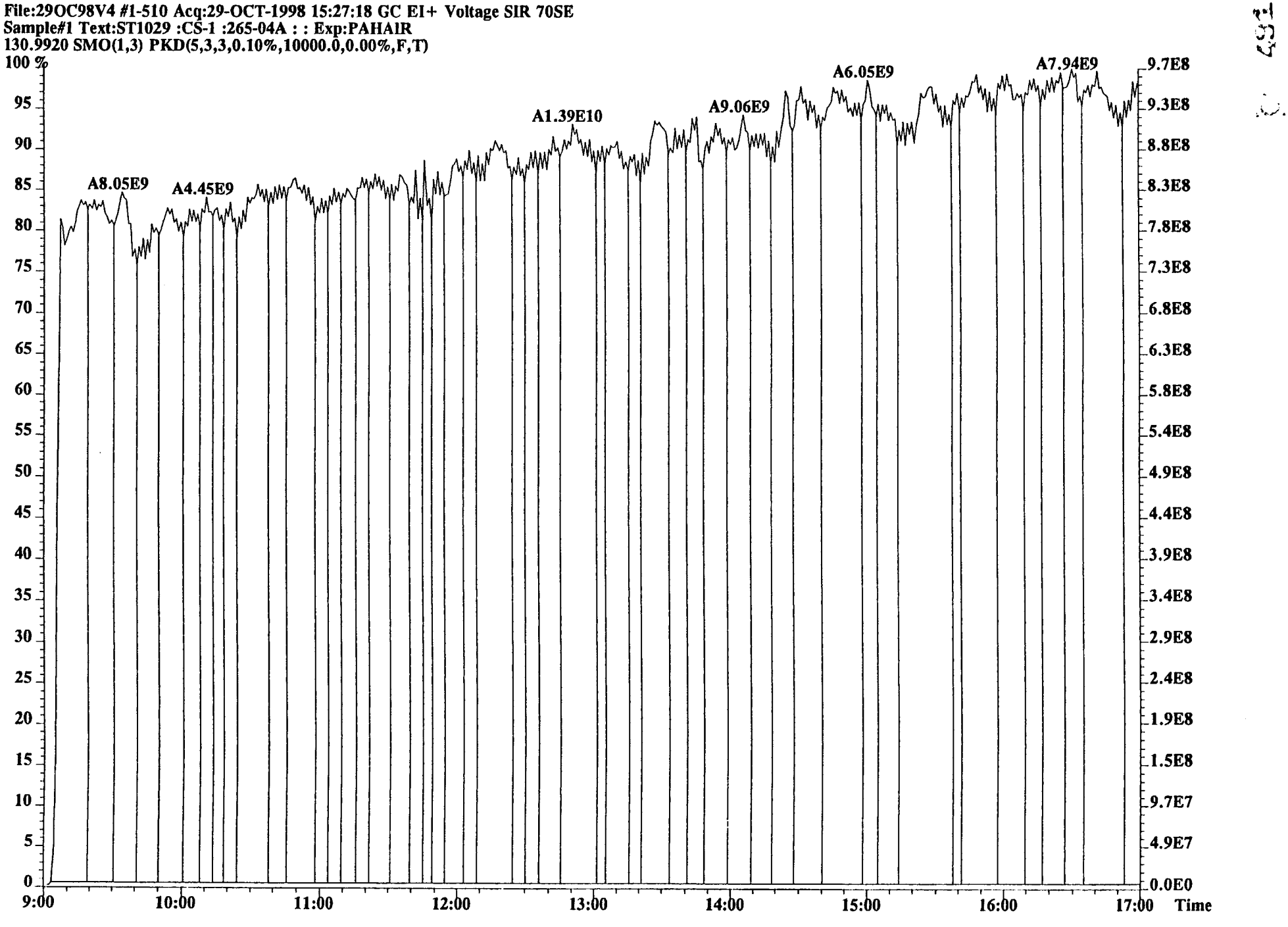
154.0782 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



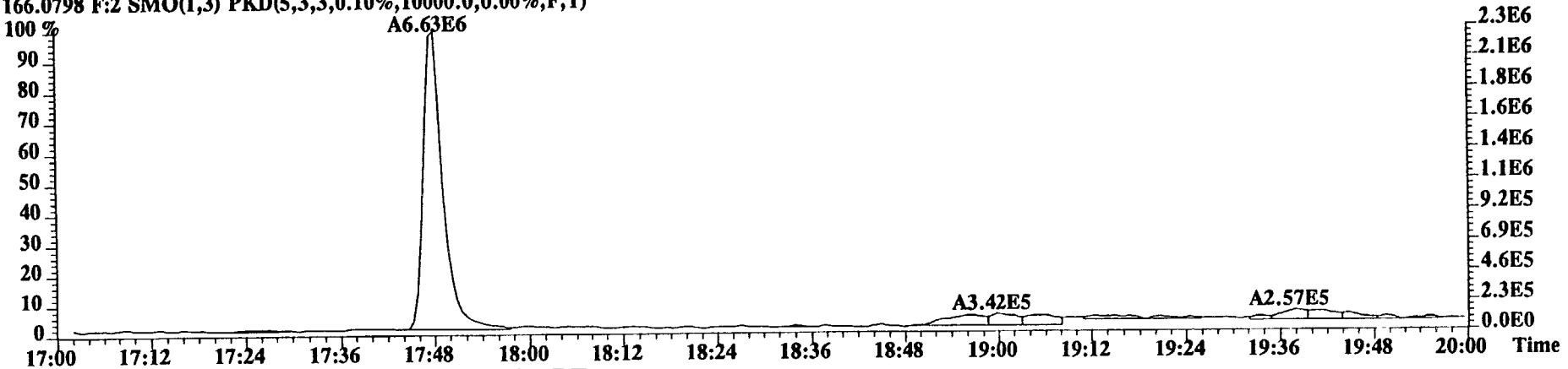
164.1410 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



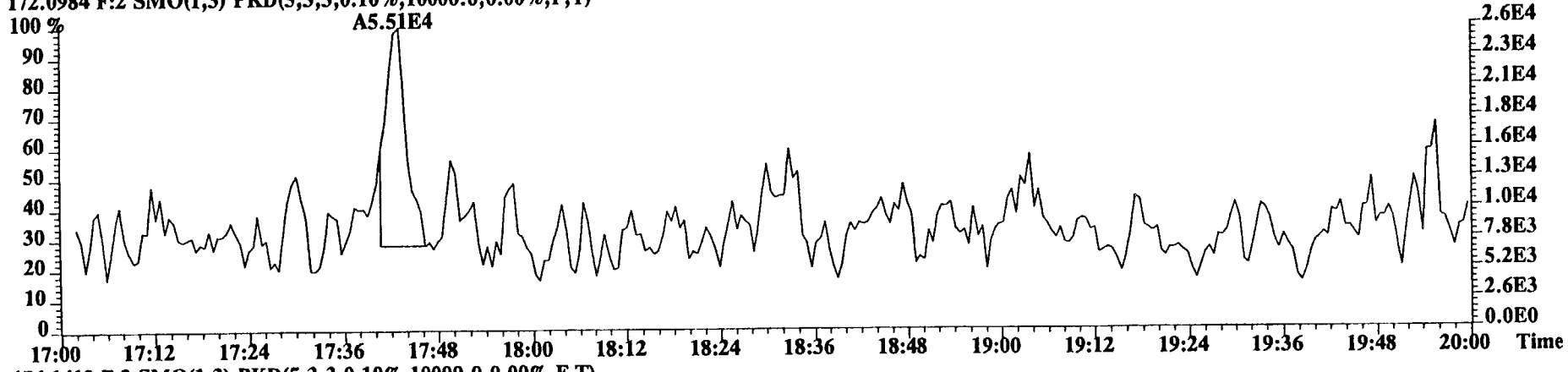

File:29OC98V4 #1-510 Acq:29-OCT-1998 15:27:18 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1029 :CS-1 :265-04A : : Exp:PAHAIR
154.0782 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A6.79E6
A4.42E6
A4.74E6
A3.83E6
A7.02E6
A6.28E6
A2.24E6
2.9E6
2.8E6
2.6E6
2.5E6
2.3E6
2.2E6
2.0E6
1.9E6
1.8E6
1.6E6
1.5E6
1.3E6
1.2E6
1.0E6
8.8E5
7.3E5
5.9E5
4.4E5
2.9E5
1.5E5
0.0E0
15:42
15:48
15:54
16:00
16:06
16:12
16:18
16:24
16:30
16:36
16:42
16:48
16:54
Time


File:29OC98V4 #1-510 Acq:29-OCT-1998 15:27:18 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1029 :CS-1 :265-04A : : Exp:PAHAIR
130.9920 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A8.05E9
A4.45E9
A1.39E10
A9.06E9
A6.05E9
A7.94E9
9.7E8
9.3E8
8.8E8
8.3E8
7.8E8
7.3E8
6.8E8
6.3E8
5.8E8
5.4E8
4.9E8
4.4E8
3.9E8
3.4E8
2.9E8
2.4E8
1.9E8
1.5E8
9.7E7
4.9E7
0.0E0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
Time

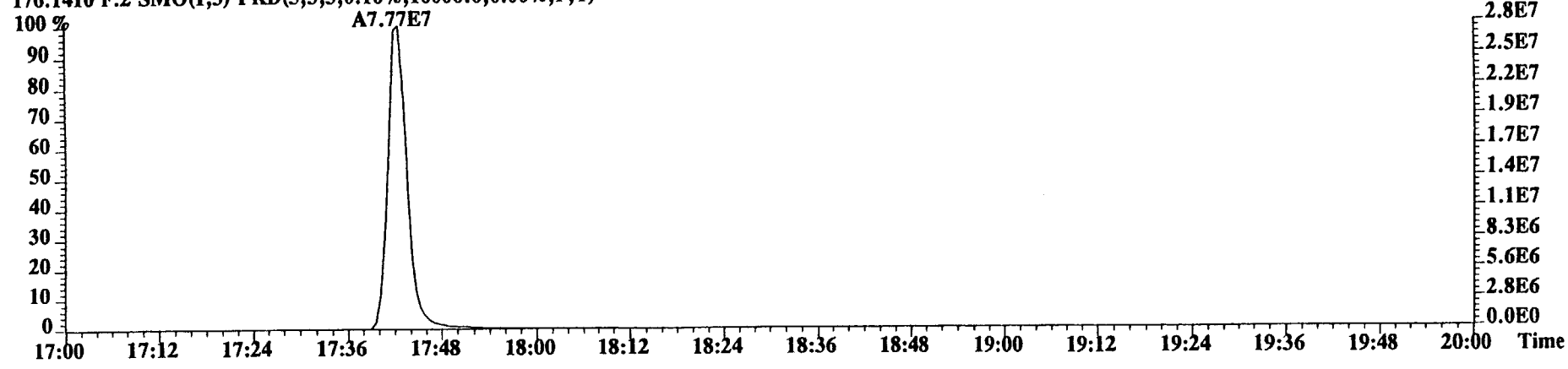
File:29OC98V4 #1-641 Acq:29-OCT-1998 15:27:18 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1029 :CS-1 :265-04A : : Exp:PAHAIR
166.0798 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

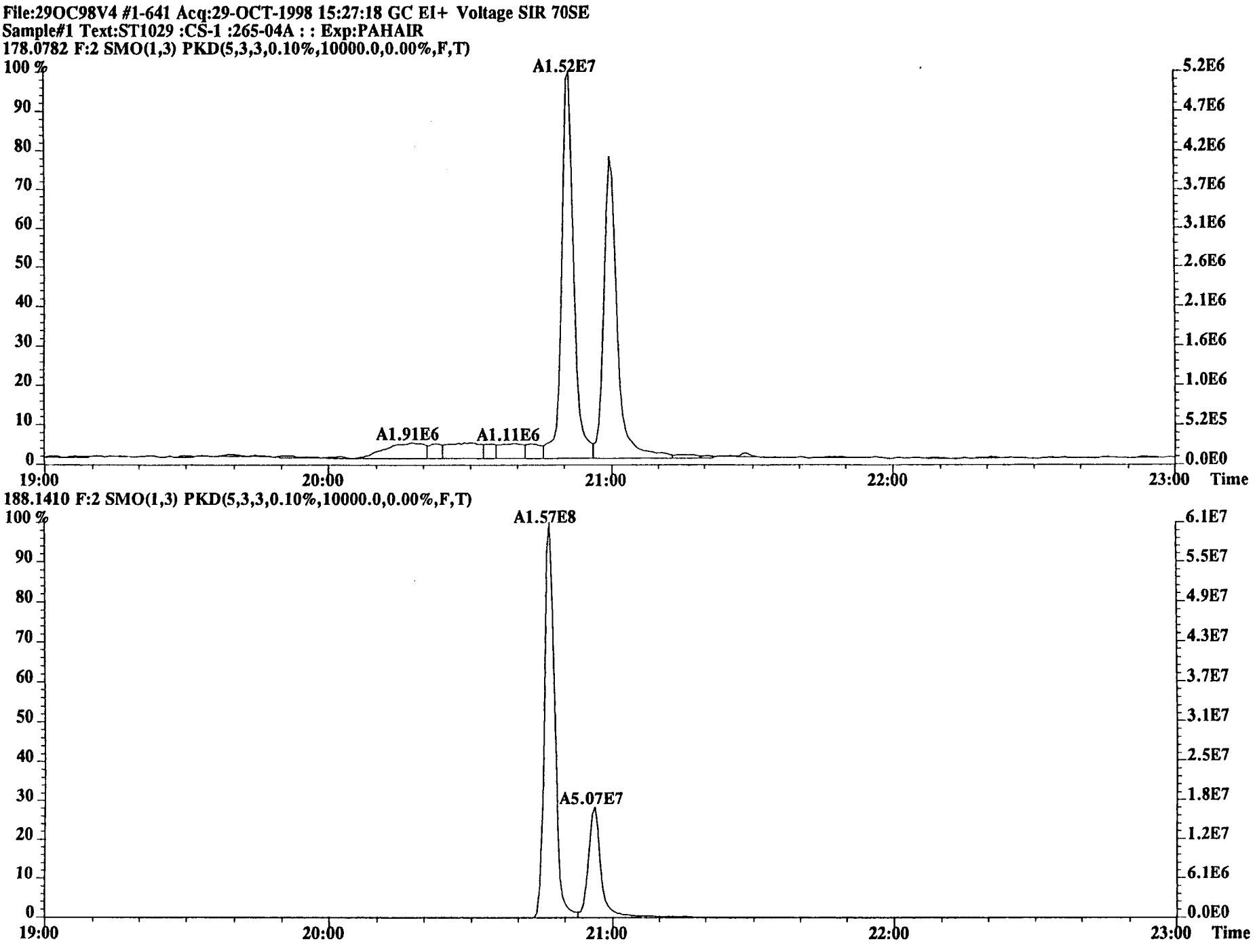


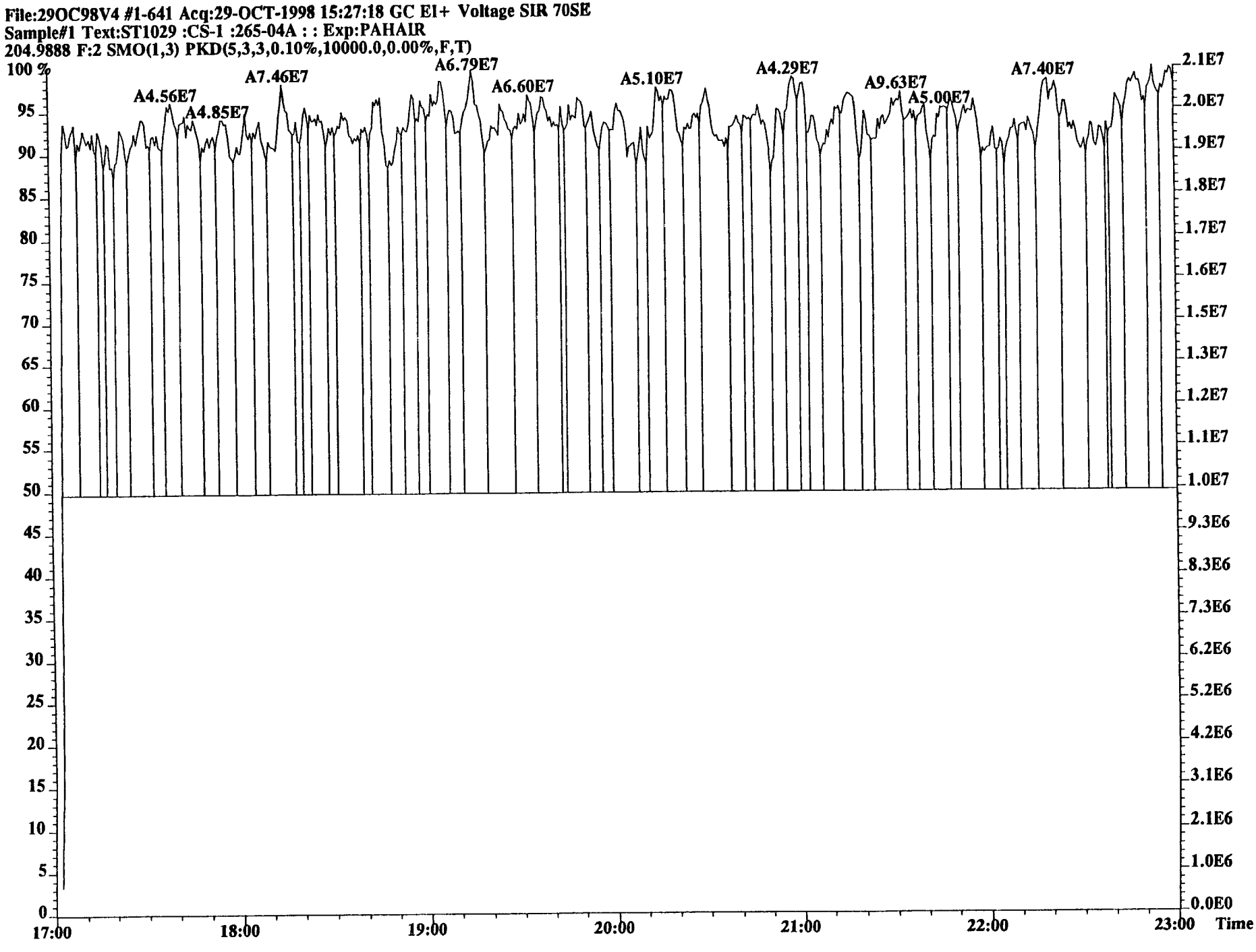
172.0984 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



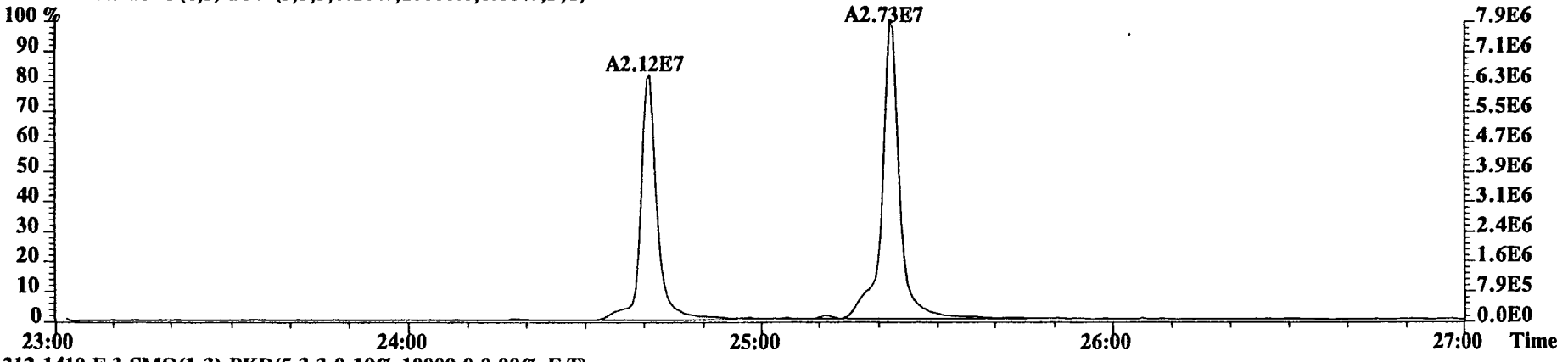
176.1410 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



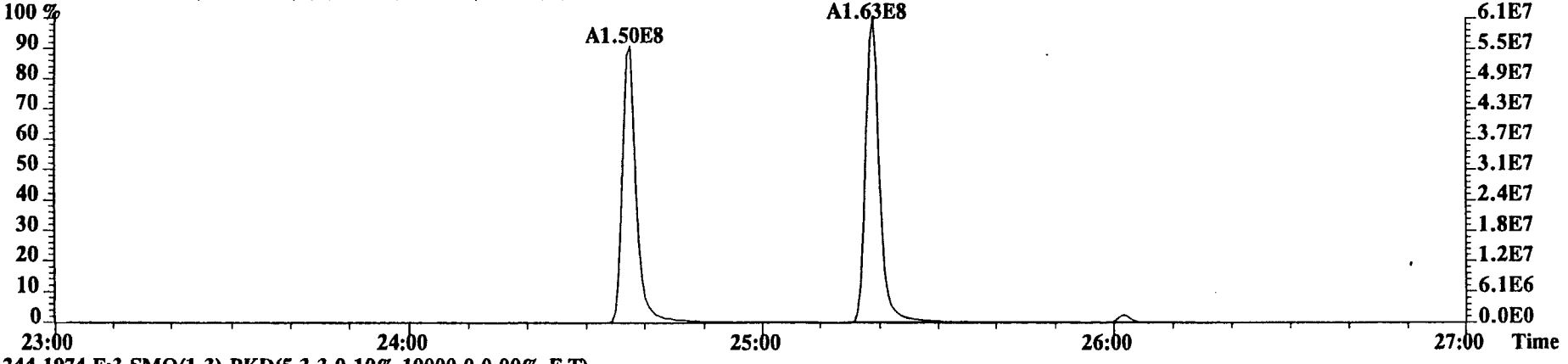

File:29OC98V4 #1-641 Acq:29-OCT-1998 15:27:18 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1029 :CS-1 :265-04A : : Exp:PAHAIR
178.0782 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.52E7
A1.91E6
A1.11E6
188.1410 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.57E8
A5.07E7
100 %
90
80
70
60
50
40
30
20
10
0
5.2E6
4.7E6
4.2E6
3.7E6
3.1E6
2.6E6
2.1E6
1.6E6
1.0E6
5.2E5
0.0E0
6.1E7
5.5E7
4.9E7
4.3E7
3.7E7
3.1E7
2.5E7
1.8E7
1.2E7
6.1E6
0.0E0
19:00
20:00
21:00
22:00
23:00
Time


File:29OC98V4 #1-641 Acq:29-OCT-1998 15:27:18 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1029 :CS-1 :265-04A : : Exp:PAHAIR
204.9888 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A4.56E7
A4.85E7
A7.46E7
A6.79E7
A6.60E7
A5.10E7
A4.29E7
A9.63E7
A5.00E7
A7.40E7
2.1E7
2.0E7
1.9E7
1.8E7
1.7E7
1.6E7
1.5E7
1.3E7
1.2E7
1.1E7
1.0E7
9.3E6
8.3E6
7.3E6
6.2E6
5.2E6
4.2E6
3.1E6
2.1E6
1.0E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

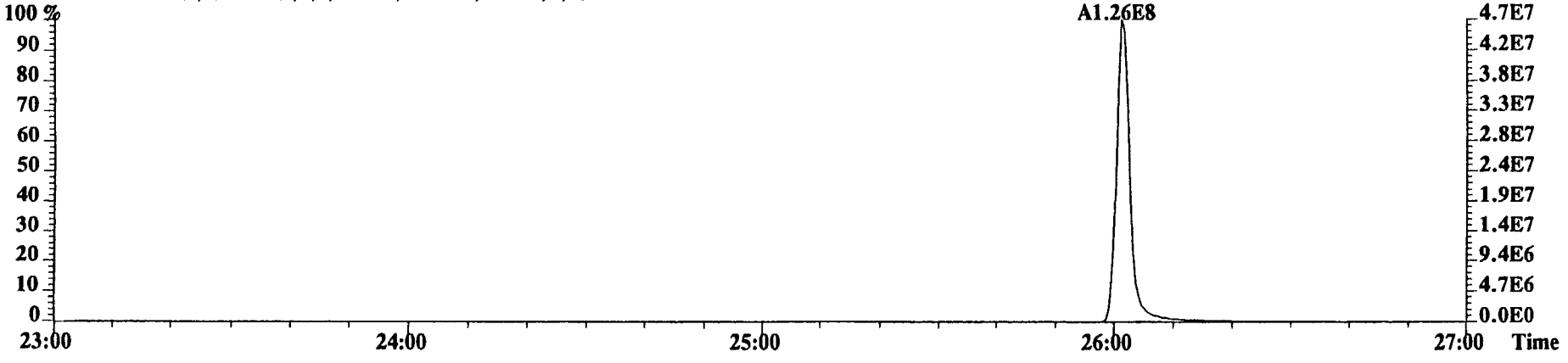
File:29OC98V4 #1-938 Acq:29-OCT-1998 15:27:18 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1029 :CS-1 :265-04A : : Exp:PAHAIR
202.0782 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

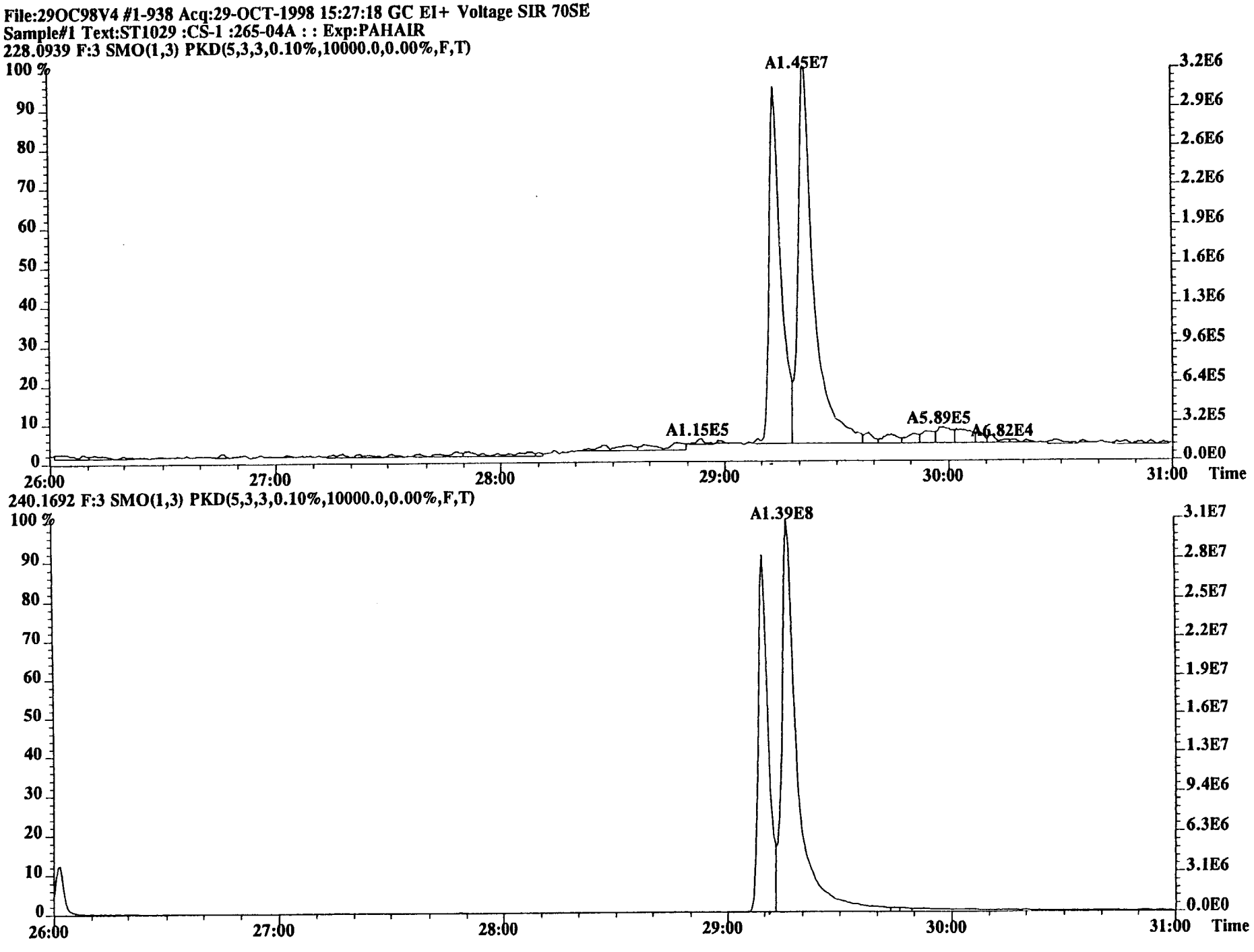


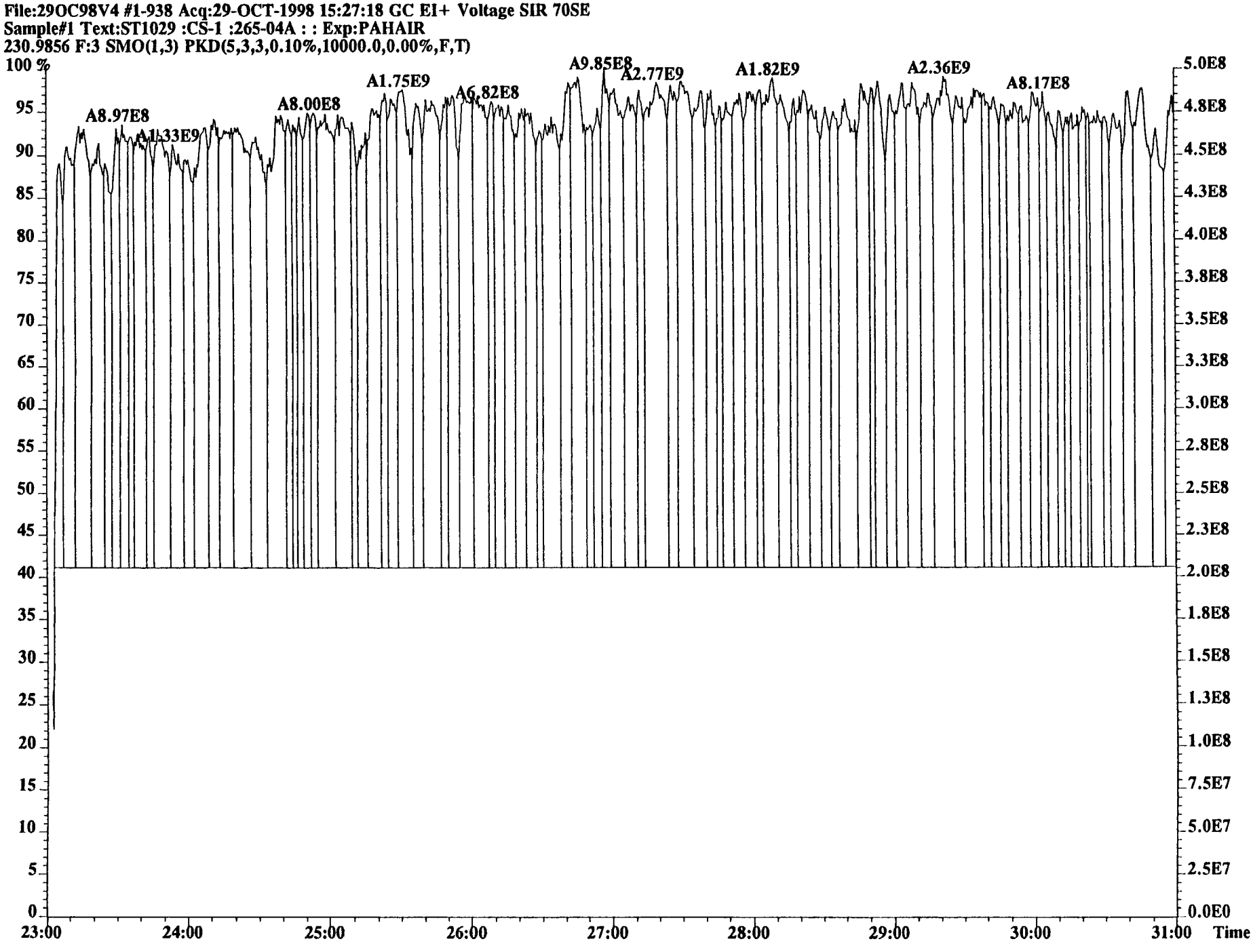
212.1410 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



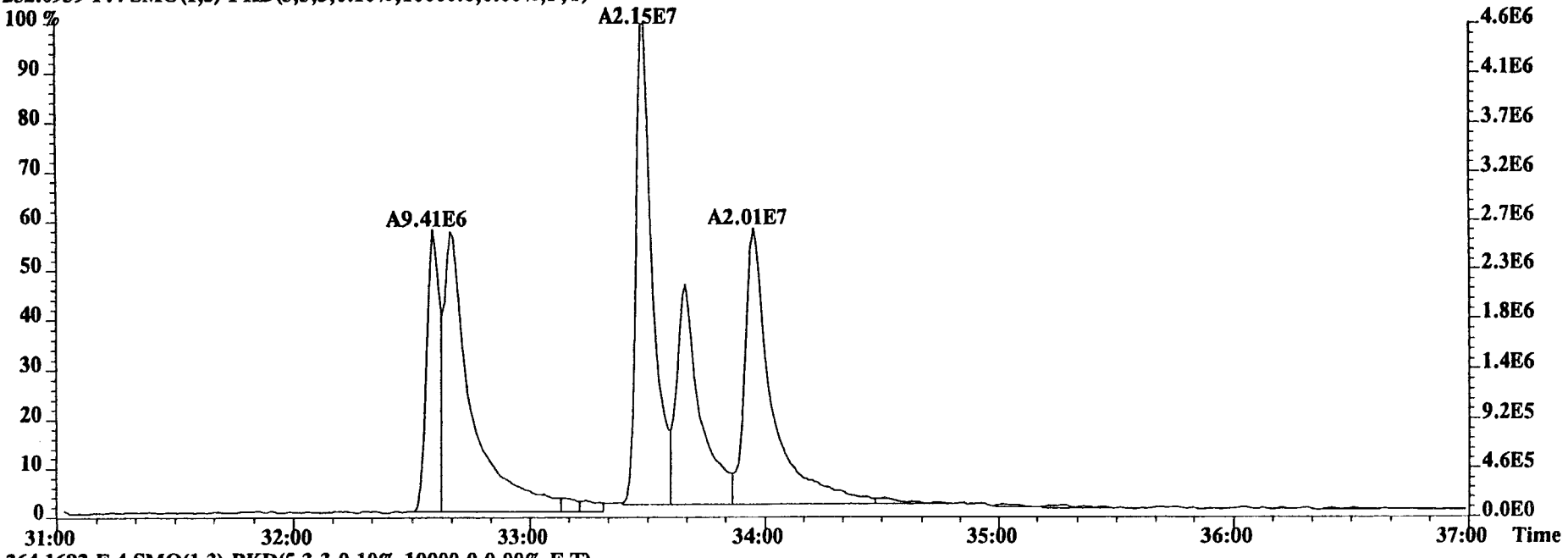
244.1974 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



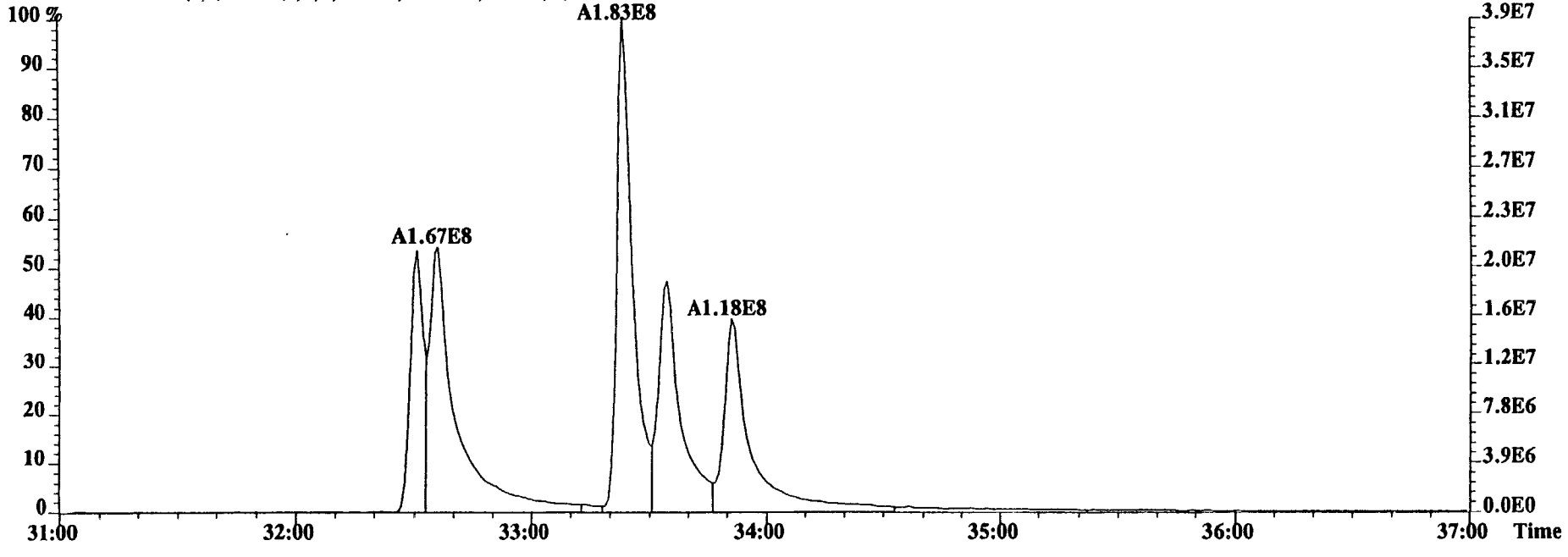

File:29OC98V4 #1-938 Acq:29-OCT-1998 15:27:18 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1029 :CS-1 :265-04A : : Exp:PAHAIR
228.0939 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
90
80
70
60
50
40
30
20
10
0
A1.45E7
A1.15E5
A5.89E5
A6.82E4
3.2E6
2.9E6
2.6E6
2.2E6
1.9E6
1.6E6
1.3E6
9.6E5
6.4E5
3.2E5
0.0E0
26:00
27:00
28:00
29:00
30:00
31:00
Time
240.1692 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
90
80
70
60
50
40
30
20
10
0
A1.39E8
3.1E7
2.8E7
2.5E7
2.2E7
1.9E7
1.6E7
1.3E7
9.4E6
6.3E6
3.1E6
0.0E0
26:00
27:00
28:00
29:00
30:00
31:00
Time

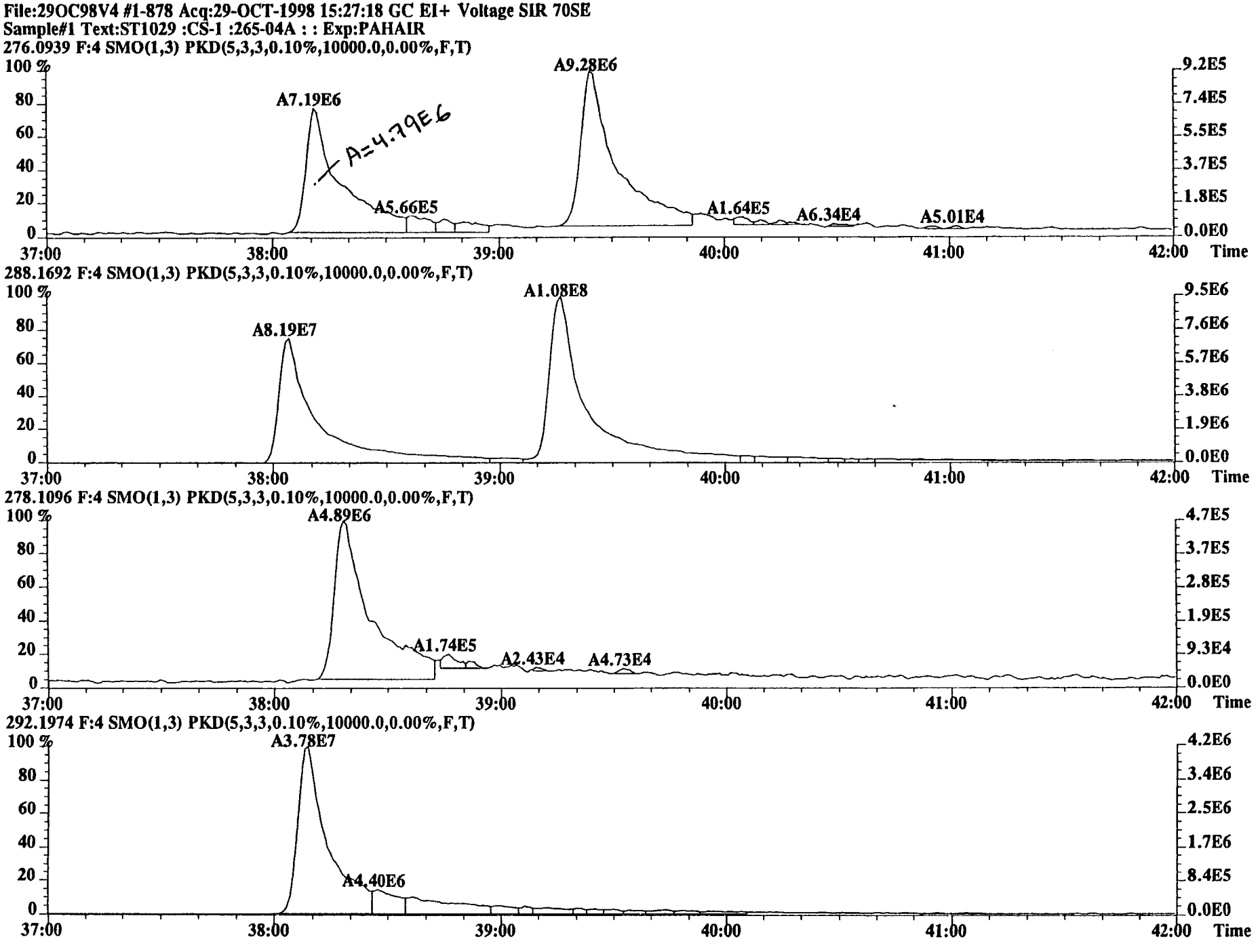

File:29OC98V4 #1-938 Acq:29-OCT-1998 15:27:18 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1029 :CS-1 :265-04A : : Exp:PAHAIR
230.9856 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.97E8
A1.33E9
A8.00E8
A1.75E9
A6.82E8
A9.85E8
A2.77E9
A1.82E9
A2.36E9
A8.17E8
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
5.0E8
4.8E8
4.5E8
4.3E8
4.0E8
3.8E8
3.5E8
3.3E8
3.0E8
2.8E8
2.5E8
2.3E8
2.0E8
1.8E8
1.5E8
1.3E8
1.0E8
7.5E7
5.0E7
2.5E7
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time

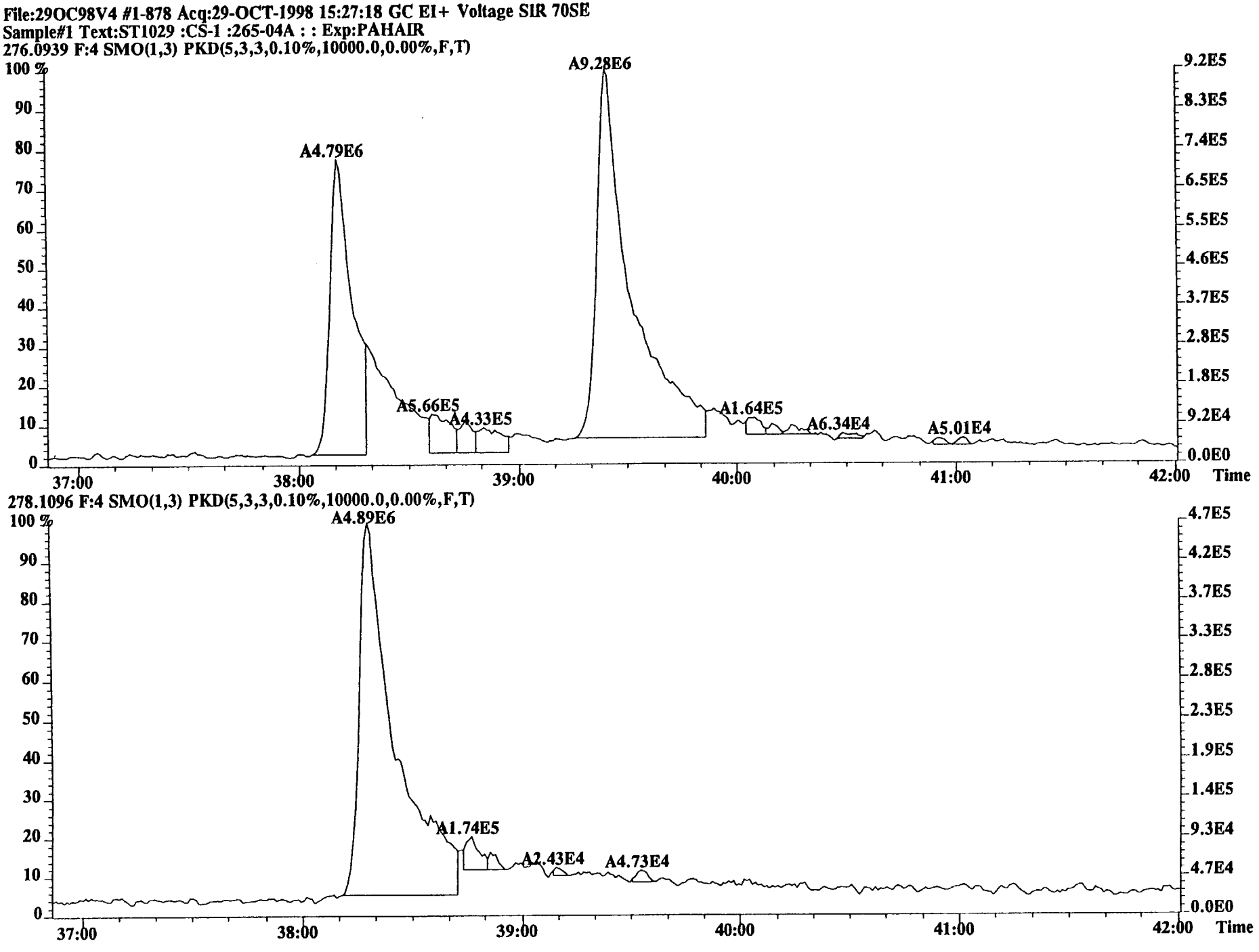
File:29OC98V4 #1-878 Acq:29-OCT-1998 15:27:18 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1029 :CS-1 :265-04A : : Exp:PAHAIR
252.0939 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



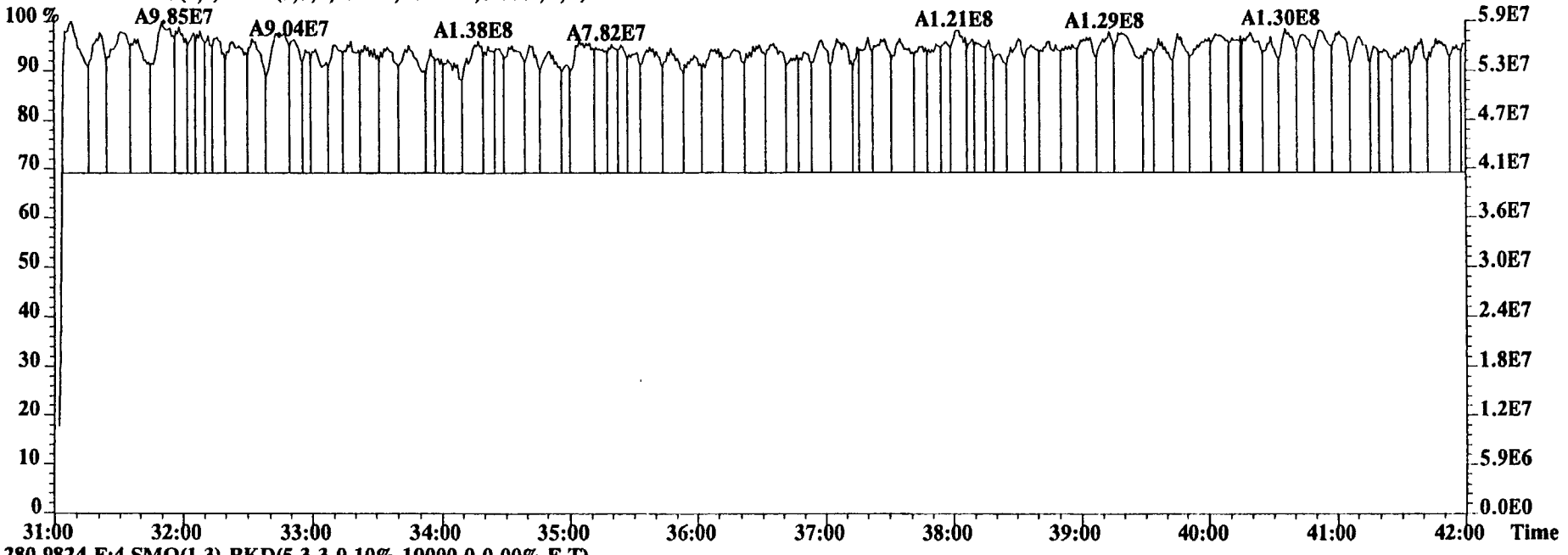
264.1692 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



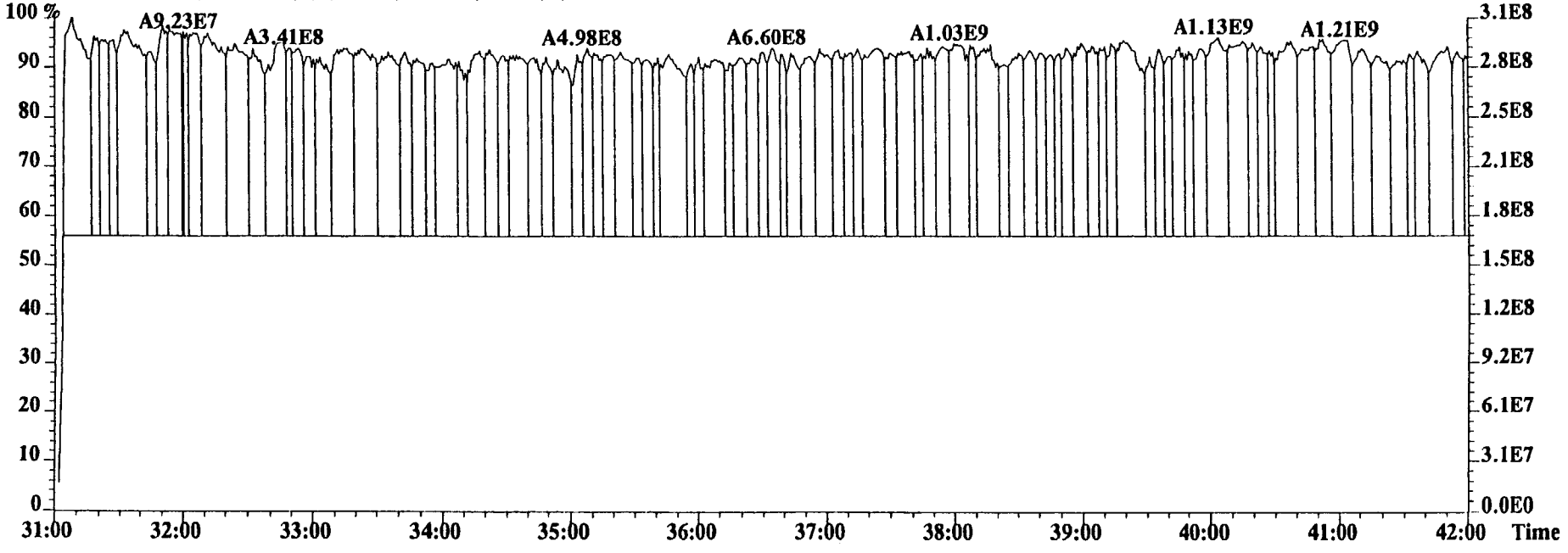

File:29OC98V4 #1-878 Acq:29-OCT-1998 15:27:18 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1029 :CS-1 :265-04A : : Exp:PAHAIR
276.0939 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.19E6
A=4.79E6
A9.28E6
A5.66E5
A1.64E5
A6.34E4
A5.01E4
288.1692 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.19E7
A1.08E8
278.1096 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.89E6
A1.74E5
A2.43E4
A4.73E4
292.1974 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.78E7
A4.40E6
100 %
80
60
40
20
0
37:00
38:00
39:00
40:00
41:00
42:00
Time
9.2E5
7.4E5
5.5E5
3.7E5
1.8E5
0.0E0
9.5E6
7.6E6
5.7E6
3.8E6
1.9E6
4.7E5
3.7E5
2.8E5
1.9E5
9.3E4
4.2E6
3.4E6
2.5E6
1.7E6
8.4E5


File:29OC98V4 #1-878 Acq:29-OCT-1998 15:27:18 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1029 :CS-1 :265-04A : : Exp:PAHAIR
276.0939 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.79E6
A9.28E6
A5.66E5
A4.33E5
A1.64E5
A6.34E4
A5.01E4
278.1096 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.89E6
A1.74E5
A2.43E4
A4.73E4
Time

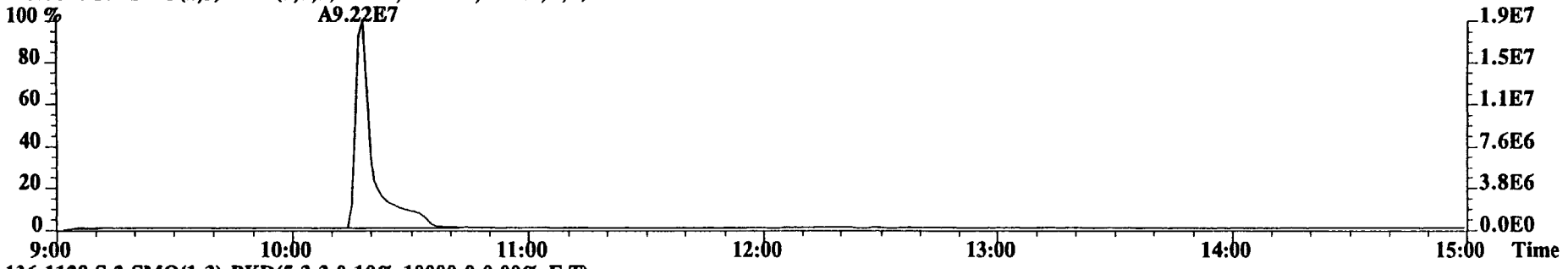
File:29OC98V4 #1-878 Acq:29-OCT-1998 15:27:18 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1029 :CS-1 :265-04A : : Exp:PAHAIR
268.9824 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



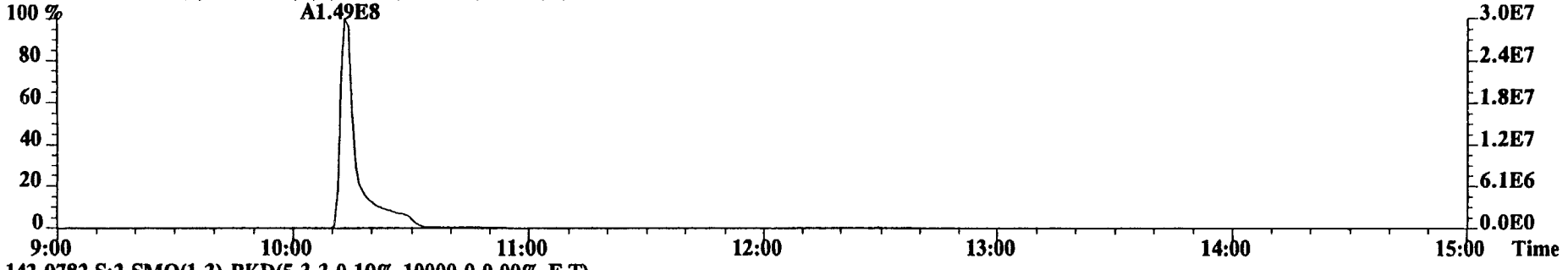
280.9824 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



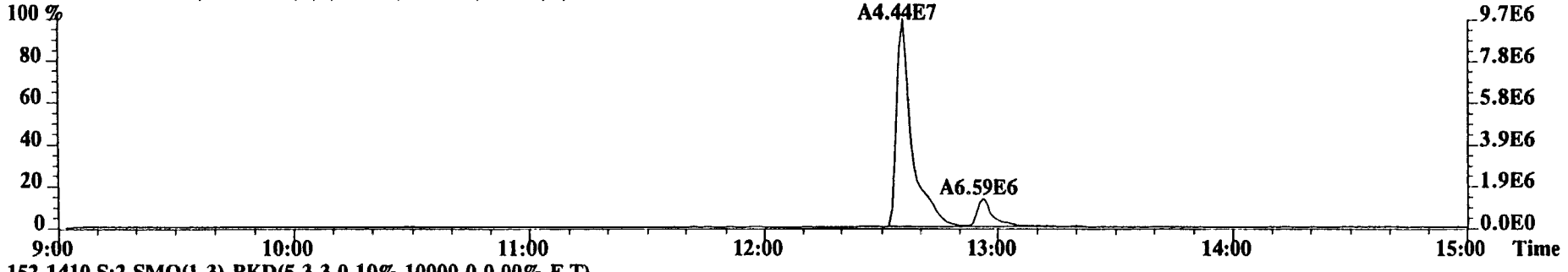
File:29OC98V4 #1-510 Acq:29-OCT-1998 16:16:17 GC EI+ Voltage SIR 70SE
Sample#2 Text:ST1029A :CS-2 :265-04B : Exp:PAHAIR
128.0626 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



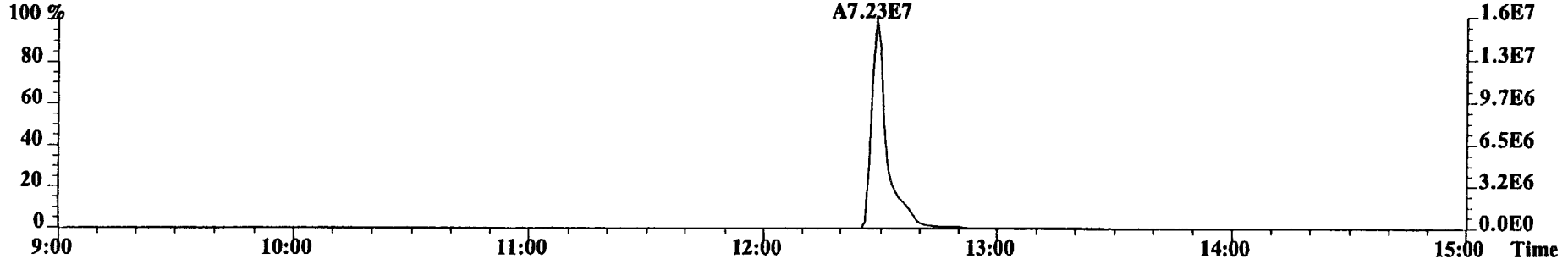
136.1128 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



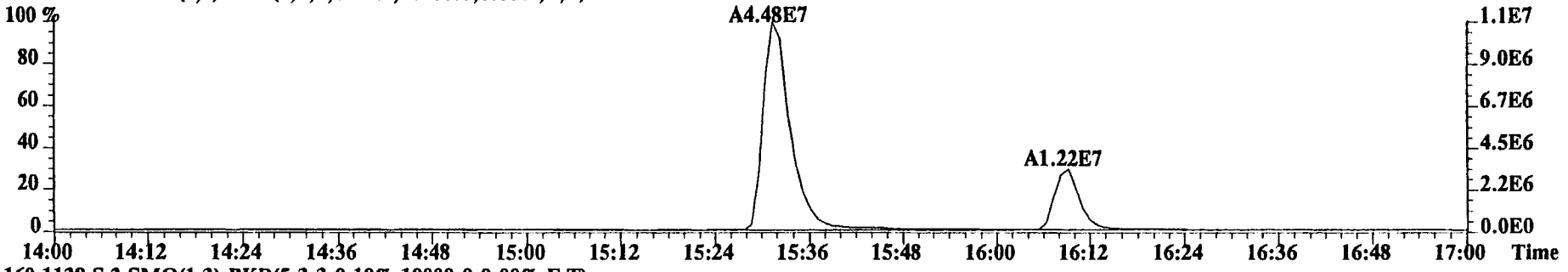
142.0782 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



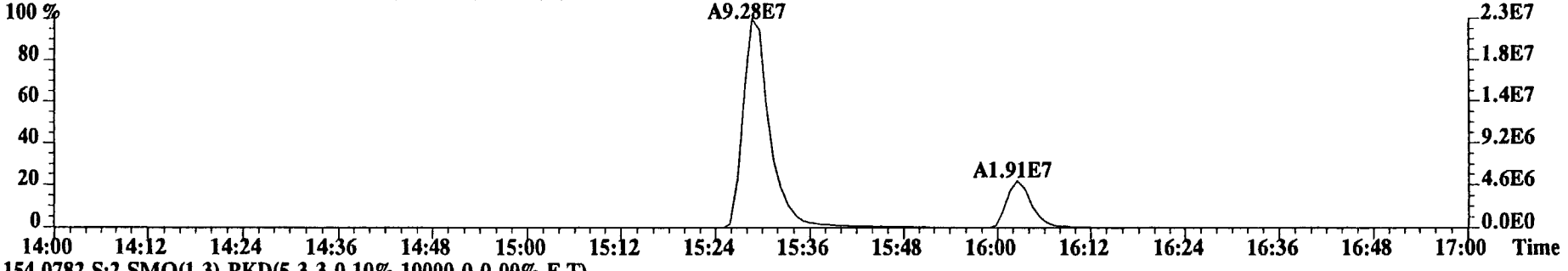
152.1410 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



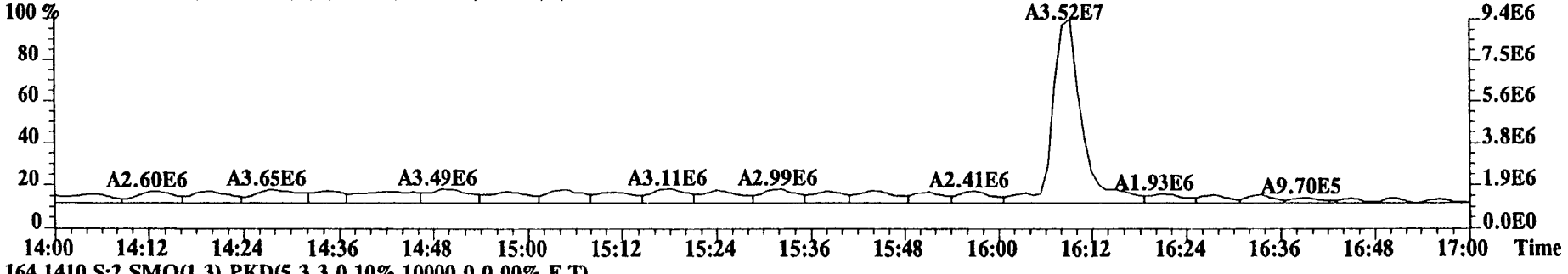
File:29OC98V4 #1-510 Acq:29-OCT-1998 16:16:17 GC EI+ Voltage SIR 70SE
Sample#2 Text:ST1029A :CS-2 :265-04B : Exp:PAHAIR
152.0626 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



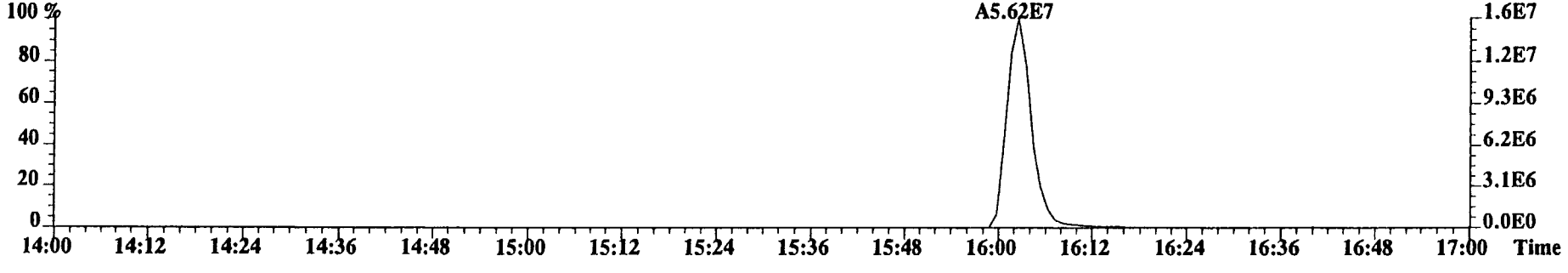
160.1128 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



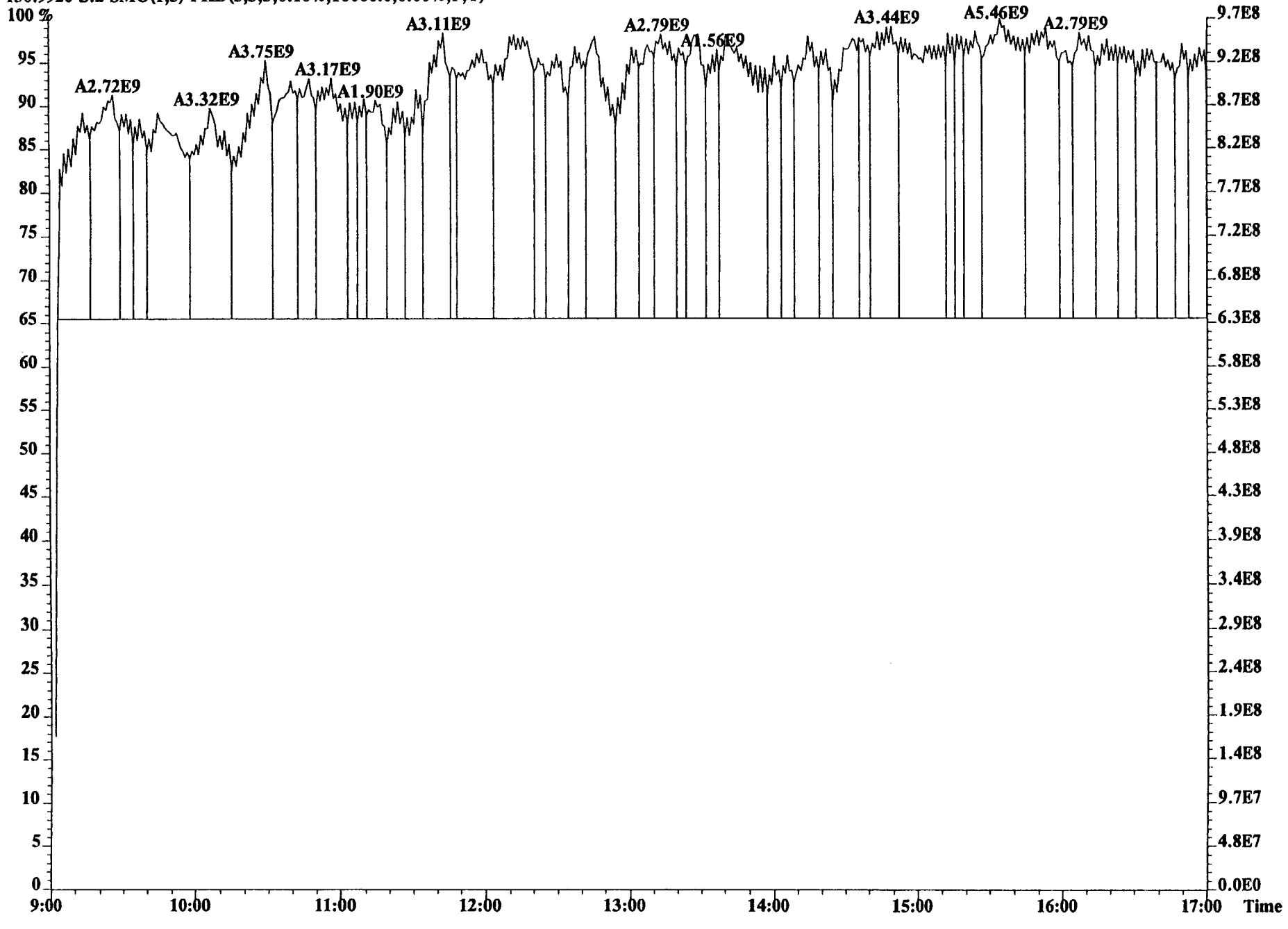
154.0782 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



164.1410 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

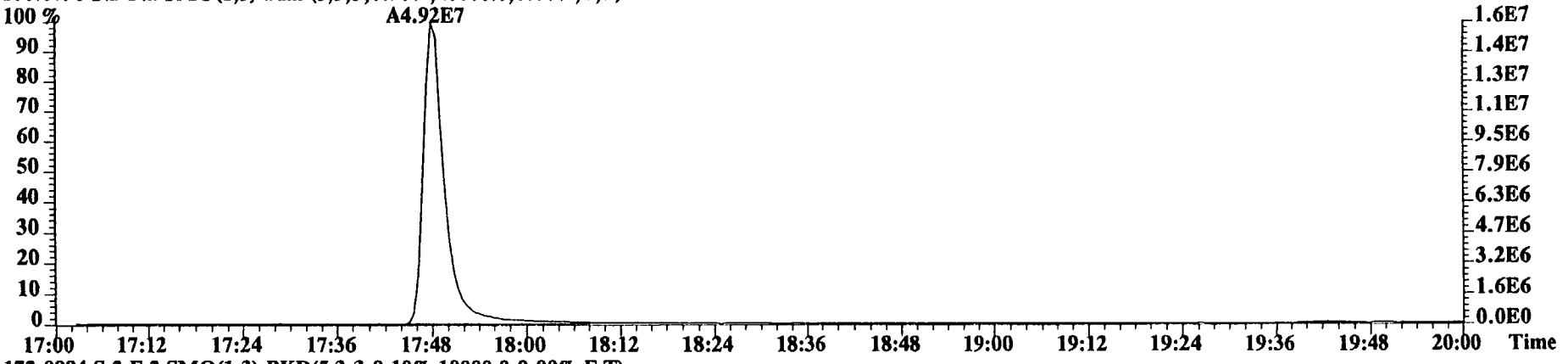


File:29OC98V4 #1-510 Acq:29-OCT-1998 16:16:17 GC EI+ Voltage SIR 70SE
Sample#2 Text:ST1029A :CS-2 :265-04B : Exp:PAHAIR
130.9920 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

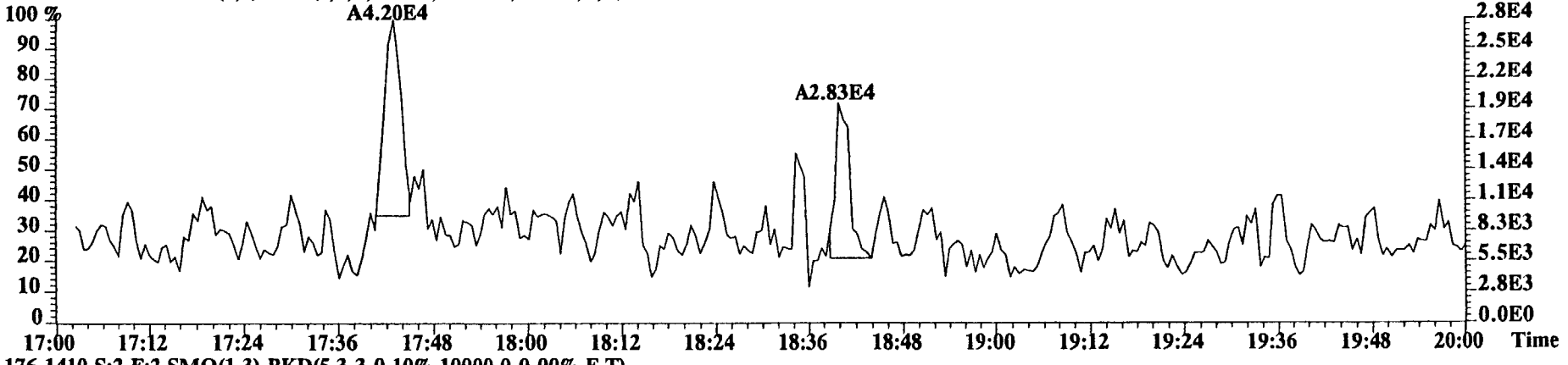


504

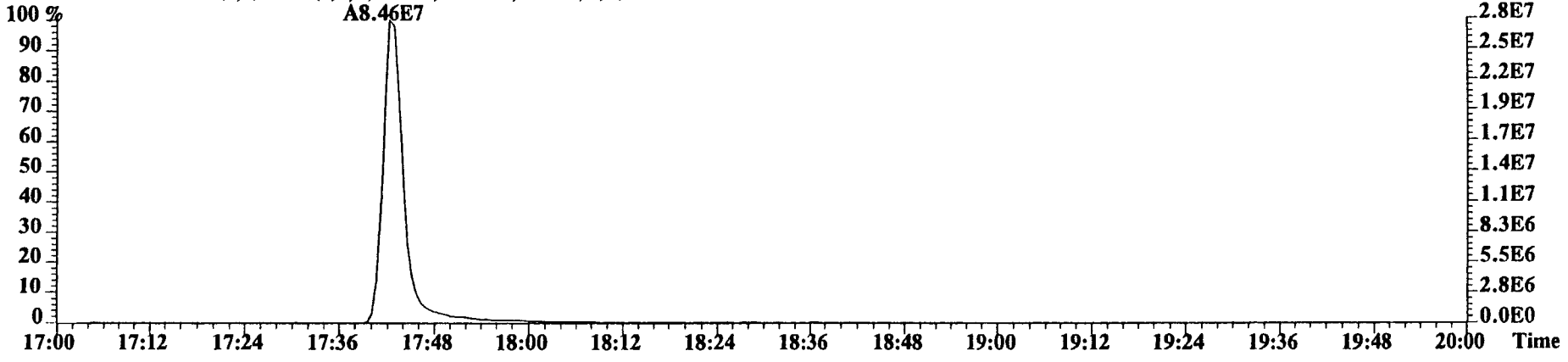
File:29OC98V4 #1-640 Acq:29-OCT-1998 16:16:17 GC EI+ Voltage SIR 70SE
Sample#2 Text:ST1029A :CS-2 :265-04B : Exp:PAHAIR
166.0798 S:2 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



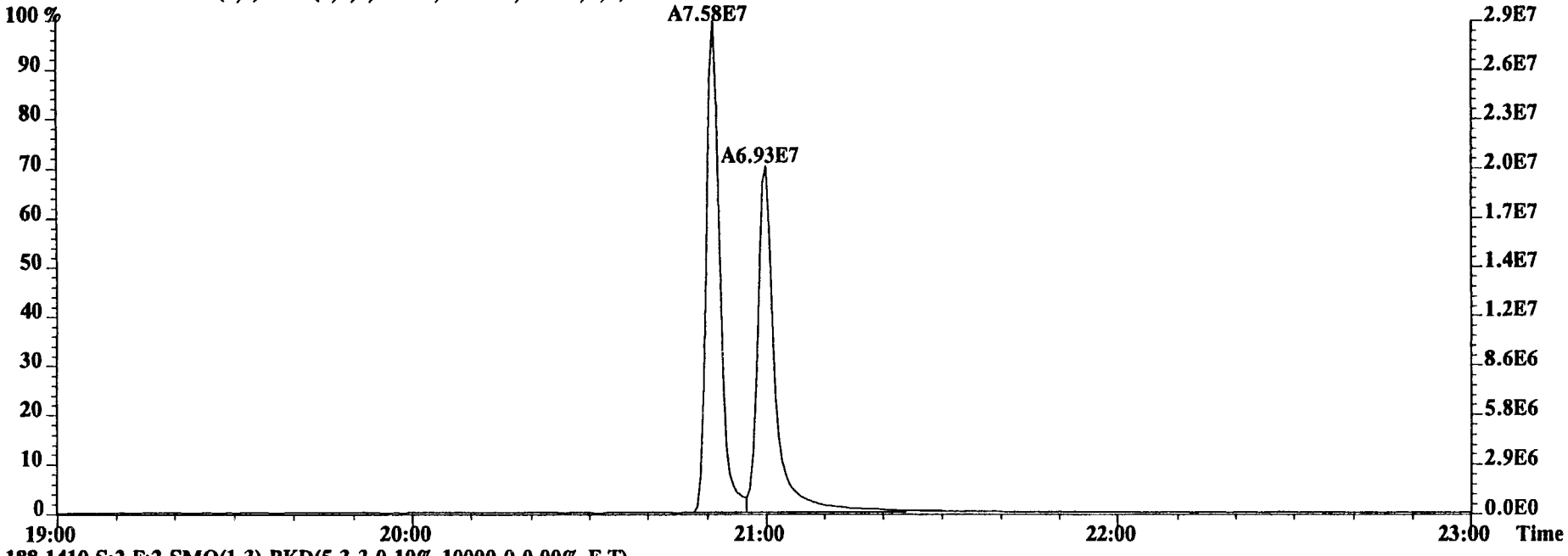
172.0984 S:2 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



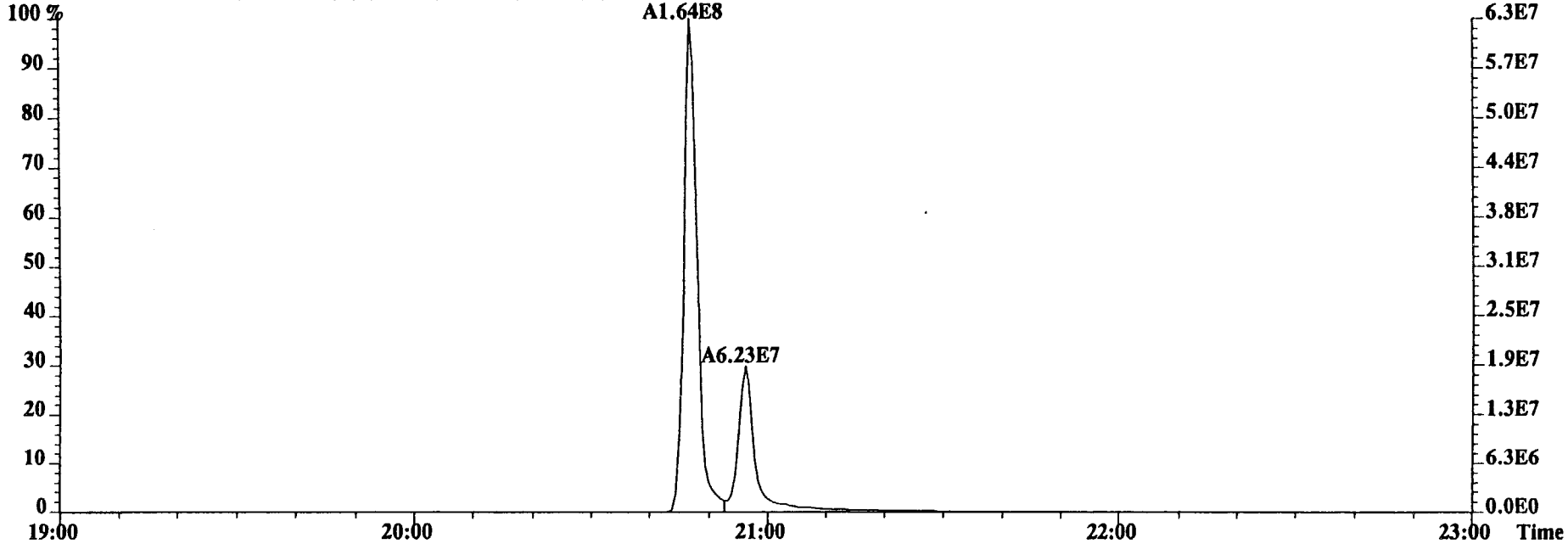
176.1410 S:2 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

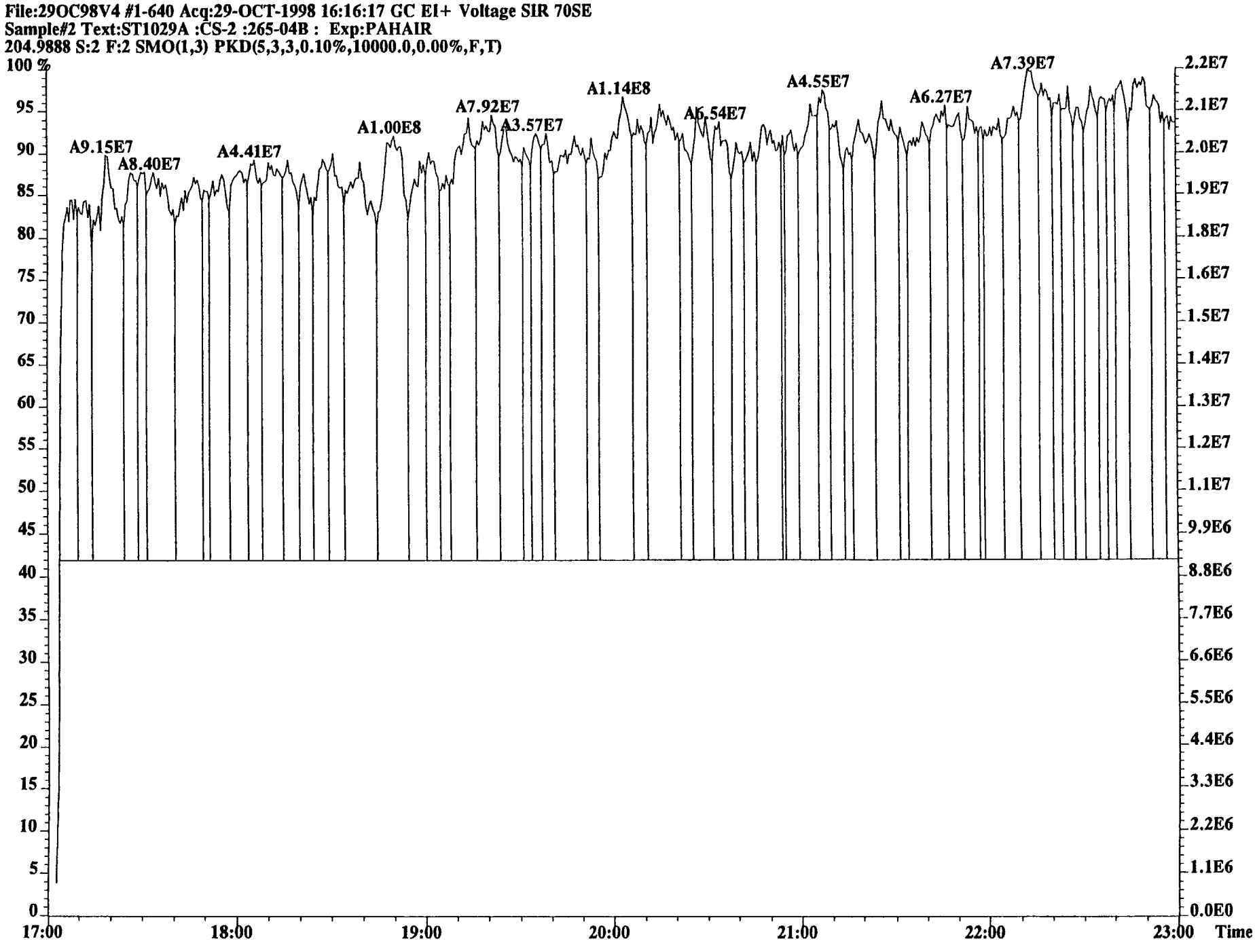


File:29OC98V4 #1-640 Acq:29-OCT-1998 16:16:17 GC EI+ Voltage SIR 70SE
Sample#2 Text:ST1029A :CS-2 :265-04B : Exp:PAHAIR
178.0782 S:2 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

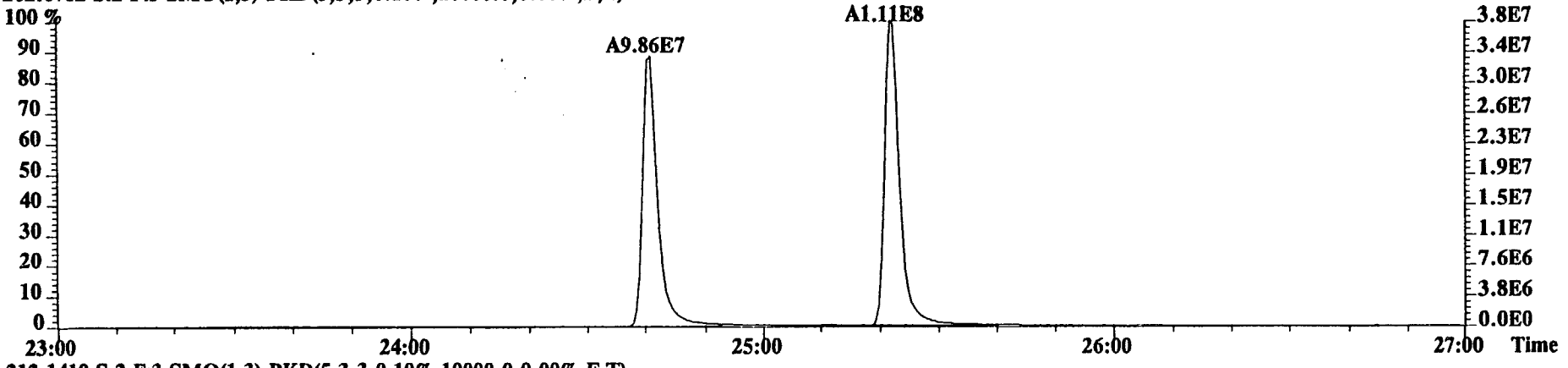


188.1410 S:2 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

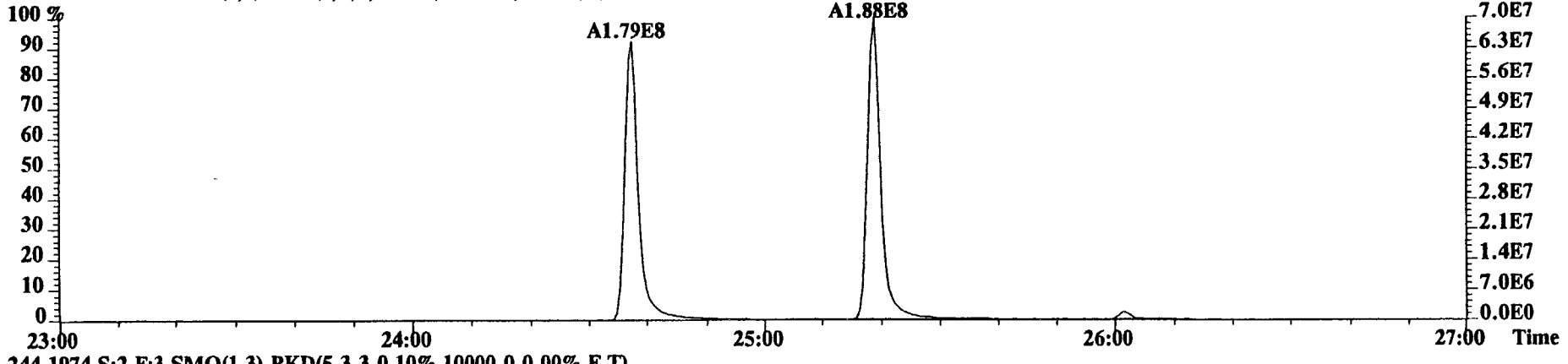



File:29OC98V4 #1-640 Acq:29-OCT-1998 16:16:17 GC EI+ Voltage SIR 70SE
Sample#2 Text:ST1029A :CS-2 :265-04B : Exp:PAHAIR
204.9888 S:2 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A9.15E7
A8.40E7
A4.41E7
A1.00E8
A7.92E7
A3.57E7
A1.14E8
A6.54E7
A4.55E7
A6.27E7
A7.39E7
2.2E7
2.1E7
2.0E7
1.9E7
1.8E7
1.6E7
1.5E7
1.4E7
1.3E7
1.2E7
1.1E7
9.9E6
8.8E6
7.7E6
6.6E6
5.5E6
4.4E6
3.3E6
2.2E6
1.1E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

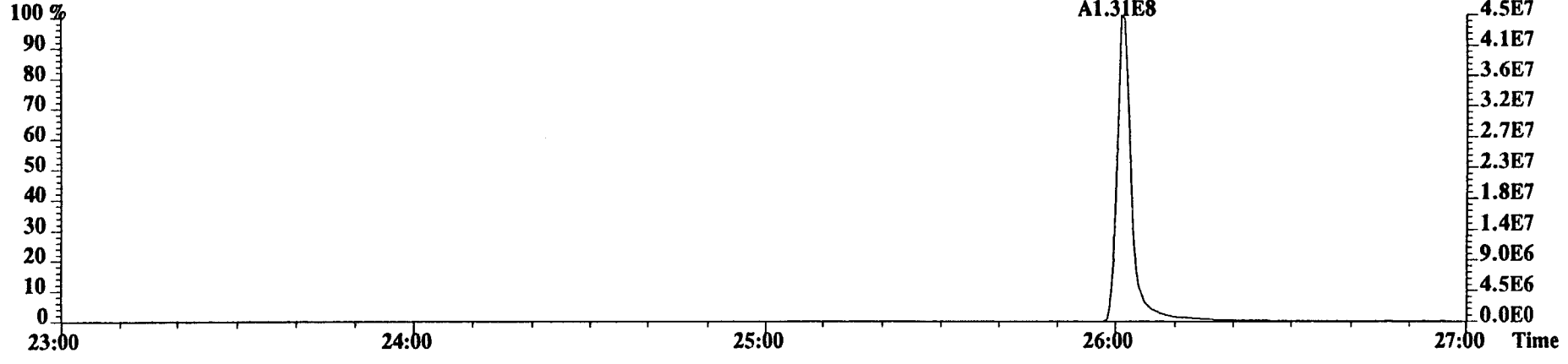
File:29OC98V4 #1-938 Acq:29-OCT-1998 16:16:17 GC EI+ Voltage SIR 70SE
Sample#2 Text:ST1029A :CS-2 :265-04B : Exp:PAHAIR
202.0782 S:2 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



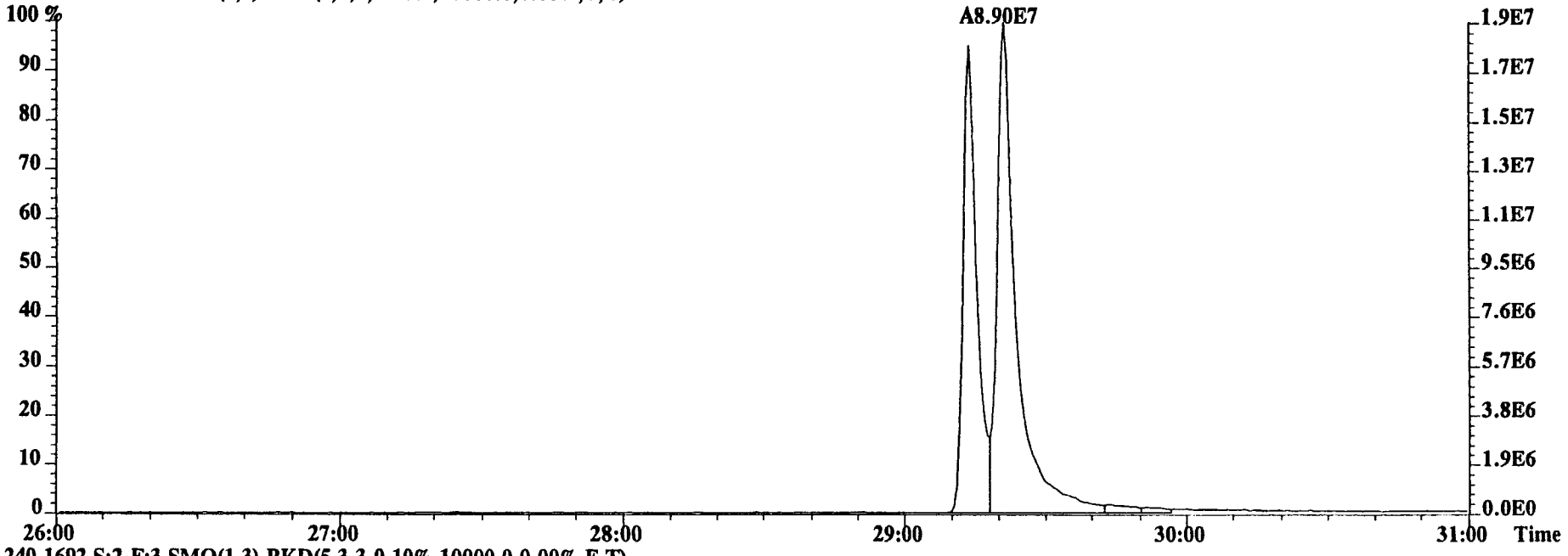
212.1410 S:2 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



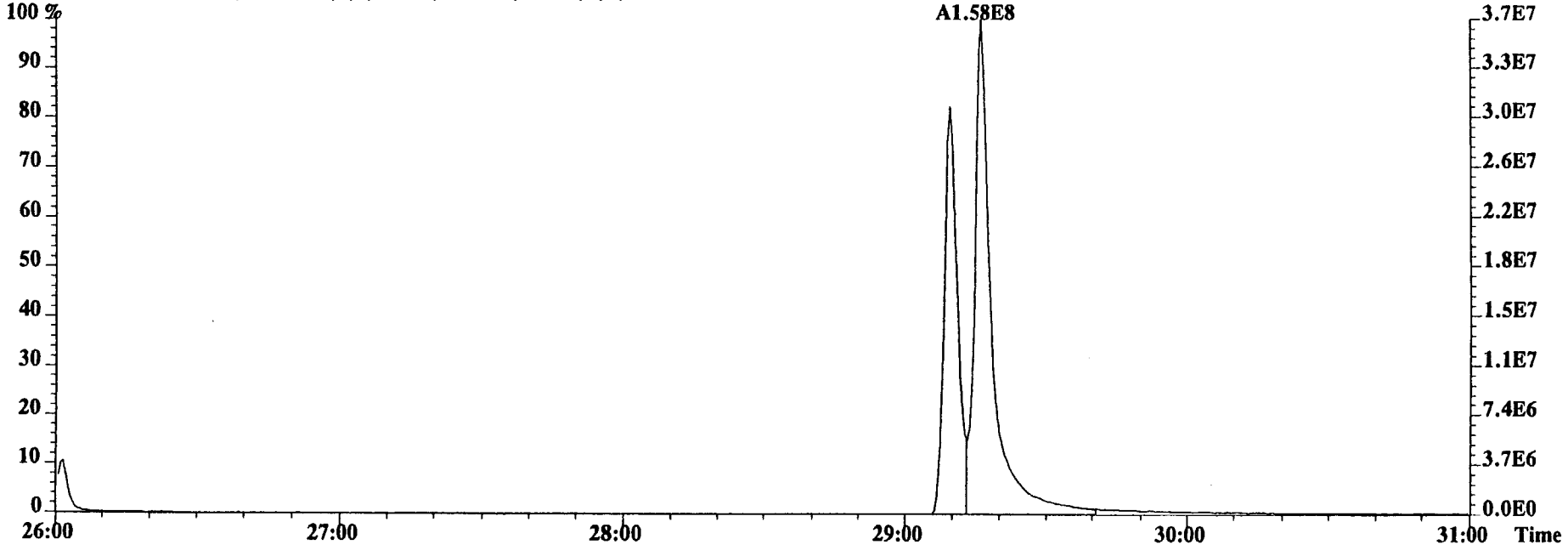
244.1974 S:2 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

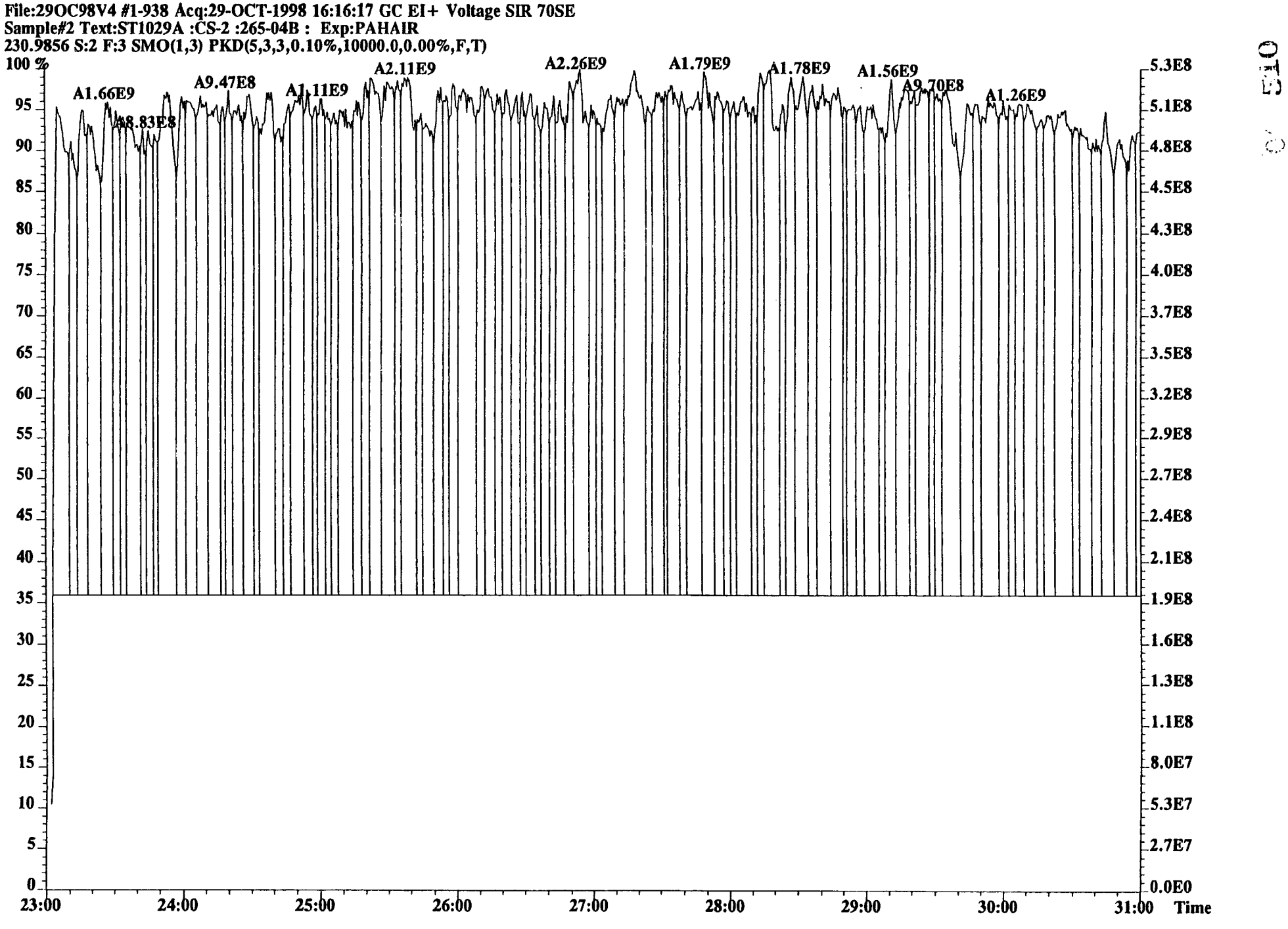


File:29OC98V4 #1-938 Acq:29-OCT-1998 16:16:17 GC EI+ Voltage SIR 70SE
Sample#2 Text:ST1029A :CS-2 :265-04B : Exp:PAHAIR
228.0939 S:2 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

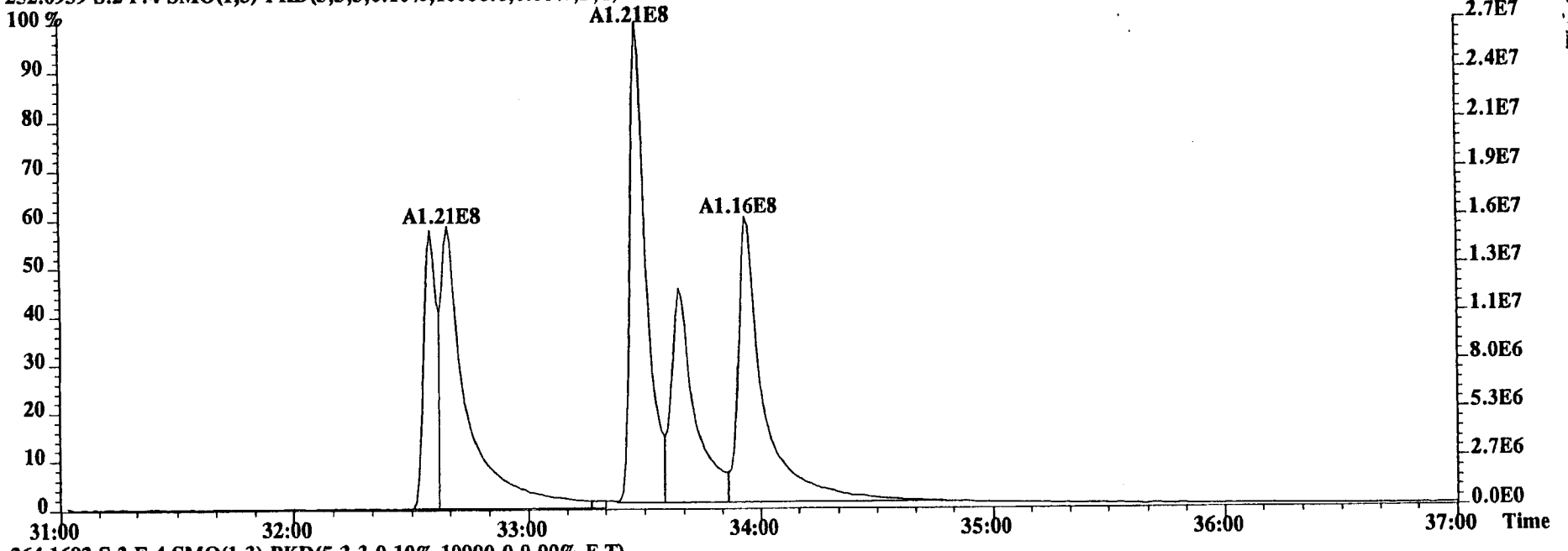


240.1692 S:2 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

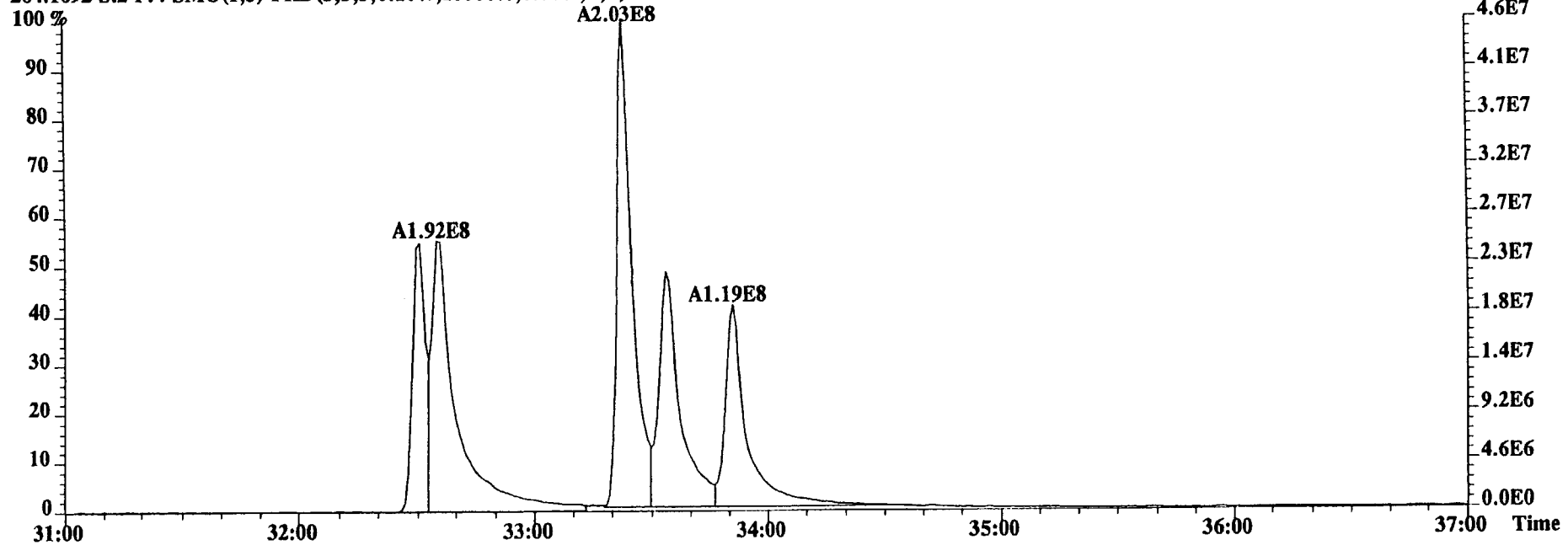



File:29OC98V4 #1-938 Acq:29-OCT-1998 16:16:17 GC EI+ Voltage SIR 70SE
Sample#2 Text:ST1029A :CS-2 :265-04B : Exp:PAHAIR
230.9856 S:2 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.66E9
A8.83E8
A9.47E8
A1.11E9
A2.11E9
A2.26E9
A1.79E9
A1.78E9
A1.56E9
A9.70E8
A1.26E9
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
5.3E8
5.1E8
4.8E8
4.5E8
4.3E8
4.0E8
3.7E8
3.5E8
3.2E8
2.9E8
2.7E8
2.4E8
2.1E8
1.9E8
1.6E8
1.3E8
1.1E8
8.0E7
5.3E7
2.7E7
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time

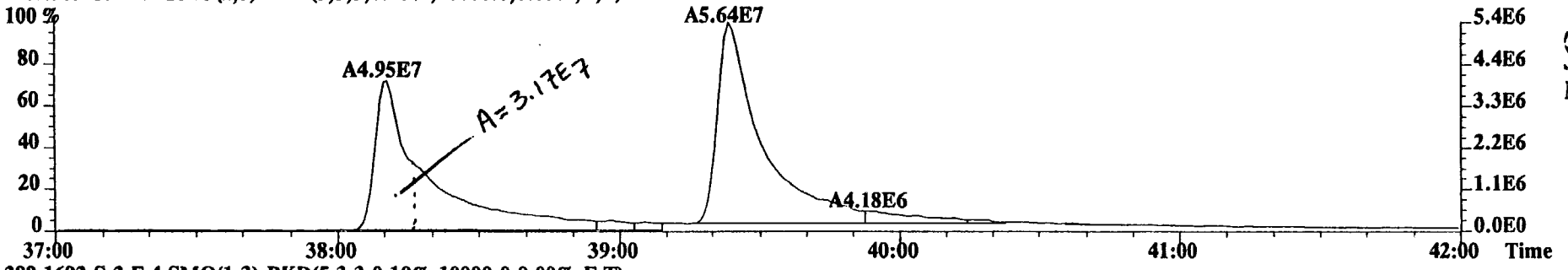
File:29OC98V4 #1-878 Acq:29-OCT-1998 16:16:17 GC EI+ Voltage SIR 70SE
Sample#2 Text:ST1029A :CS-2 :265-04B : Exp:PAHAIR
252.0939 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



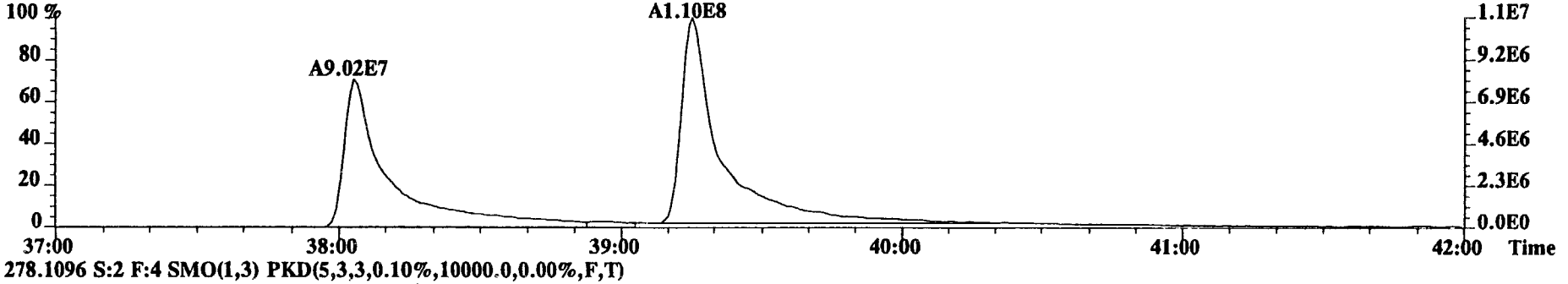
264.1692 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



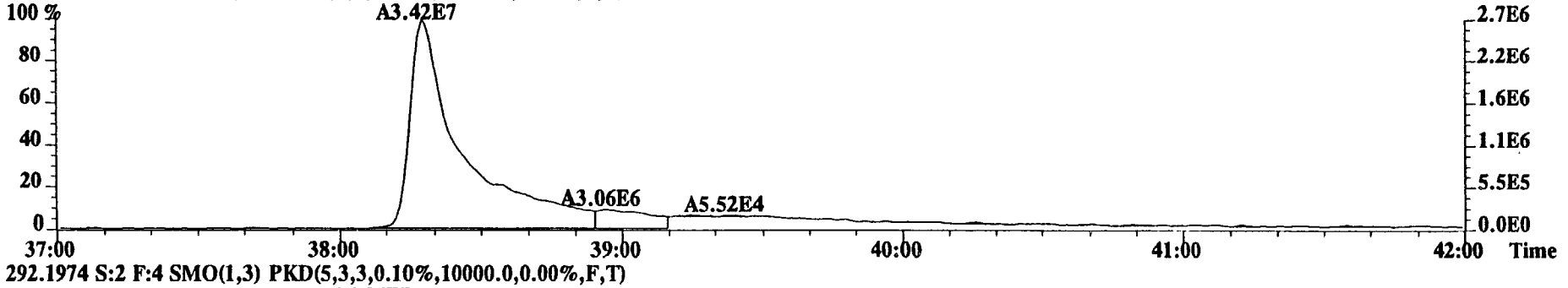
File:29OC98V4 #1-878 Acq:29-OCT-1998 16:16:17 GC EI+ Voltage SIR 70SE
Sample#2 Text:ST1029A :CS-2 :265-04B : Exp:PAHAIR
276.0939 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



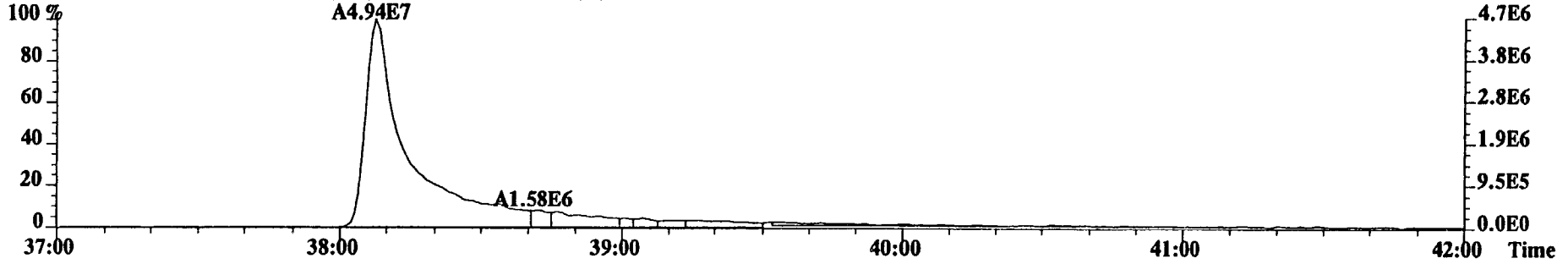
288.1692 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



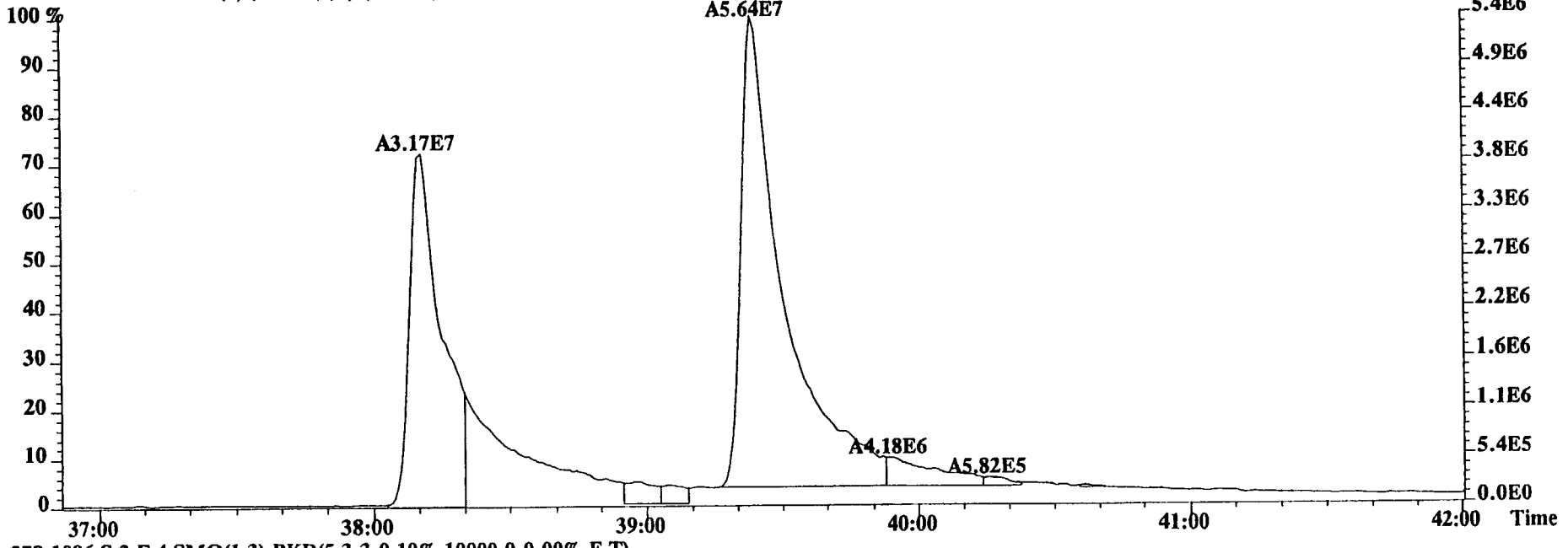
278.1096 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



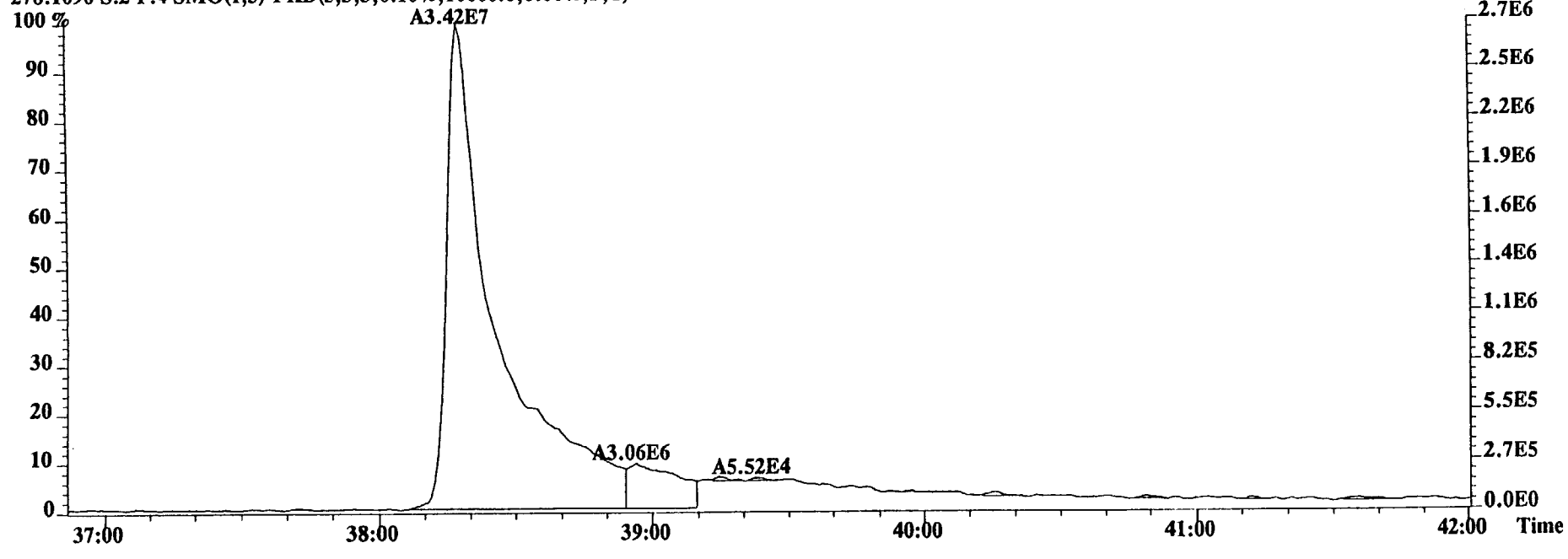
292.1974 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

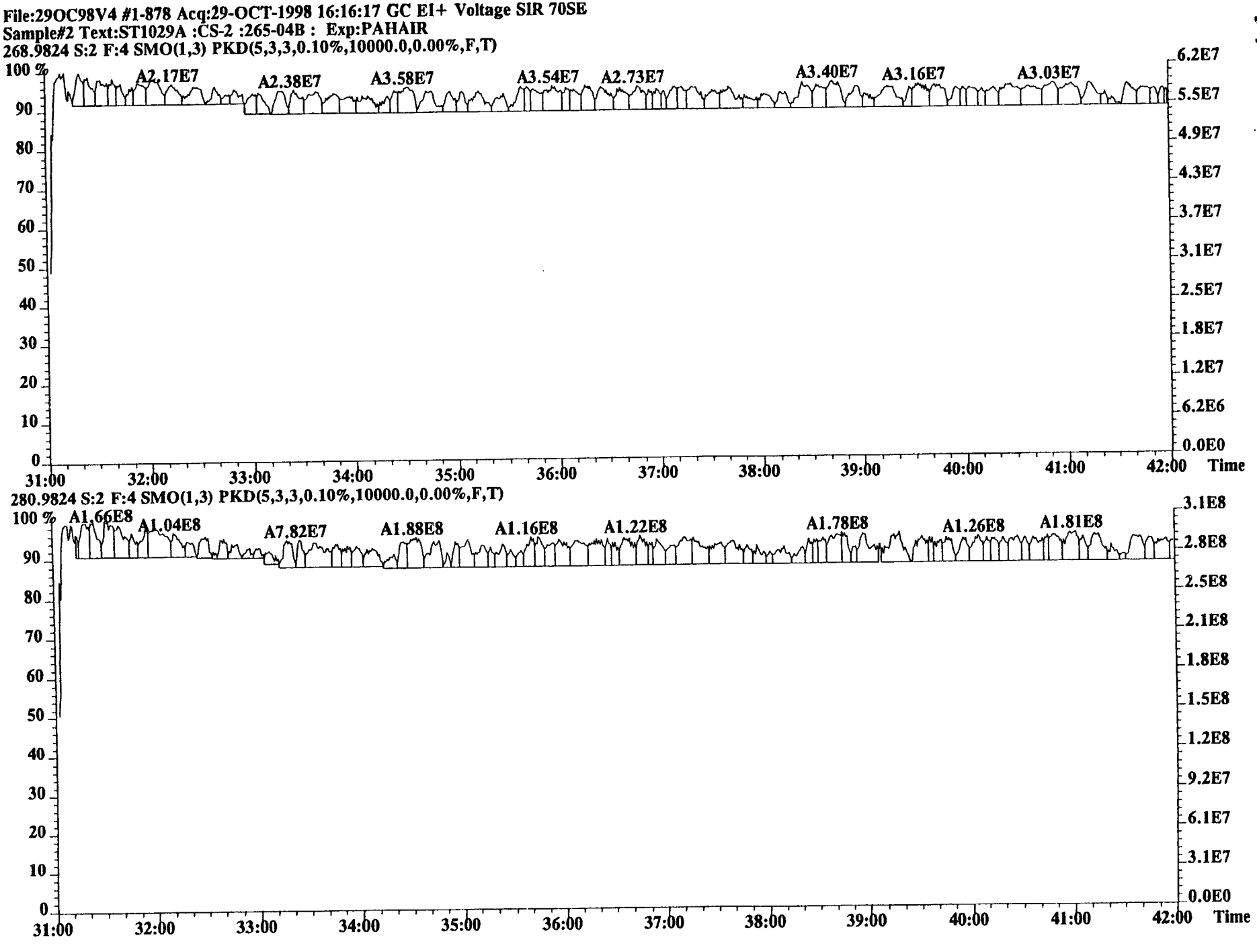


File:29OC98V4 #1-878 Acq:29-OCT-1998 16:16:17 GC EI+ Voltage SIR 70SE
Sample#2 Text:ST1029A :CS-2 :265-04B : Exp:PAHAIR
276.0939 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

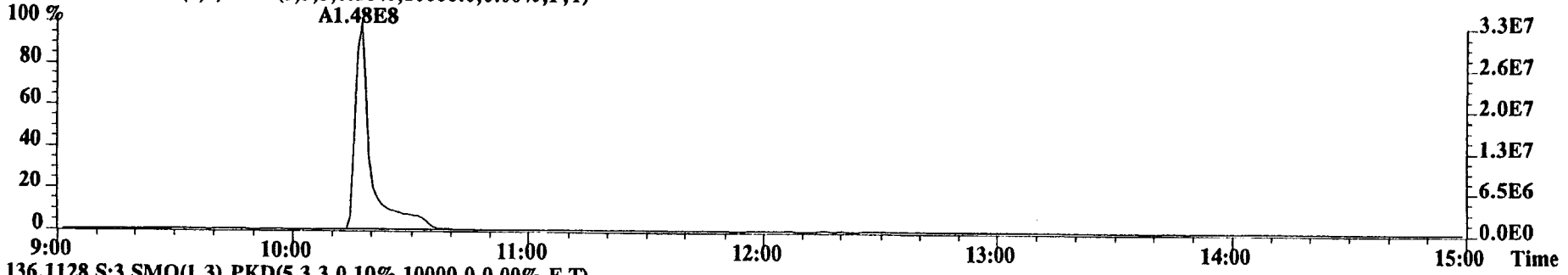


278.1096 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

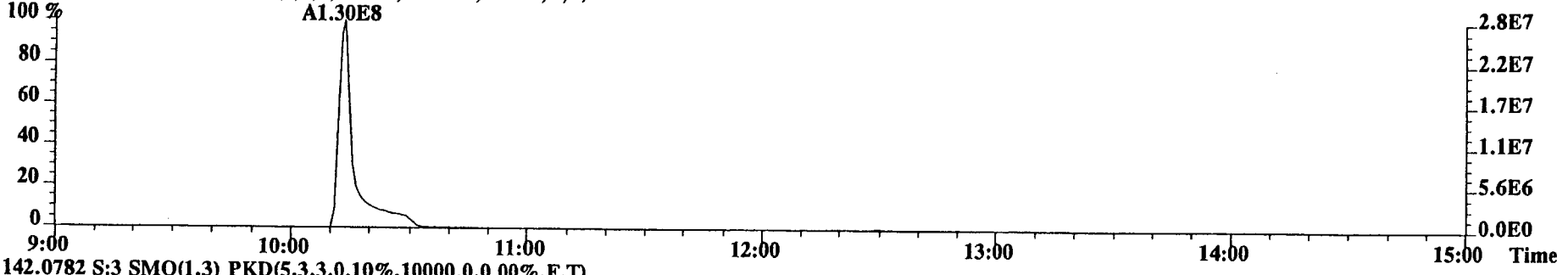



File:29OC98V4 #1-878 Acq:29-OCT-1998 16:16:17 GC EI+ Voltage SIR 70SE
Sample#2 Text:ST1029A :CS-2 :265-04B : Exp:PAHAIR
268.9824 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.17E7
A2.38E7
A3.58E7
A3.54E7
A2.73E7
A3.40E7
A3.16E7
A3.03E7
6.2E7
5.5E7
4.9E7
4.3E7
3.7E7
3.1E7
2.5E7
1.8E7
1.2E7
6.2E6
0.0E0
Time
280.9824 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.66E8
A1.04E8
A7.82E7
A1.88E8
A1.16E8
A1.22E8
A1.78E8
A1.26E8
A1.81E8
3.1E8
2.8E8
2.5E8
2.1E8
1.8E8
1.5E8
1.2E8
9.2E7
6.1E7
3.1E7
0.0E0
Time

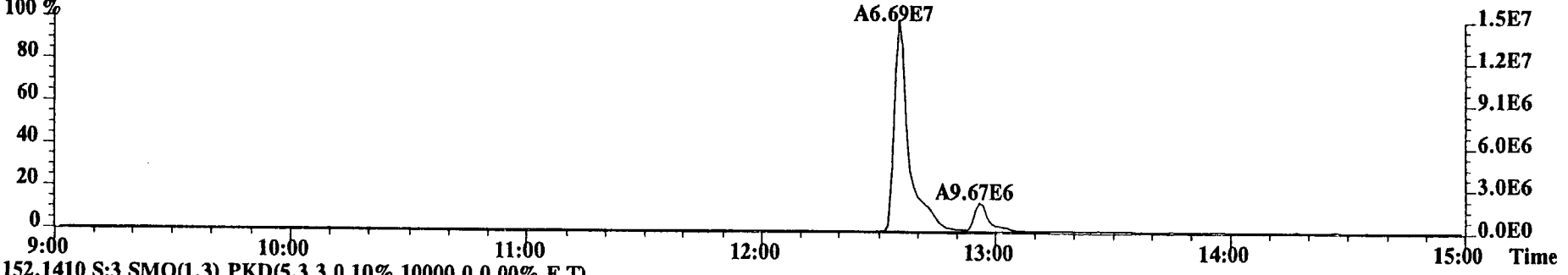
File:29OC98V4 #1-510 Acq:29-OCT-1998 17:05:20 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1029B :CS-3 :956-64 : : Exp:PAHAIR
128.0626 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



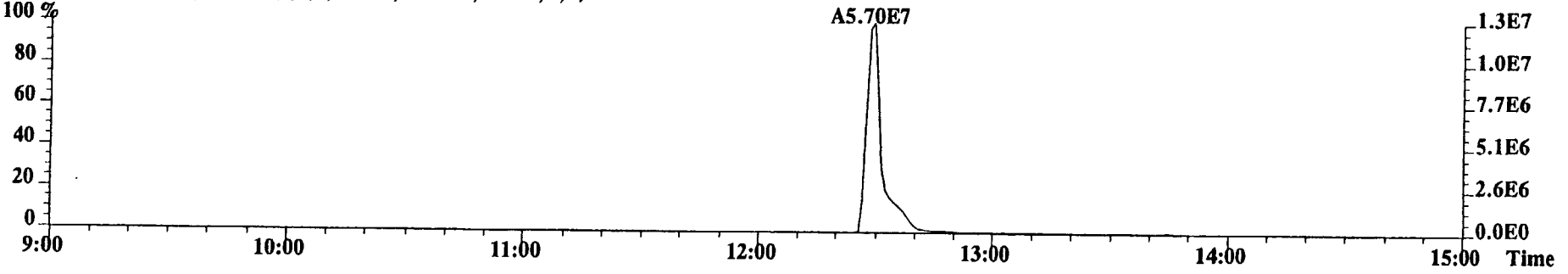
136.1128 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



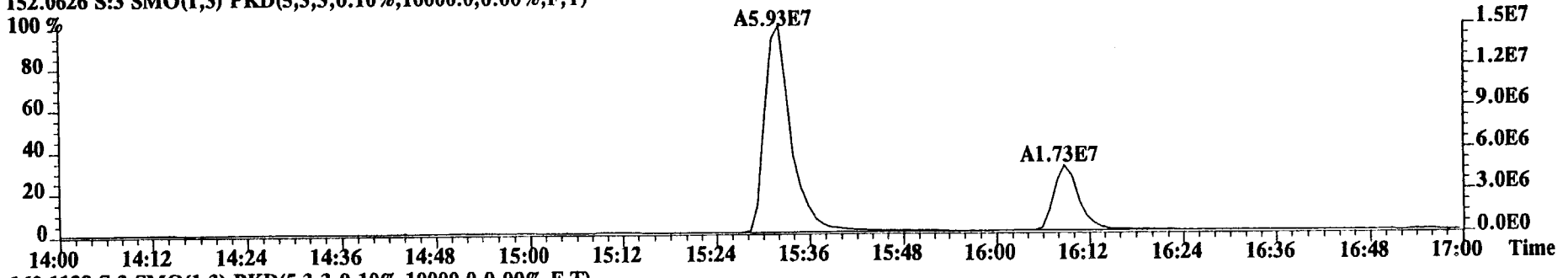
142.0782 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



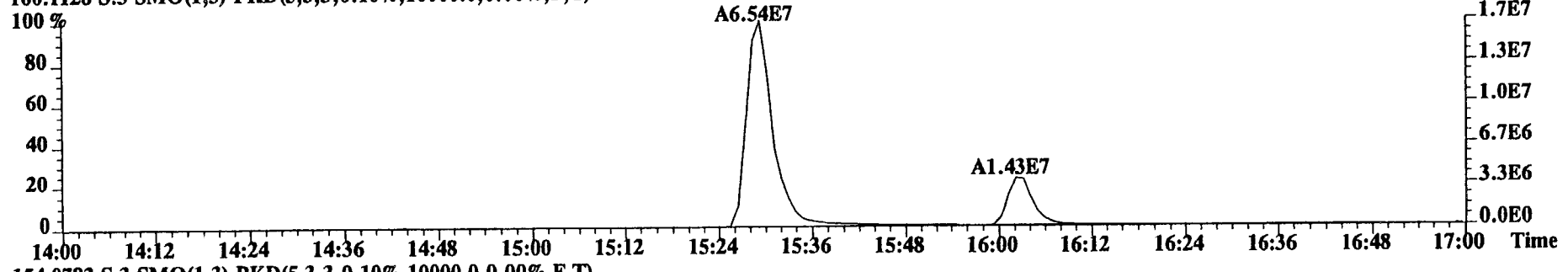
152.1410 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



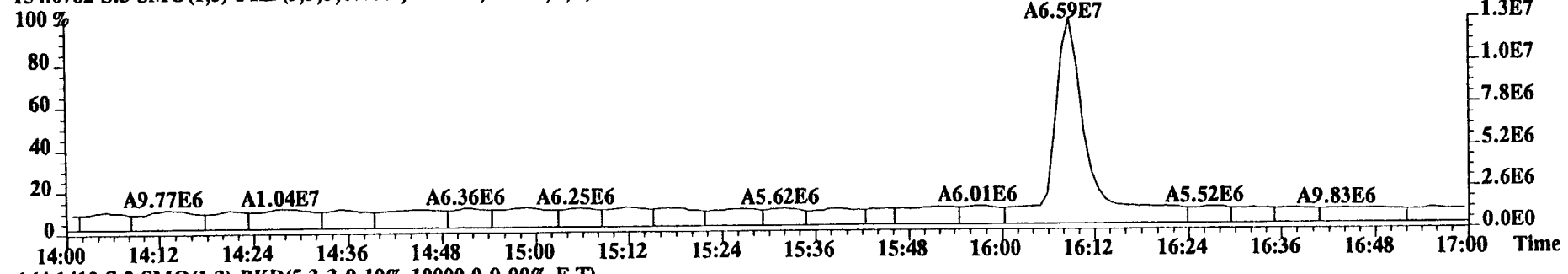
File:29OC98V4 #1-510 Acq:29-OCT-1998 17:05:20 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1029B :CS-3 :956-64 : : Exp:PAHAIR
152.0626 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



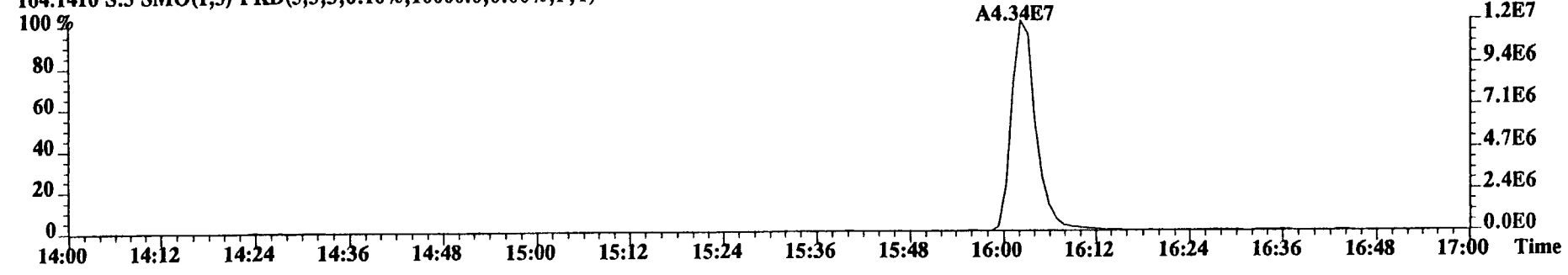
160.1128 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



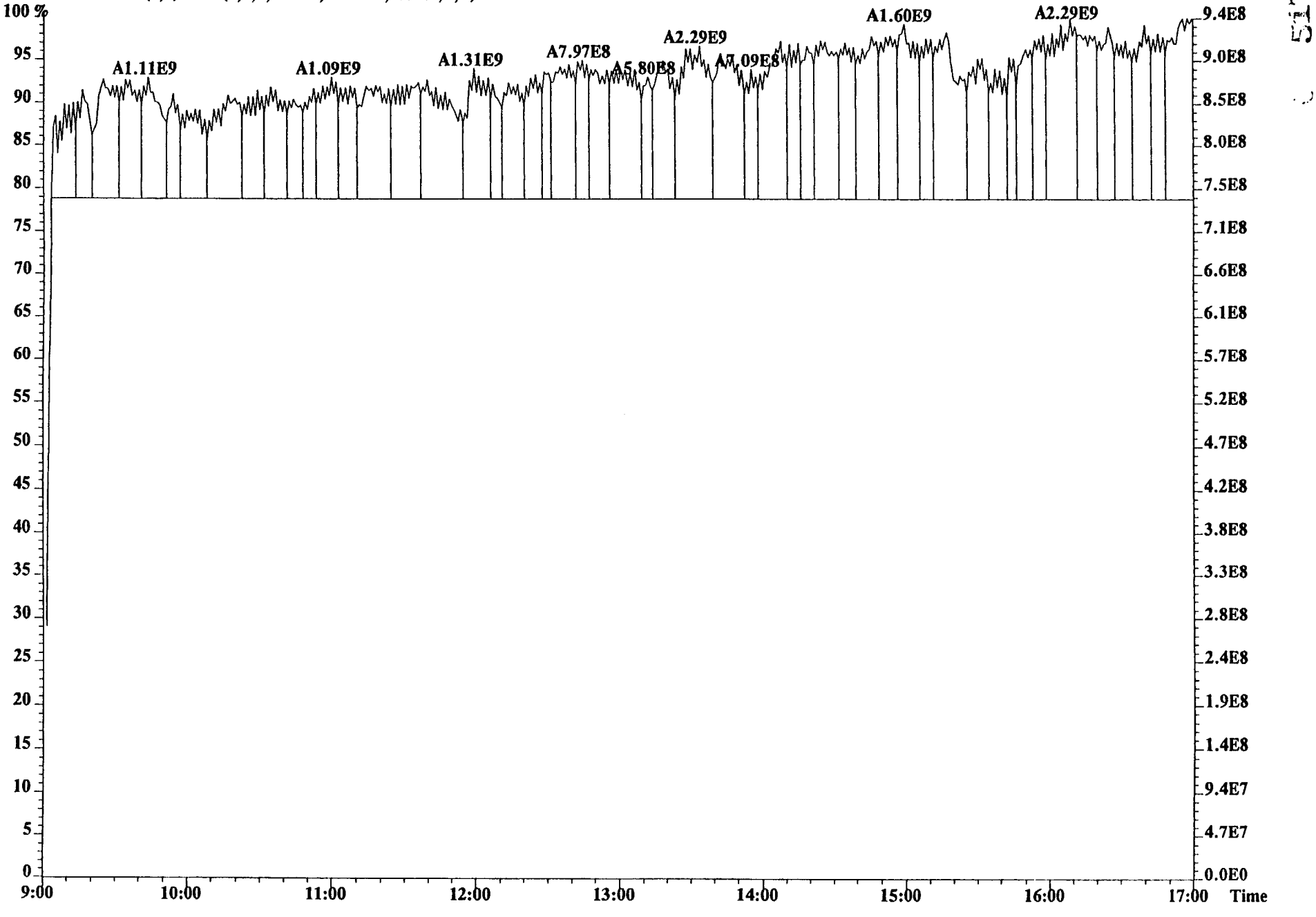
154.0782 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

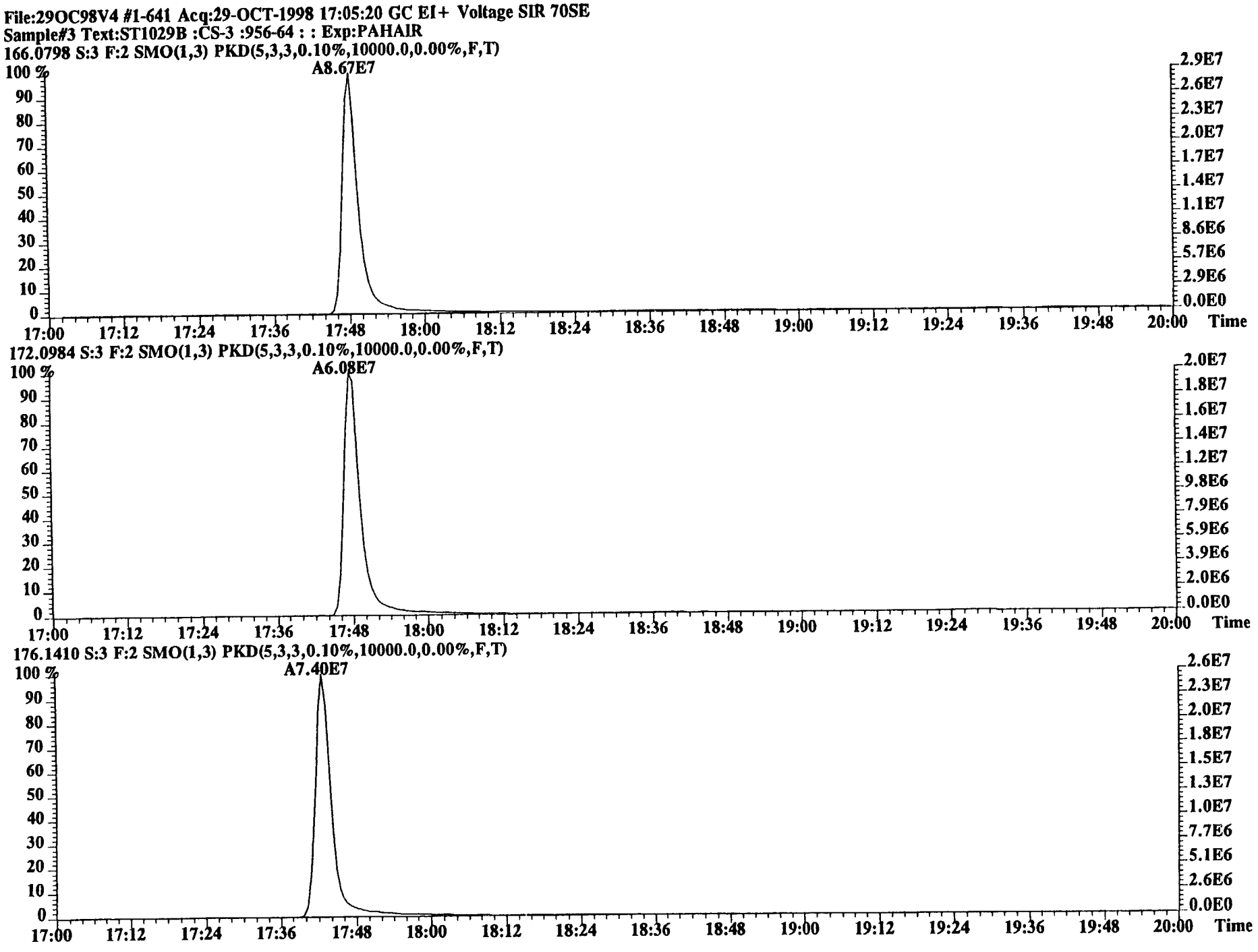


164.1410 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

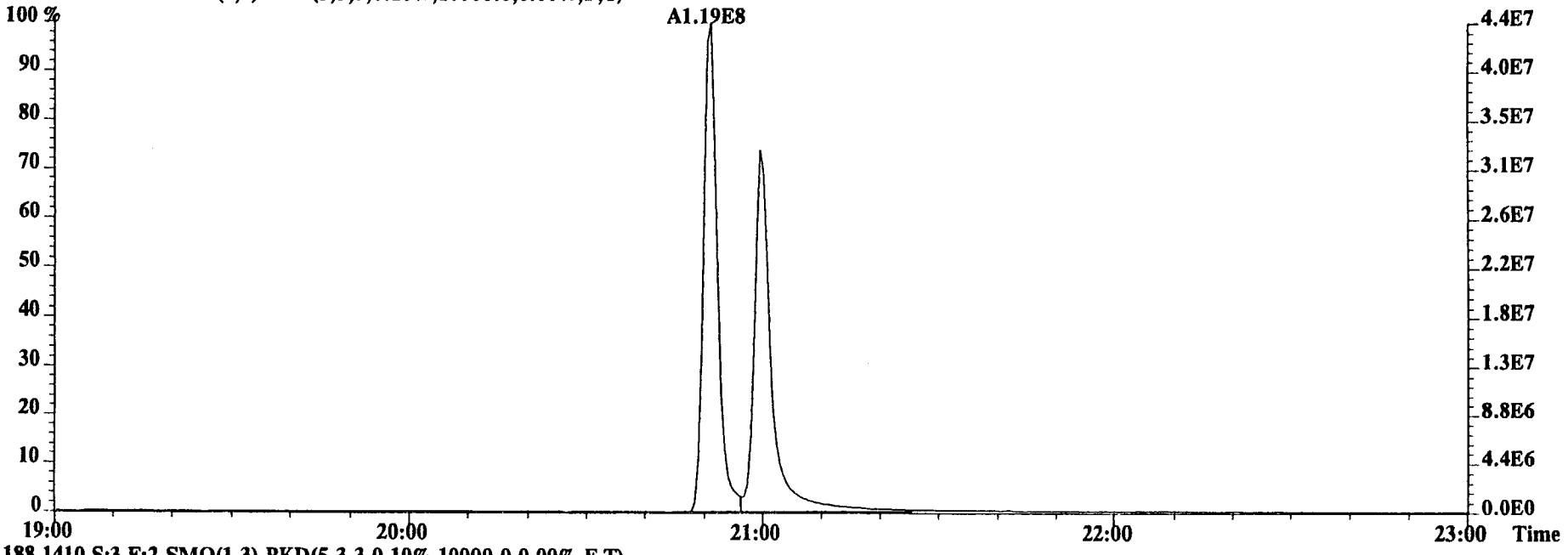


File:29OC98V4 #1-510 Acq:29-OCT-1998 17:05:20 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1029B :CS-3 :956-64 : : Exp:PAHAIR
130.9920 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

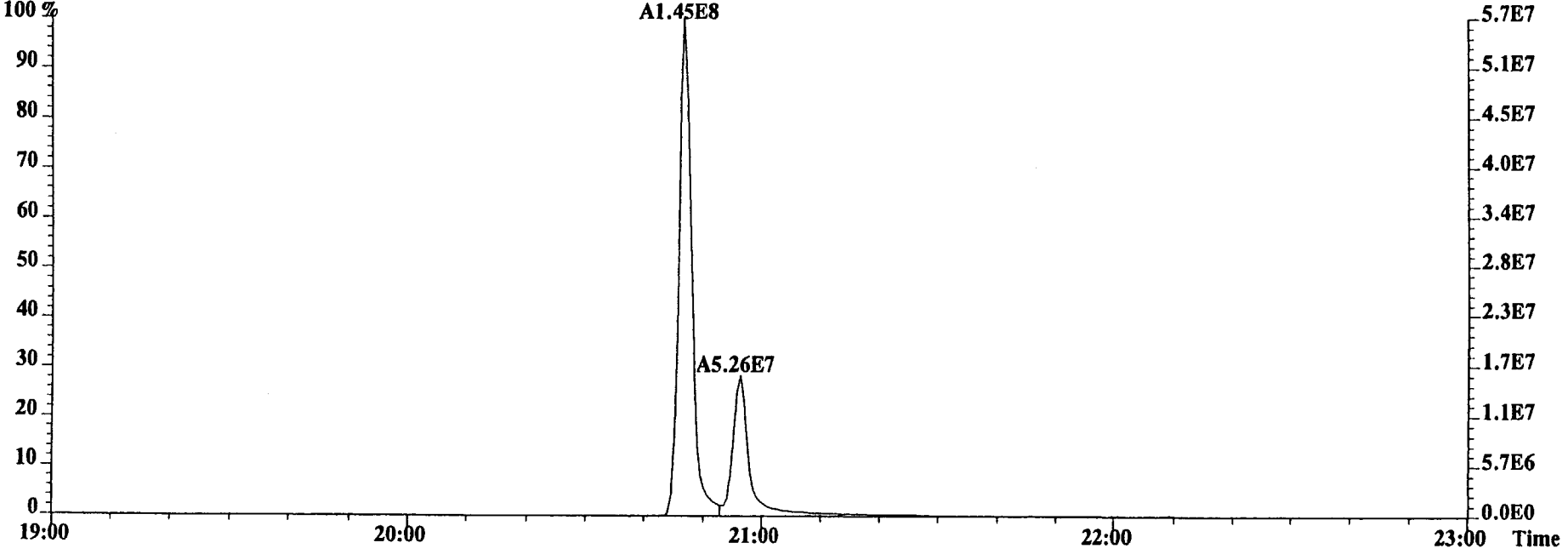


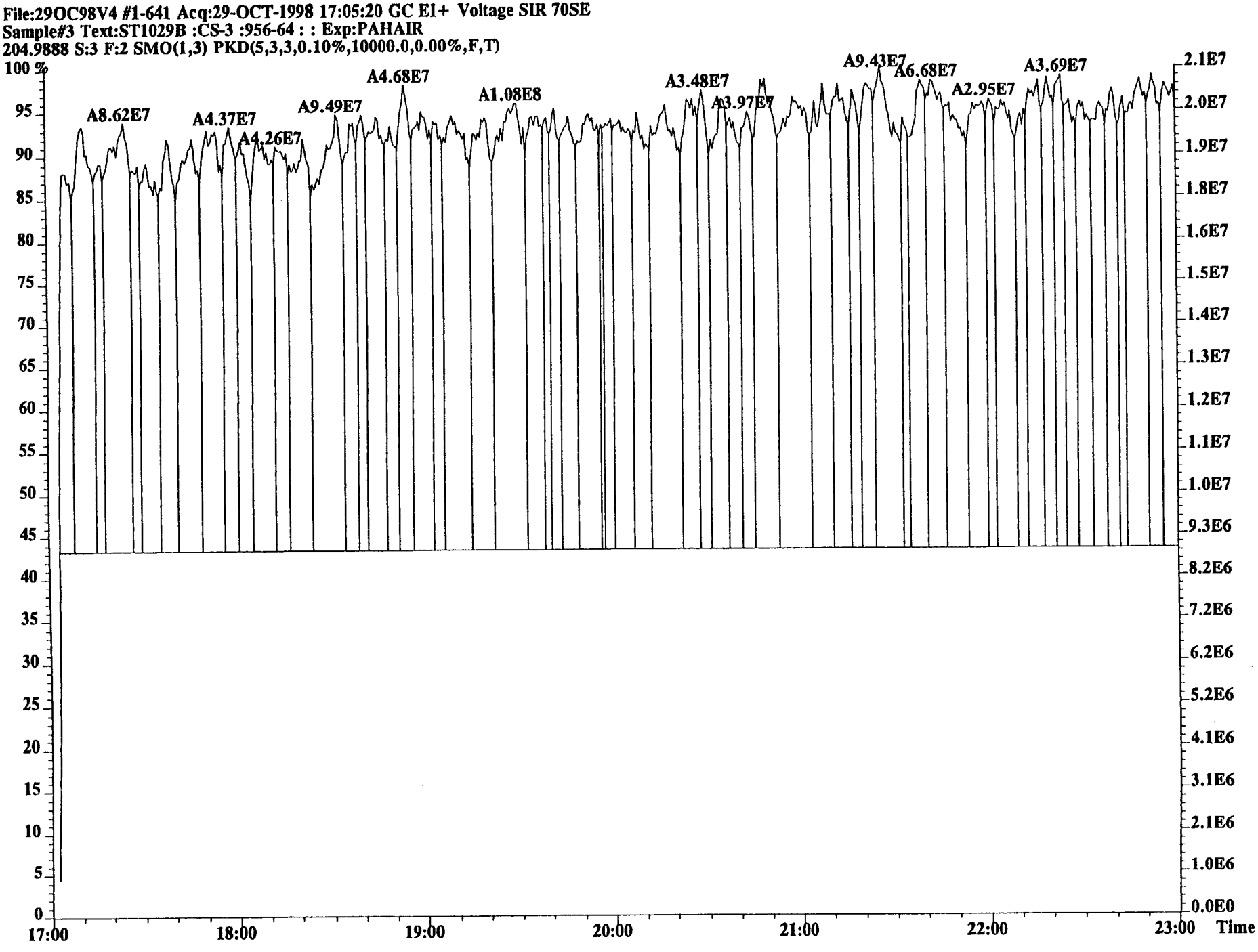

File:29OC98V4 #1-641 Acq:29-OCT-1998 17:05:20 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1029B :CS-3 :956-64 : : Exp:PAHAIR
166.0798 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.67E7
172.0984 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A6.08E7
176.1410 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.40E7
100 %
90
80
70
60
50
40
30
20
10
0
17:00
17:12
17:24
17:36
17:48
18:00
18:12
18:24
18:36
18:48
19:00
19:12
19:24
19:36
19:48
20:00
Time
2.9E7
2.6E7
2.3E7
2.0E7
1.7E7
1.4E7
1.1E7
8.6E6
5.7E6
2.9E6
0.0E0
2.0E7
1.8E7
1.6E7
1.4E7
1.2E7
9.8E6
7.9E6
5.9E6
3.9E6
2.0E6
0.0E0
2.6E7
2.3E7
2.0E7
1.8E7
1.5E7
1.3E7
1.0E7
7.7E6
5.1E6
2.6E6
0.0E0

File:29OC98V4 #1-641 Acq:29-OCT-1998 17:05:20 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1029B :CS-3 :956-64 : : Exp:PAHAIR
178.0782 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

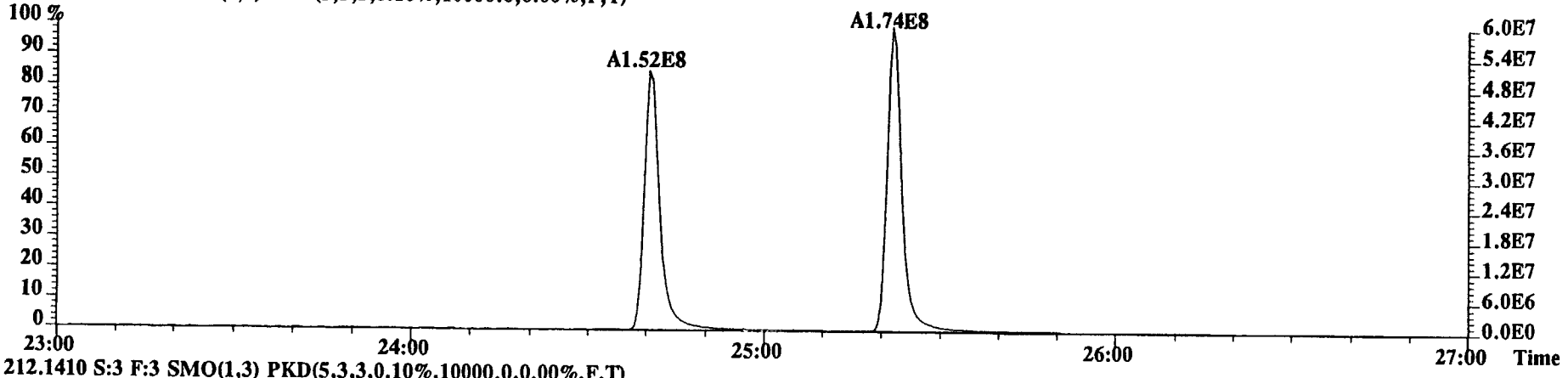


188.1410 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

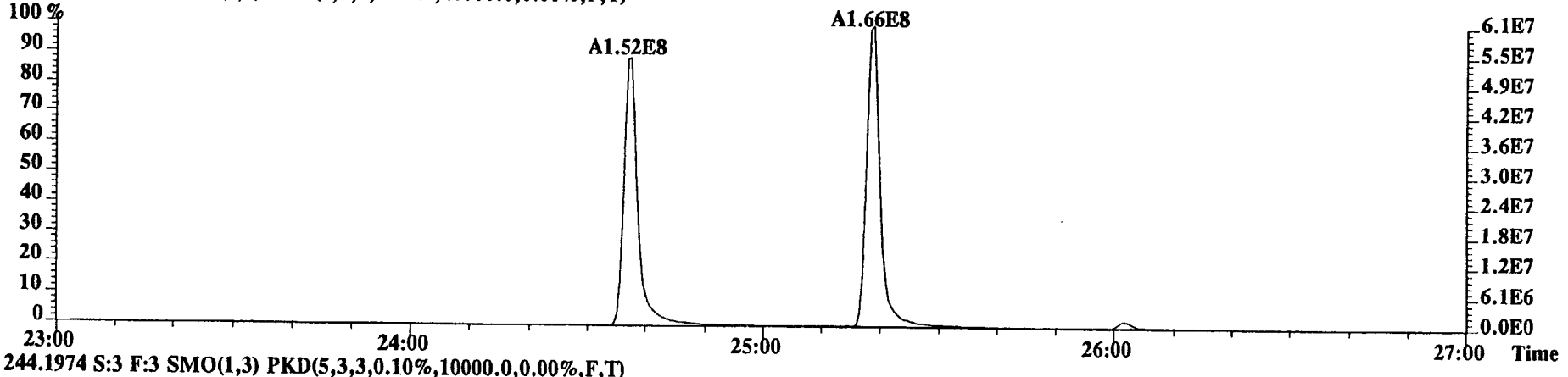



File:29OC98V4 #1-641 Acq:29-OCT-1998 17:05:20 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1029B :CS-3 :956-64 : : Exp:PAHAIR
204.9888 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A8.62E7
A4.37E7
A4.26E7
A9.49E7
A4.68E7
A1.08E8
A3.48E7
A3.97E7
A9.43E7
A6.68E7
A2.95E7
A3.69E7
2.1E7
2.0E7
1.9E7
1.8E7
1.6E7
1.5E7
1.4E7
1.3E7
1.2E7
1.1E7
1.0E7
9.3E6
8.2E6
7.2E6
6.2E6
5.2E6
4.1E6
3.1E6
2.1E6
1.0E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

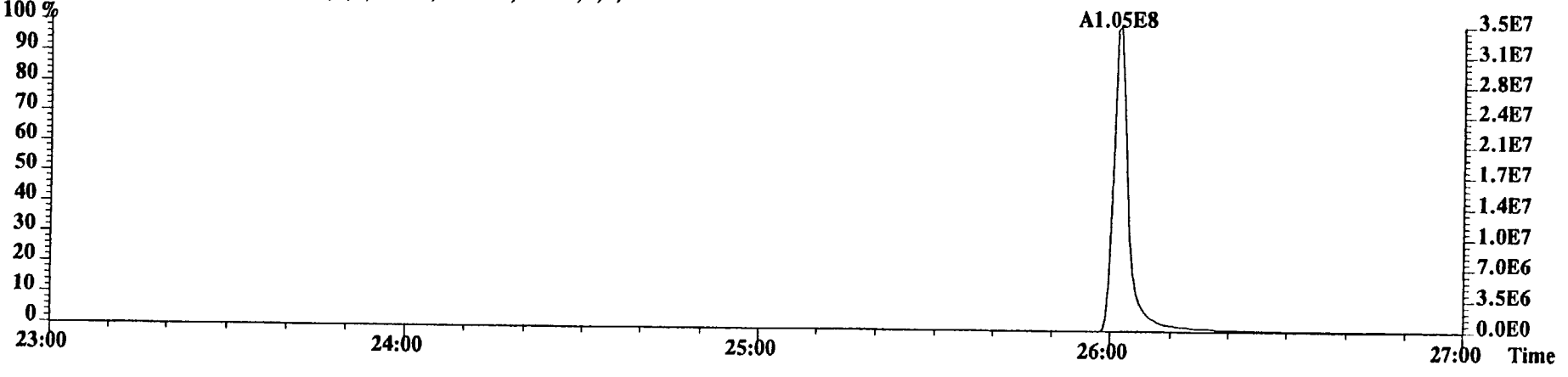
File:29OC98V4 #1-938 Acq:29-OCT-1998 17:05:20 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1029B :CS-3 :956-64 : : Exp:PAHAIR
202.0782 S:3 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



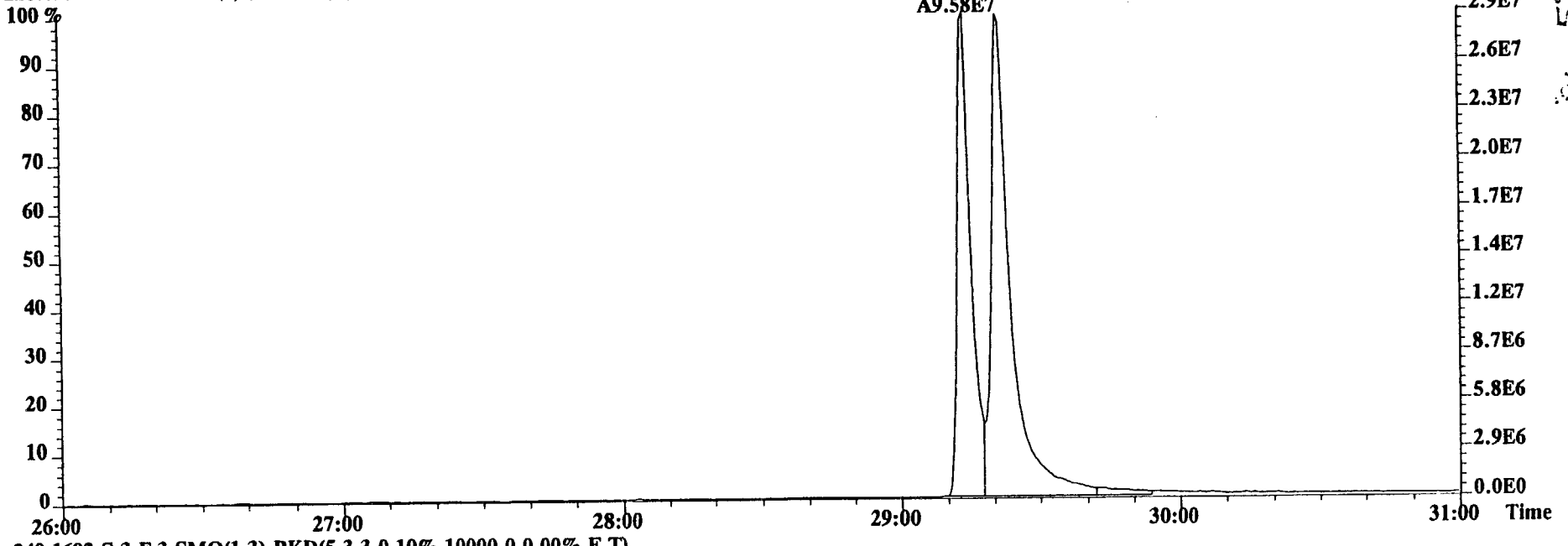
212.1410 S:3 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



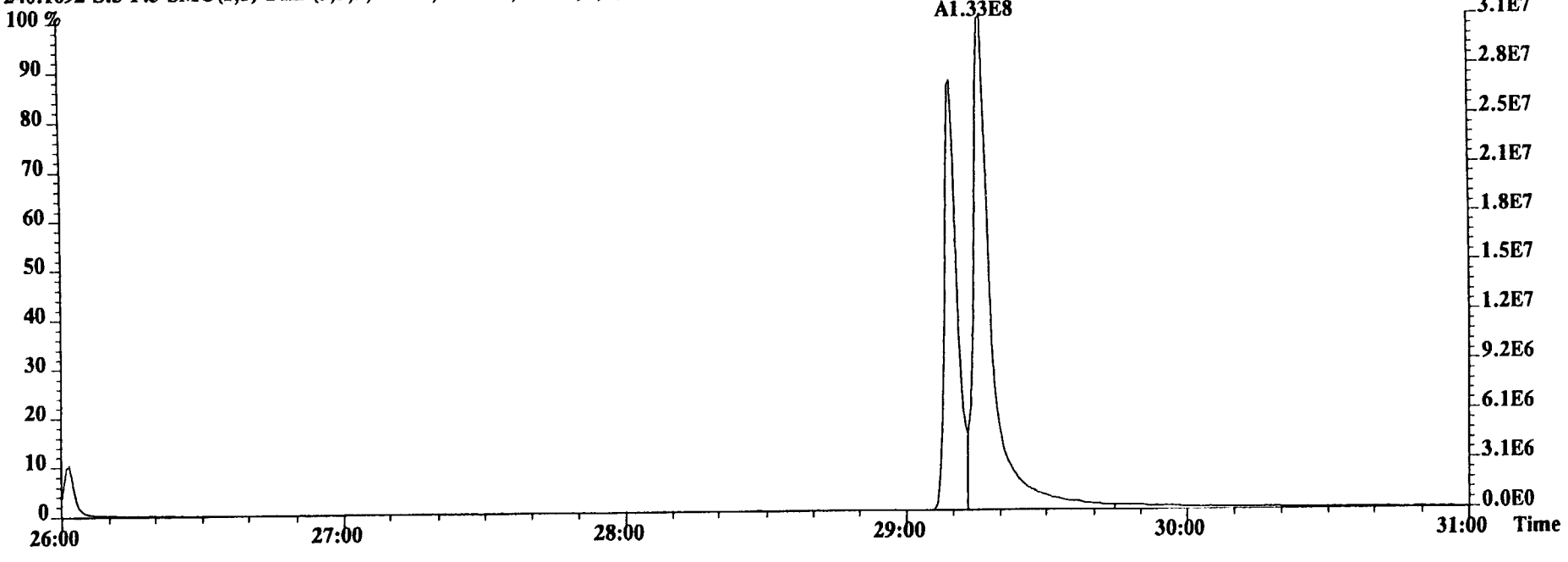
244.1974 S:3 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

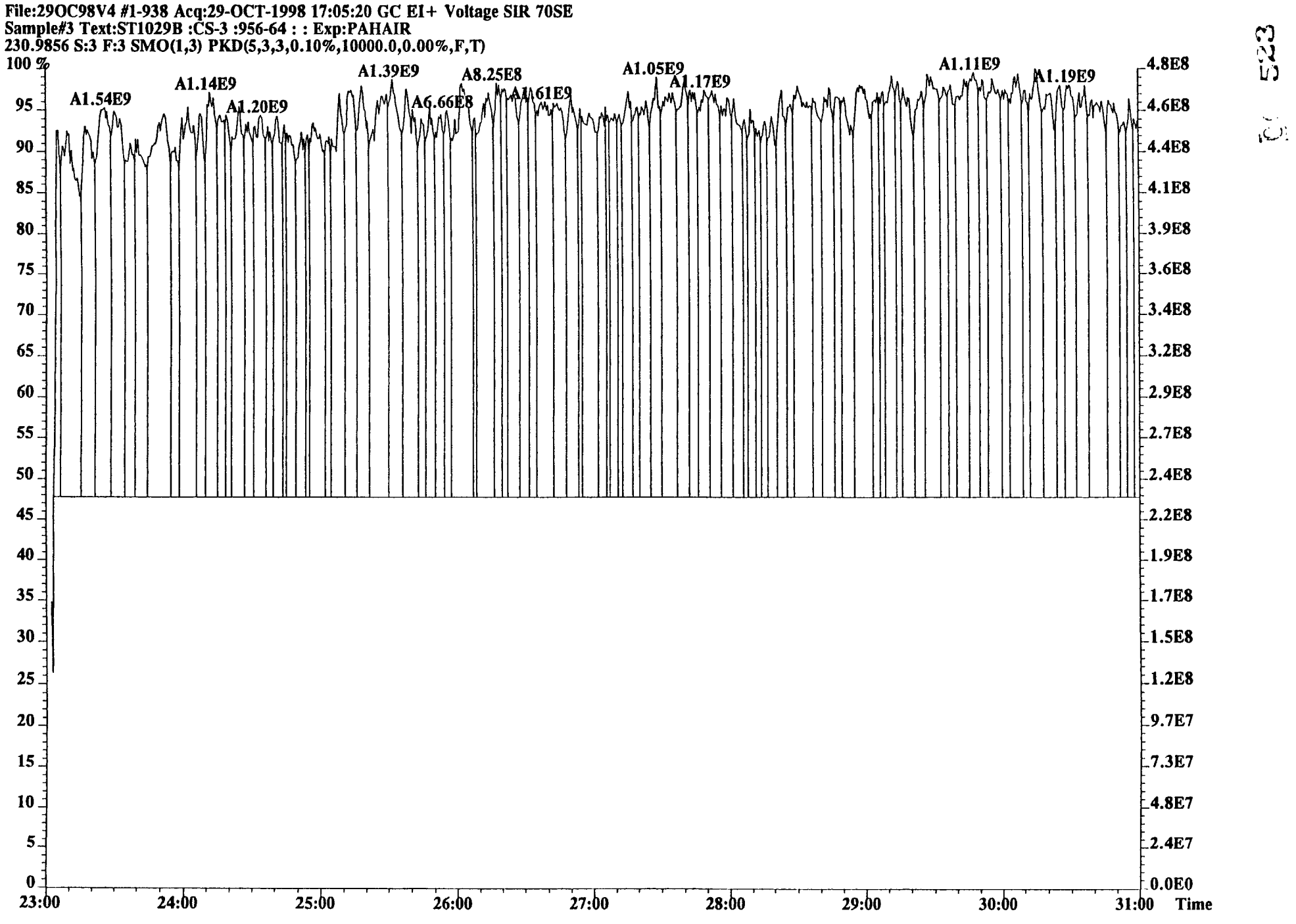


File:29OC98V4 #1-938 Acq:29-OCT-1998 17:05:20 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1029B :CS-3 :956-64 : : Exp:PAHAIR
228.0939 S:3 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

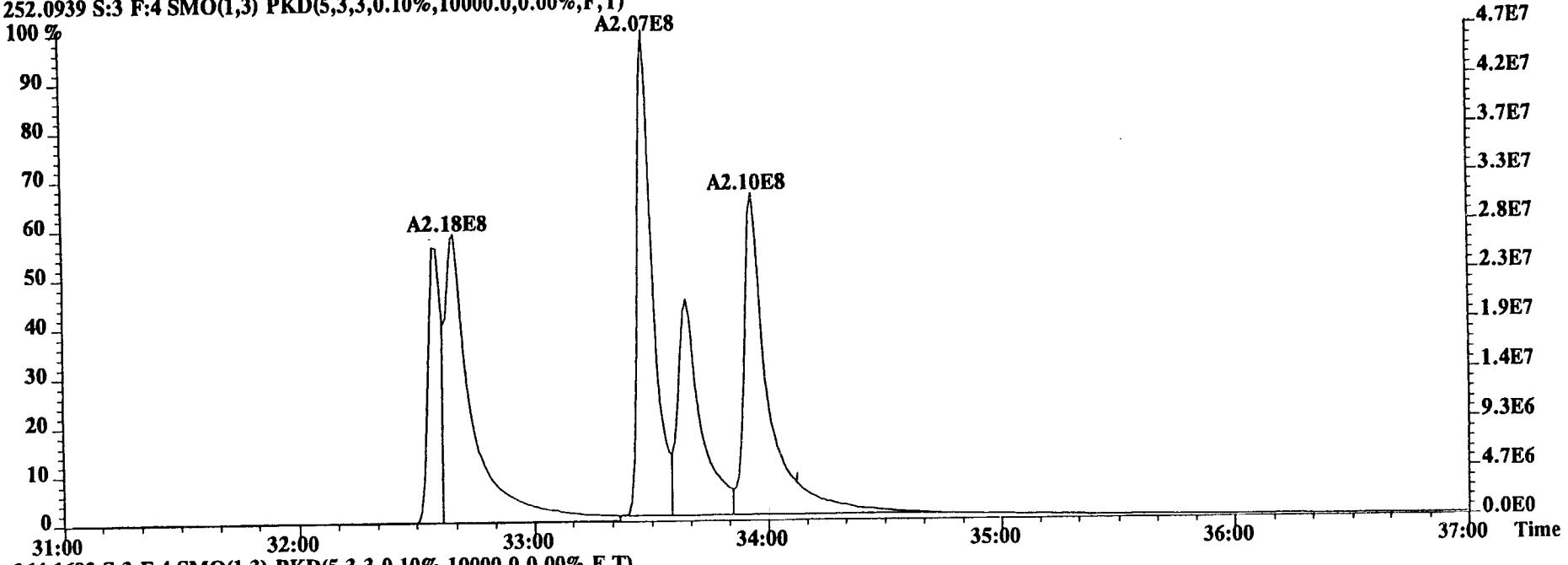


240.1692 S:3 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

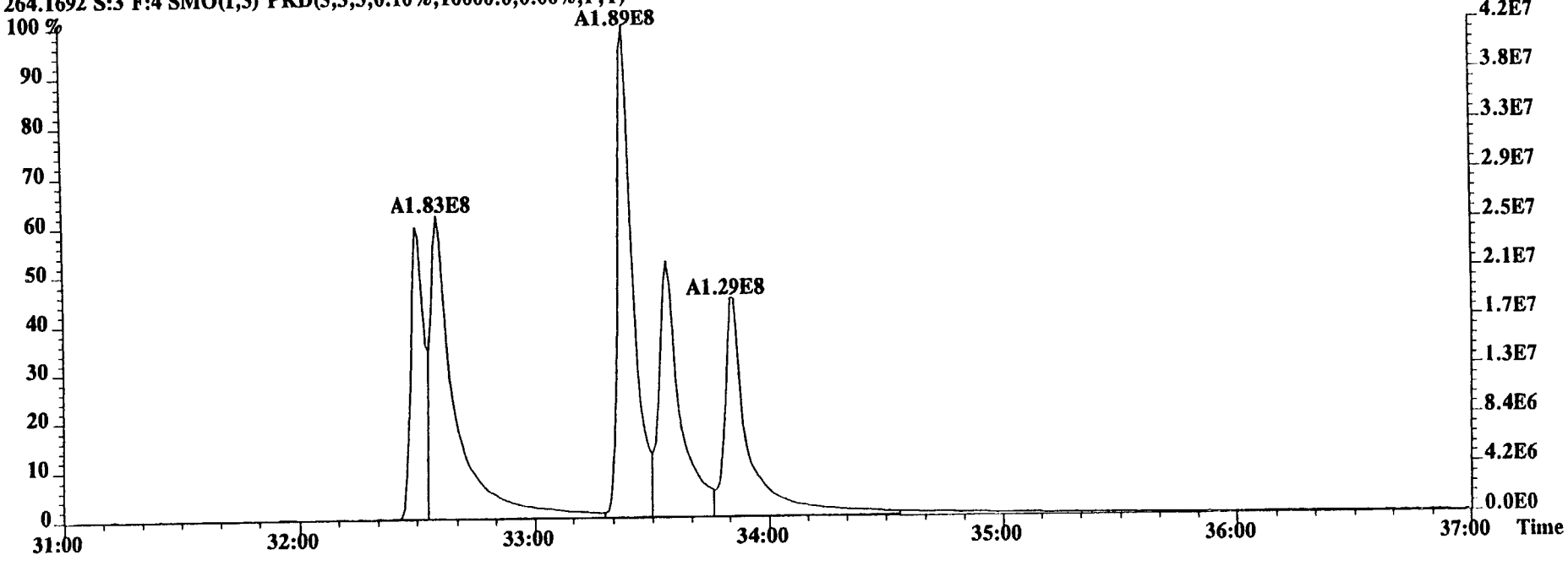



File:29OC98V4 #1-938 Acq:29-OCT-1998 17:05:20 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1029B :CS-3 :956-64 : : Exp:PAHAIR
230.9856 S:3 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.54E9
A1.14E9
A1.20E9
A1.39E9
A6.66E8
A8.25E8
A1.61E9
A1.05E9
A1.17E9
A1.11E9
A1.19E9
4.8E8
4.6E8
4.4E8
4.1E8
3.9E8
3.6E8
3.4E8
3.2E8
2.9E8
2.7E8
2.4E8
2.2E8
1.9E8
1.7E8
1.5E8
1.2E8
9.7E7
7.3E7
4.8E7
2.4E7
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time

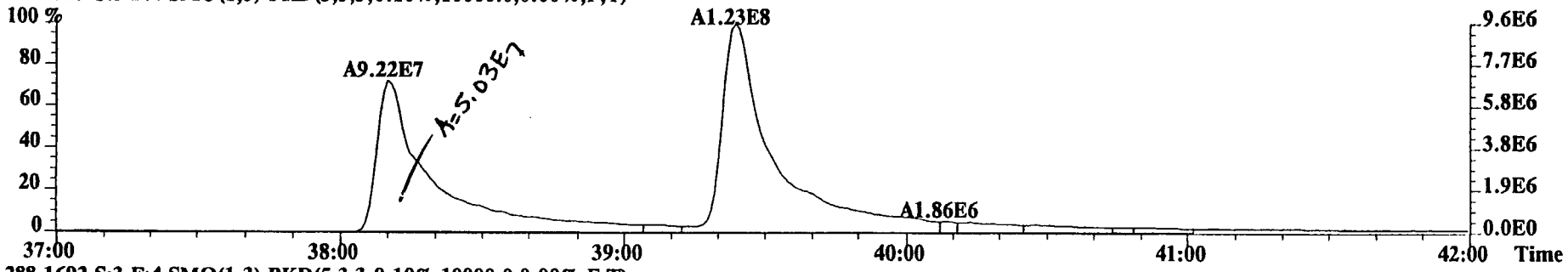
File:29OC98V4 #1-878 Acq:29-OCT-1998 17:05:20 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1029B :CS-3 :956-64 : : Exp:PAHAIR
252.0939 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



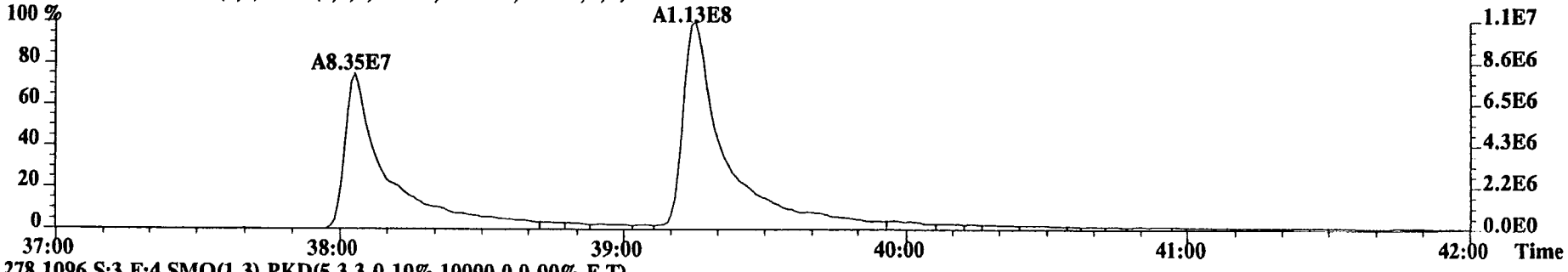
264.1692 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



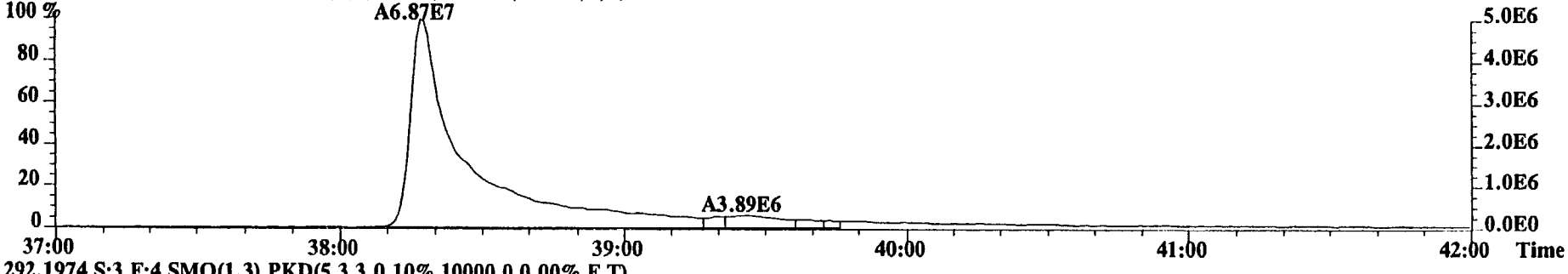
File:29OC98V4 #1-878 Acq:29-OCT-1998 17:05:20 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1029B :CS-3 :956-64 : : Exp:PAHAIR
276.0939 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



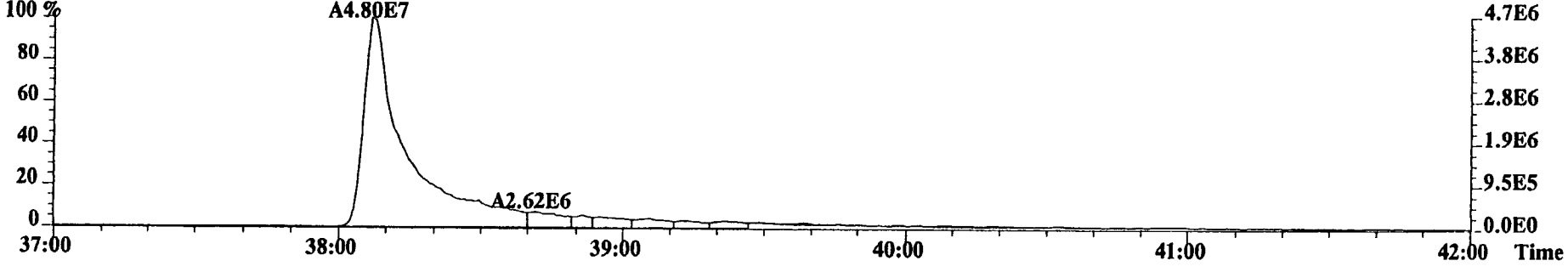
288.1692 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



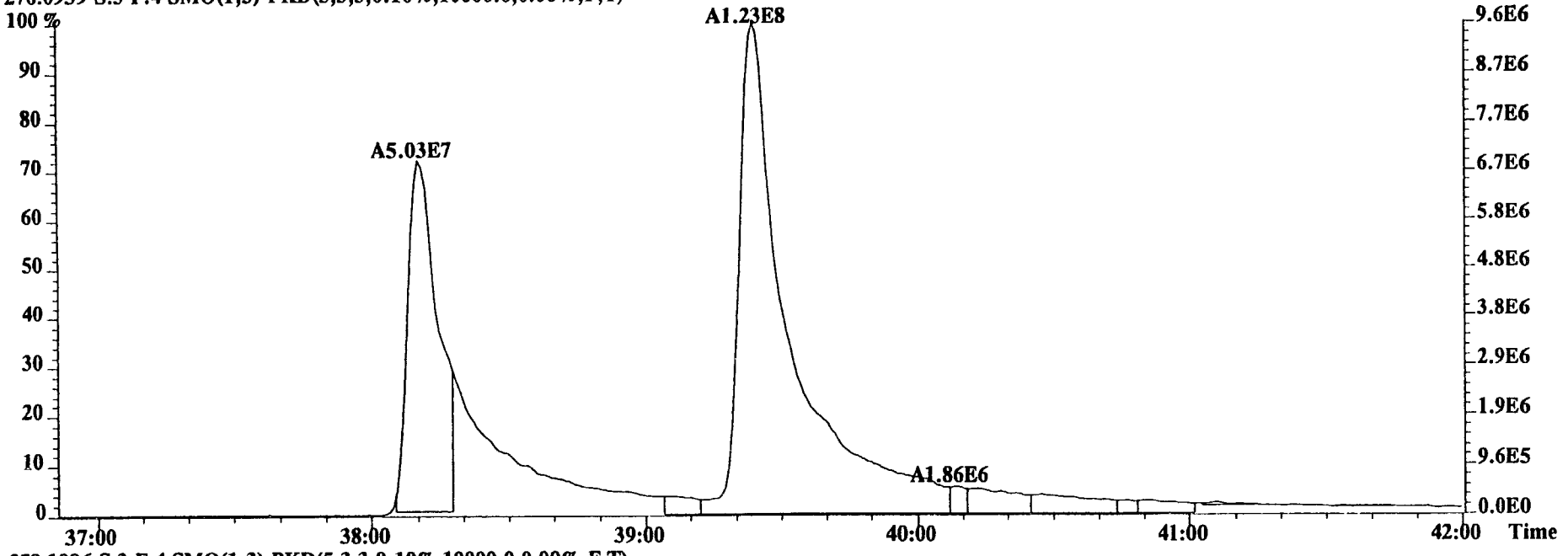
278.1096 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



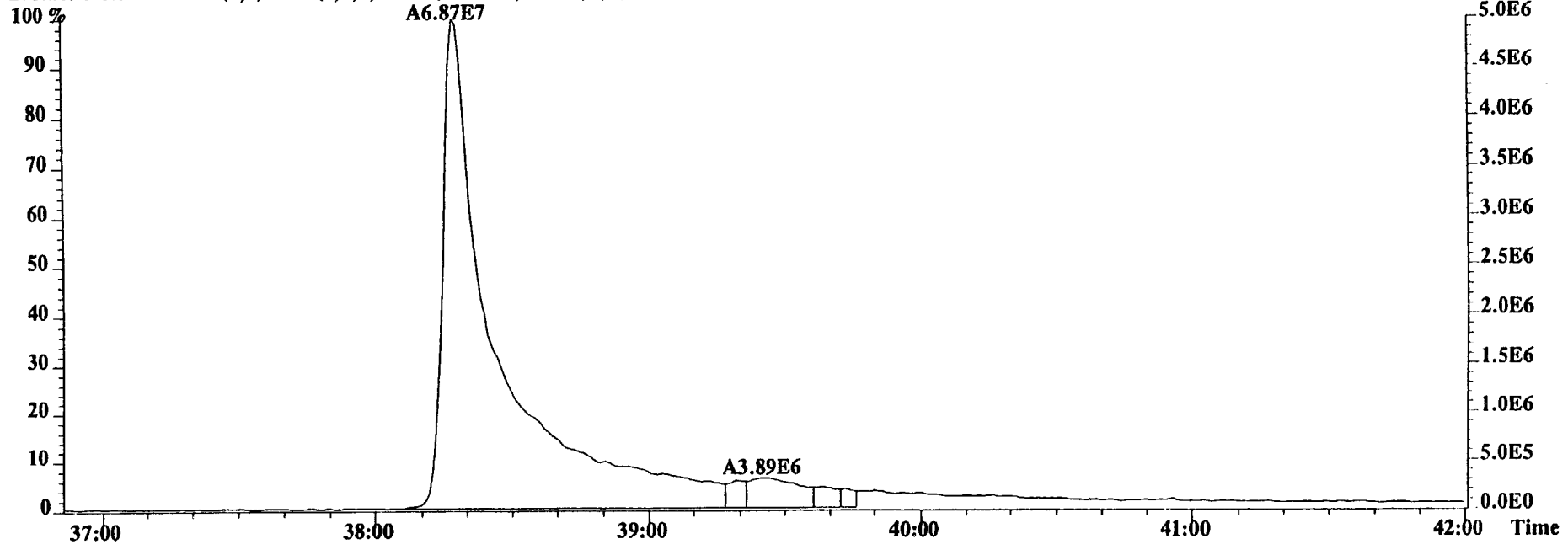
292.1974 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



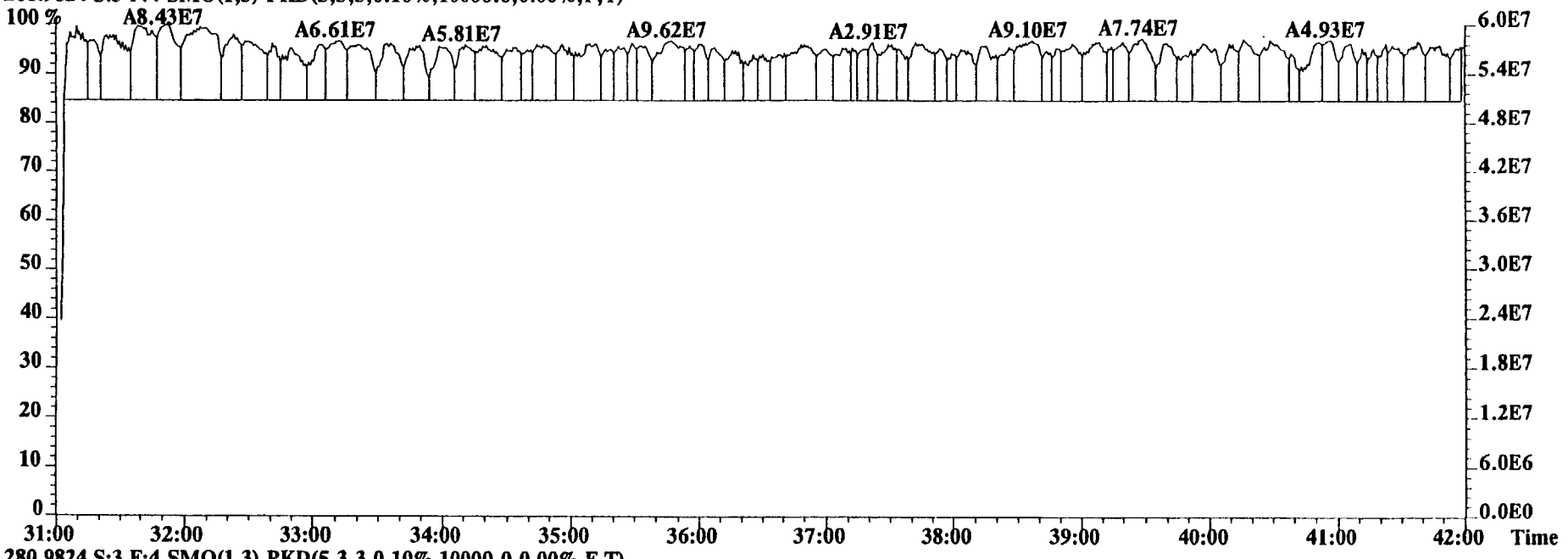
File:29OC98V4 #1-878 Acq:29-OCT-1998 17:05:20 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1029B :CS-3 :956-64 : : Exp:PAHAIR
276.0939 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



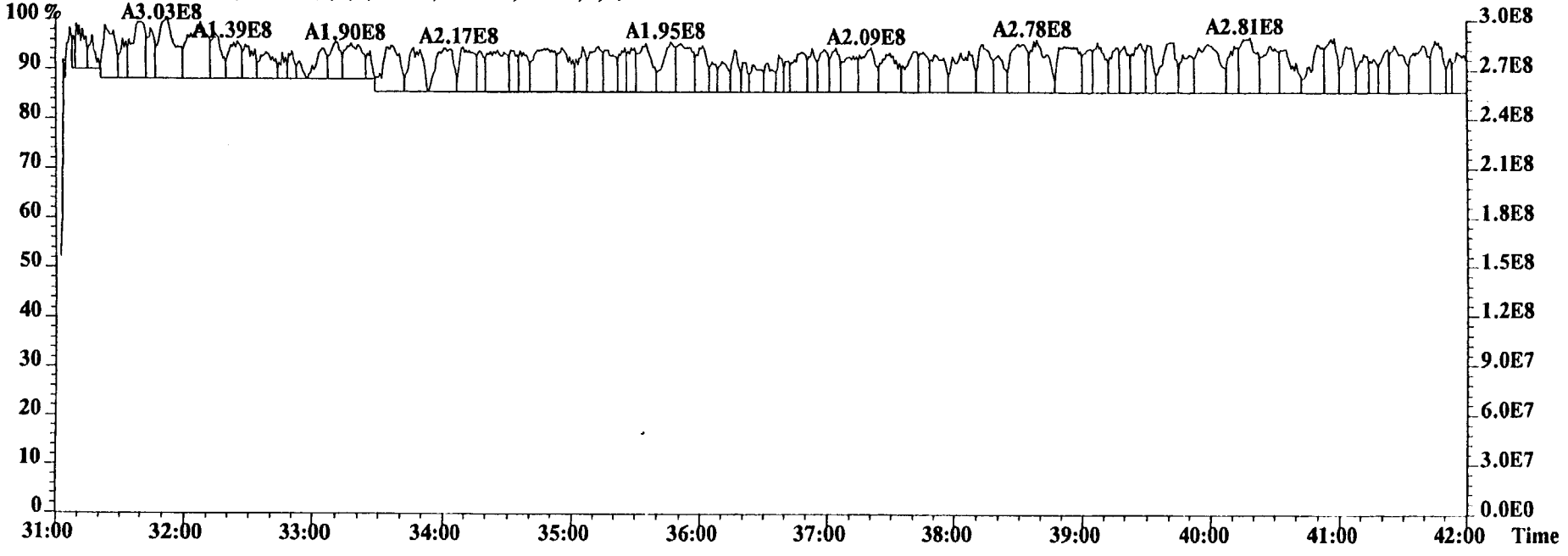
278.1096 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



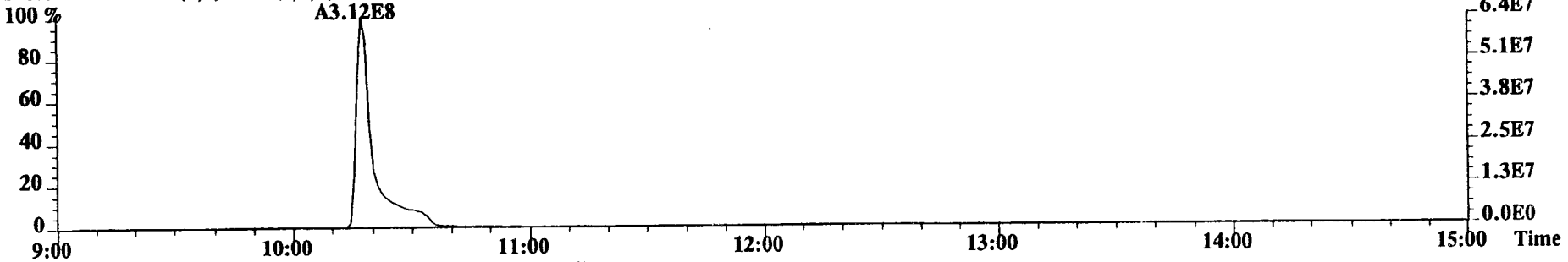
File:29OC98V4 #1-878 Acq:29-OCT-1998 17:05:20 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1029B :CS-3 :956-64 : : Exp:PAHAIR
268.9824 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



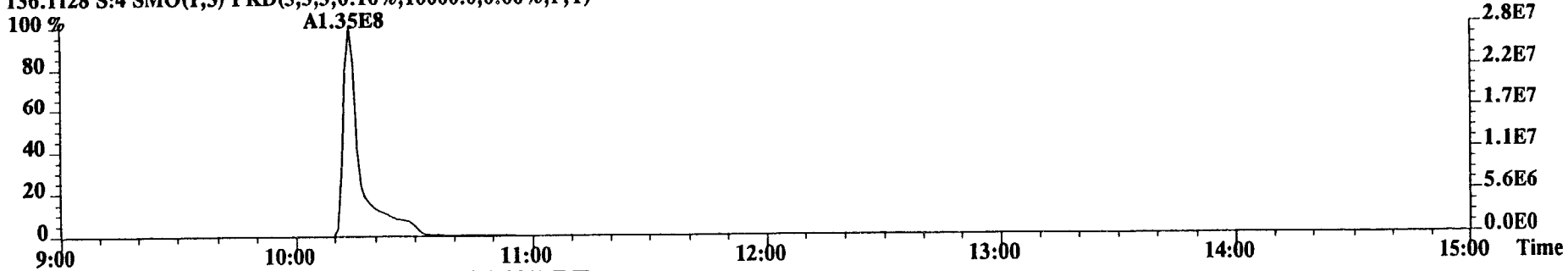
280.9824 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



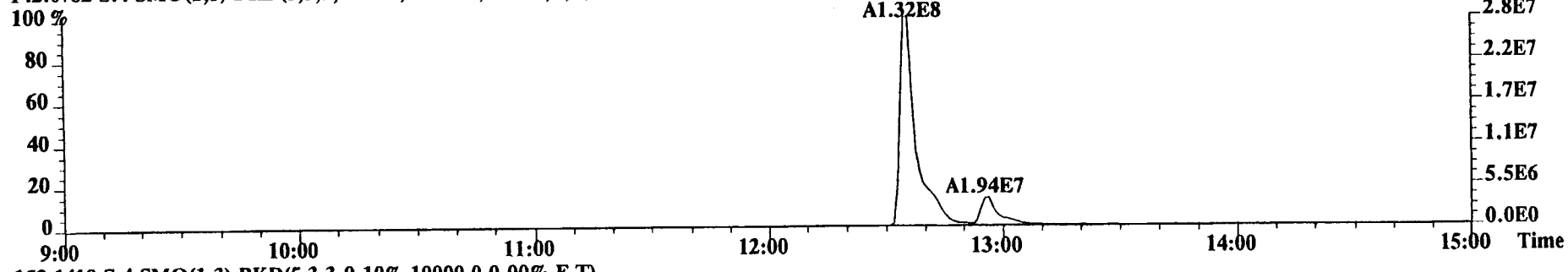
File:29OC98V4 #1-510 Acq:29-OCT-1998 17:54:20 GC EI+ Voltage SIR 70SE
Sample#4 Text:ST1029C :CS-4 :265-04D : Exp:PAHAIR
128.0626 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



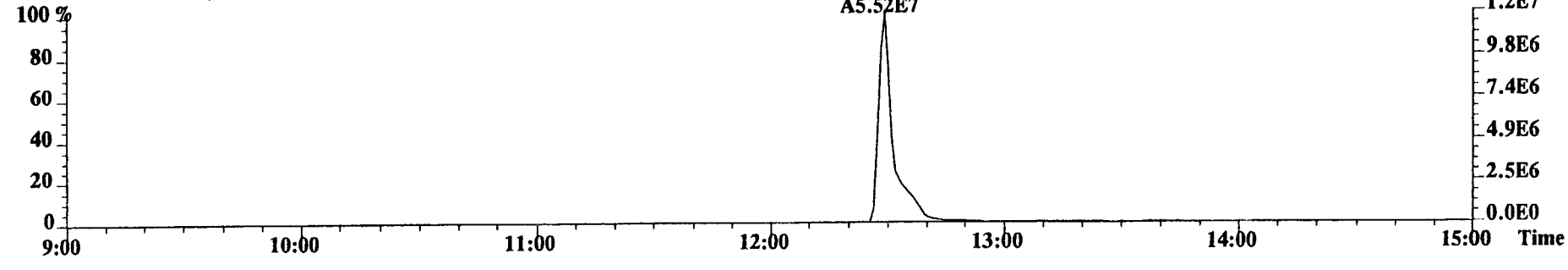
136.1128 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



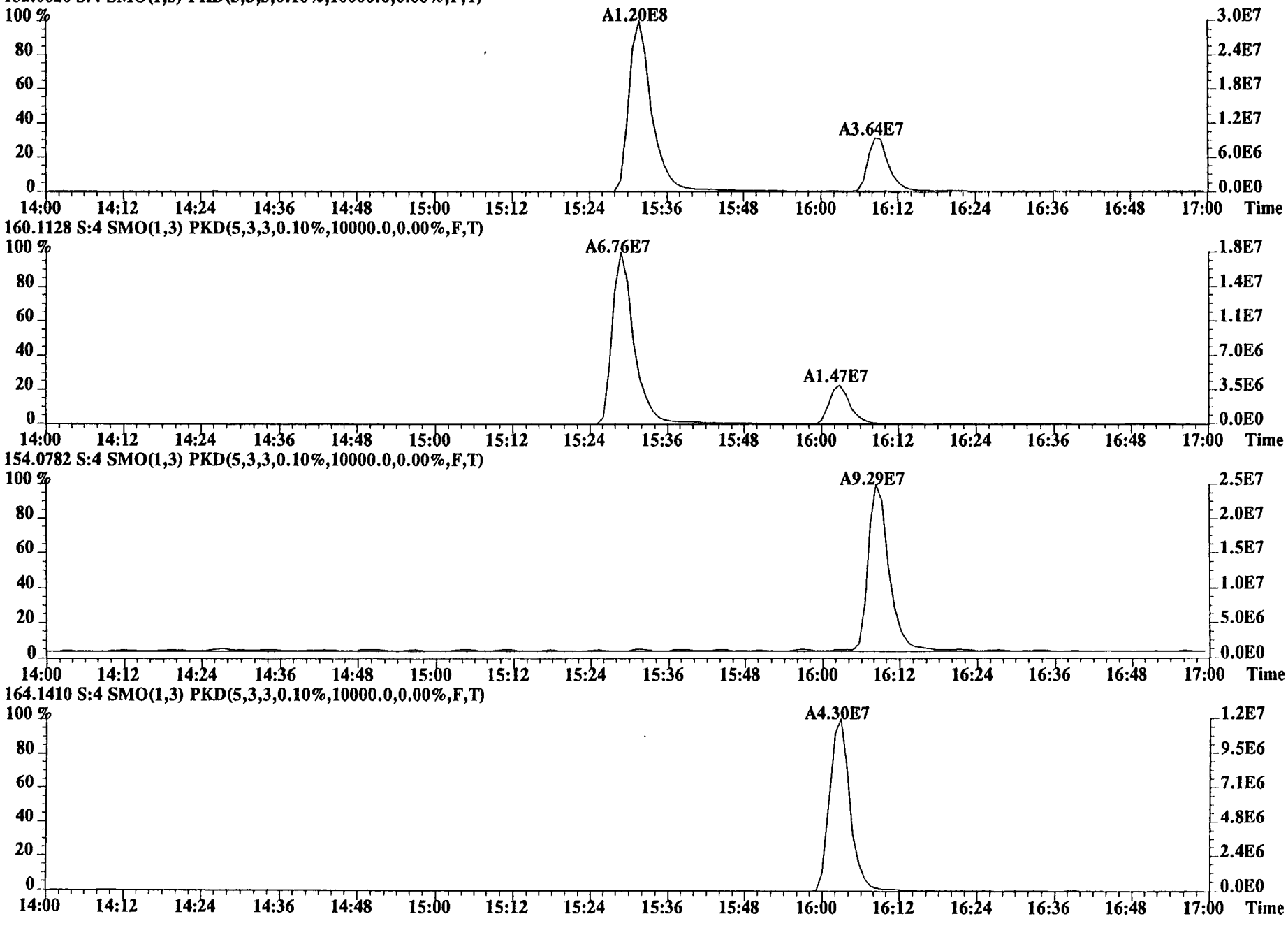
142.0782 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

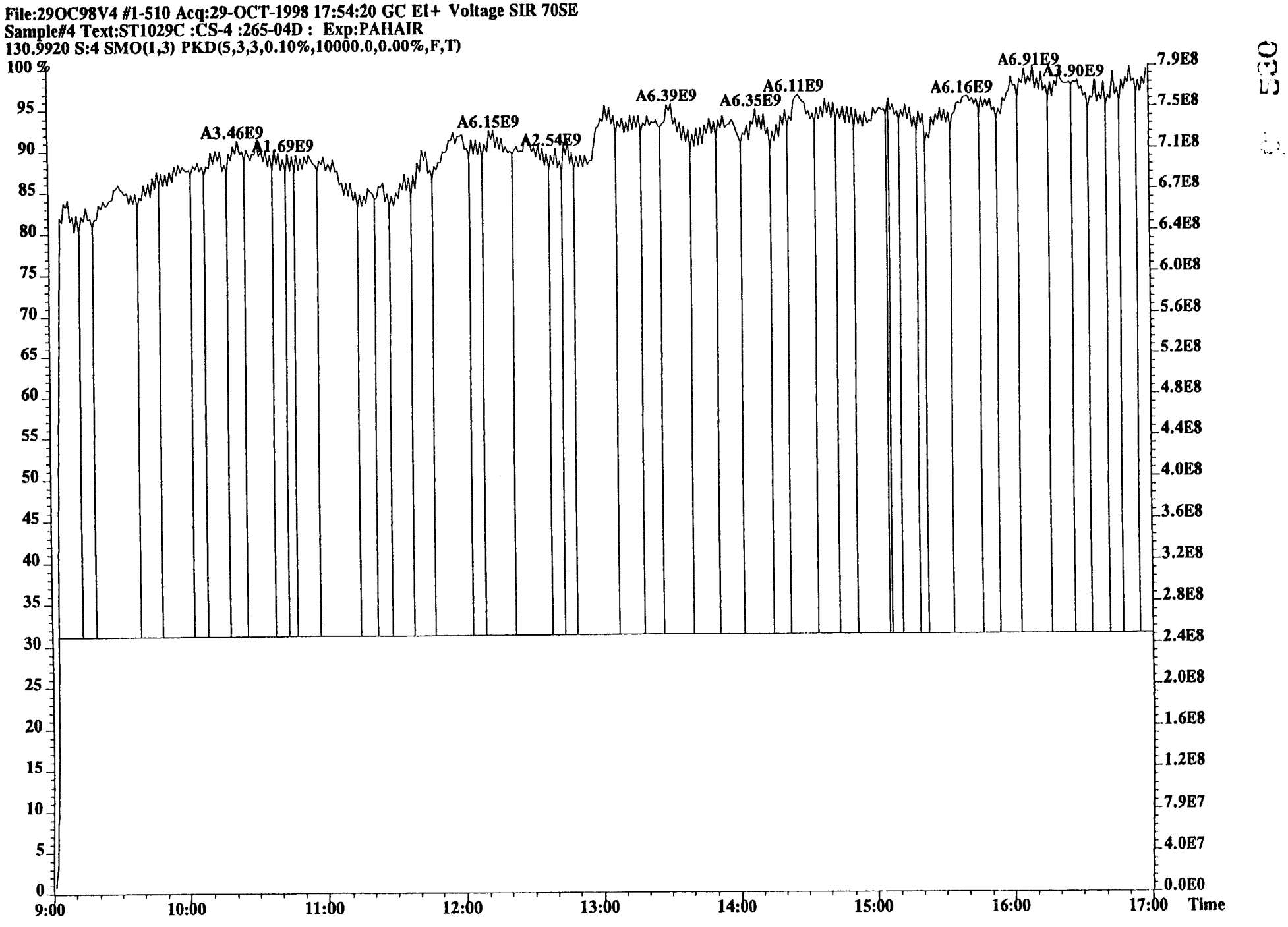


152.1410 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

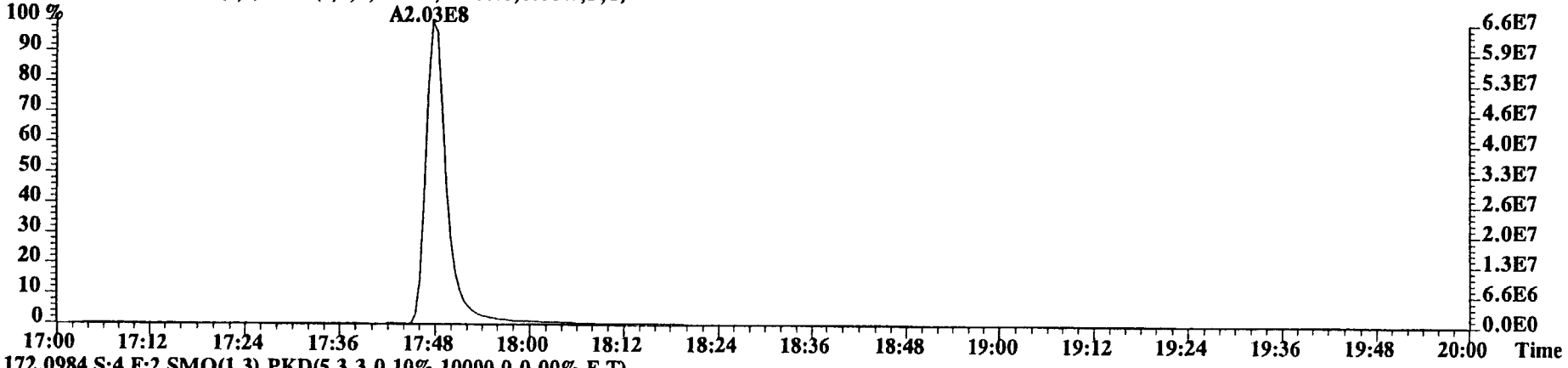


File:29OC98V4 #1-510 Acq:29-OCT-1998 17:54:20 GC EI+ Voltage SIR 70SE
Sample#4 Text:ST1029C :CS-4 :265-04D : Exp:PAHAIR

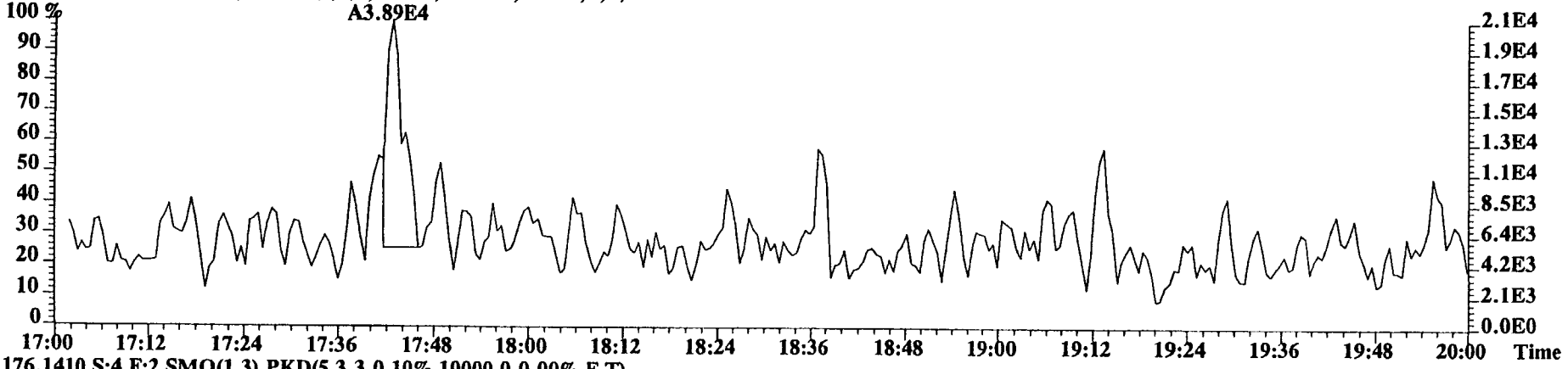



File:29OC98V4 #1-510 Acq:29-OCT-1998 17:54:20 GC EI+ Voltage SIR 70SE
Sample#4 Text:ST1029C :CS-4 :265-04D : Exp:PAHAIR
130.9920 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A3.46E9
A1.69E9
A6.15E9
A2.54E9
A6.39E9
A6.35E9
A6.11E9
A6.16E9
A6.91E9
A3.90E9
7.9E8
7.5E8
7.1E8
6.7E8
6.4E8
6.0E8
5.6E8
5.2E8
4.8E8
4.4E8
4.0E8
3.6E8
3.2E8
2.8E8
2.4E8
2.0E8
1.6E8
1.2E8
7.9E7
4.0E7
0.0E0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
Time

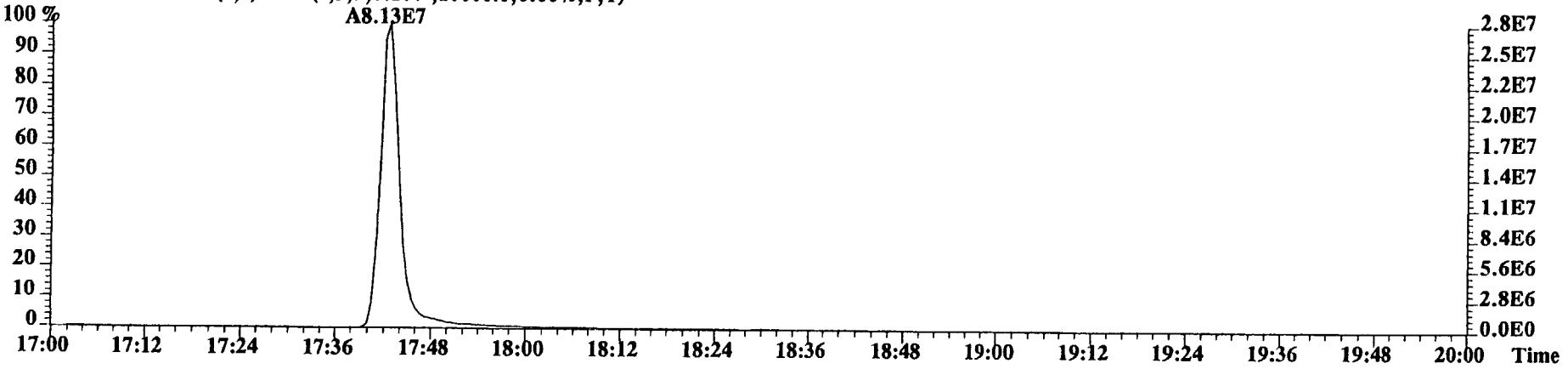
File:29OC98V4 #1-641 Acq:29-OCT-1998 17:54:20 GC EI+ Voltage SIR 70SE
Sample#4 Text:ST1029C :CS-4 :265-04D : Exp:PAHAIR
166.0798 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



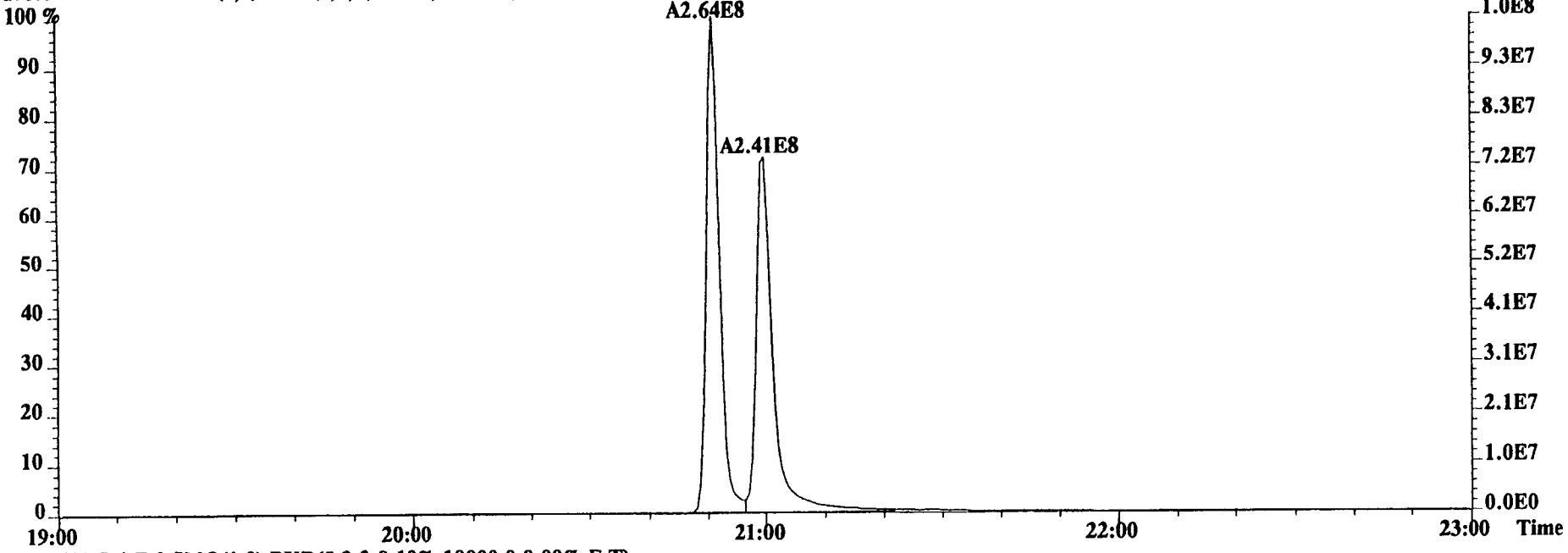
172.0984 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



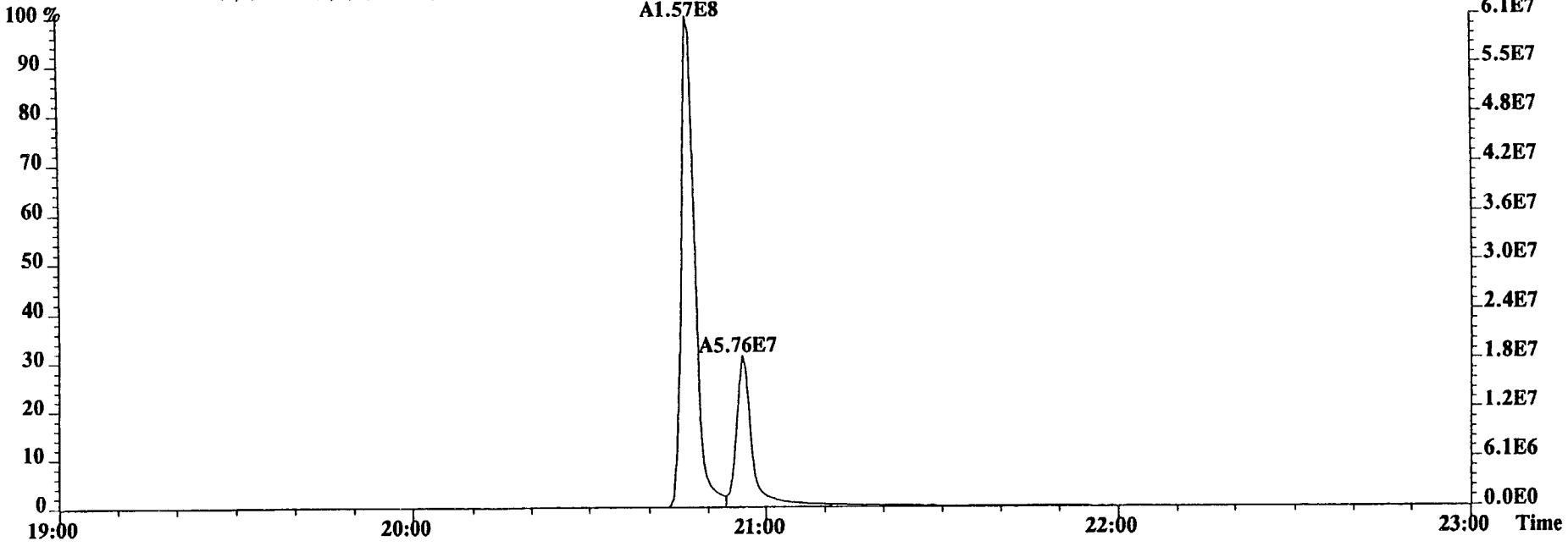
176.1410 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

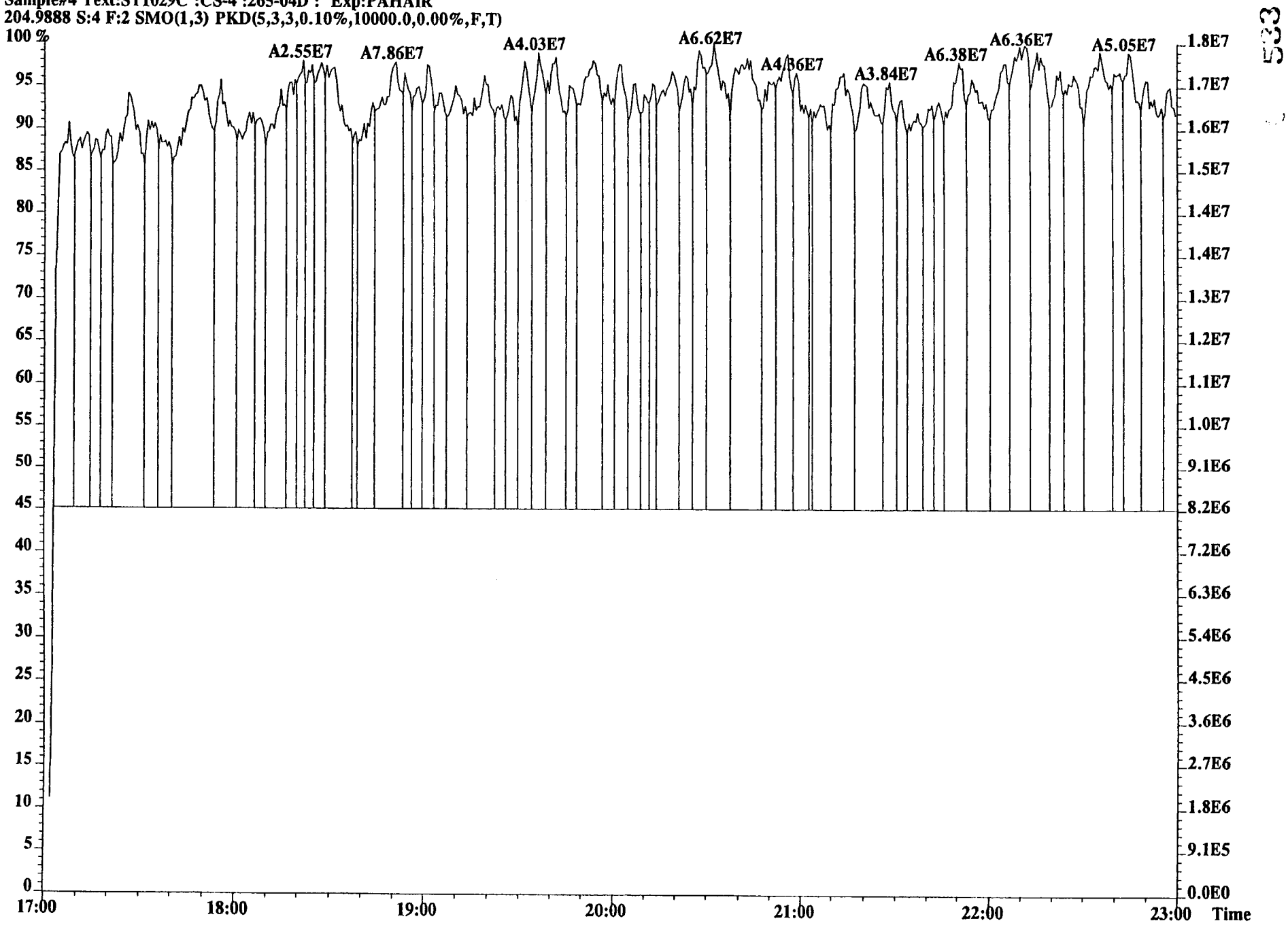


File:29OC98V4 #1-641 Acq:29-OCT-1998 17:54:20 GC EI+ Voltage SIR 70SE
Sample#4 Text:ST1029C :CS-4 :265-04D : Exp:PAHAIR
178.0782 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

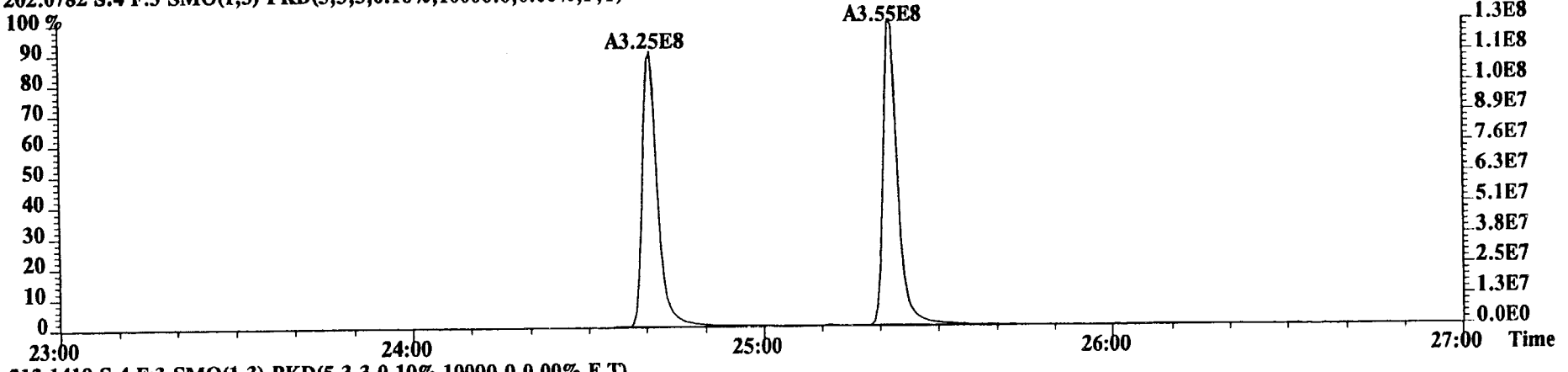


188.1410 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

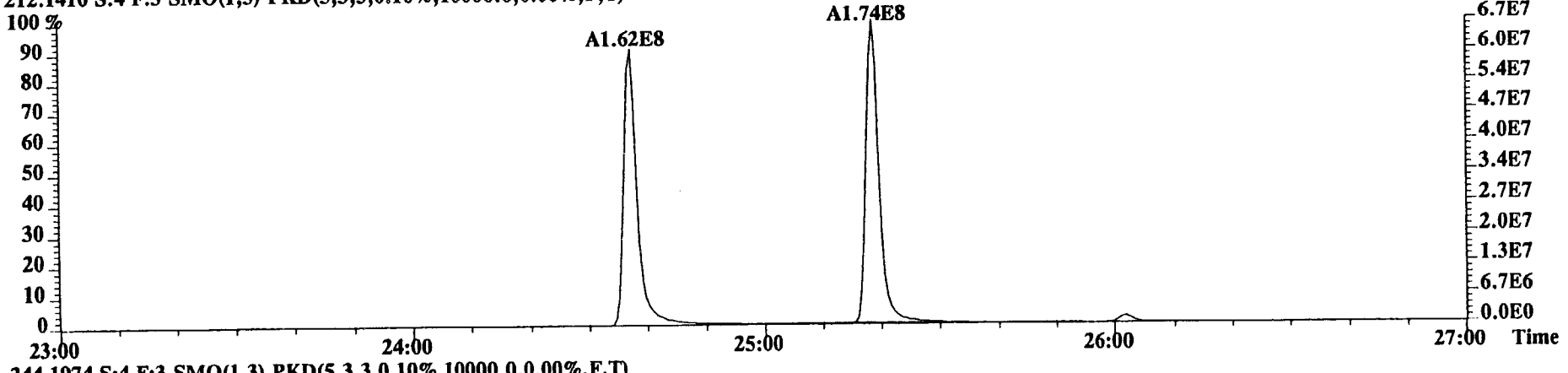



File:29OC98V4 #1-641 Acq:29-OCT-1998 17:54:20 GC EI+ Voltage SIR 70SE
Sample#4 Text:ST1029C :CS-4 :265-04D : Exp:PAHAIR
204.9888 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A2.55E7
A7.86E7
A4.03E7
A6.62E7
A4.36E7
A3.84E7
A6.38E7
A6.36E7
A5.05E7
1.8E7
1.7E7
1.6E7
1.5E7
1.4E7
1.4E7
1.3E7
1.2E7
1.1E7
1.0E7
9.1E6
8.2E6
7.2E6
6.3E6
5.4E6
4.5E6
3.6E6
2.7E6
1.8E6
9.1E5
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

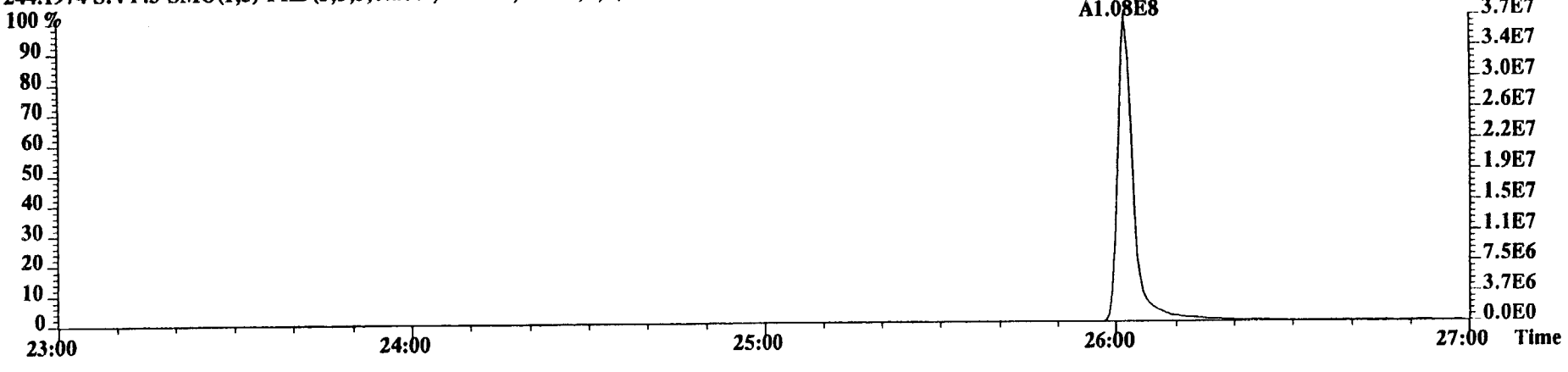
File:29OC98V4 #1-939 Acq:29-OCT-1998 17:54:20 GC EI+ Voltage SIR 70SE
Sample#4 Text:ST1029C :CS-4 :265-04D : Exp:PAHAIR
202.0782 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

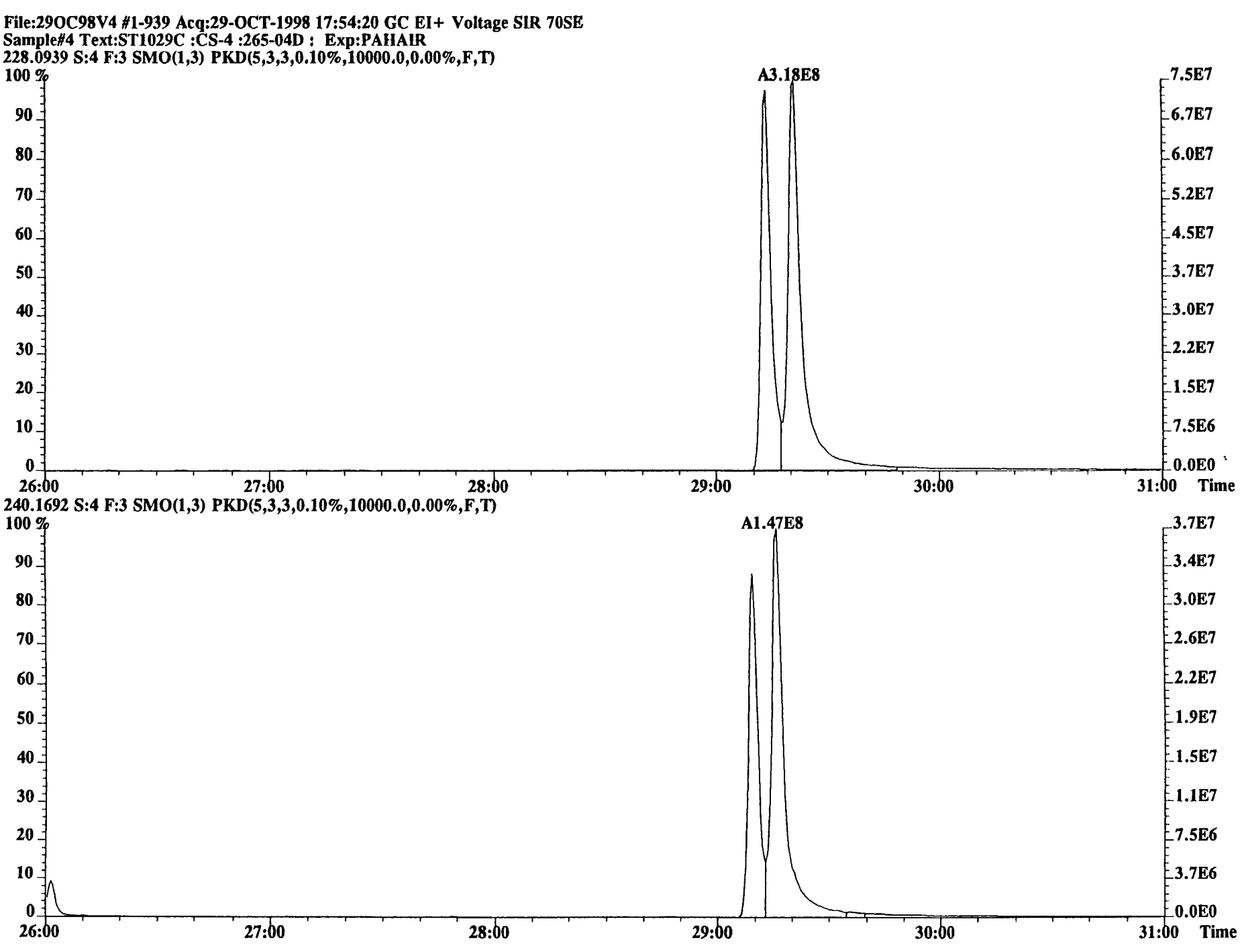


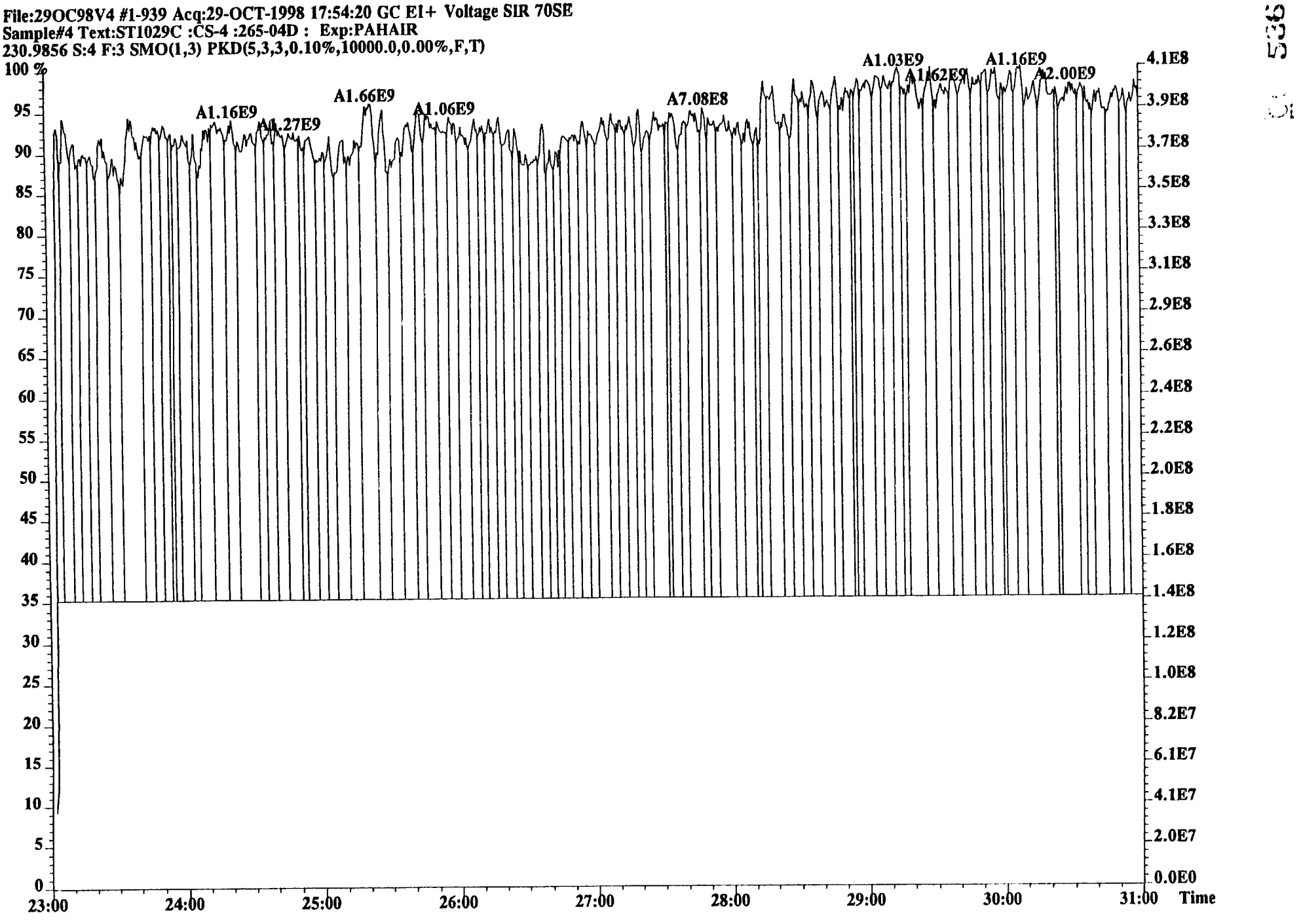
212.1410 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

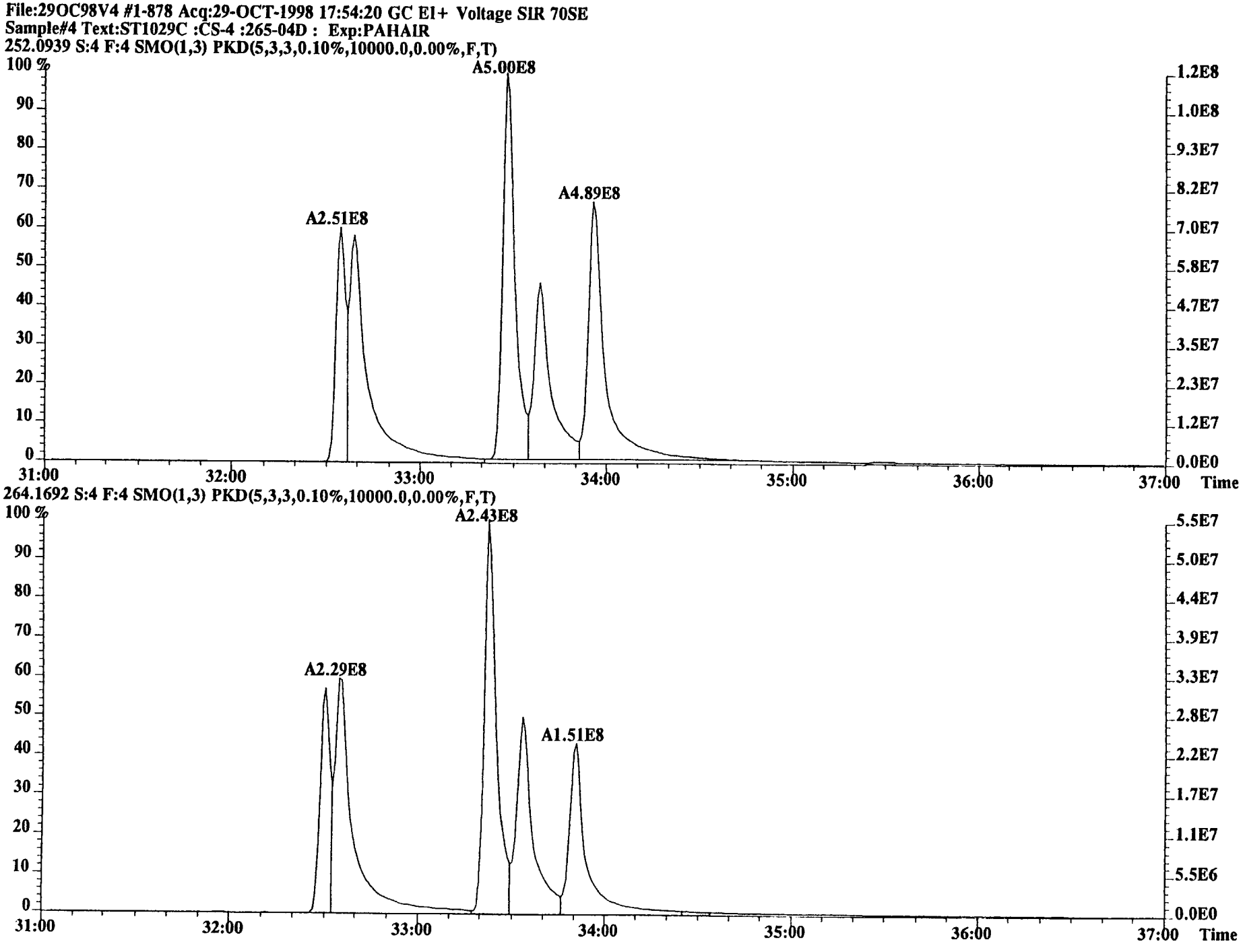


244.1974 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

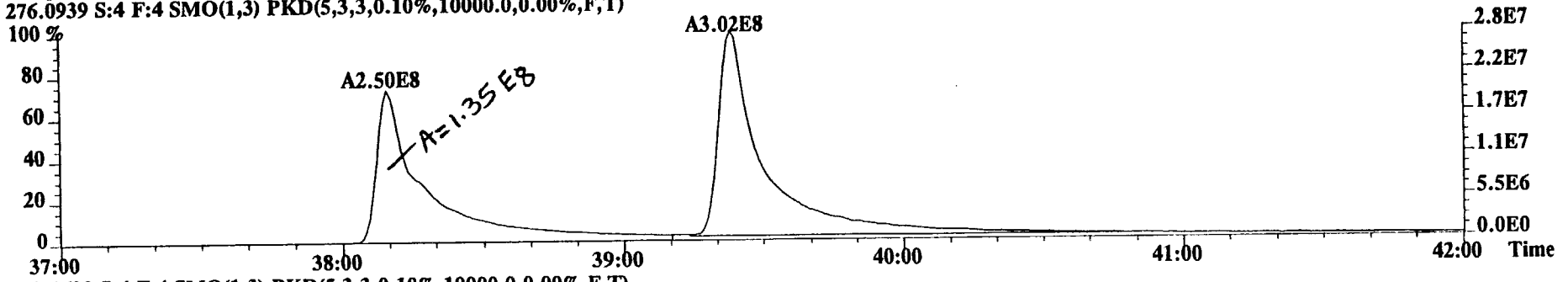



File:29OC98V4 #1-939 Acq:29-OCT-1998 17:54:20 GC EI+ Voltage SIR 70SE
Sample#4 Text:ST1029C :CS-4 :265-04D : Exp:PAHAIR
228.0939 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.18E8
240.1692 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.47E8
Time

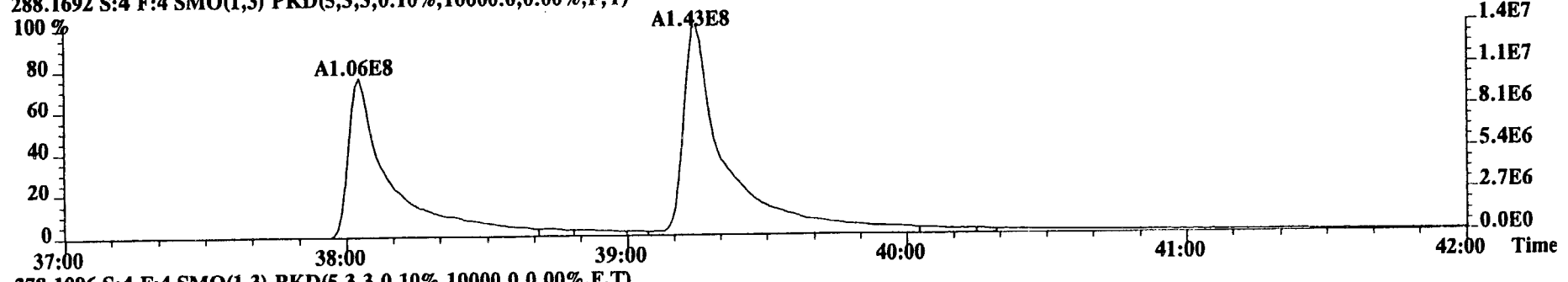

File:29OC98V4 #1-939 Acq:29-OCT-1998 17:54:20 GC EI+ Voltage SIR 70SE
Sample#4 Text:ST1029C :CS-4 :265-04D : Exp:PAHAIR
230.9856 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.16E9
A1.27E9
A1.66E9
A1.06E9
A7.08E8
A1.03E9
A1.16E9
A2.00E9
4.1E8
3.9E8
3.7E8
3.5E8
3.3E8
3.1E8
2.9E8
2.6E8
2.4E8
2.2E8
2.0E8
1.8E8
1.6E8
1.4E8
1.2E8
1.0E8
8.2E7
6.1E7
4.1E7
2.0E7
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time


File:29OC98V4 #1-878 Acq:29-OCT-1998 17:54:20 GC EI+ Voltage SIR 70SE
Sample#4 Text:ST1029C :CS-4 :265-04D : Exp:PAHAIR
252.0939 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A5.00E8
A4.89E8
A2.51E8
264.1692 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.43E8
A2.29E8
A1.51E8
Time

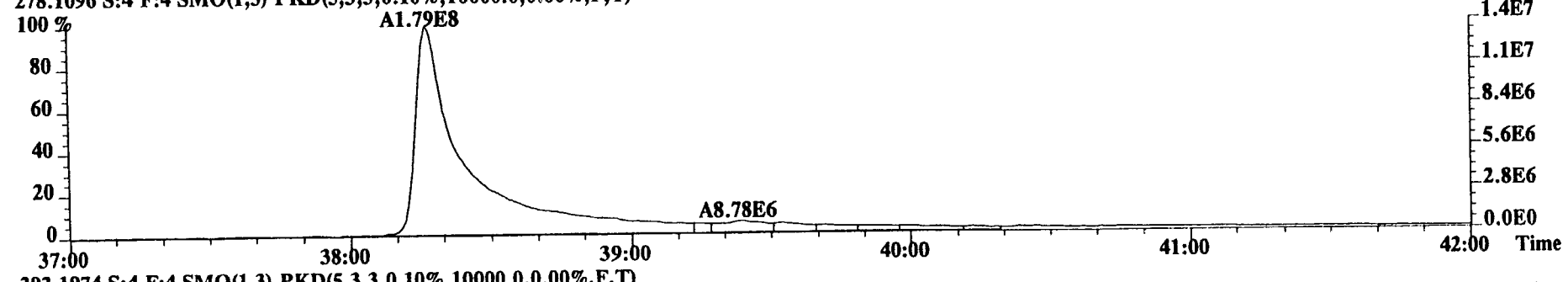
File:29OC98V4 #1-878 Acq:29-OCT-1998 17:54:20 GC EI+ Voltage SIR 70SE
Sample#4 Text:ST1029C :CS-4 :265-04D : Exp:PAHAIR
276.0939 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



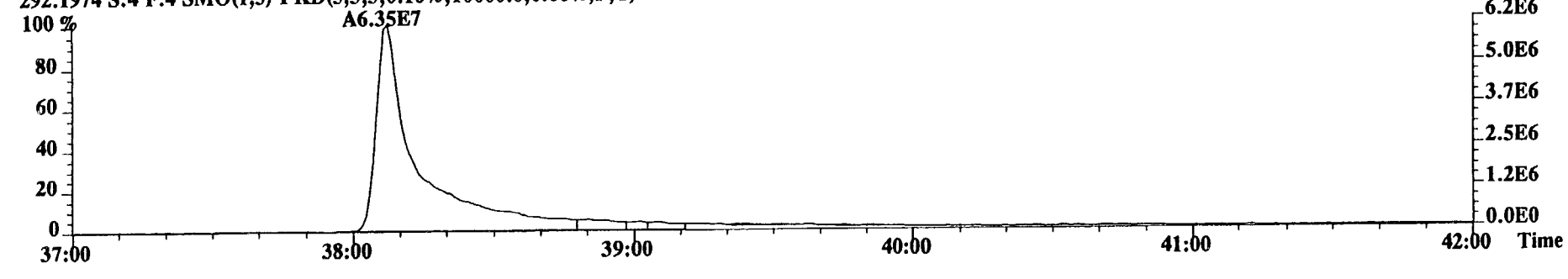
288.1692 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



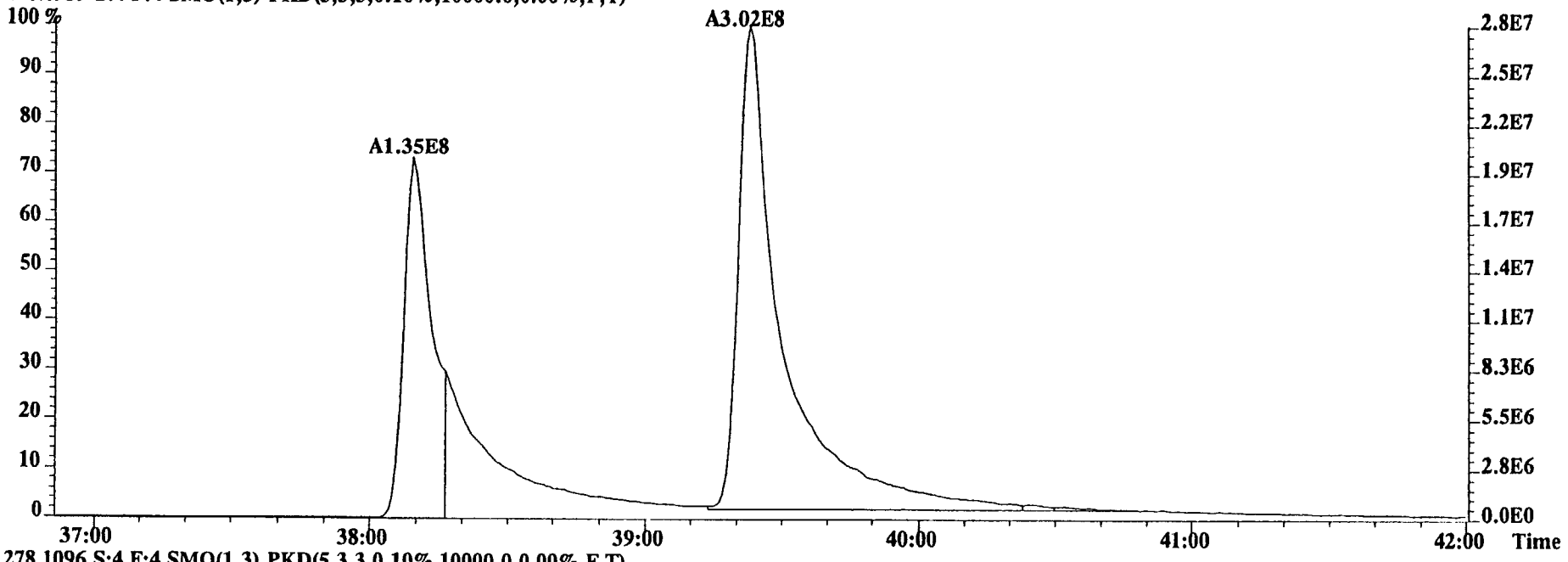
278.1096 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



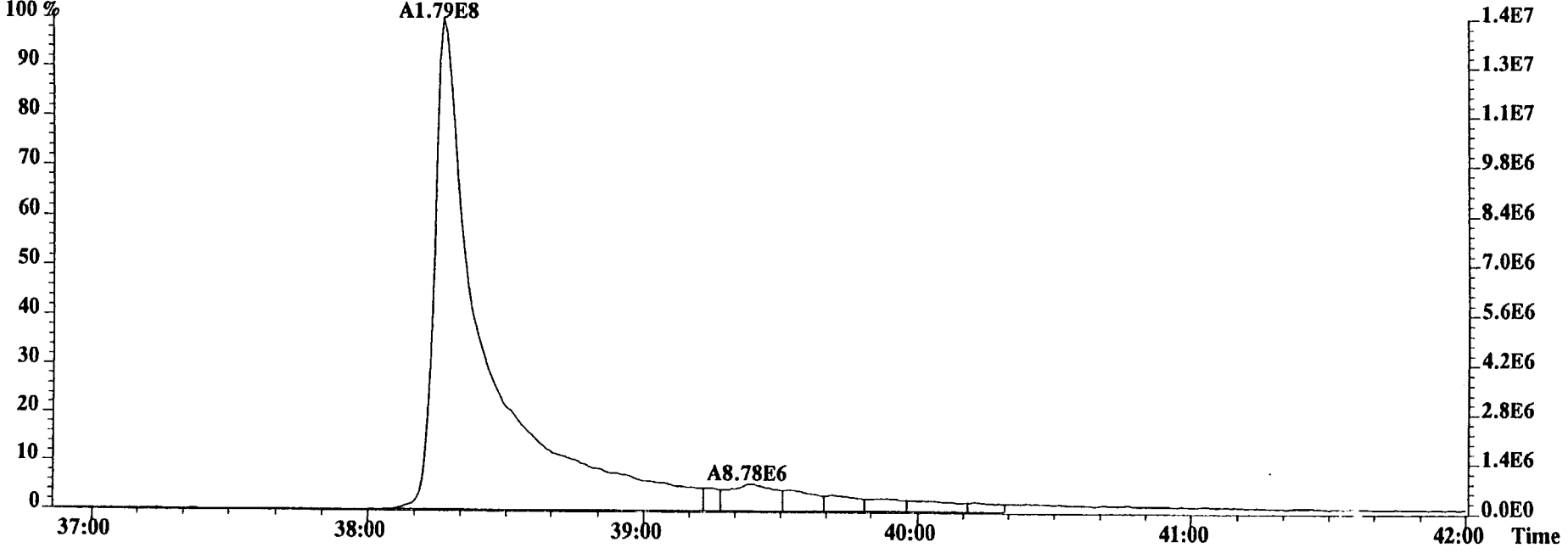
292.1974 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

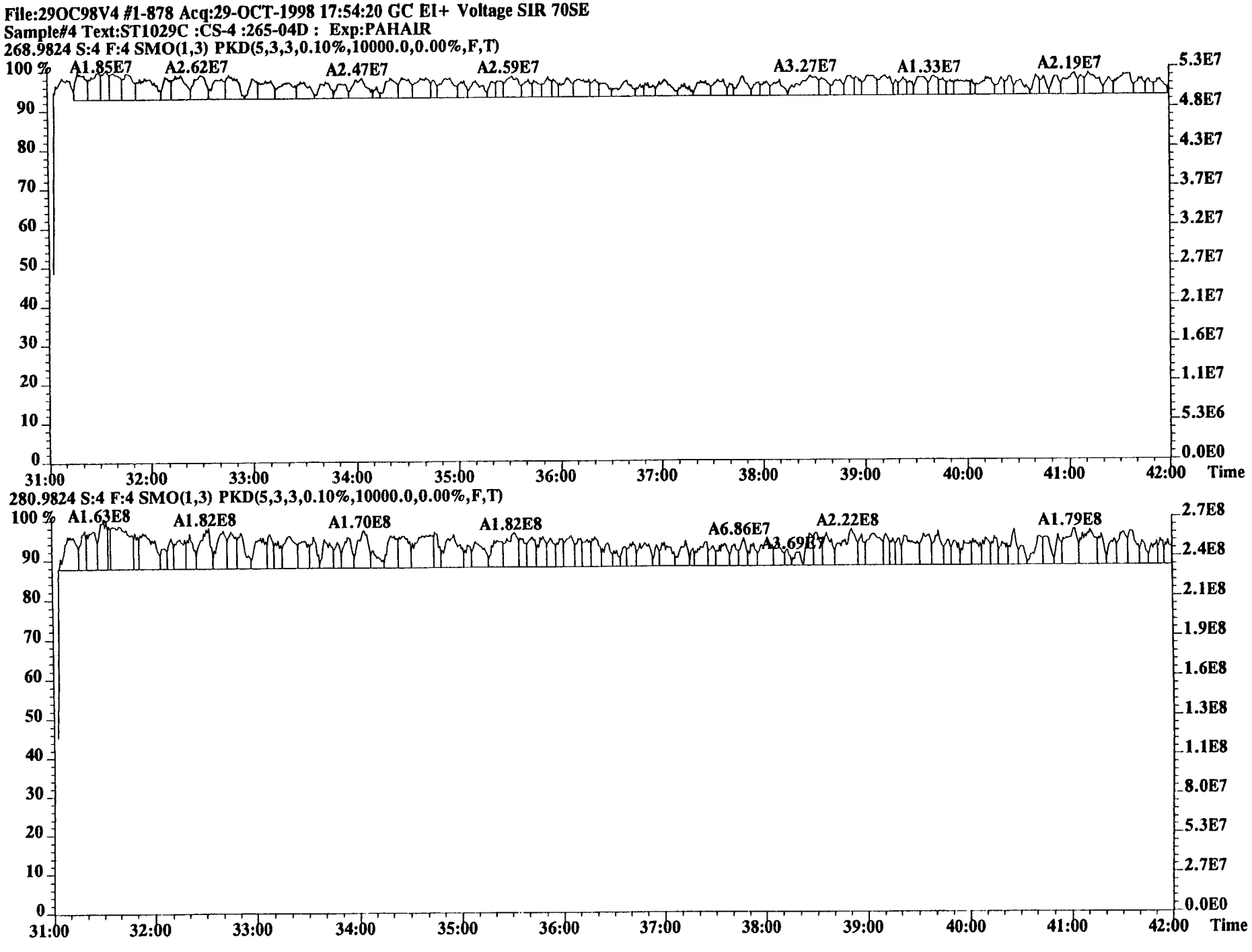


File:29OC98V4 #1-878 Acq:29-OCT-1998 17:54:20 GC EI+ Voltage SIR 70SE
Sample#4 Text:ST1029C :CS-4 :265-04D : Exp:PAHAIR
276.0939 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

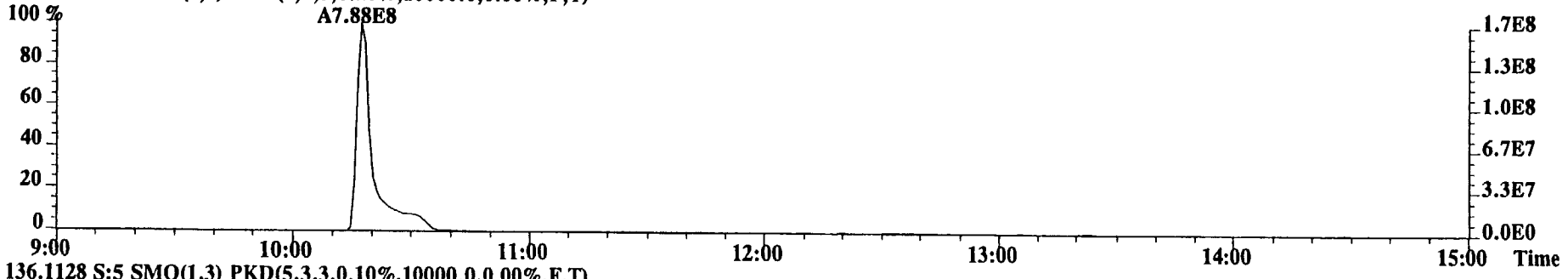


278.1096 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

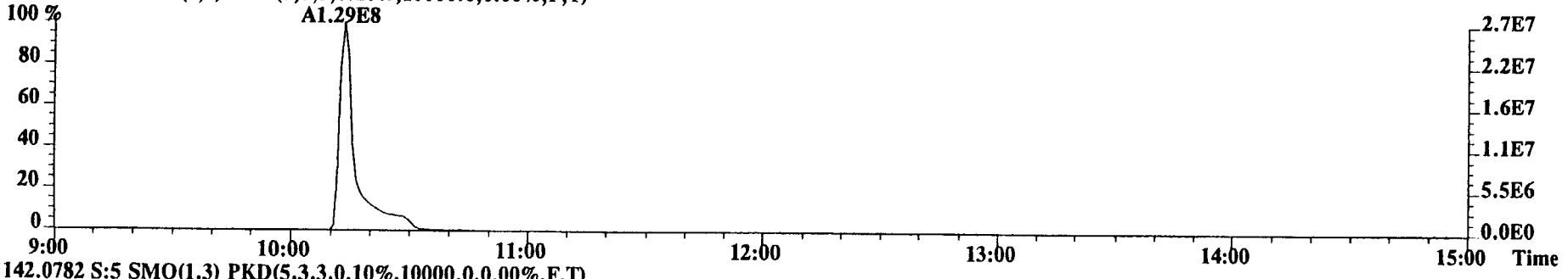



File:29OC98V4 #1-878 Acq:29-OCT-1998 17:54:20 GC EI+ Voltage SIR 70SE
Sample#4 Text:ST1029C :CS-4 :265-04D : Exp:PAHAIR
268.9824 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.85E7
A2.62E7
A2.47E7
A2.59E7
A3.27E7
A1.33E7
A2.19E7
5.3E7
4.8E7
4.3E7
3.7E7
3.2E7
2.7E7
2.1E7
1.6E7
1.1E7
5.3E6
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time
280.9824 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.63E8
A1.82E8
A1.70E8
A1.82E8
A6.86E7
A3.69E7
A2.22E8
A1.79E8
2.7E8
2.4E8
2.1E8
1.9E8
1.6E8
1.3E8
1.1E8
8.0E7
5.3E7
2.7E7
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time

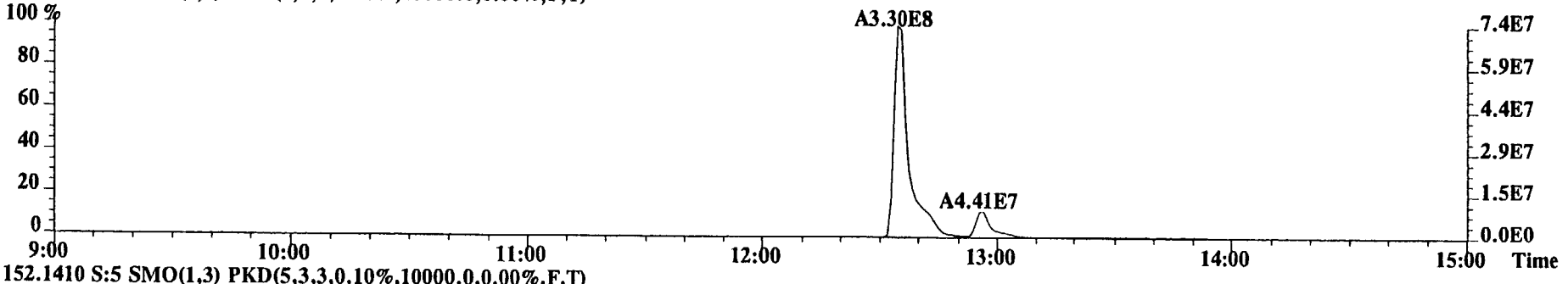
File:29OC98V4 #1-510 Acq:29-OCT-1998 18:43:24 GC EI+ Voltage SIR 70SE
Sample#5 Text:ST1029D :CS-5 :265-04E : Exp:PAHAIR
128.0626 S:5 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



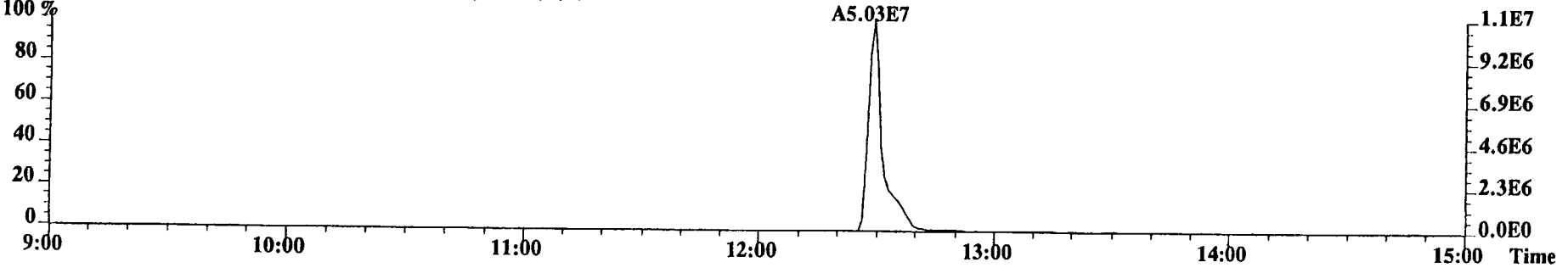
136.1128 S:5 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



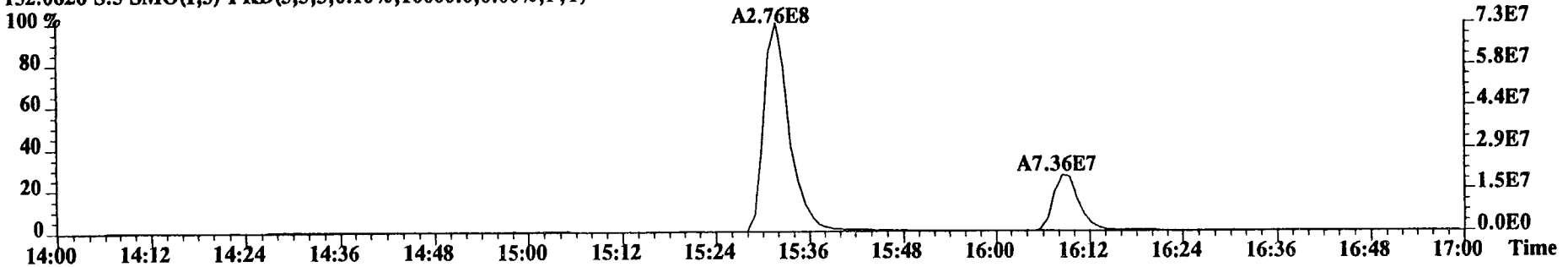
142.0782 S:5 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



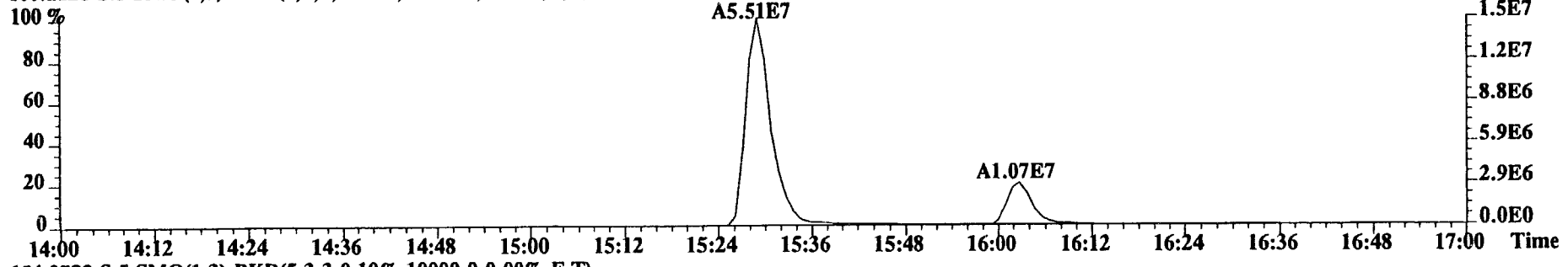
152.1410 S:5 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



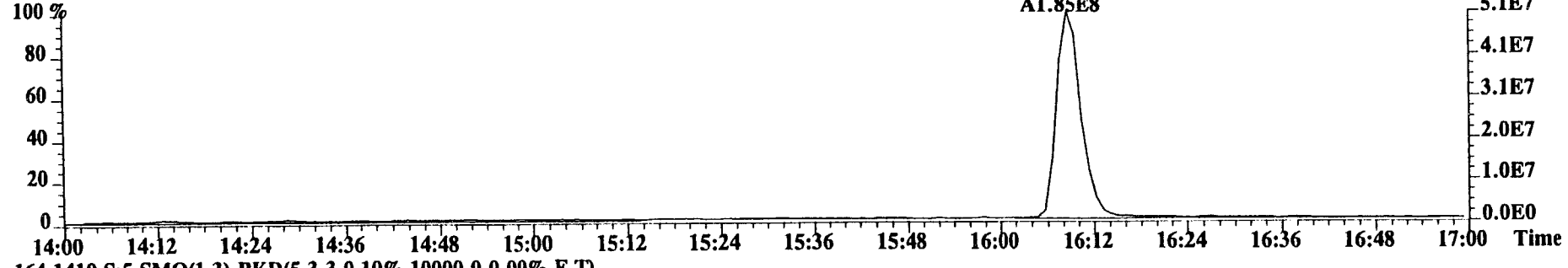
File:29OC98V4 #1-510 Acq:29-OCT-1998 18:43:24 GC EI+ Voltage SIR 70SE
Sample#5 Text:ST1029D :CS-5 :265-04E : Exp:PAHAIR
152.0626 S:5 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



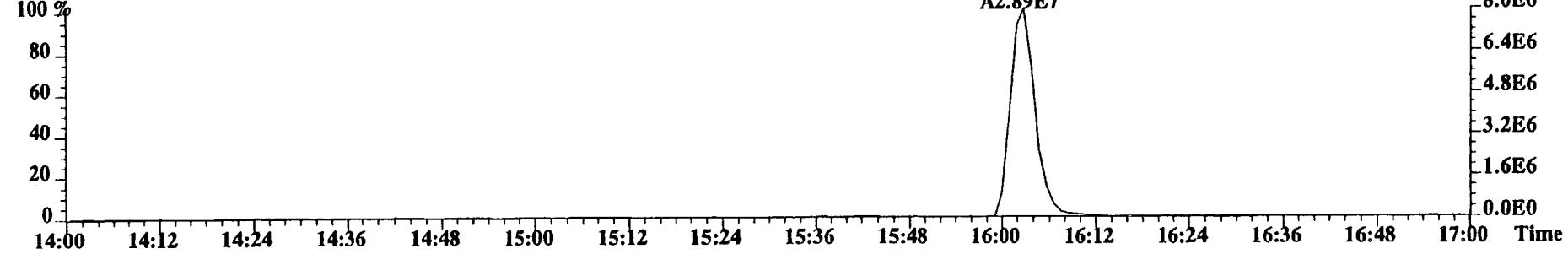
160.1128 S:5 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

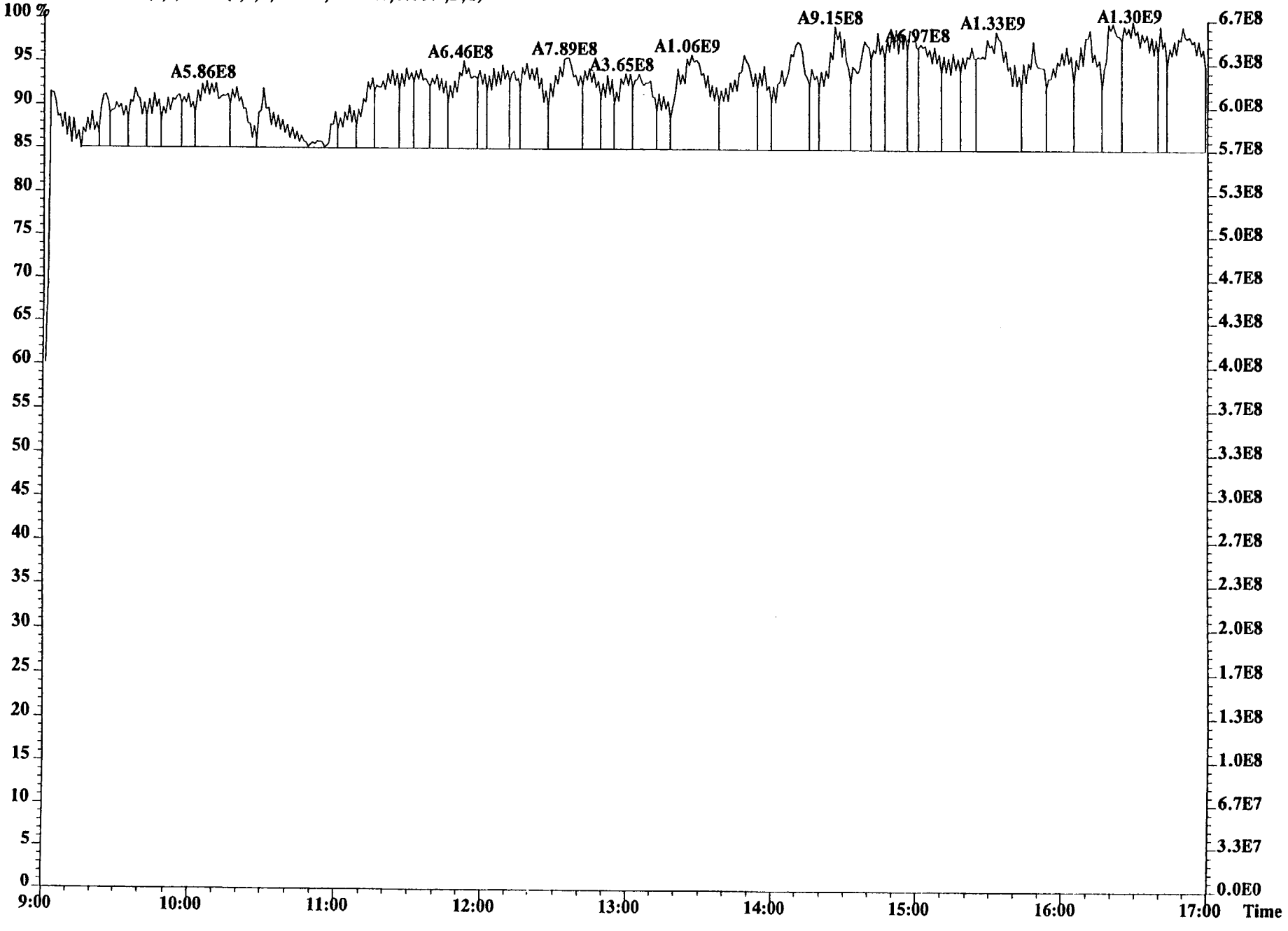


154.0782 S:5 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

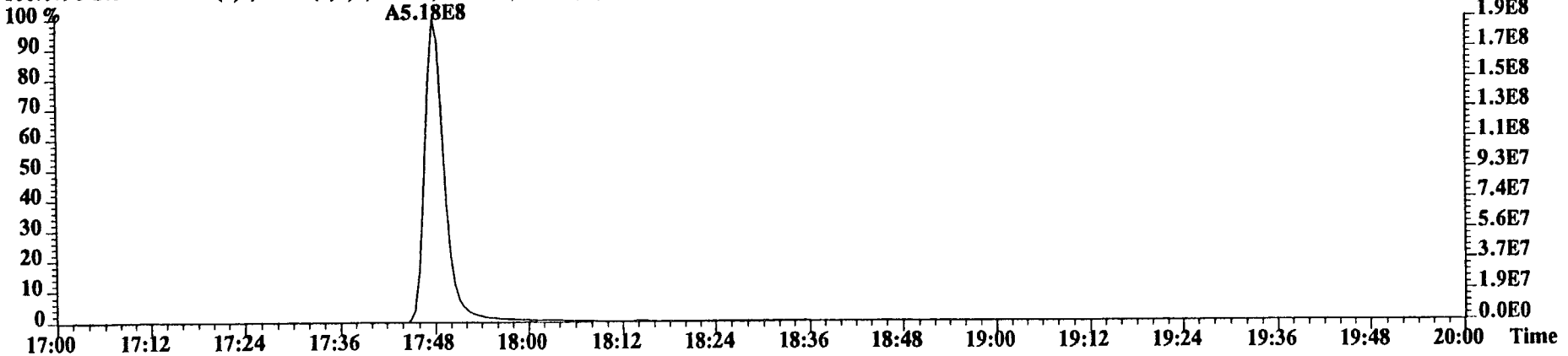


164.1410 S:5 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

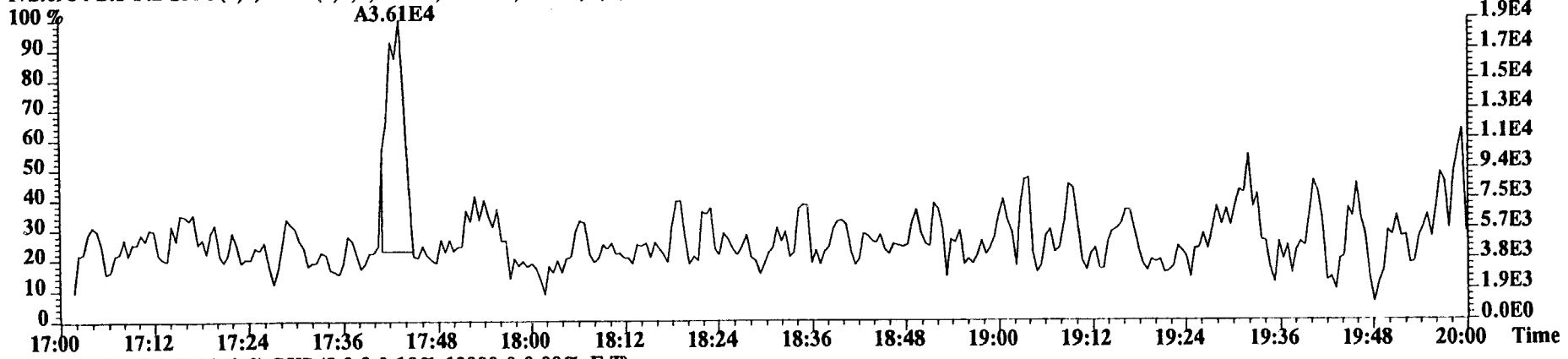



File:29OC98V4 #1-510 Acq:29-OCT-1998 18:43:24 GC EI+ Voltage SIR 70SE
Sample#5 Text:ST1029D :CS-5 :265-04E : Exp:PAHAIR
130.9920 S:5 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A5.86E8
A6.46E8
A7.89E8
A3.65E8
A1.06E9
A9.15E8
A6.97E8
A1.33E9
A1.30E9
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
6.7E8
6.3E8
6.0E8
5.7E8
5.3E8
5.0E8
4.7E8
4.3E8
4.0E8
3.7E8
3.3E8
3.0E8
2.7E8
2.3E8
2.0E8
1.7E8
1.3E8
1.0E8
6.7E7
3.3E7
0.0E0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
Time

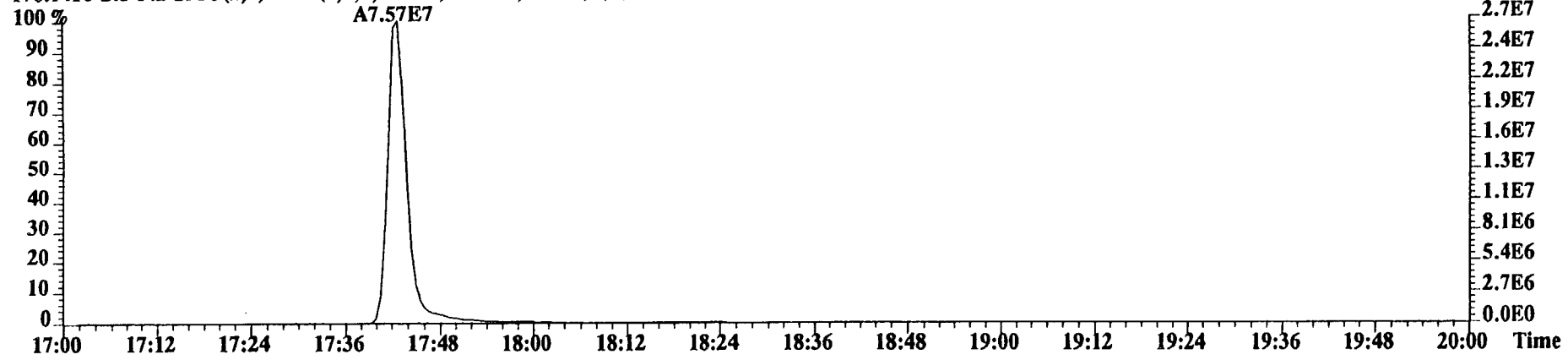
File:29OC98V4 #1-641 Acq:29-OCT-1998 18:43:24 GC EI+ Voltage SIR 70SE
Sample#5 Text:ST1029D :CS-5 :265-04E : Exp:PAHAIR
166.0798 S:5 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

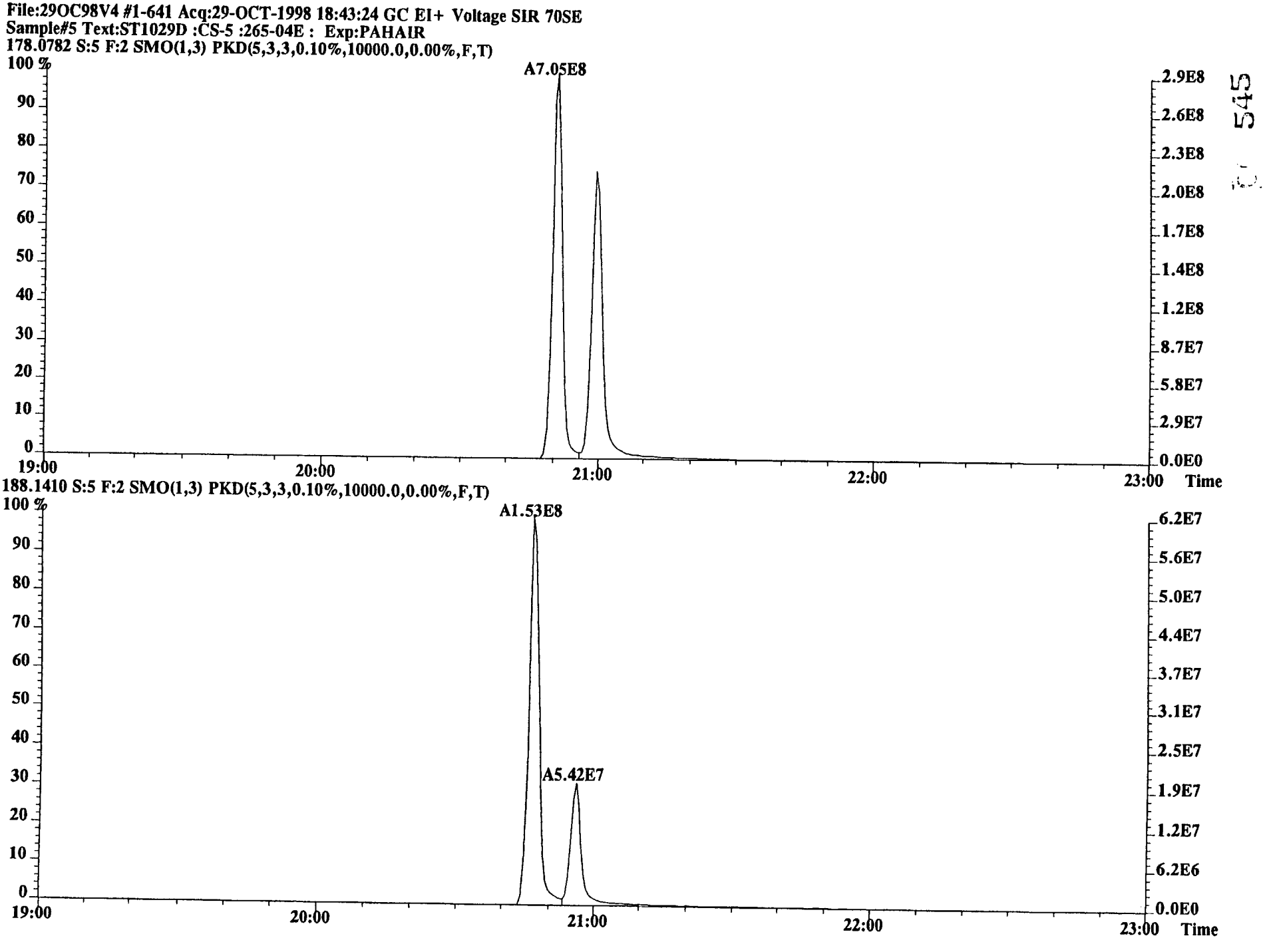


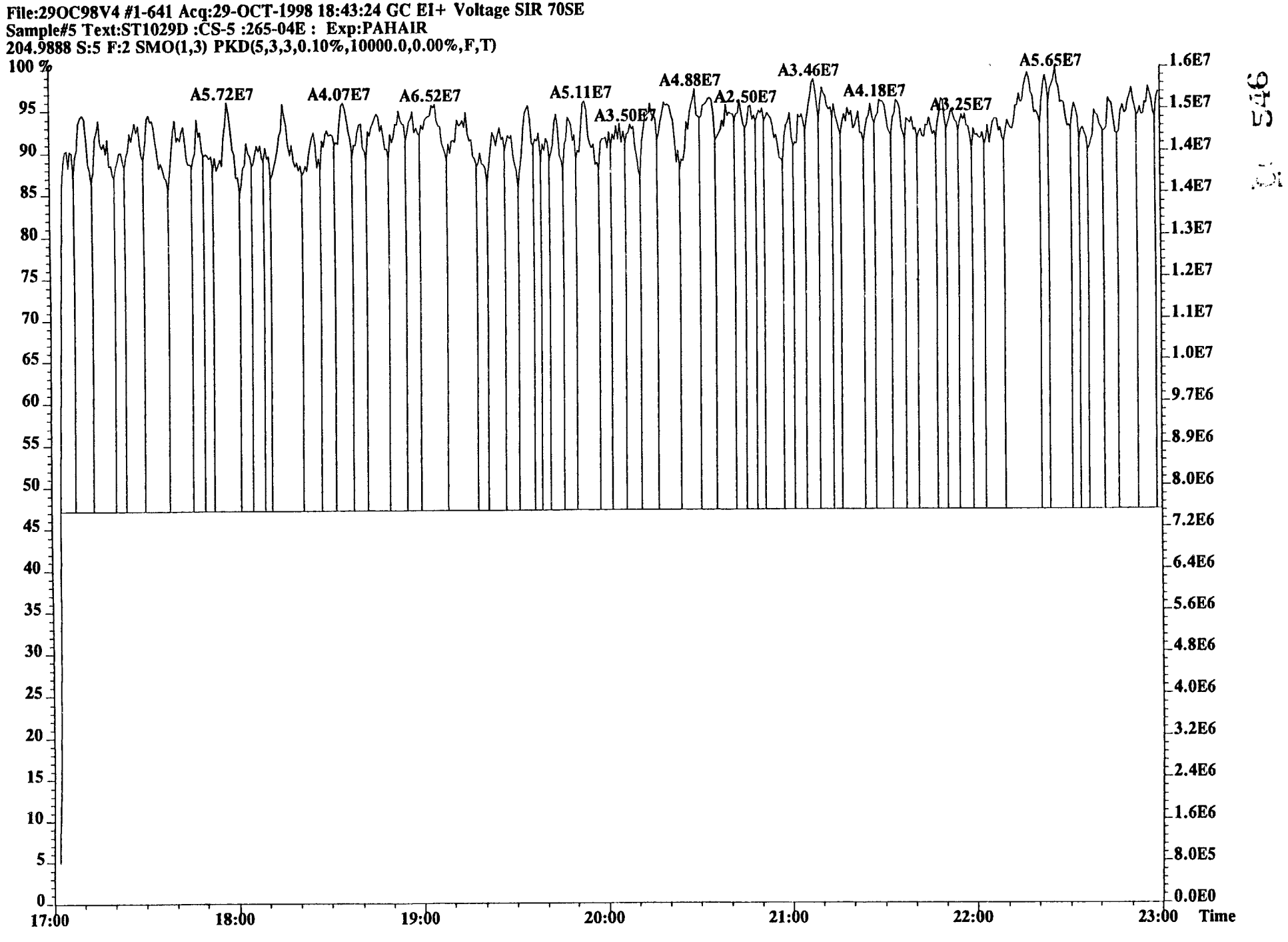
172.0984 S:5 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



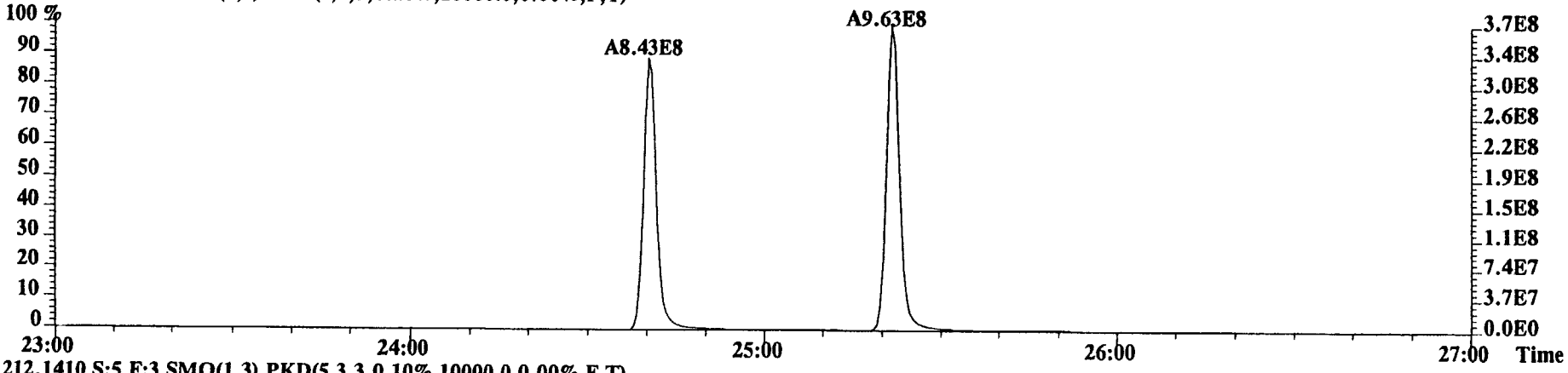
176.1410 S:5 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



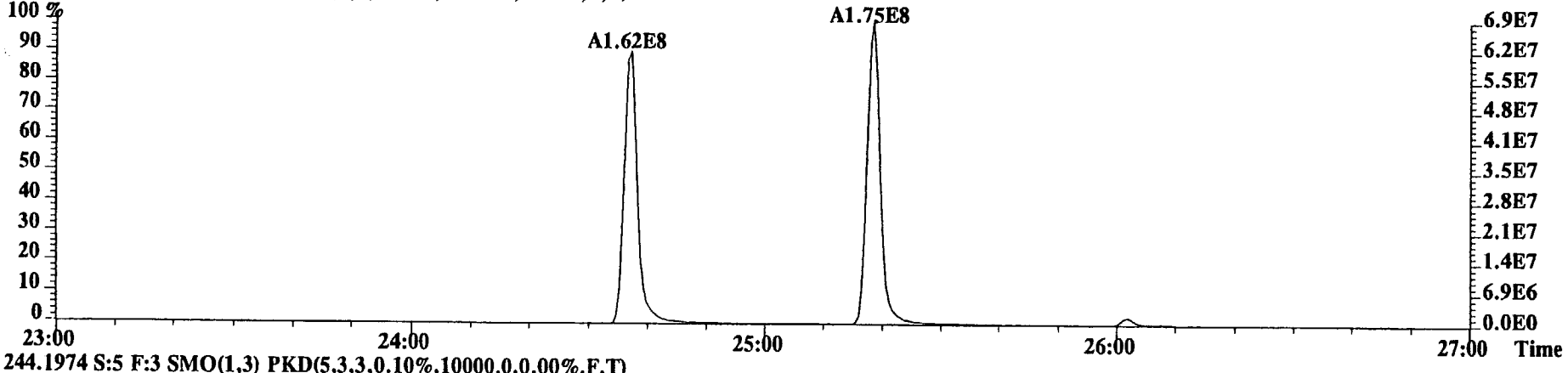

File:29OC98V4 #1-641 Acq:29-OCT-1998 18:43:24 GC EI+ Voltage SIR 70SE
Sample#5 Text:ST1029D :CS-5 :265-04E : Exp:PAHAIR
178.0782 S:5 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A7.05E8
2.9E8
2.6E8
2.3E8
2.0E8
1.7E8
1.4E8
1.2E8
8.7E7
5.8E7
2.9E7
0.0E0
19:00
20:00
21:00
22:00
23:00
Time
188.1410 S:5 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.53E8
A5.42E7
6.2E7
5.6E7
5.0E7
4.4E7
3.7E7
3.1E7
2.5E7
1.9E7
1.2E7
6.2E6
0.0E0
19:00
20:00
21:00
22:00
23:00
Time


File:29OC98V4 #1-641 Acq:29-OCT-1998 18:43:24 GC EI+ Voltage SIR 70SE
Sample#5 Text:ST1029D :CS-5 :265-04E : Exp:PAHAIR
204.9888 S:5 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A5.72E7
A4.07E7
A6.52E7
A5.11E7
A3.50E7
A4.88E7
A2.50E7
A3.46E7
A4.18E7
A3.25E7
A5.65E7
1.6E7
1.5E7
1.4E7
1.4E7
1.3E7
1.2E7
1.1E7
1.0E7
9.7E6
8.9E6
8.0E6
7.2E6
6.4E6
5.6E6
4.8E6
4.0E6
3.2E6
2.4E6
1.6E6
8.0E5
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

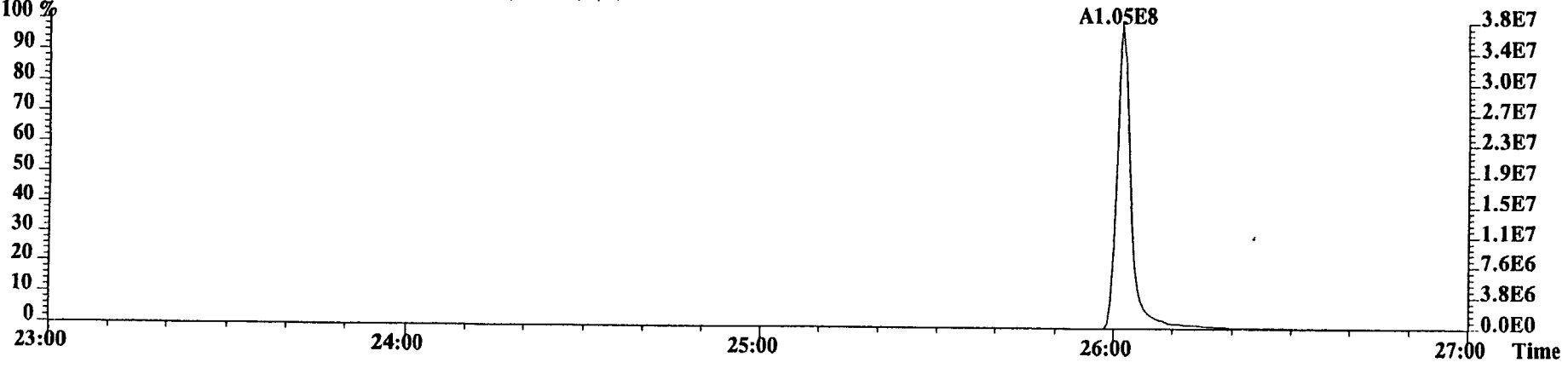
File:29OC98V4 #1-939 Acq:29-OCT-1998 18:43:24 GC EI+ Voltage SIR 70SE
Sample#5 Text:ST1029D :CS-5 :265-04E : Exp:PAHAIR
202.0782 S:5 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



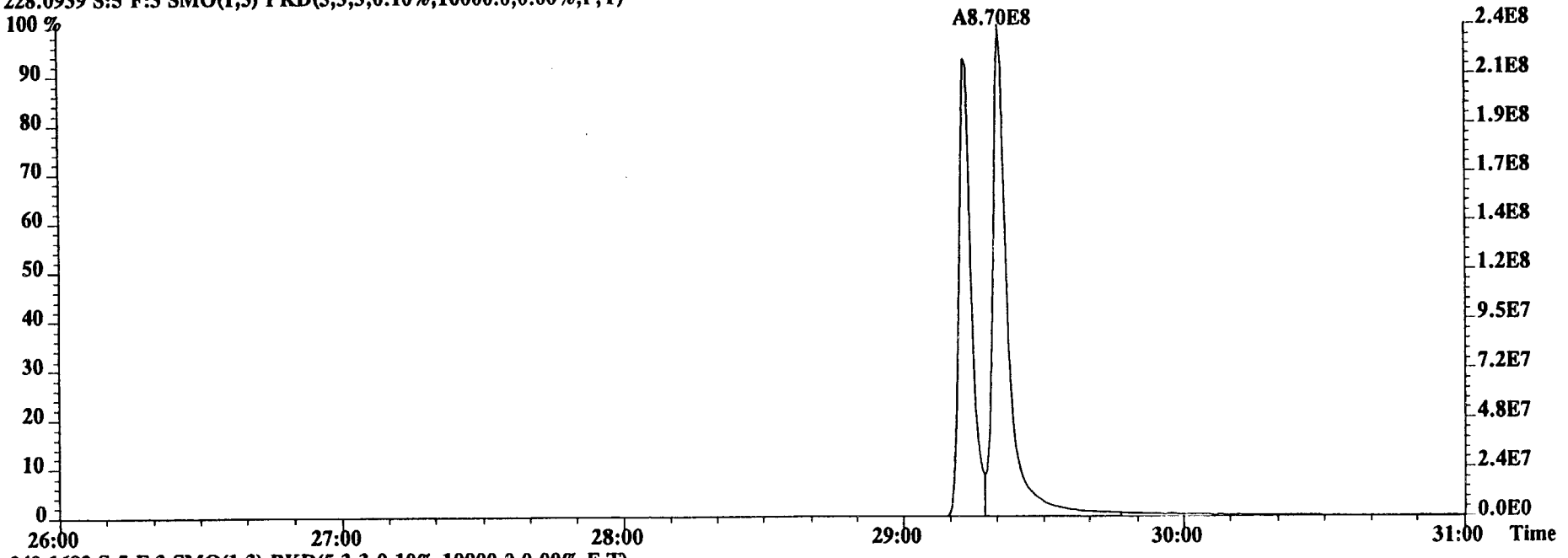
212.1410 S:5 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



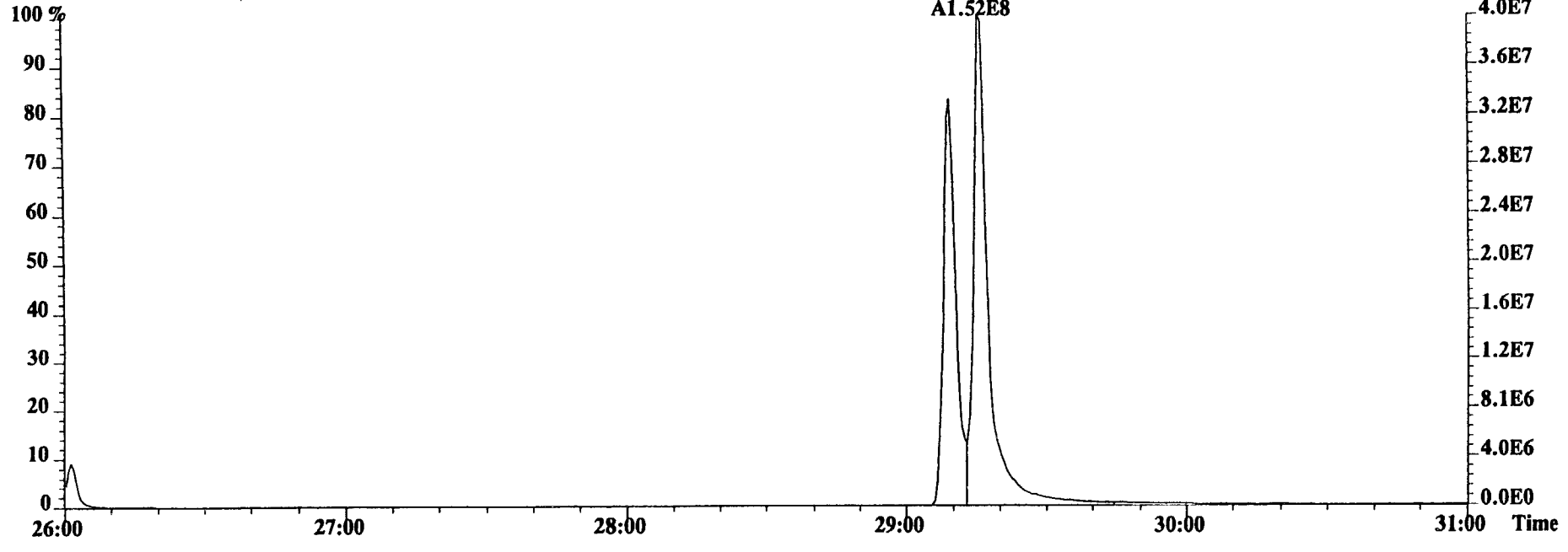
244.1974 S:5 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

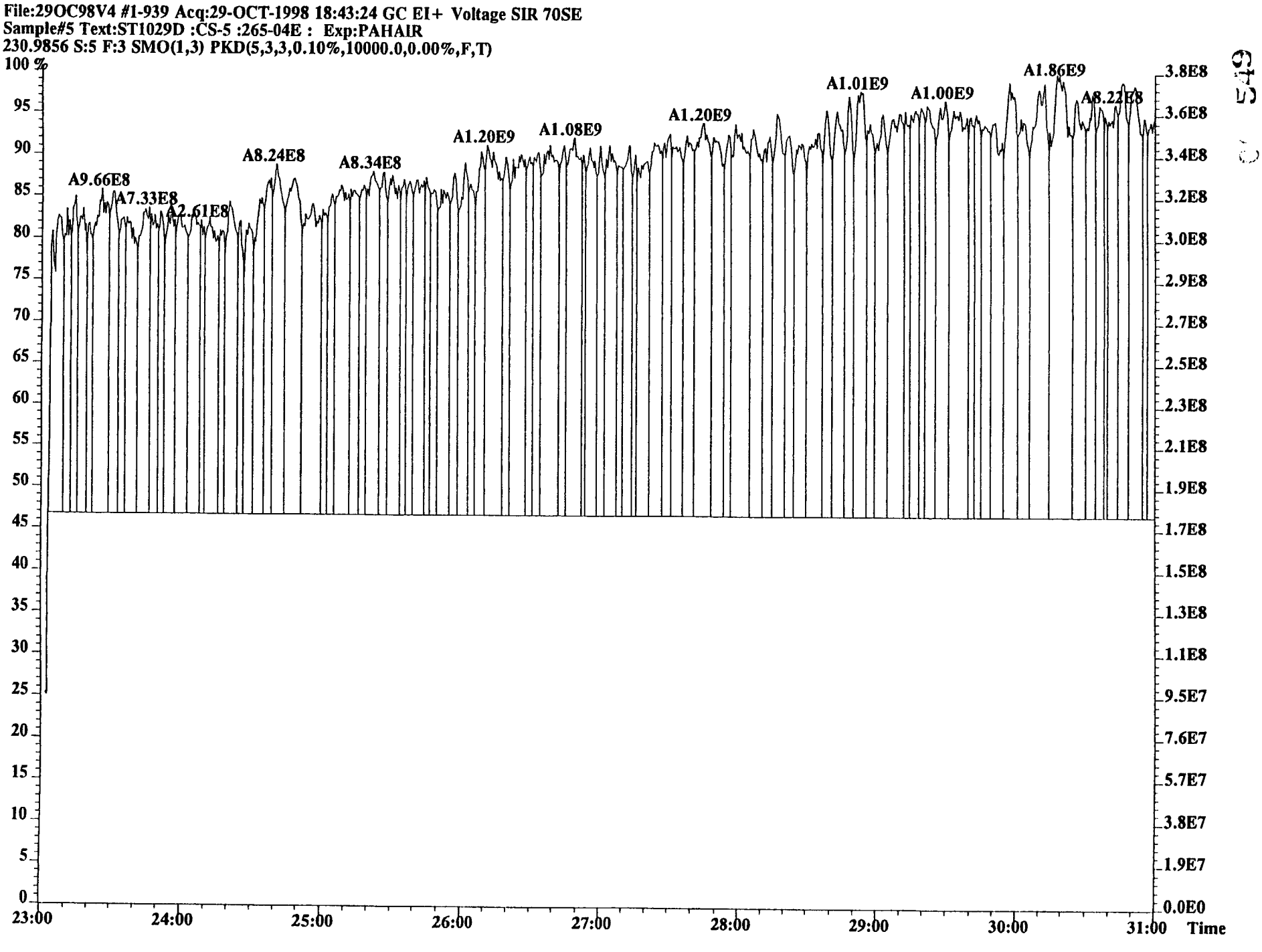


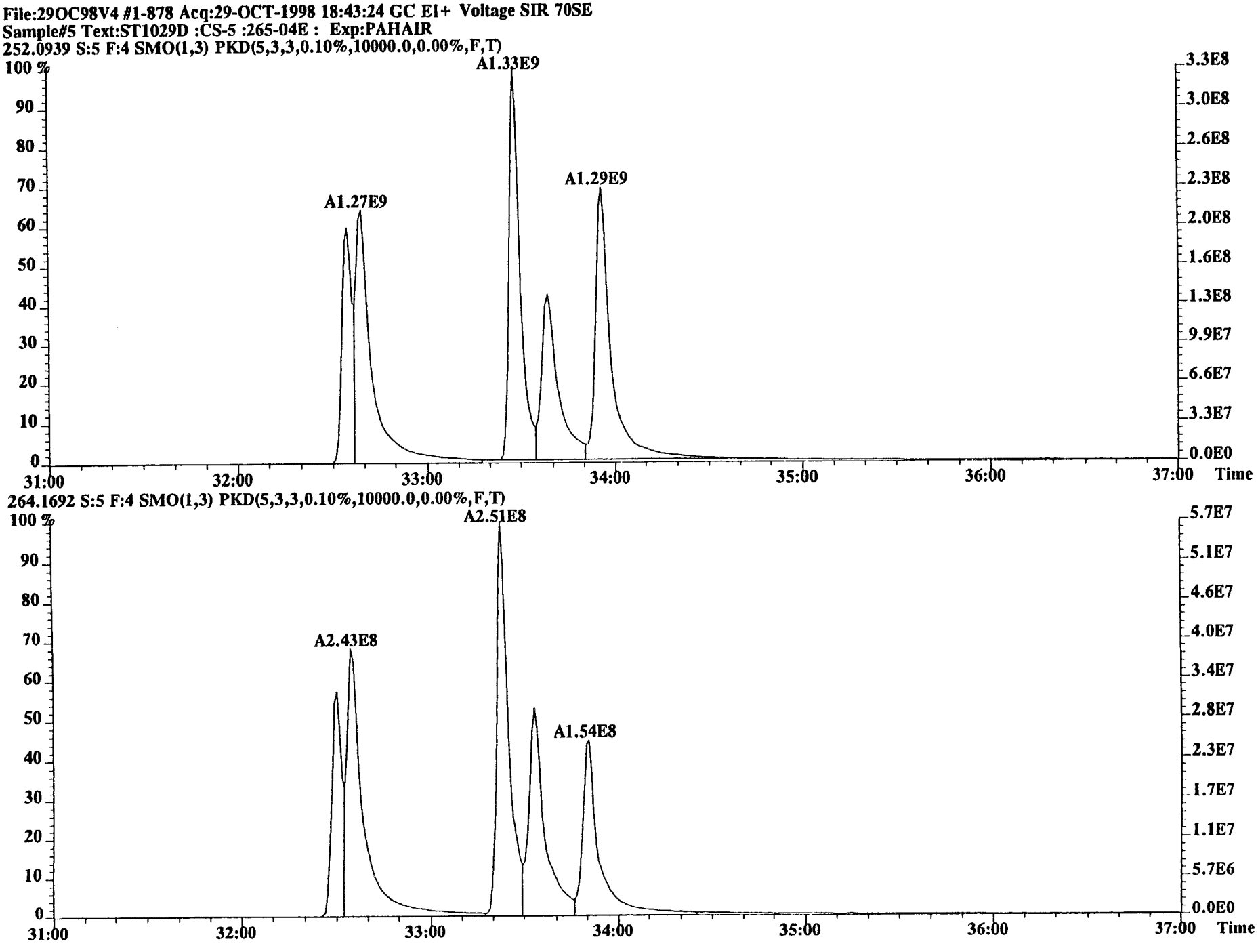
File:29OC98V4 #1-939 Acq:29-OCT-1998 18:43:24 GC EI+ Voltage SIR 70SE
Sample#5 Text:ST1029D :CS-5 :265-04E : Exp:PAHAIR
228.0939 S:5 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



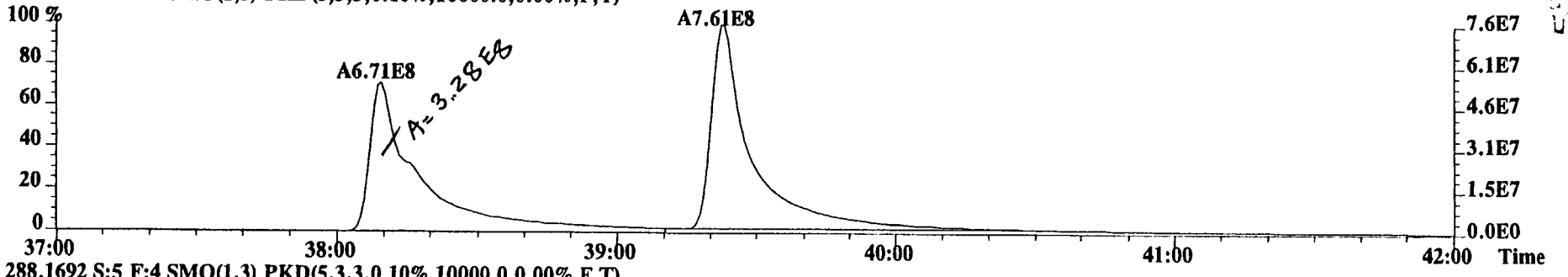
240.1692 S:5 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



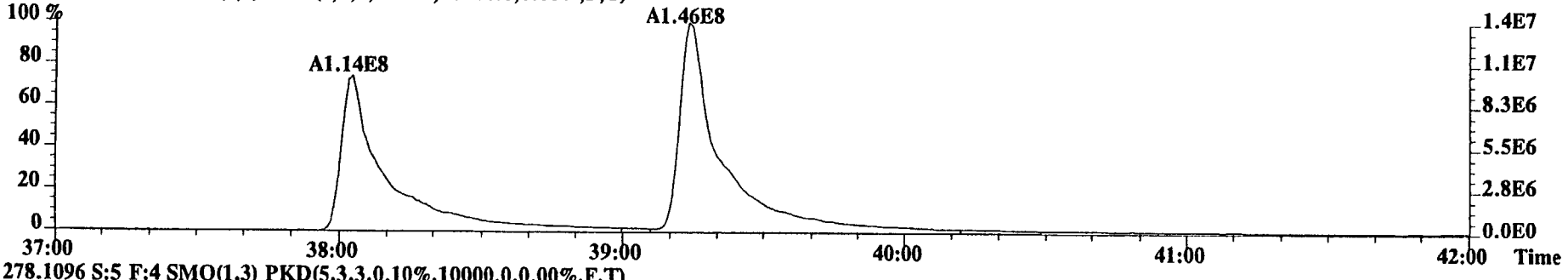

File:29OC98V4 #1-939 Acq:29-OCT-1998 18:43:24 GC EI+ Voltage SIR 70SE
Sample#5 Text:ST1029D :CS-5 :265-04E : Exp:PAHAIR
230.9856 S:5 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A9.66E8
A7.33E8
A2.61E8
A8.24E8
A8.34E8
A1.20E9
A1.08E9
A1.20E9
A1.01E9
A1.00E9
A1.86E9
A8.22E8
3.8E8
3.6E8
3.4E8
3.2E8
3.0E8
2.9E8
2.7E8
2.5E8
2.3E8
2.1E8
1.9E8
1.7E8
1.5E8
1.3E8
1.1E8
9.5E7
7.6E7
5.7E7
3.8E7
1.9E7
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time


File:29OC98V4 #1-878 Acq:29-OCT-1998 18:43:24 GC EI+ Voltage SIR 70SE
Sample#5 Text:ST1029D :CS-5 :265-04E : Exp:PAHAIR
252.0939 S:5 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.33E9
A1.27E9
A1.29E9
100 %
90
80
70
60
50
40
30
20
10
0
3.3E8
3.0E8
2.6E8
2.3E8
2.0E8
1.6E8
1.3E8
9.9E7
6.6E7
3.3E7
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
Time
264.1692 S:5 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.51E8
A2.43E8
A1.54E8
100 %
90
80
70
60
50
40
30
20
10
0
5.7E7
5.1E7
4.6E7
4.0E7
3.4E7
2.8E7
2.3E7
1.7E7
1.1E7
5.7E6
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
Time

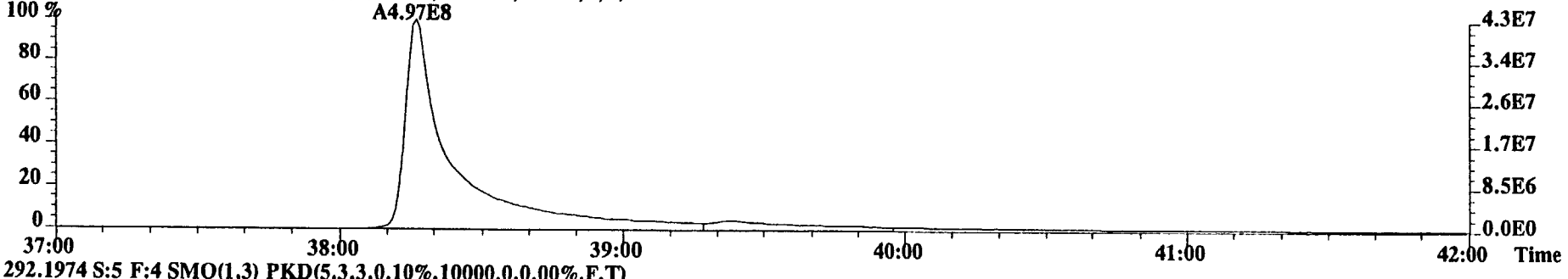
File:29OC98V4 #1-878 Acq:29-OCT-1998 18:43:24 GC EI+ Voltage SIR 70SE
Sample#5 Text:ST1029D :CS-5 :265-04E : Exp:PAHAIR
276.0939 S:5 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



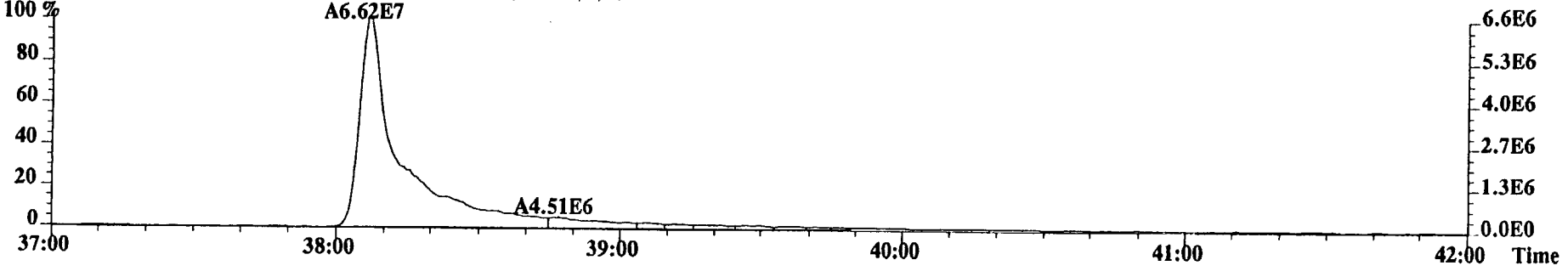
288.1692 S:5 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



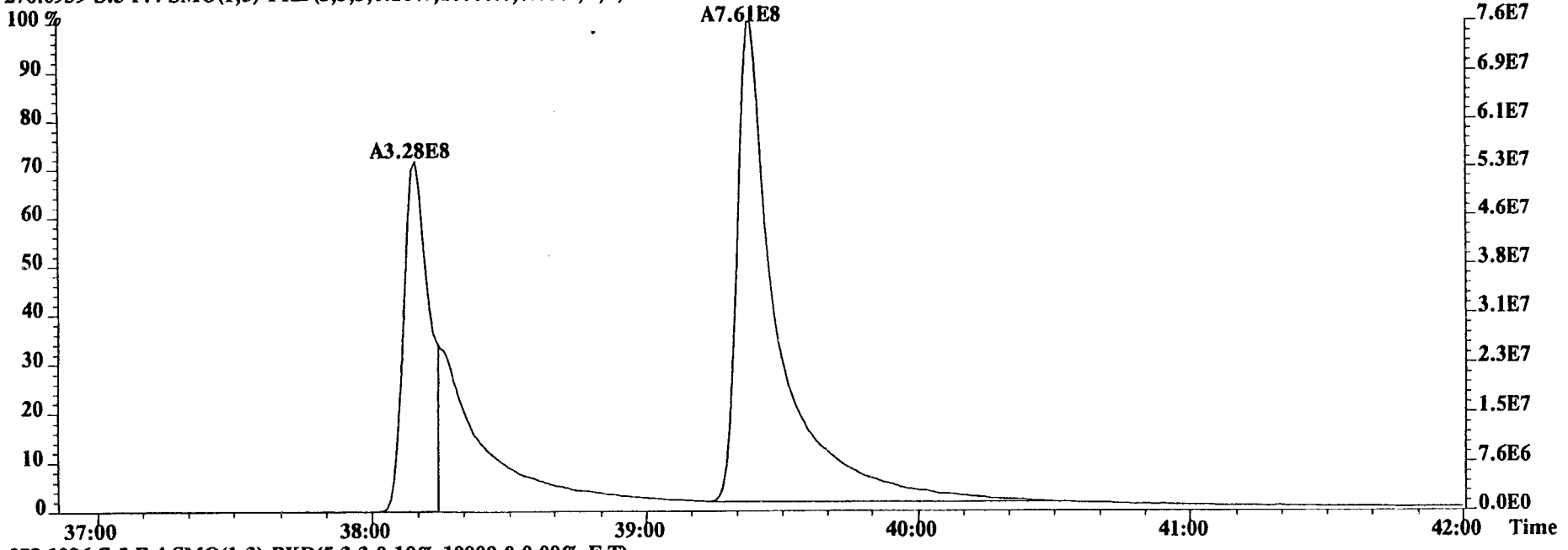
278.1096 S:5 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



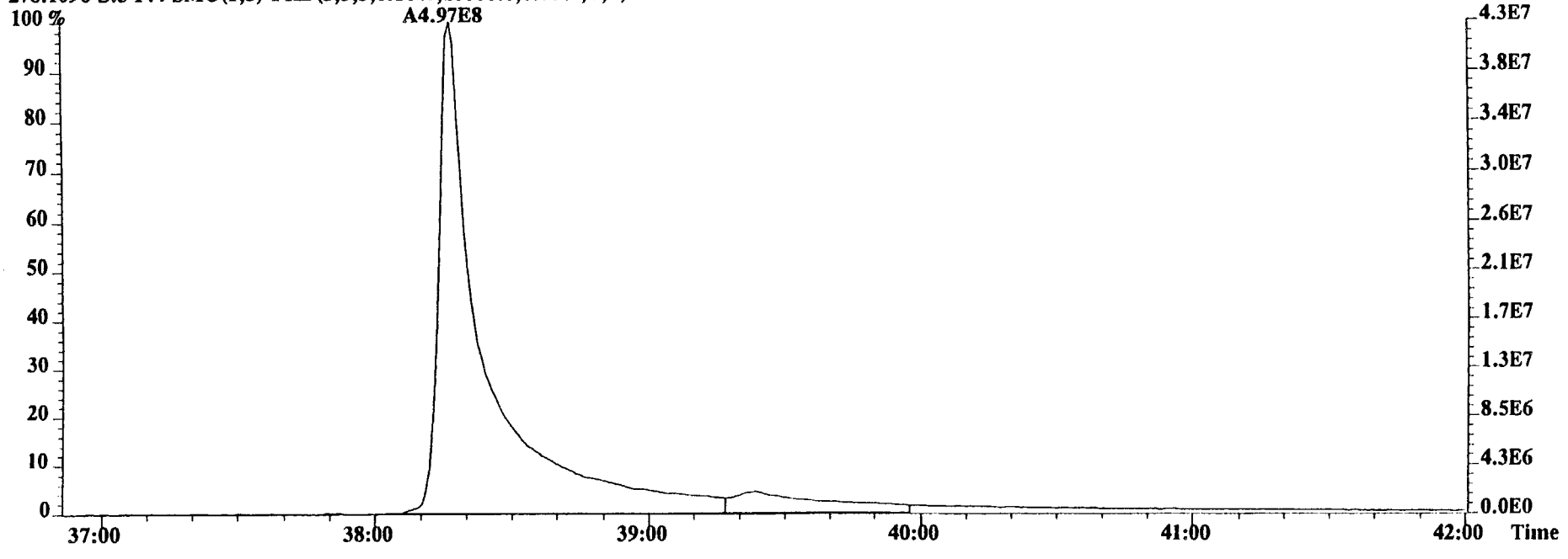
292.1974 S:5 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

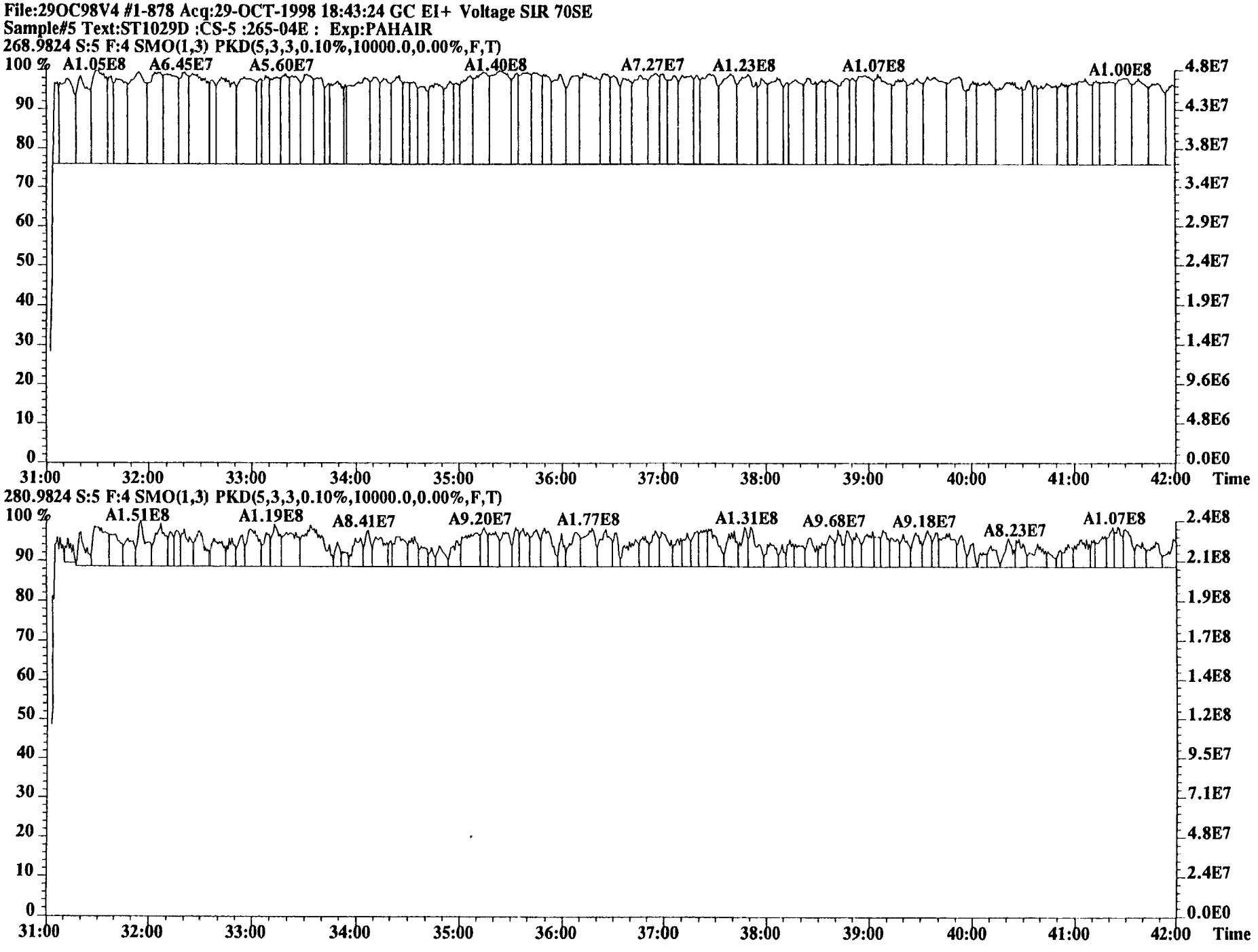


File:29OC98V4 #1-878 Acq:29-OCT-1998 18:43:24 GC EI+ Voltage SIR 70SE
Sample#5 Text:ST1029D :CS-5 :265-04E : Exp:PAHAIR
276.0939 S:5 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



278.1096 S:5 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)




File:29OC98V4 #1-878 Acq:29-OCT-1998 18:43:24 GC EI+ Voltage SIR 70SE
Sample#5 Text:ST1029D :CS-5 :265-04E : Exp:PAHAIR
268.9824 S:5 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.05E8
A6.45E7
A5.60E7
A1.40E8
A7.27E7
A1.23E8
A1.07E8
A1.00E8
4.8E7
4.3E7
3.8E7
3.4E7
2.9E7
2.4E7
1.9E7
1.4E7
9.6E6
4.8E6
0.0E0
90
80
70
60
50
40
30
20
10
0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time
280.9824 S:5 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.51E8
A1.19E8
A8.41E7
A9.20E7
A1.77E8
A1.31E8
A9.68E7
A9.18E7
A8.23E7
A1.07E8
2.4E8
2.1E8
1.9E8
1.7E8
1.4E8
1.2E8
9.5E7
7.1E7
4.8E7
2.4E7
0.0E0
90
80
70
60
50
40
30
20
10
0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time

Continuing Calibration

QUANTERRA INCORPORATED
West Sacramento

Daily Standard Checklist
Dioxin/Furan High Res

STD ID ST1029E **Method ID** 429-Air **Column ID** DB-5 **Instr ID** VG-4

Standard Solution 956-64 **Prepared By** SMA **Prepared Date** 11-02-98

Analyzed By SMA/AM **Date Analyzed** 10-29-98

Reviewed By Jeri Stone **Date Reviewed** 11-3-98

ANALYSIS OF DAILY STANDARD	INITIATED	REVIEWED
Standard, CPSM, and solvent blank present?	✓/NA	✓/NA
Copy of Instrument logfile present?	✓	✓
CPSM blow up and peak profile present?	NA/✓	NA/✓
Curve summary present?	✓	✓
Summary of 1613A criteria present?	NA	NA
Daily standard within method specified limits*?	*	①
Daily ion abundance ratios within limits?	NA	NA
CPSM valley < 25%?	NA	NA
~~CPSM~~ window correct? JS 11/3/98	✓	✓
Samples analyzed within 12 hrs of daily standard?	✓	✓

COMMENTS:

① The RRF of d8-Naphthalene is high. However, some of the associated samples are saturated with native naphthalene which need dilution and that data can be used. Also those samples which have high d8-Naphthalene IS recovery will be reinjected.

No cpsm in PAH's analysis

~~STD has been processed twice - will be used appropriately depending on which RS's are to be used in sample analysis.~~ JS 11/3/98

* For NCASI 551, Control Limit (CL) = +/- 20% from curve RRFs for all analytes.
For Method 8290, CL = +/- 20% from curve RRFs for native analytes, CL = +/- 30% from curve RRFs for labeled compounds.
For Method 1613A, see 3rd Revision to Method 1613 Performance Specifications, Table 7.

02-NOV-1998 08:15:11 AM Dioxin Furan ConCal RESULTS

ass Spec : VG-4 Results : 29OC98V4071.RES : PAHAIRCAL3.TRG
GC Column : DB-5 Date analyzed : 29-OCT-98
Data file : 29OC98V4 ST1029E :CS-3 :956-64 : : Ex
eight : 1

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg		% Dev
d10-2-Methylnaphthalene	67809400	1.00	Y	12: 29	Y	0.00	100.00		
d8-Naphthalene	226452000	1.00	Y	10: 14	Y	3.34	100.00		49
Naphthalene	283054000	1.00	Y	10: 17	Y	1.25	100.00		2
2-Methylnaphthalene	98533400	1.00	Y	12: 36	Y	0.44	100.00		-22
d8-Acenaphthylene	67166000	1.00	Y	15: 29	Y	0.99	100.00		-18
Acenaphthylene	69855400	1.00	Y	15: 32	Y	1.04	100.00		10
d10-Acenaphthene	35367200	1.00	Y	16: 3	Y	0.52	100.00		-30
Acenaphthene	46600000	1.00	Y	16: 8	Y	1.32	100.00		6
d10-Anthracene	88742800	1.00	Y	20: 56	Y	0.00	100.00		
d10-Fluorene	116294400	1.00	Y	17: 43	Y	1.31	100.00		-8
Fluorene	157910000	1.00	Y	17: 48	Y	1.36	100.00		17
d10-Phenanthrene	240408000	1.00	Y	20: 47	Y	2.71	100.00		-4
Phenanthrene	187689600	1.00	Y	20: 51	Y	0.78	100.00		-13
Anthracene	178902400	1.00	Y	21: 0	Y	0.74	100.00		-7
d14-Terphenyl	157032000	1.00	Y	26: 1	Y	-1.00	100.00		
d10-Fluoranthene	252590000	1.00	Y	24: 37	Y	1.61	100.00		14
Fluoranthene	233216000	1.00	Y	24: 41	Y	0.92	100.00		-17
d10-Pyrene	273298000	1.00	Y	25: 18	Y	1.74	100.00		15
Pyrene	255434000	1.00	Y	25: 22	Y	0.93	100.00		-22
d12-Benzo(a)anthracene	149476600	1.00	Y	29: 9	Y	0.95	100.00		6
Benzo(a)anthracene	180687200	1.00	Y	29: 13	Y	1.21	100.00		0
d12-Chrysene	234240000	1.00	Y	29: 16	Y	1.49	100.00		17
Chrysene	267286000	1.00	Y	29: 21	Y	1.14	100.00		5
d12-Benzo(e)pyrene	478608000	1.00	Y	33: 23	Y	1.00	100.00		
d12-Benzo(b)fluoranthene	211046000	1.00	Y	32: 30	Y	0.44	100.00		-3
Benzo(b)fluoranthene	216280000	1.00	Y	32: 34	Y	1.02	100.00		-12
d12-Benzo(k)fluoranthene	444140000	1.00	Y	32: 35	Y	0.93	100.00		-2
Benzo(k)fluoranthene	459304000	1.00	Y	32: 39	Y	1.03	100.00		-11
d12-Benzo(a)pyrene	313348000	1.00	Y	33: 34	Y	0.65	100.00		-3
Benzo(e)pyrene	441892000	1.00	Y	33: 28	Y	1.41	100.00		-14
Benzo(a)pyrene	299770000	1.00	Y	33: 38	Y	0.96	100.00		-11
d12-Perylene	303216000	1.00	Y	33: 50	Y	0.63	100.00		1
Perylene	473068000	1.00	Y	33: 56	Y	1.56	100.00		-9
d12-Indeno(123-cd)pyrene	209746000	1.00	Y	38: 3	Y	0.44	100.00		-1
Indeno(123-cd)pyrene	133400000	1.00	Y	38: 10	Y	0.64	100.00		2
d14-Dibenz(ah)anthracene	95717400	1.00	Y	38: 7	Y	0.20	100.00		-19
Dibenz(ah)anthracene	174180200	1.00	Y	38: 17	Y	1.82	100.00		30
d12-Benzo(ghi)perylene	257774000	1.00	Y	39: 15	Y	0.54	100.00		-7
Benzo(ghi)perylene	331102000	1.00	Y	39: 23	Y	1.28	100.00		26
d10-Fluorene	116294400	1.00	Y	17: 43	Y	0.24	100.00		
13C-Fluorene	94089400	1.00	Y	17: 48	Y	0.81	100.00		

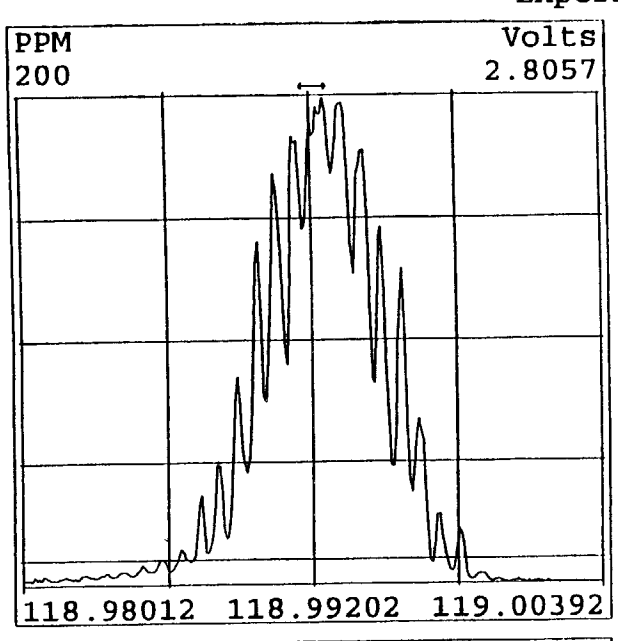
956

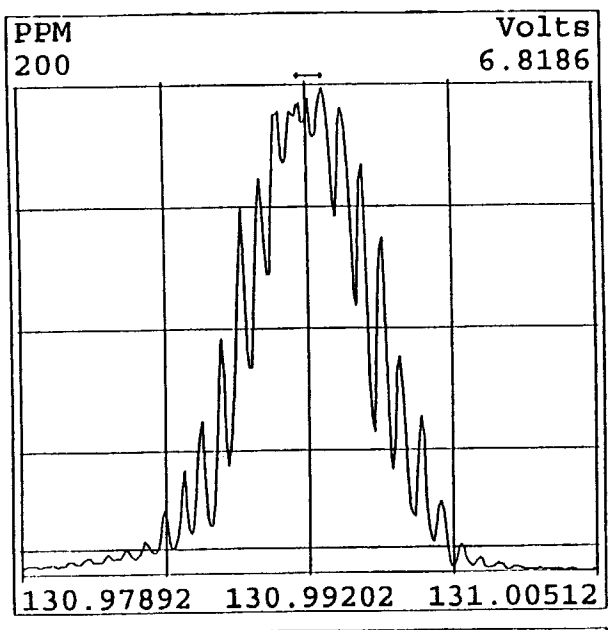
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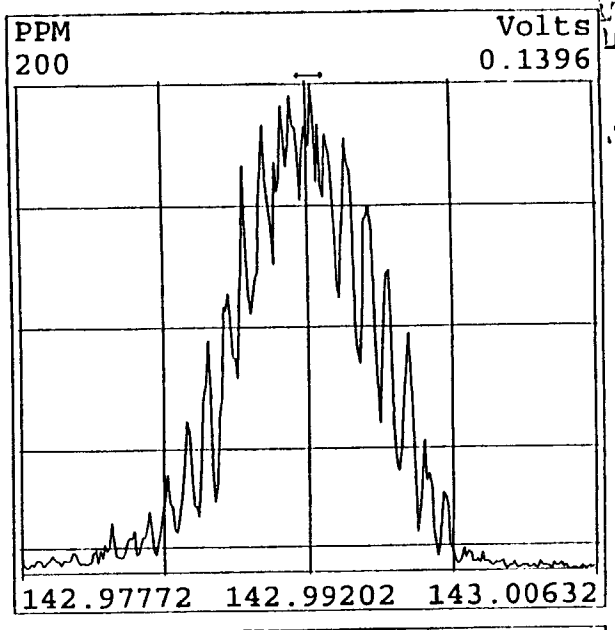
FILE	SAMP No. (1)	LAB. SAMP No	CUSTOMER ID	CLEAN UP 1 (SDS)	CLEAN UP 2 (D2)	TYPE (1)	CONCn.
29OC98V4	1	ST1029	CS-1	265-04A			1
29OC98V4	2	ST1029A	CS-2	265-04B			1
29OC98V4	3	ST1029B	CS-3	956-64			1
29OC98V4	4	ST1029C	CS-4	265-04D			1
29OC98V4	5	ST1029D	CS-5	265-04E			1
29OC98V4	6	SB1029A	Solvent Blank	C-8			1
29OC98V4	7	ST1029E	CS-3	956-64			1
29OC98V4	8	SB1029B	Solvent Blank	C-8			1
29OC98V4	9	302050-1MB	METHOD BLANK	AIR	PAH	VSE-25	0.333
29OC98V4	10	302050-1LC	LCS				0.333
29OC98V4	11	302050-1BA	METHOD BLANK				0.333
29OC98V4	12	302050-1LA	LCS				0.333
29OC98V4	13	302050-2	CLXTP				0.333
29OC98V4	14	302050-4	CLXTR				0.333
29OC98V4	15	302050-6	CLXTW				0.333
29OC98V4	16	302050-8	CLXVO				0.333
29OC98V4	17	302050-1	CLXTM				0.333
29OC98V4	18	302050-3	CLXTQ				0.333
29OC98V4	19	302050-5	CLXTV				0.333
29OC98V4	20	302050-7	CLXTX				0.333
29OC98V4	21	301802-1	10X DIL.	AIR	PAH	VSE-26	0.50
29OC98V4	22	301802-2	10X DIL.				0.50
29OC98V4	23	301802-3	10X DIL.				0.50
29OC98V4	24	SB1029C	Solvent Blank	C-8			1
29OC98V4	25	ST1029F	CS-3	956-64			1
29OC98V4	26	SB1029D	Solvent Blank	C-8			1
29OC98V4	27	301802-1MB	METHOD BLANK	AIR	PAH	VSE-26	0.50
29OC98V4	28	301802-1LC	LCS				0.50
29OC98V4	29	301802-4	10X DIL.				0.50
29OC98V4	30	301802-5	10X DIL.				0.50
29OC98V4	31	301802-6	10X DIL.				0.50
29OC98V4	32	301802-7	10X DIL.				0.50
29OC98V4	33	301802-8	10X DIL.				0.50
29OC98V4	34	301802-9	10X DIL.				0.50
29OC98V4	35	301802-10	10X DIL.				0.50
29OC98V4	36	301802-11	10X DIL.				0.50
29OC98V4	37	301802-12	10X DIL.				0.50
29OC98V4	38	301802-13	10X DIL.				0.50
29OC98V4	39	301802-14	10X DIL.				0.50
29OC98V4	40	SB1029E	Solvent Blank	C-8			1
29OC98V4	41						
29OC98V4	42						
29OC98V4	43						
29OC98V4	44						
29OC98V4	45						
29OC98V4	46		SMA, AM 10-29-98				
29OC98V4	47						
29OC98V4	48						
29OC98V4	49						
29OC98V4	50						

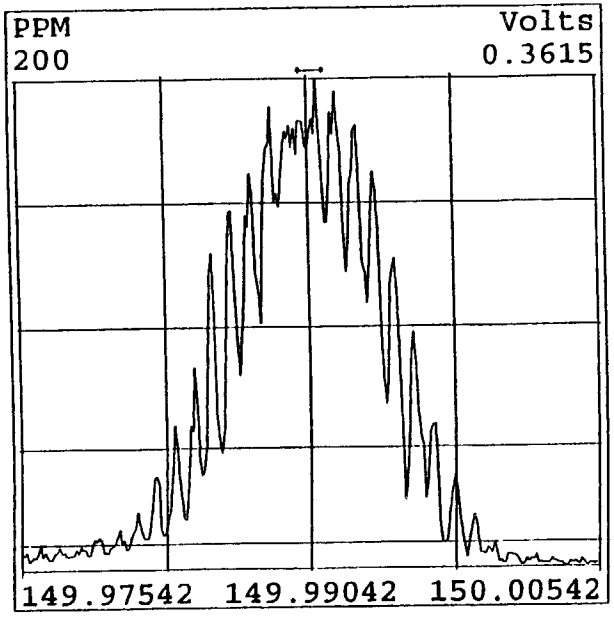
SMA 10-30-

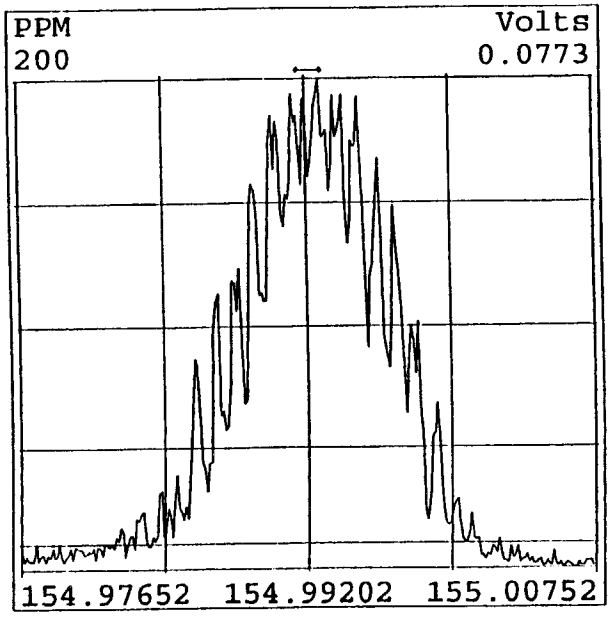
Peak Locate Examination:29-OCT-1998:15:23 File:29OC98V4
Experiment:PAHAIR Function:1 Reference:PFK

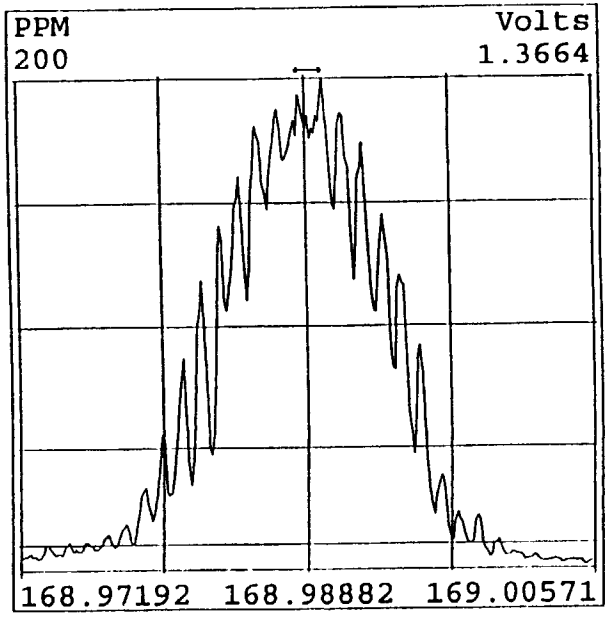




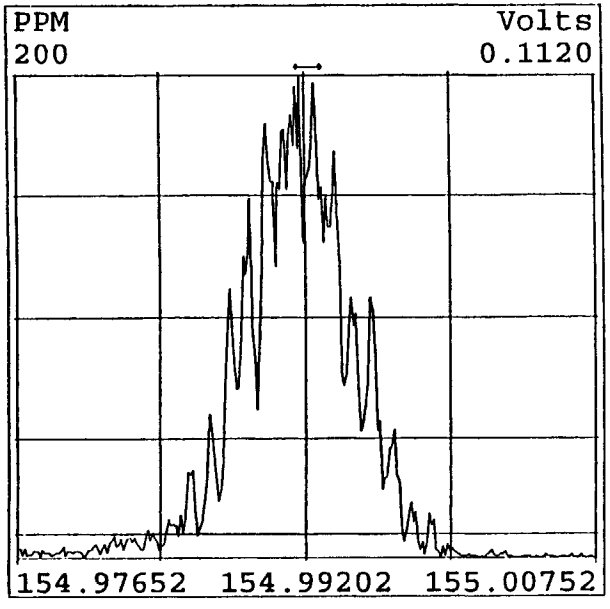


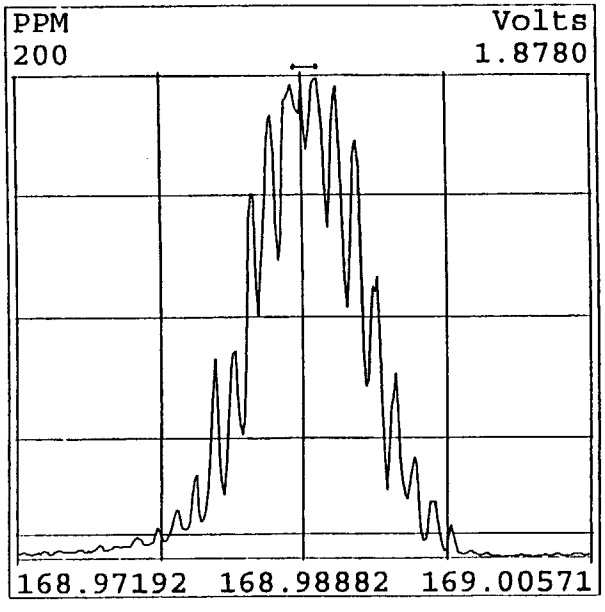


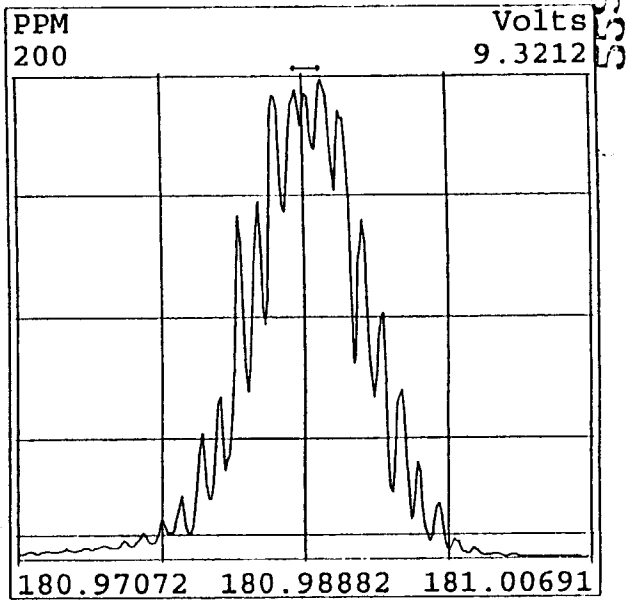


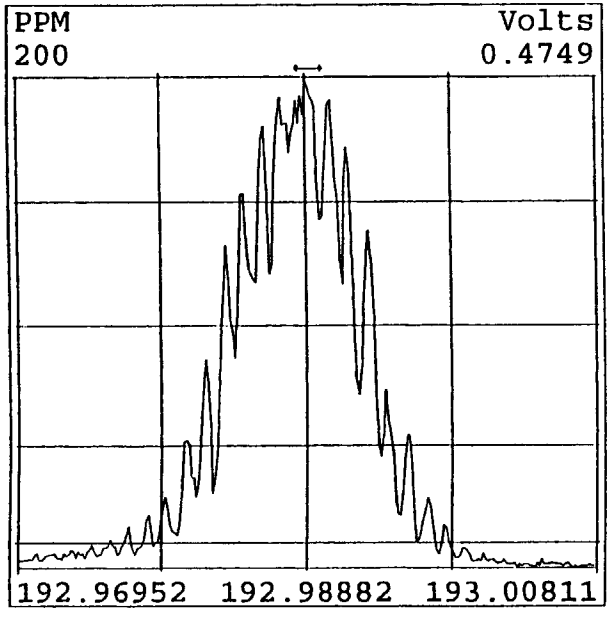


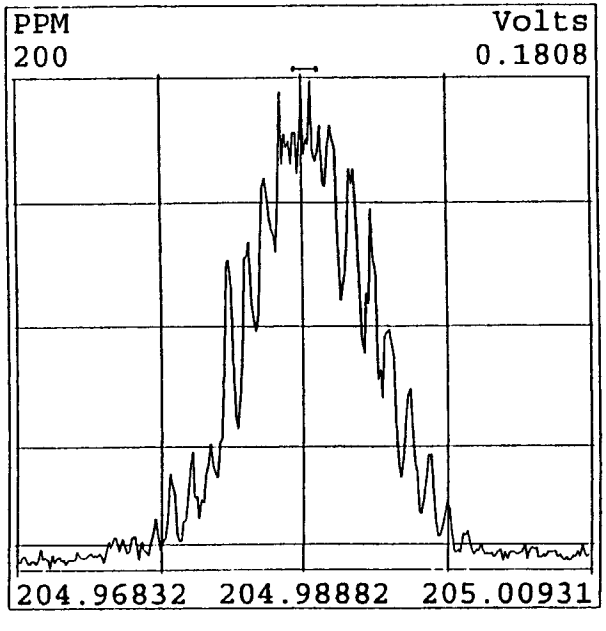
Peak Locate Examination:29-OCT-1998:15:23 File:29OC98V4
Experiment:PAHAIR Function:2 Reference:PFK



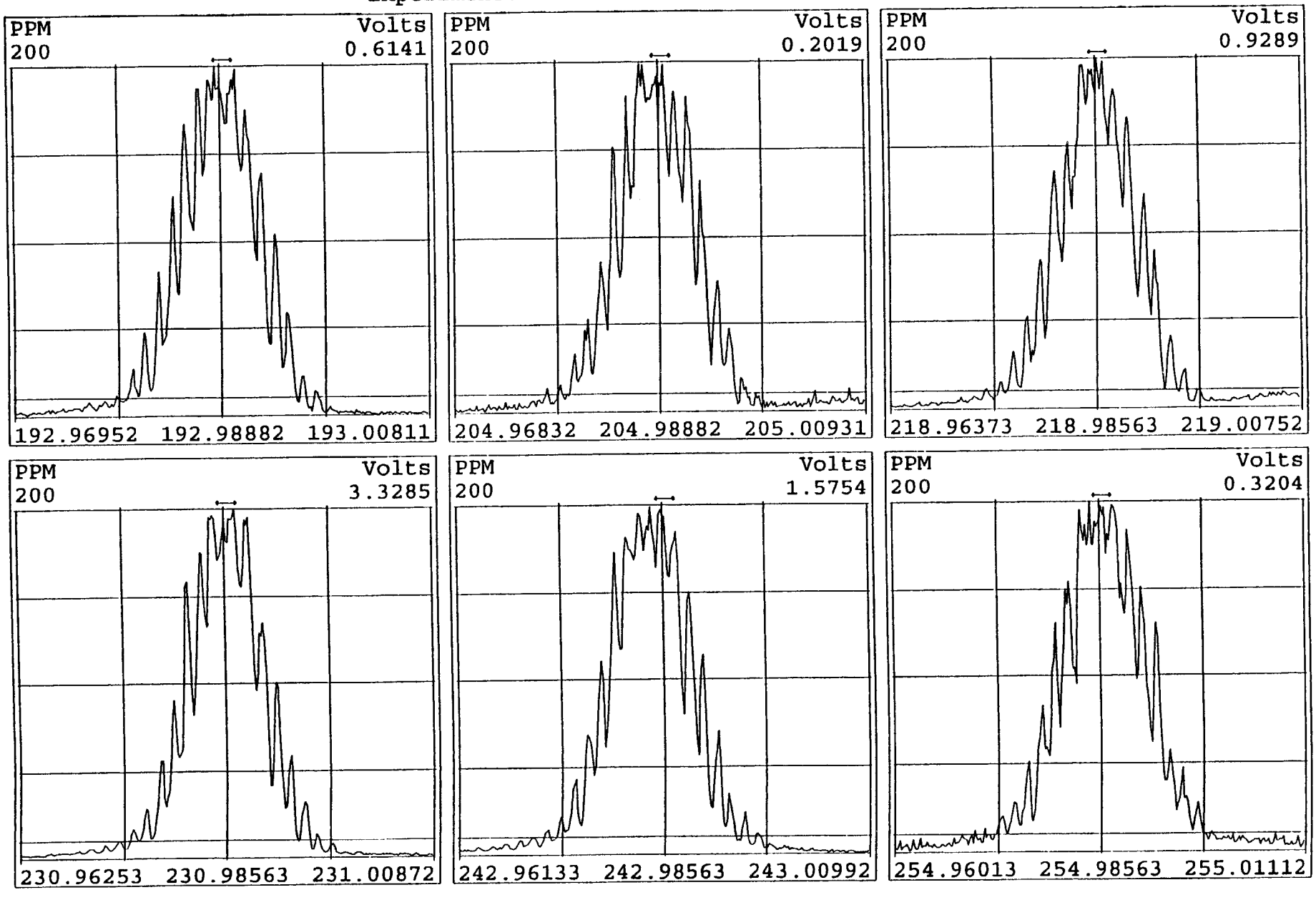




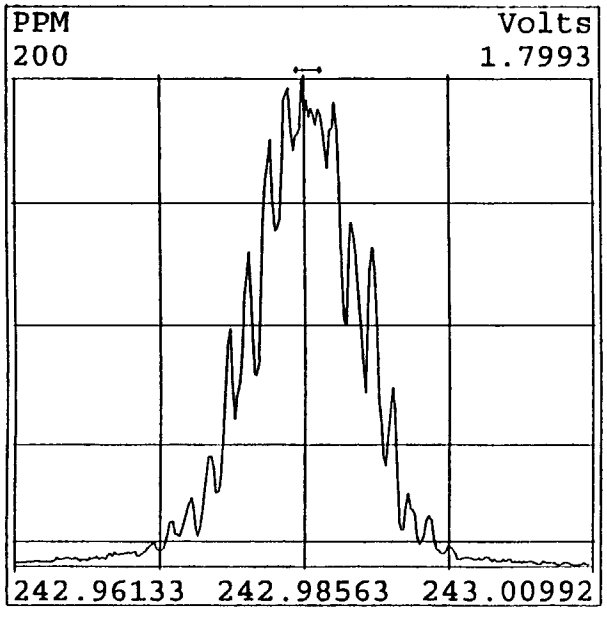


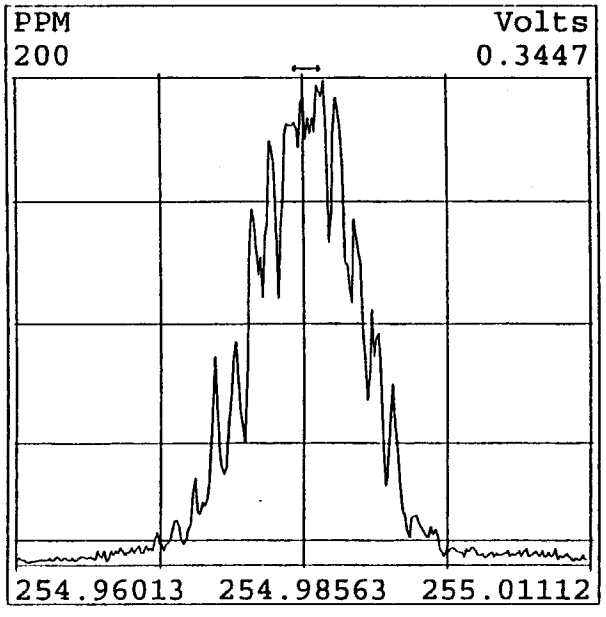


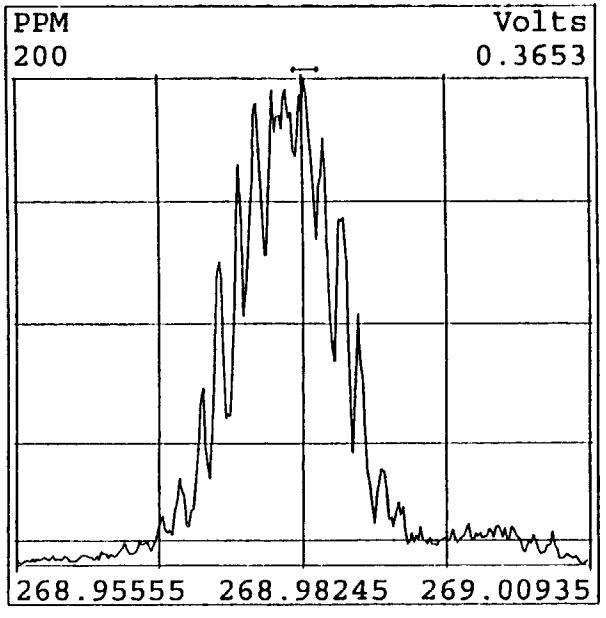
Peak Locate Examination:29-OCT-1998:15:24 File:29OC98V4
Experiment:PAHAIR Function:3 Reference:PFK

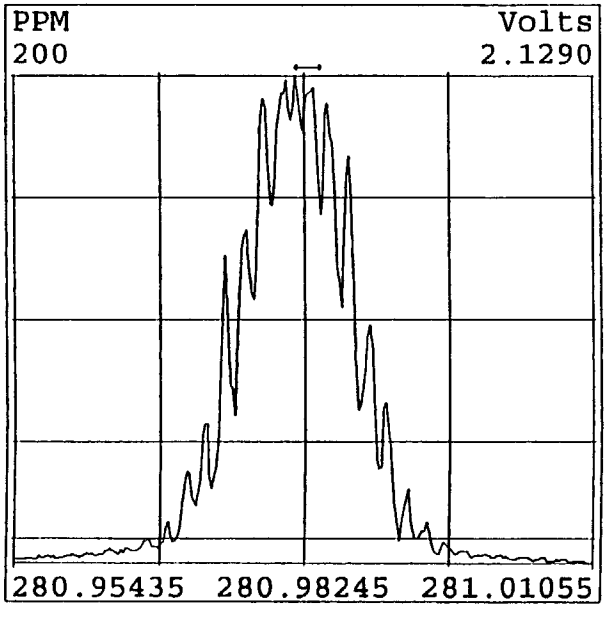


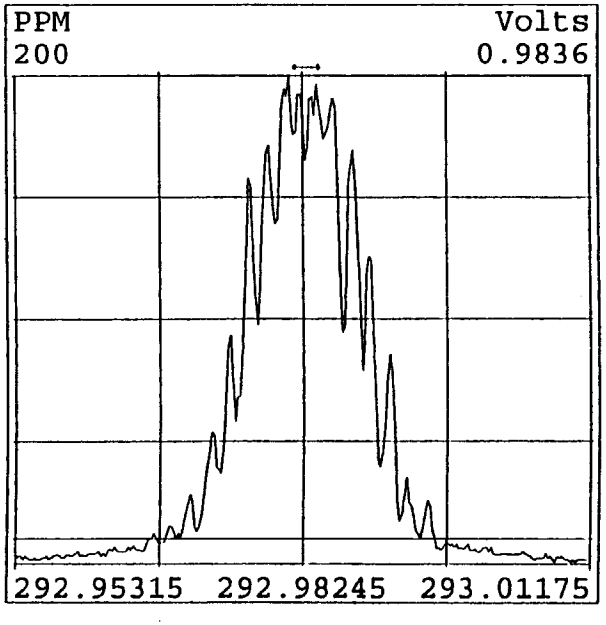
Peak Locate Examination:29-OCT-1998:15:26 File:29OC98V4
Experiment:PAHAIR Function:4 Reference:PFK











02-NOV-1998 08:06:49 AM

Dioxin Furan CALIBRATION TABLE

File name : PAHAIR102998V4.RRF
Date analyzed : 29-OCT-98

Mass Spec : VG-4
GC Column : DB-5
265-04A,B,D,E,956-64

Mult.: 350

INITIAL CALIBRATION CURVE

		Mean	S.D.	%RSD	1	2	3	4	5	6	7	8	9	10
d8-Naphthalene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				185.11	205.87	228.31	244.46	256.61					
	RRF	2.24	0.289	12.900	1.85	2.06	2.28	2.44	2.57					
Naphthalene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				13.76	61.93	113.47	231.43	609.70					
	RRF	1.23	0.094	7.707	1.38	1.24	1.13	1.16	1.22					
2-Methylnaphthalene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				6.91	29.85	51.39	97.93	255.67					
	RRF	0.56	0.084	14.909	0.69	0.60	0.51	0.49	0.51					
d8-Acenaphthylene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				131.95	128.38	114.60	122.45	109.50					
	RRF	1.21	0.093	7.696	1.32	1.28	1.15	1.22	1.10					
Acenaphthylene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				9.55	48.30	90.68	178.19	500.84					
	RRF	0.94	0.045	4.773	0.95	0.97	0.91	0.89	1.00					
d10-Acenaphthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				83.11	77.72	76.15	77.96	57.36					
	RRF	0.74	0.099	13.310	0.83	0.78	0.76	0.78	0.57					
Acenaphthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				10.98	62.63	151.76	215.88	641.50					
	RRF	1.25	0.177	14.178	1.10	1.25	1.52	1.08	1.28					
d10-Fluorene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				153.24	135.78	140.61	141.09	139.72					
	RRF	1.42	0.066	4.625	1.53	1.36	1.41	1.41	1.40					
Fluorene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				8.53	58.18	117.21	249.15	684.13					
	RRF	1.16	0.191	16.420	0.85	1.16	1.17	1.25	1.37					
d10-Phenanthrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				308.98	263.63	276.27	272.04	282.87					
	RRF	2.81	0.173	6.145	3.09	2.64	2.76	2.72	2.83					
Phenanthrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				9.70	46.13	81.87	168.14	460.23					
	RRF	0.89	0.063	7.028	0.97	0.92	0.82	0.84	0.92					
Anthracene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				8.13	42.20	77.06	153.96	402.42					
	RRF	0.80	0.031	3.901	0.81	0.84	0.77	0.77	0.80					
d10-Fluoranthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				118.94	136.07	145.72	150.34	154.31					
	RRF	1.41	0.141	10.009	1.19	1.36	1.46	1.50	1.54					
Fluoranthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				14.14	55.12	99.77	200.49	521.18					
	RRF	1.11	0.174	15.653	1.41	1.10	1.00	1.00	1.04					
d10-Pyrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				129.03	143.24	158.81	161.45	166.55					
	RRF	1.52	0.154	10.160	1.29	1.43	1.59	1.61	1.67					
Pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				16.74	59.11	104.58	204.18	551.22					
	RRF	1.21	0.269	22.353	1.67	1.18	1.05	1.02	1.10					

Mass Spec : VG-4
GC Column : DB-5
265-04A,B,D,E,956-64

File name : PAHAIR102998V4.RRF
Date analyzed : 29-OCT-98

INITIAL CALIBRATION CURVE

Mult.: 350

		Mean	S.D.	%RSD	1	2	3	4	5	6	7	8	9	10
d12-Benzo(a)anthracene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				68.20	70.96	127.65	89.95	93.26					
	RRF	0.90	0.238	26.446	0.68	0.71	1.28	0.90	0.93					
Benzo(a)anthracene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				11.85	64.84	102.61	234.26	671.78					
	RRF	1.20	0.124	10.269	1.18	1.30	1.03	1.17	1.34					
d12-Chrysene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				109.94	119.85	127.65	136.79	145.35					
	RRF	1.28	0.139	10.855	1.10	1.20	1.28	1.37	1.45					
Chrysene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				10.44	56.47	102.61	215.75	571.04					
	RRF	1.08	0.051	4.716	1.04	1.13	1.03	1.08	1.14					
d12-Benzo(b)fluoranthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				41.05	45.84	49.22	45.10	45.72					
	RRF	0.45	0.029	6.414	0.41	0.46	0.49	0.45	0.46					
Benzo(b)fluoranthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				12.56	61.73	95.82	228.66	622.27					
	RRF	1.17	0.125	10.717	1.26	1.23	0.96	1.14	1.24					
d12-Benzo(k)fluoranthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				91.66	94.95	96.52	94.09	96.82					
	RRF	0.95	0.021	2.203	0.92	0.95	0.97	0.94	0.97					
Benzo(k)fluoranthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				12.71	63.16	119.14	210.18	522.11					
	RRF	1.16	0.111	9.525	1.27	1.26	1.19	1.05	1.04					
d12-Benzo(a)pyrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				65.24	66.86	69.56	67.87	68.82					
	RRF	0.68	0.017	2.504	0.65	0.67	0.70	0.68	0.69					
Benzo(e)pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				18.05	89.03	157.16	302.58	767.23					
	RRF	1.64	0.140	8.557	1.80	1.78	1.57	1.51	1.53					
Benzo(a)pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				11.71	60.46	102.44	200.46	476.32					
	RRF	1.07	0.112	10.437	1.17	1.21	1.02	1.00	0.95					
d12-Perylene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				64.89	58.55	68.21	62.00	61.45					
	RRF	0.63	0.037	5.829	0.65	0.59	0.68	0.62	0.61					
Perylene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				16.93	98.08	162.24	324.02	835.41					
	RRF	1.71	0.142	8.297	1.69	1.96	1.62	1.62	1.67					
d12-Indeno(123-cd)pyrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				44.86	44.54	44.08	43.39	45.40					
	RRF	0.44	0.008	1.722	0.45	0.45	0.44	0.43	0.45					
Indeno(123-cd)pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				5.85	35.13	60.26	127.89	287.53					
	RRF	0.62	0.052	8.352	0.59	0.70	0.60	0.64	0.58					
d14-Dibenz(ah)anthracene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				20.73	24.39	25.35	26.10	26.33					
	RRF	0.25	0.023	9.286	0.21	0.24	0.25	0.26	0.26					

02-NOV-1998 08:06:57 AM

Dioxin Furan CALIBRATION TABLE

Mass Spec : VG-4
GC Column : DB-5
265-04A,B,D,E,956-64

File name : PAHAIR102998V4.RRF
Date analyzed : 29-OCT-98

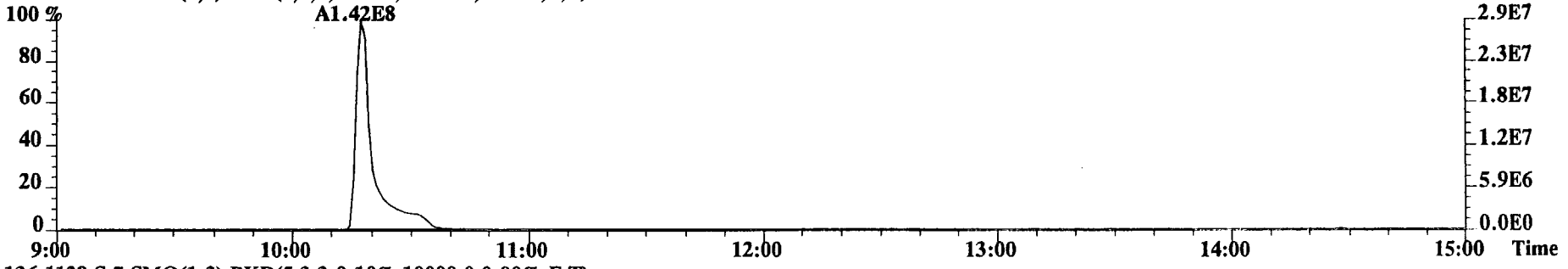
Mult.: 350

INITIAL CALIBRATION CURVE

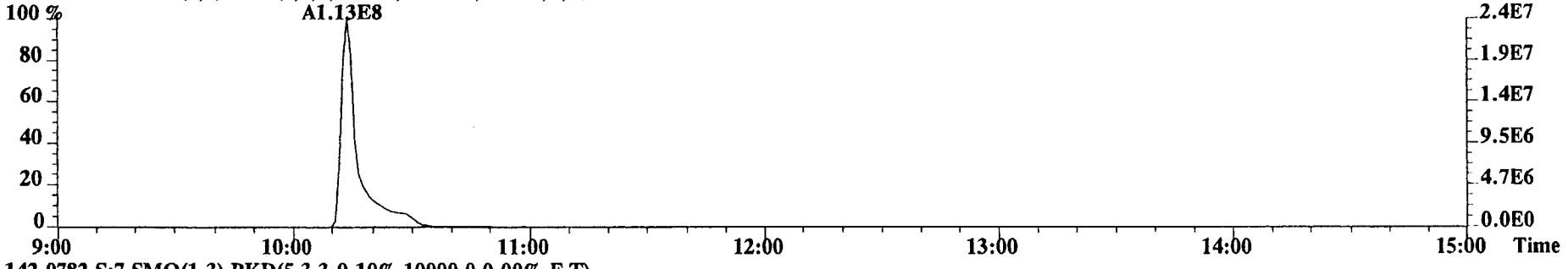
		Mean	S.D.	%RSD	1	2	3	4	5	6	7	8	9	10
Dibenz(ah)anthracene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				12.92	69.25	143.15	281.33	751.34					
	RRF	1.40	0.077	5.452	1.29	1.38	1.43	1.41	1.50					
d12-Benzo(ghi)perylene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				59.24	54.17	59.73	58.78	57.94					
	RRF	0.58	0.022	3.838	0.59	0.54	0.60	0.59	0.58					
Benzo(ghi)perylene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				8.58	51.44	109.18	211.25	522.58					
	RRF	1.02	0.091	8.984	0.86	1.03	1.09	1.06	1.05					
	Amount													
	RF				0	0	0	0	0					
	RRF	0	0	0										

564

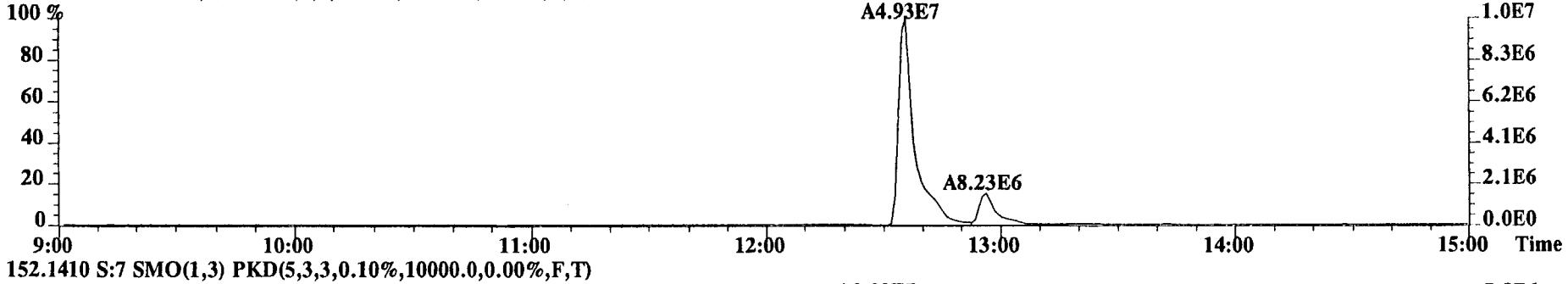
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Sample#7 Text:ST1029E :CS-3 :956-64 : : Exp:PAHAIR
128.0626 S:7 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



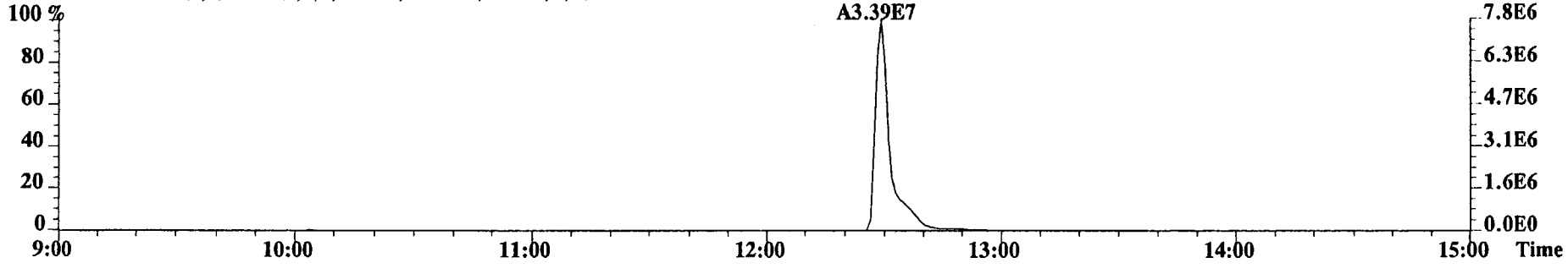
136.1128 S:7 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

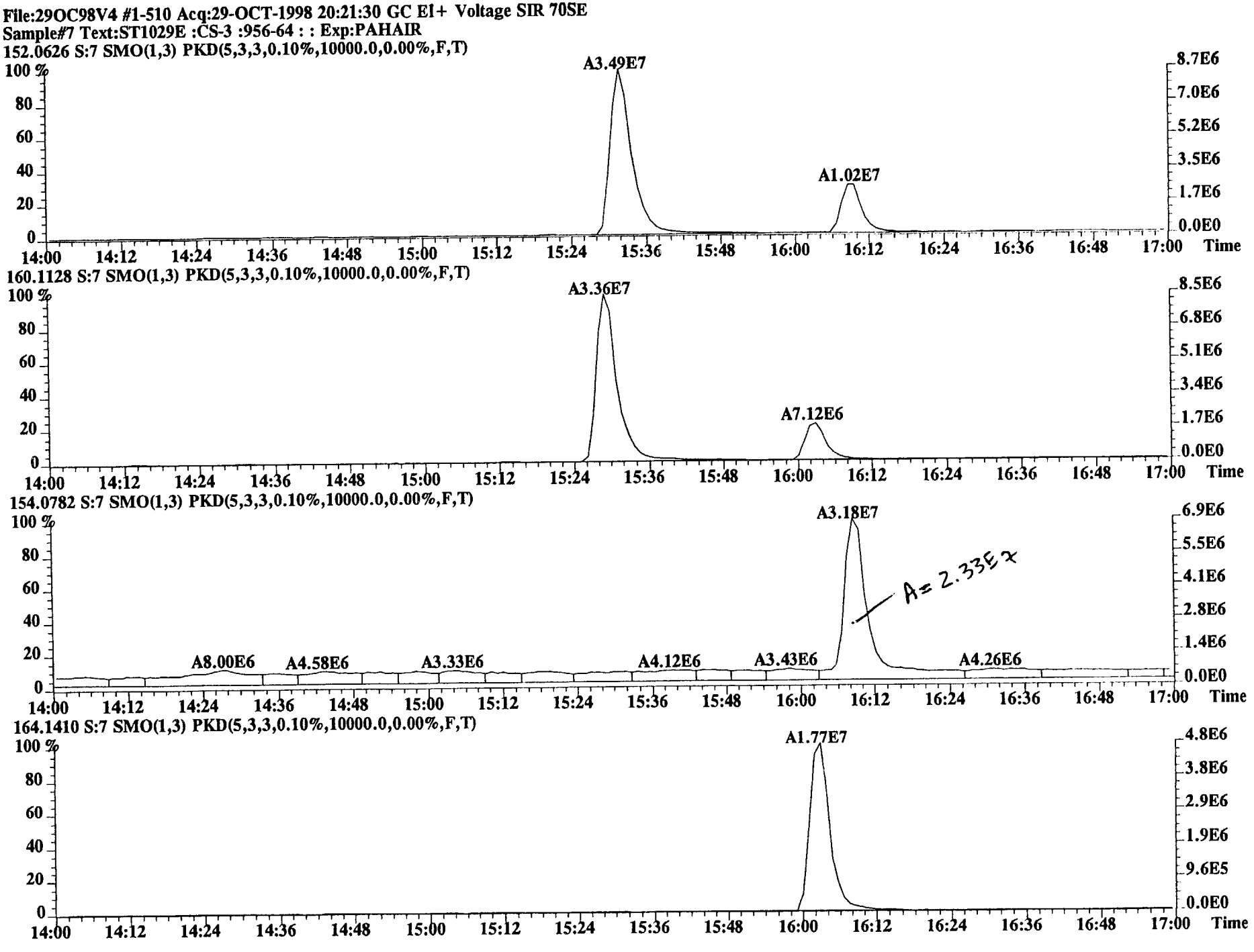


142.0782 S:7 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

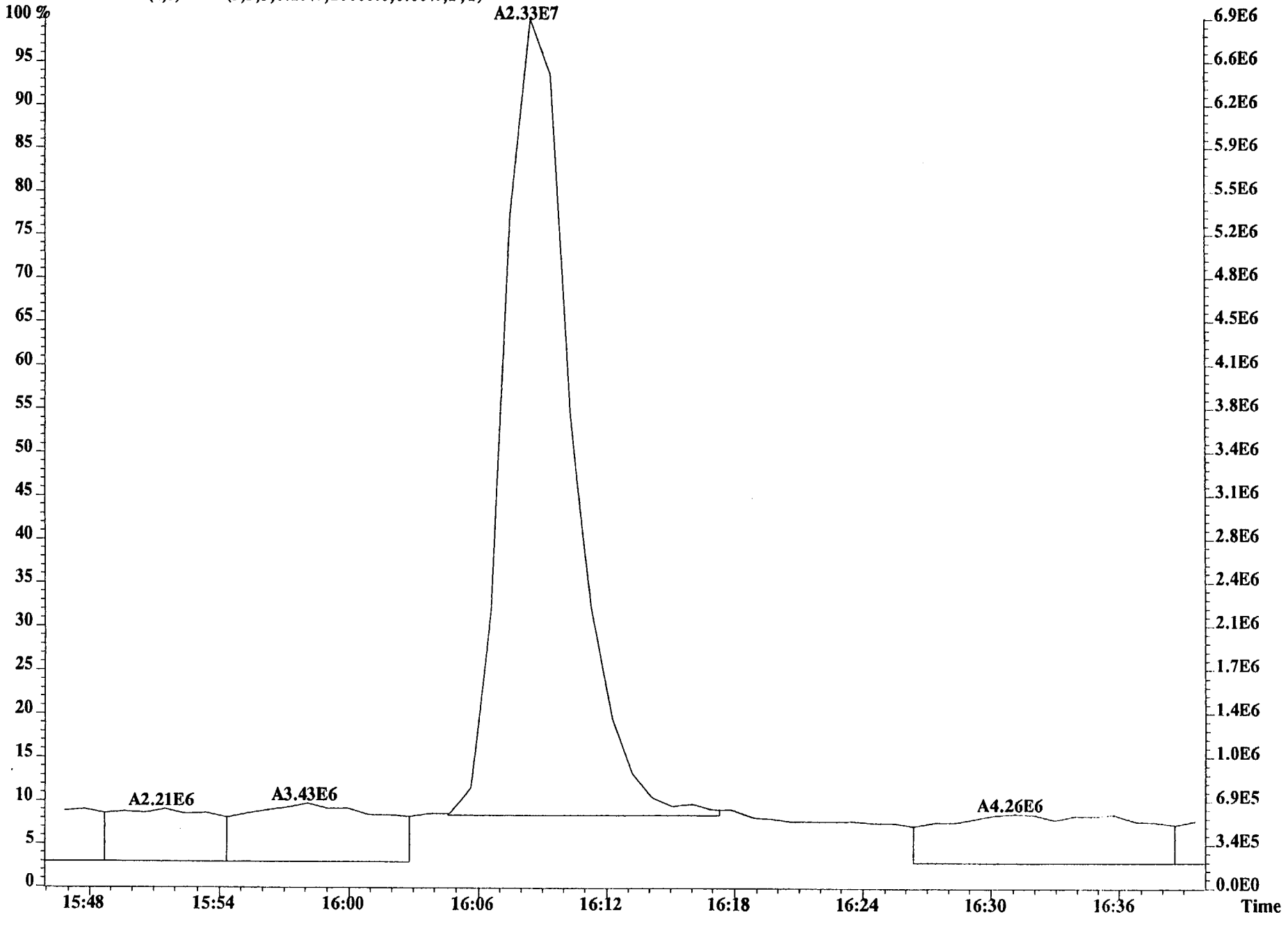


152.1410 S:7 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

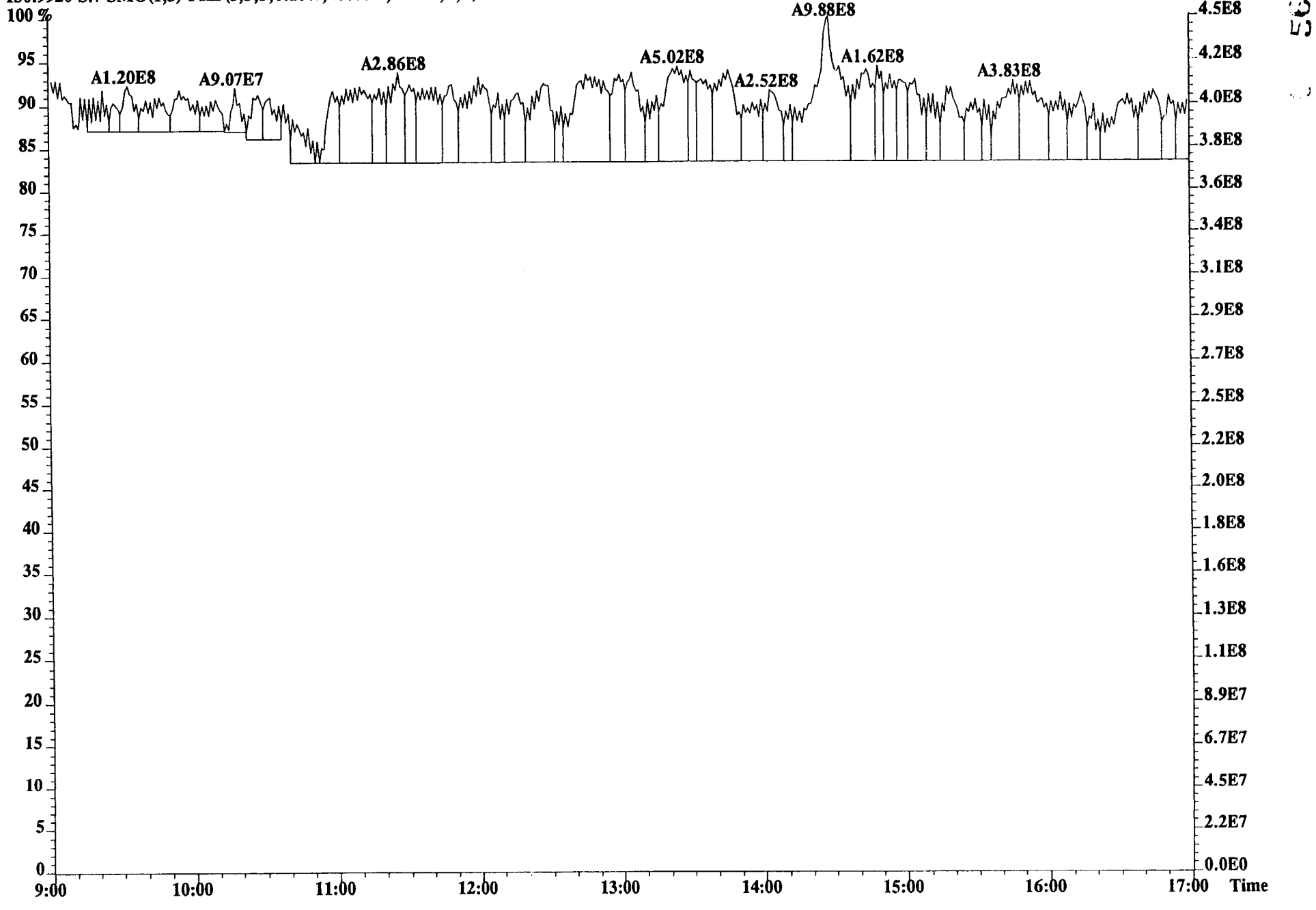



File:29OC98V4 #1-510 Acq:29-OCT-1998 20:21:30 GC EI+ Voltage SIR 70SE
Sample#7 Text:ST1029E :CS-3 :956-64 : : Exp:PAHAIR
152.0626 S:7 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.49E7
A1.02E7
160.1128 S:7 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.36E7
A7.12E6
154.0782 S:7 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.18E7
A= 2.33E7
A8.00E6
A4.58E6
A3.33E6
A4.12E6
A3.43E6
A4.26E6
164.1410 S:7 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.77E7
Time

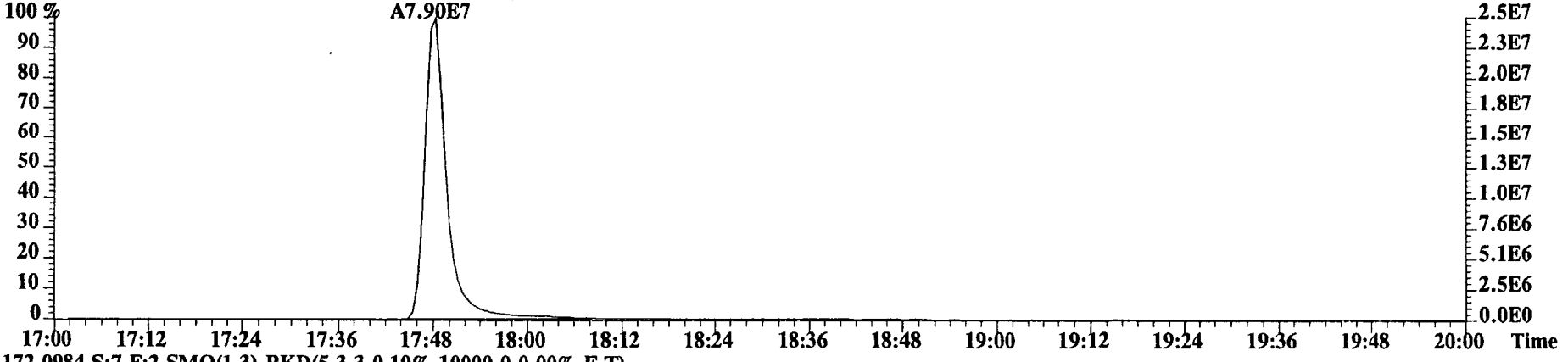
File:29OC98V4 #1-510 Acq:29-OCT-1998 20:21:30 GC EI+ Voltage SIR 70SE
Sample#7 Text:ST1029E :CS-3 :956-64 : : Exp:PAHAIR
154.0782 S:7 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



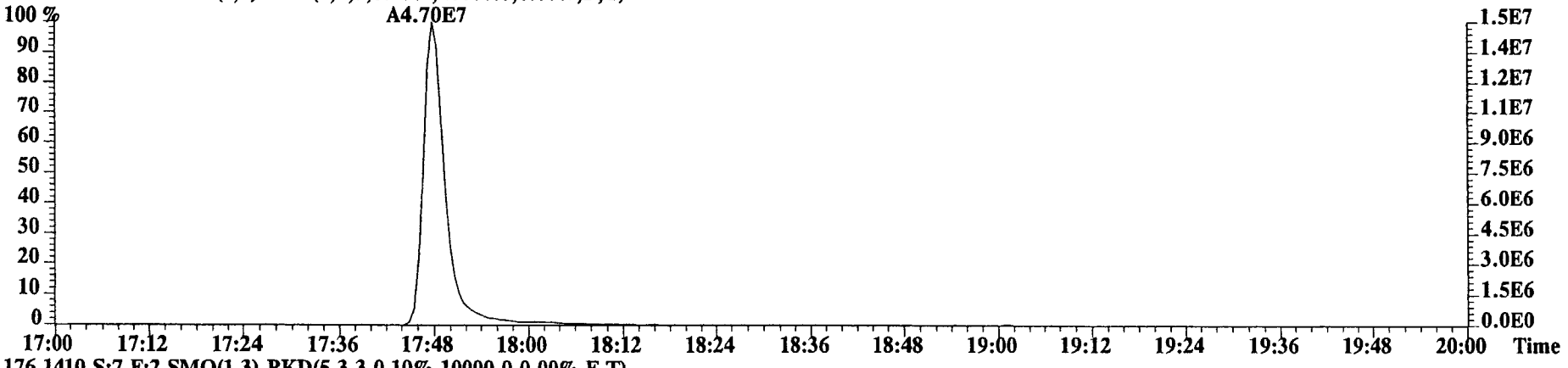
File:29OC98V4 #1-510 Acq:29-OCT-1998 20:21:30 GC EI+ Voltage SIR 70SE
Sample#7 Text:ST1029E :CS-3 :956-64 : : Exp:PAHAIR
130.9920 S:7 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



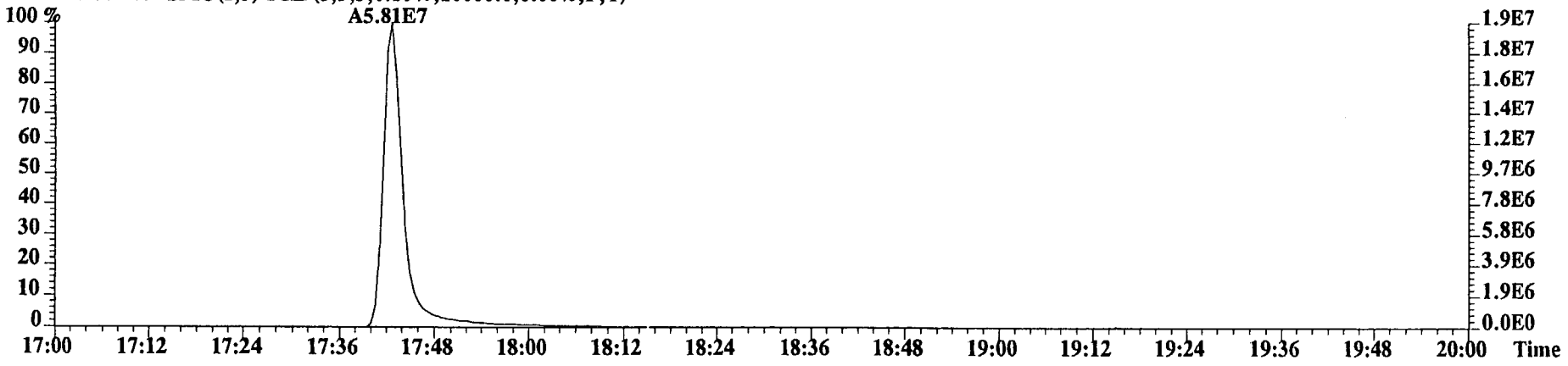
File:29OC98V4 #1-641 Acq:29-OCT-1998 20:21:30 GC EI+ Voltage SIR 70SE
Sample#7 Text:ST1029E :CS-3 :956-64 : : Exp:PAHAIR
166.0798 S:7 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



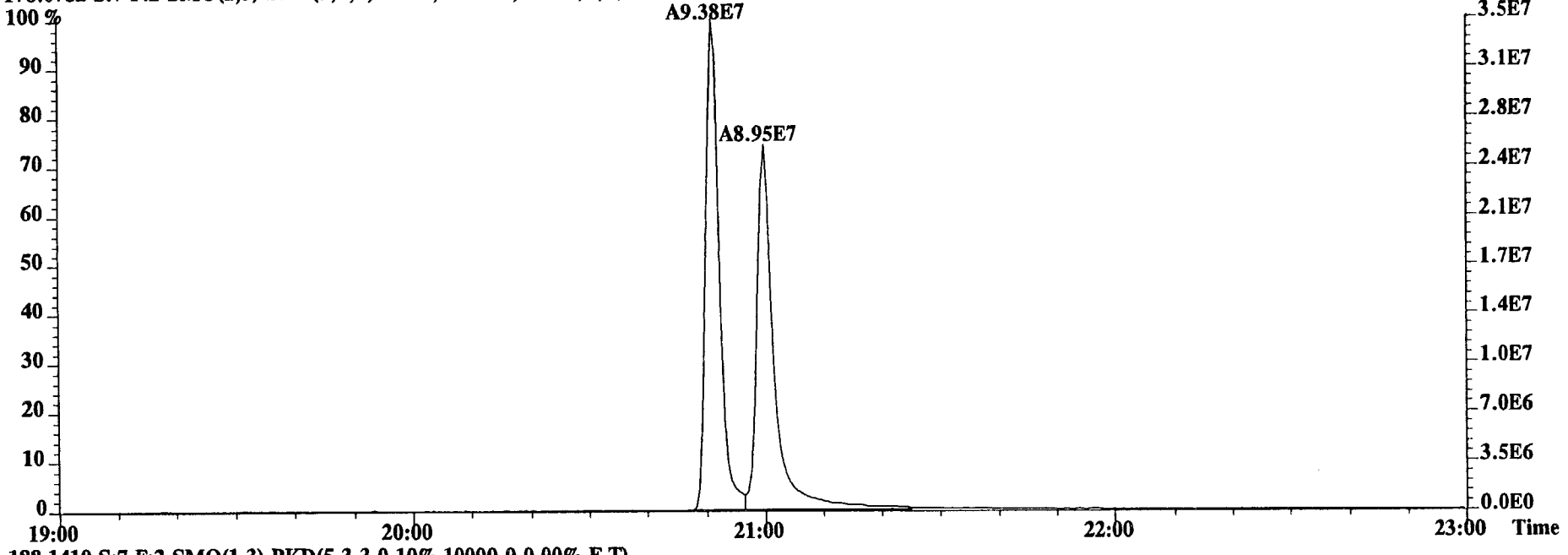
172.0984 S:7 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



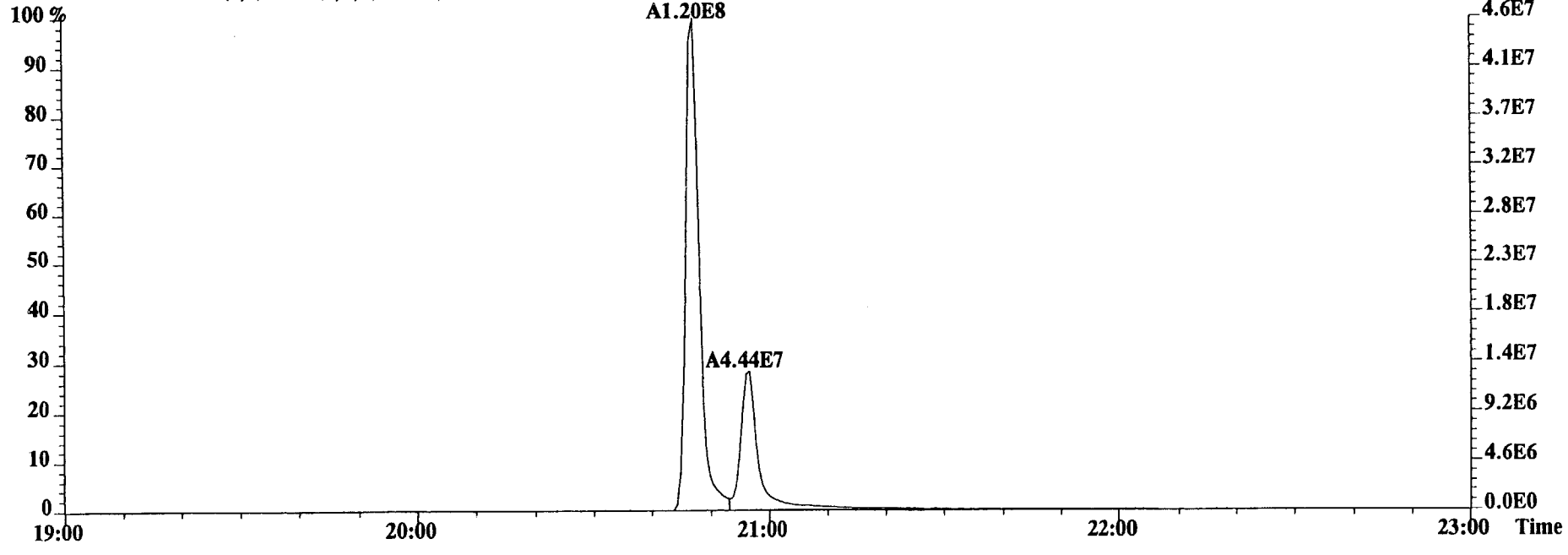
176.1410 S:7 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

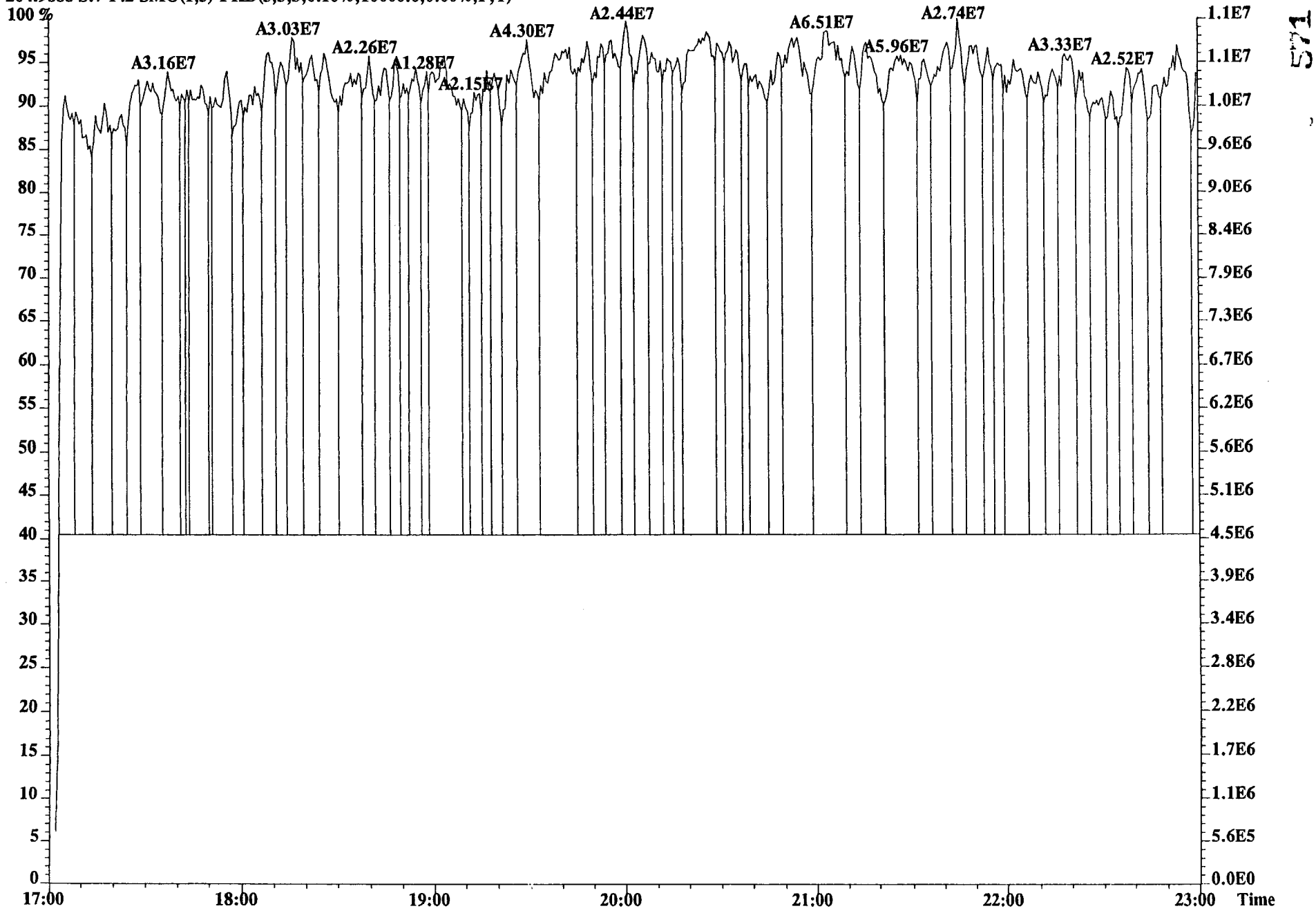


File:29OC98V4 #1-641 Acq:29-OCT-1998 20:21:30 GC EI+ Voltage SIR 70SE
Sample#7 Text:ST1029E :CS-3 :956-64 : : Exp:PAHAIR
178.0782 S:7 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

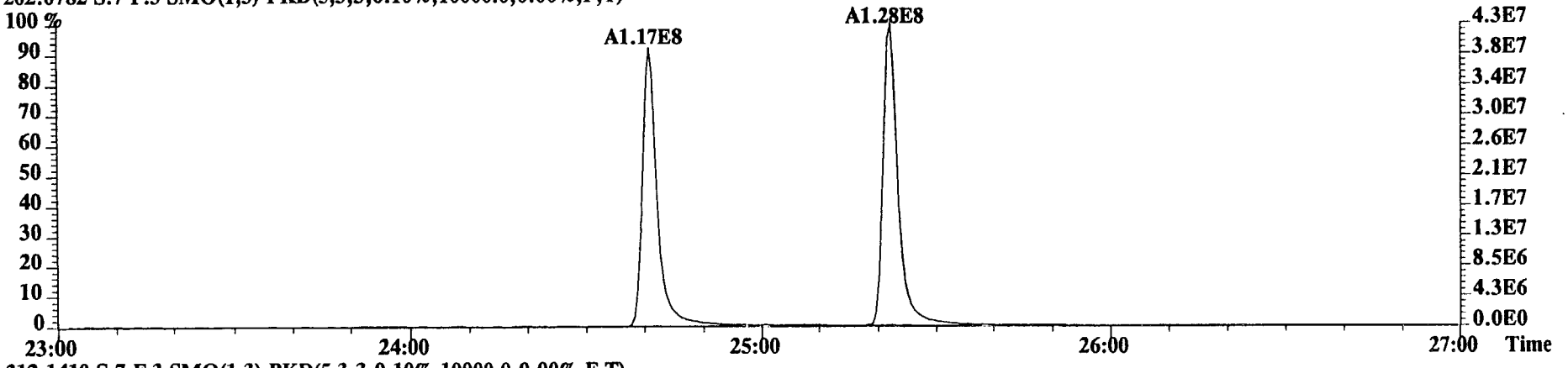


188.1410 S:7 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

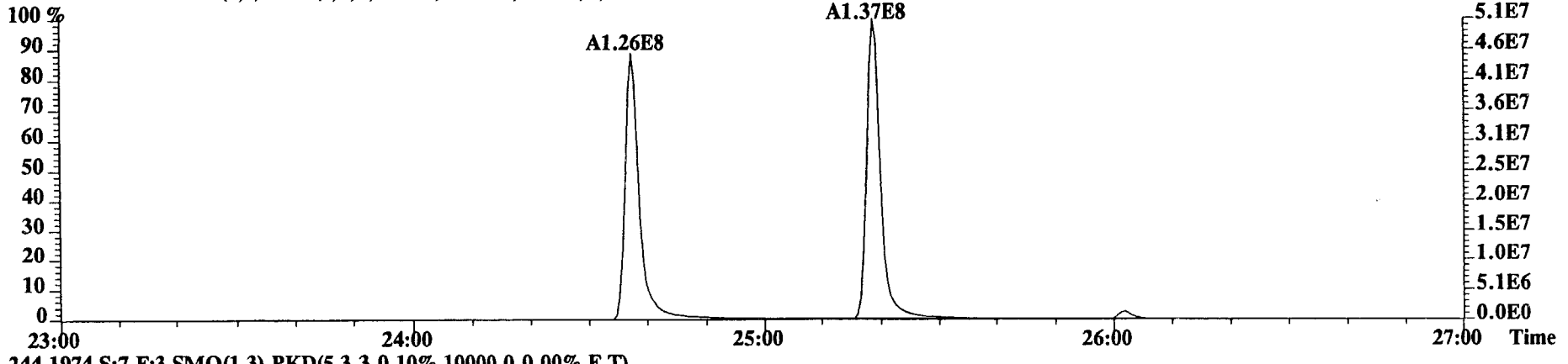



File:29OC98V4 #1-641 Acq:29-OCT-1998 20:21:30 GC EI+ Voltage SIR 70SE
Sample#7 Text:ST1029E :CS-3 :956-64 : : Exp:PAHAIR
204.9888 S:7 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A3.16E7
A3.03E7
A2.26E7
A1.28E7
A2.15E7
A4.30E7
A2.44E7
A6.51E7
A5.96E7
A2.74E7
A3.33E7
A2.52E7
1.1E7
1.1E7
1.0E7
9.6E6
9.0E6
8.4E6
7.9E6
7.3E6
6.7E6
6.2E6
5.6E6
5.1E6
4.5E6
3.9E6
3.4E6
2.8E6
2.2E6
1.7E6
1.1E6
5.6E5
0.0E0
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

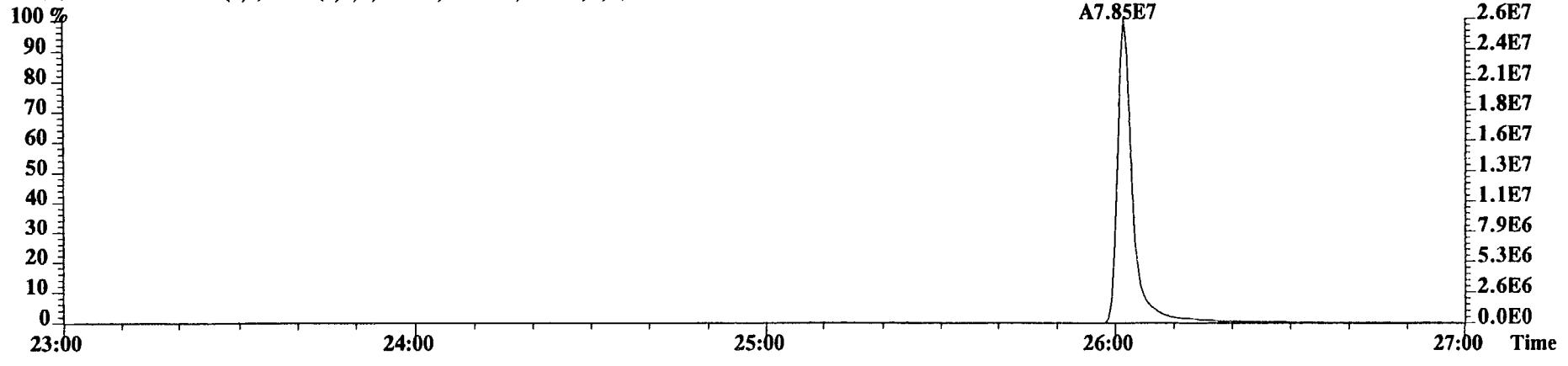
File:29OC98V4 #1-939 Acq:29-OCT-1998 20:21:30 GC EI+ Voltage SIR 70SE
Sample#7 Text:ST1029E :CS-3 :956-64 : : Exp:PAHAIR
202.0782 S:7 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



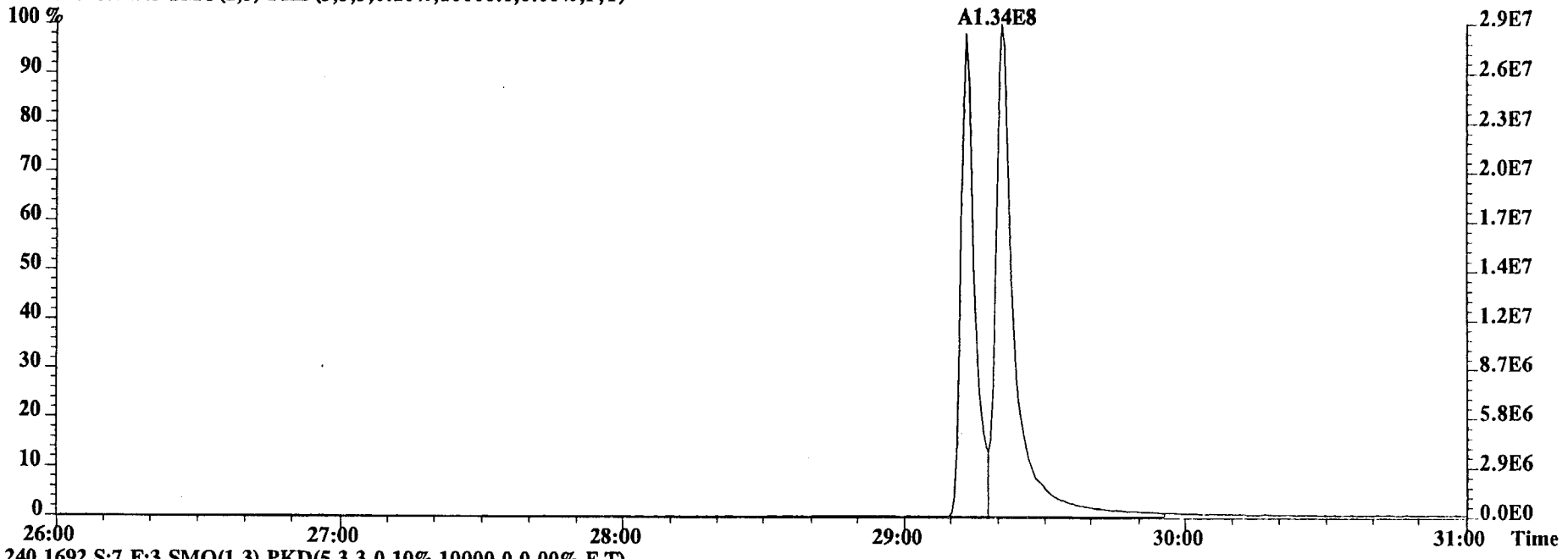
212.1410 S:7 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



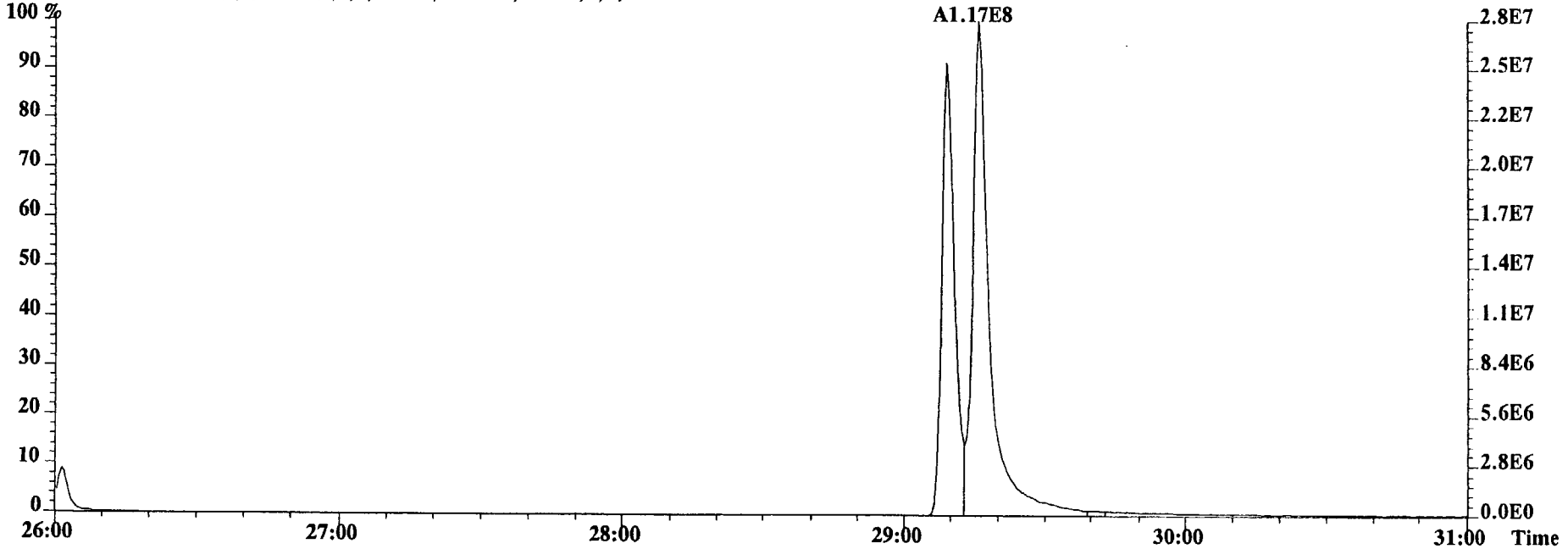
244.1974 S:7 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

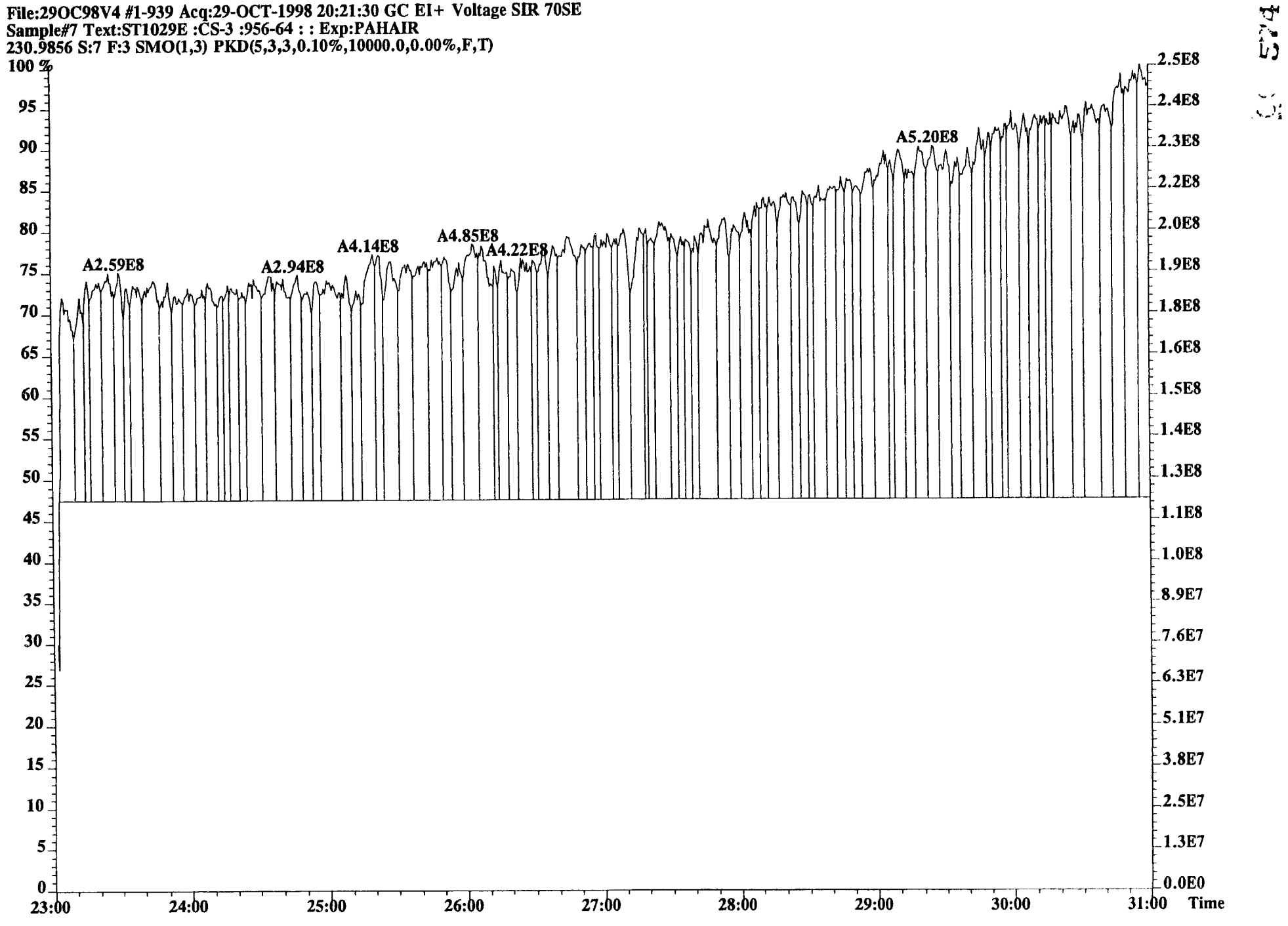


File:29OC98V4 #1-939 Acq:29-OCT-1998 20:21:30 GC EI+ Voltage SIR 70SE
Sample#7 Text:ST1029E :CS-3 :956-64 : : Exp:PAHAIR
228.0939 S:7 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

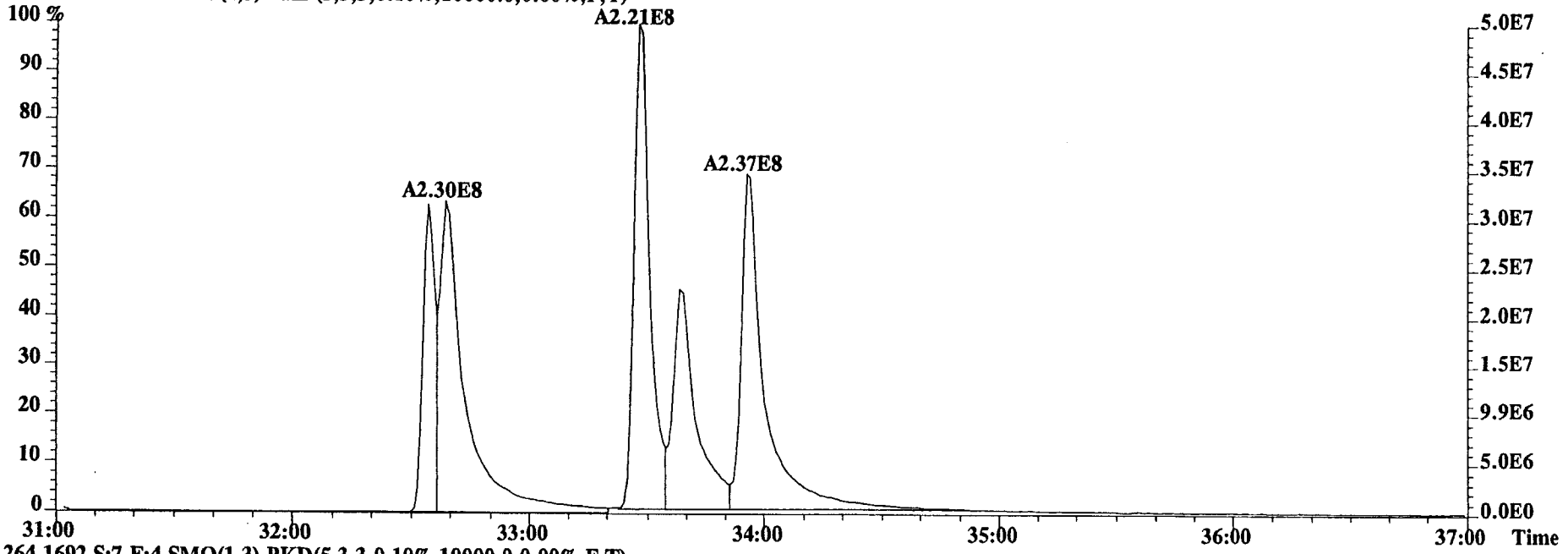


240.1692 S:7 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

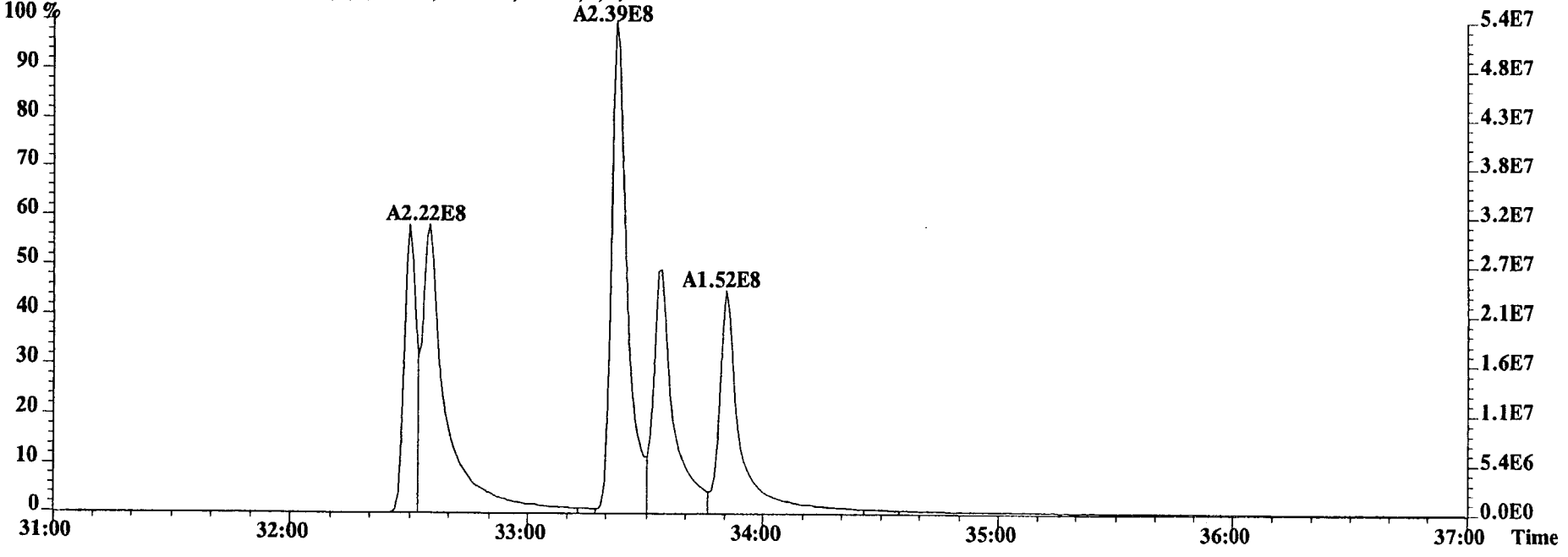



File:29OC98V4 #1-939 Acq:29-OCT-1998 20:21:30 GC EI+ Voltage SIR 70SE
Sample#7 Text:ST1029E :CS-3 :956-64 : : Exp:PAHAIR
230.9856 S:7 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A2.59E8
A2.94E8
A4.14E8
A4.85E8
A4.22E8
A5.20E8
2.5E8
2.4E8
2.3E8
2.2E8
2.0E8
1.9E8
1.8E8
1.6E8
1.5E8
1.4E8
1.3E8
1.1E8
1.0E8
8.9E7
7.6E7
6.3E7
5.1E7
3.8E7
2.5E7
1.3E7
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time

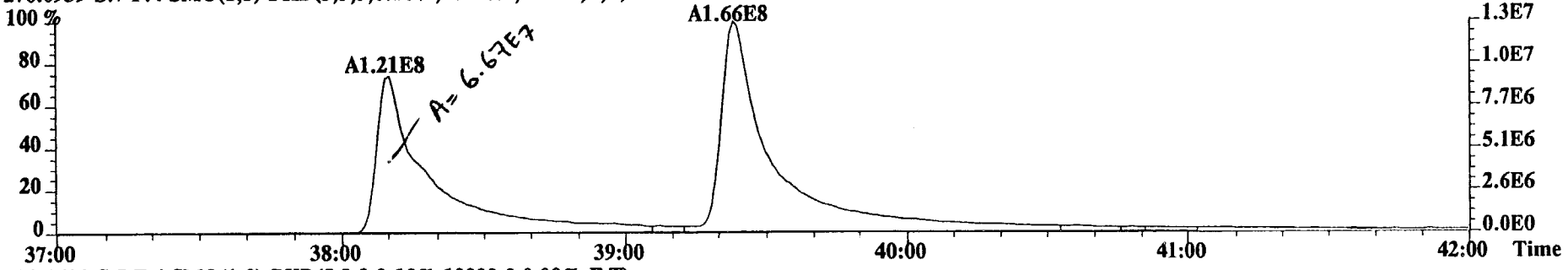
File:29OC98V4 #1-878 Acq:29-OCT-1998 20:21:30 GC EI+ Voltage SIR 70SE
Sample#7 Text:ST1029E :CS-3 :956-64 : : Exp:PAHAIR
252.0939 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



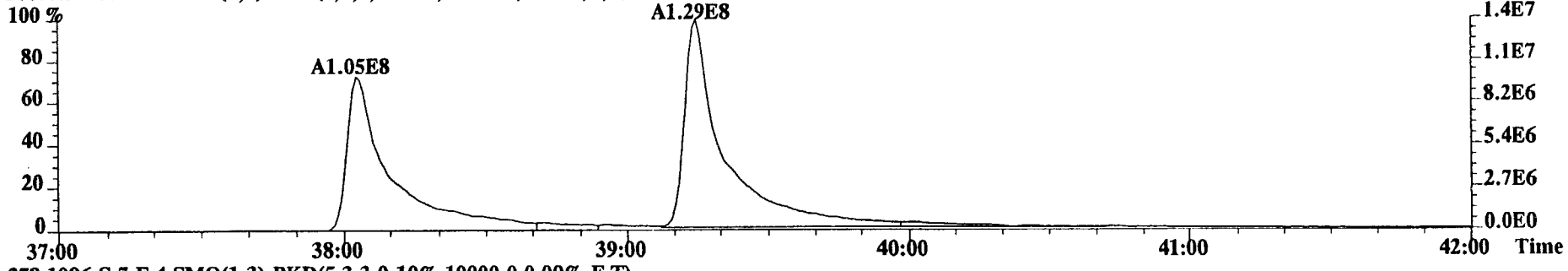
264.1692 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



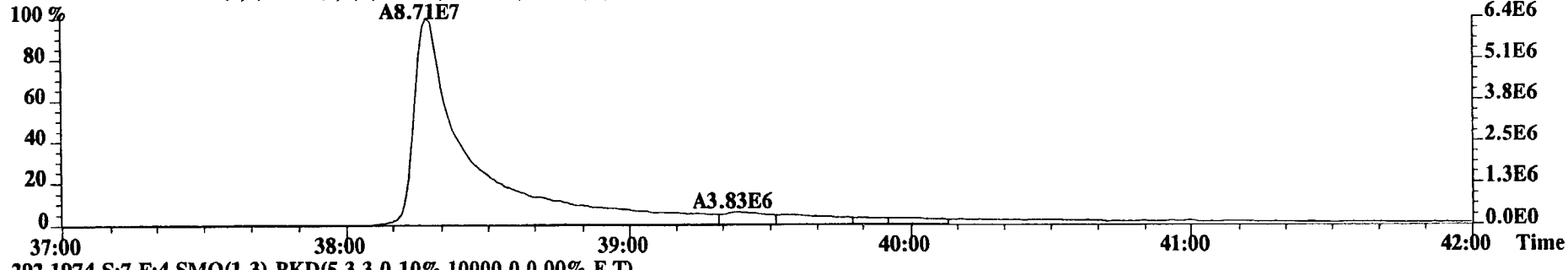
File:29OC98V4 #1-878 Acq:29-OCT-1998 20:21:30 GC EI+ Voltage SIR 70SE
Sample#7 Text:ST1029E :CS-3 :956-64 : : Exp:PAHAIR
276.0939 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



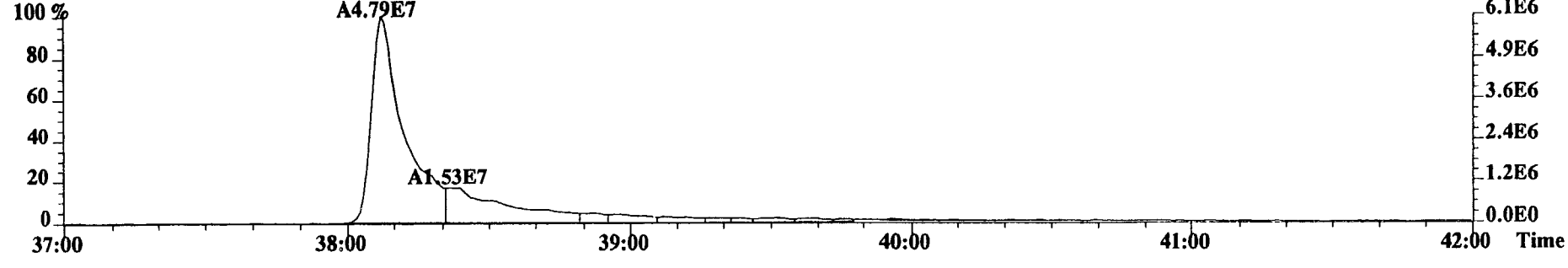
288.1692 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



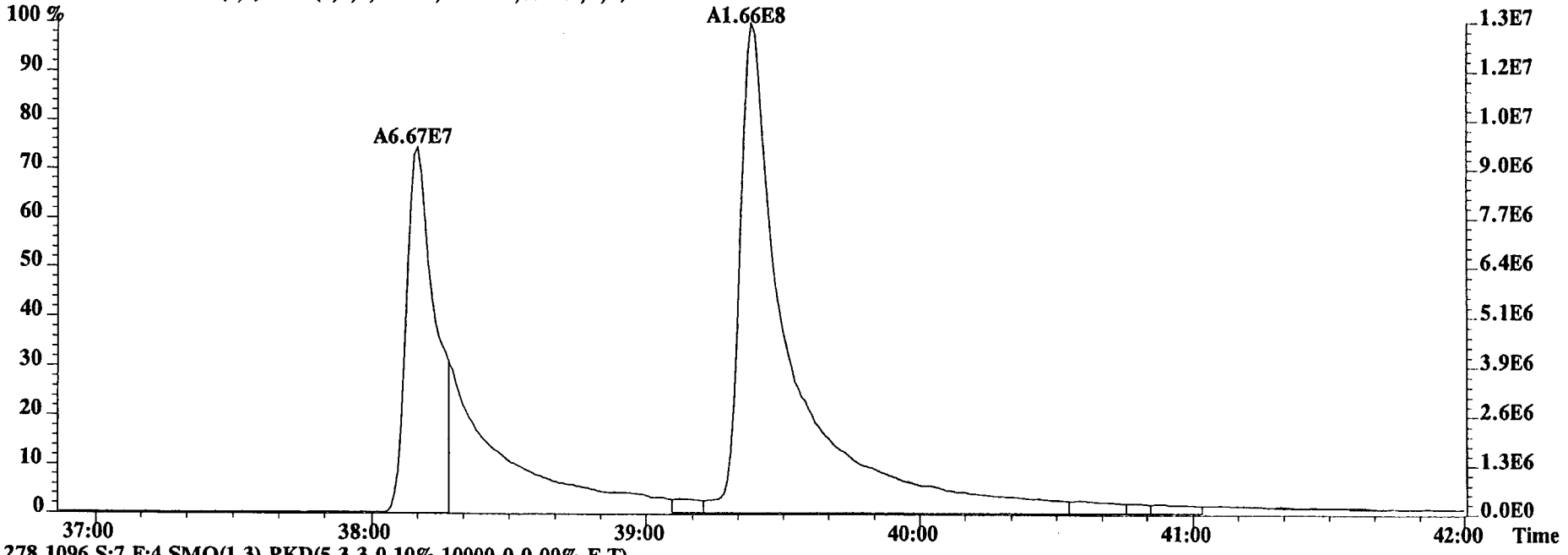
278.1096 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



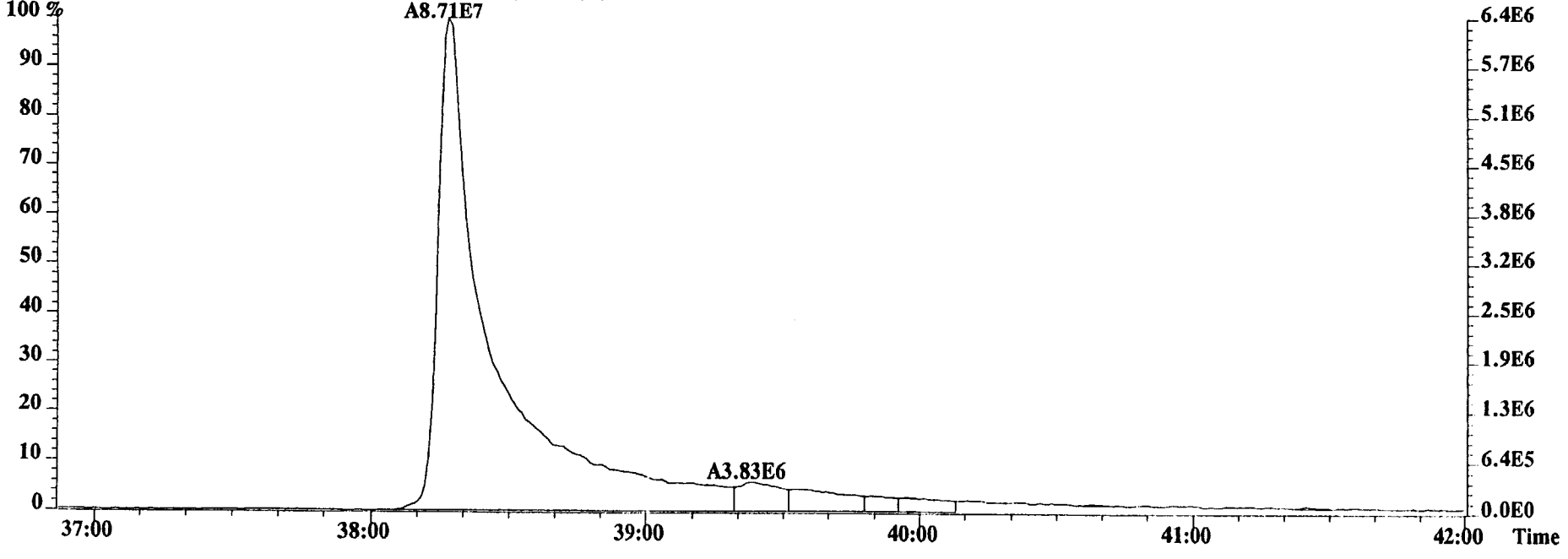
292.1974 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



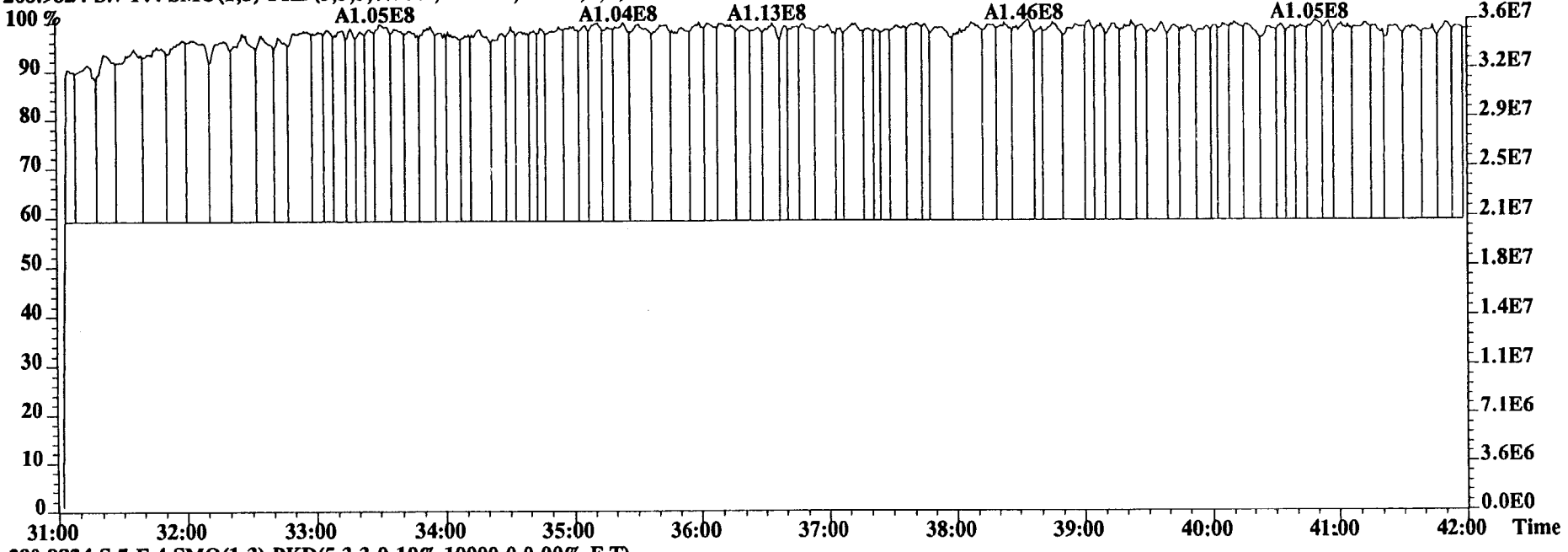
File:29OC98V4 #1-878 Acq:29-OCT-1998 20:21:30 GC EI+ Voltage SIR 70SE
Sample#7 Text:ST1029E :CS-3 :956-64 : : Exp:PAHAIR
276.0939 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



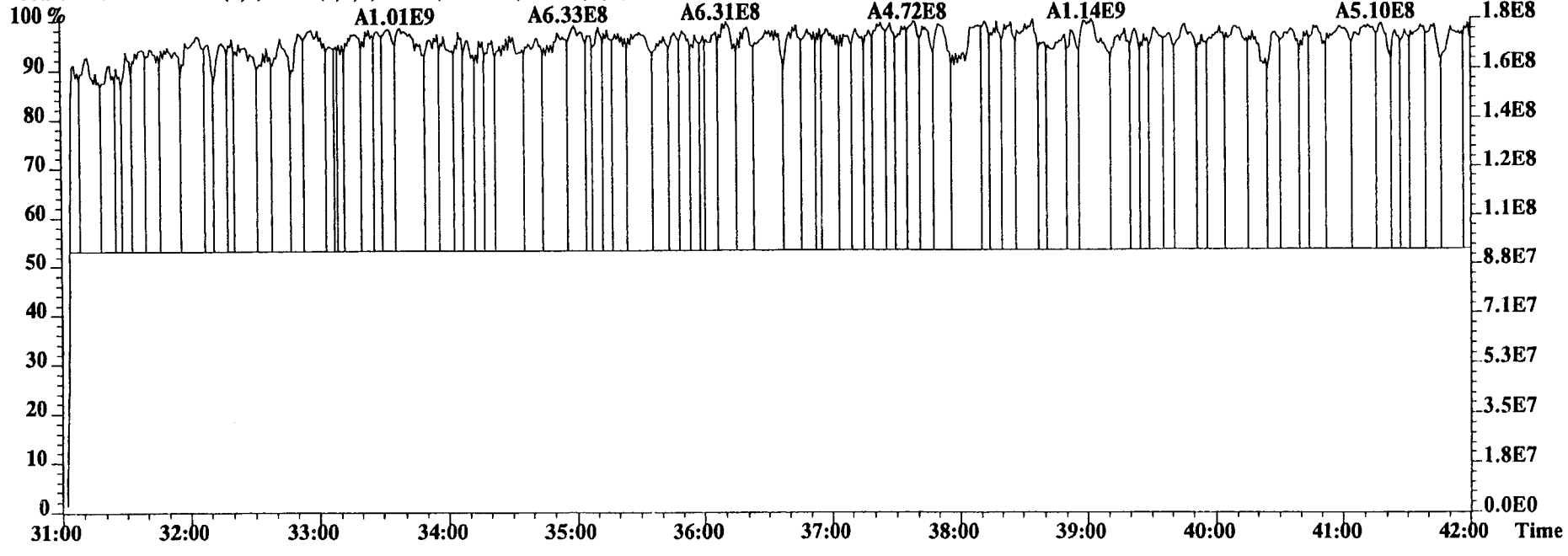
278.1096 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



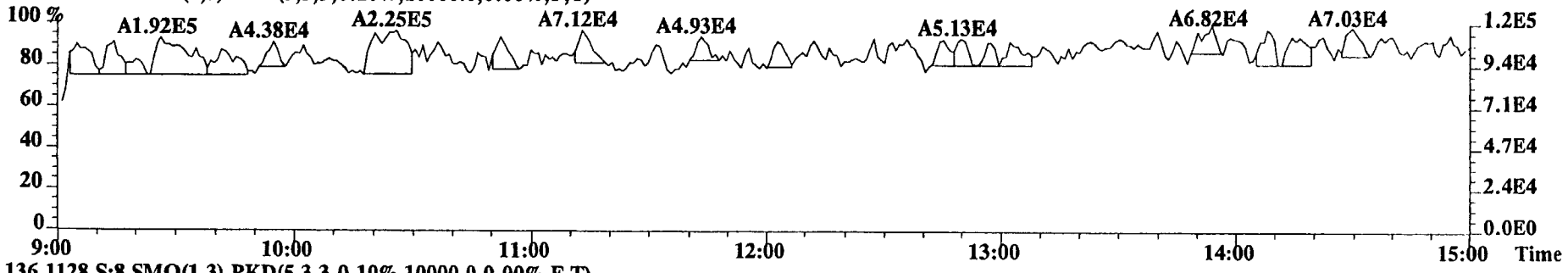
File:29OC98V4 #1-878 Acq:29-OCT-1998 20:21:30 GC EI+ Voltage SIR 70SE
Sample#7 Text:ST1029E :CS-3 :956-64 : : Exp:PAHAIR
268.9824 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



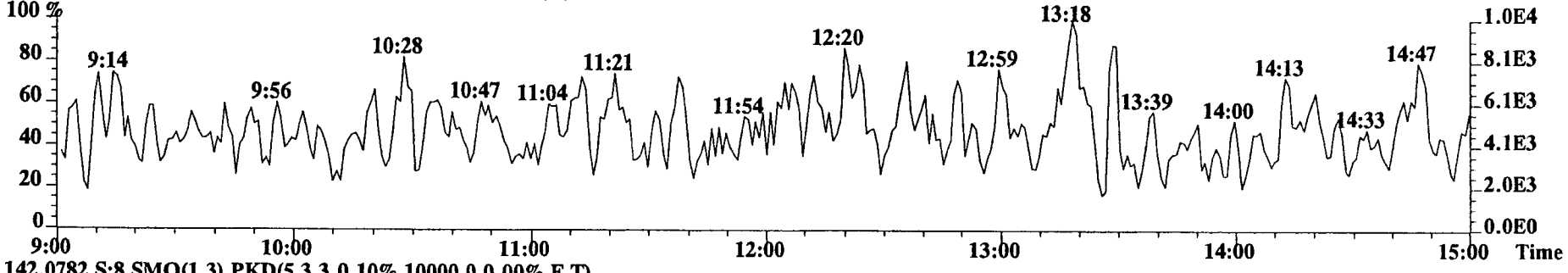
280.9824 S:7 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



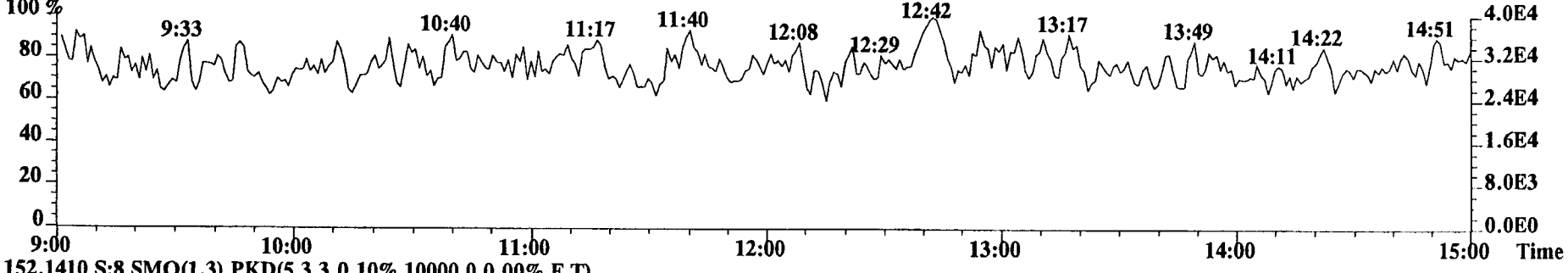
File:29OC98V4 #1-510 Acq:29-OCT-1998 21:10:34 GC EI+ Voltage SIR 70SE
Sample#8 Text:SB1029B :Solvent Blank :C Exp:PAHAIR
128.0626 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



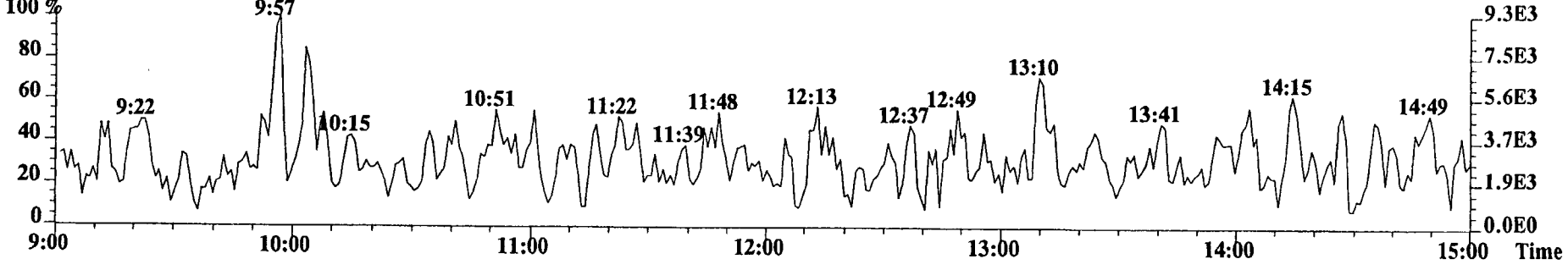
136.1128 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



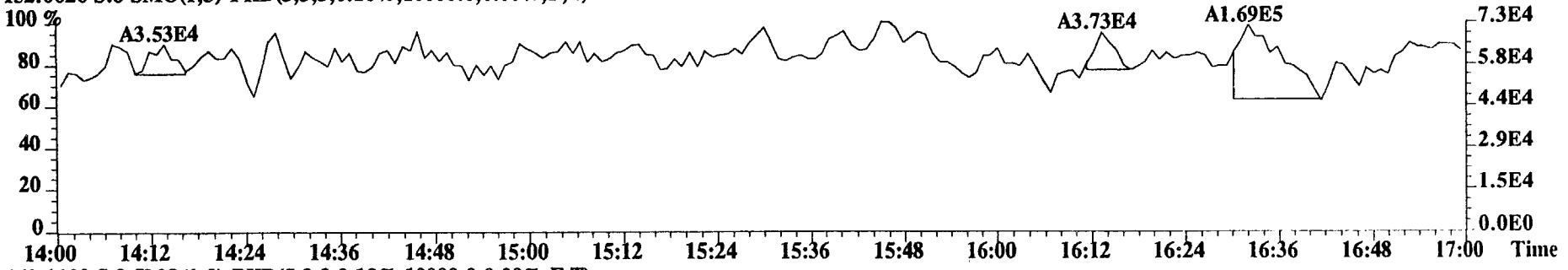
142.0782 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



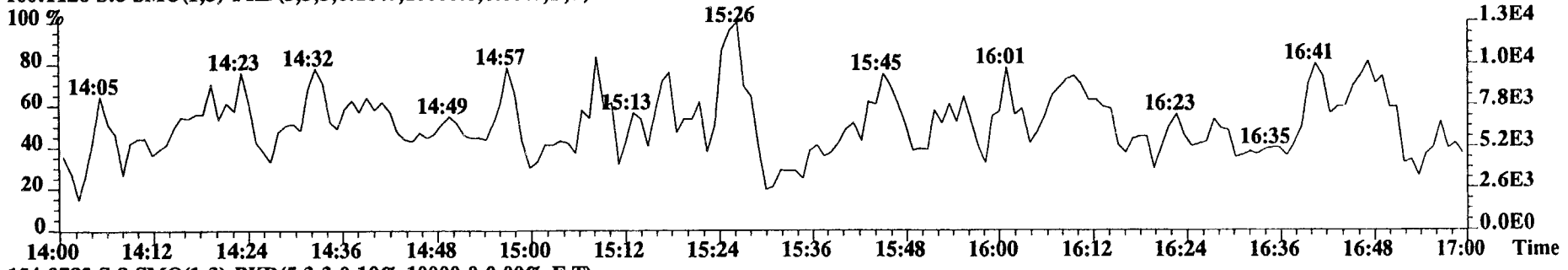
152.1410 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



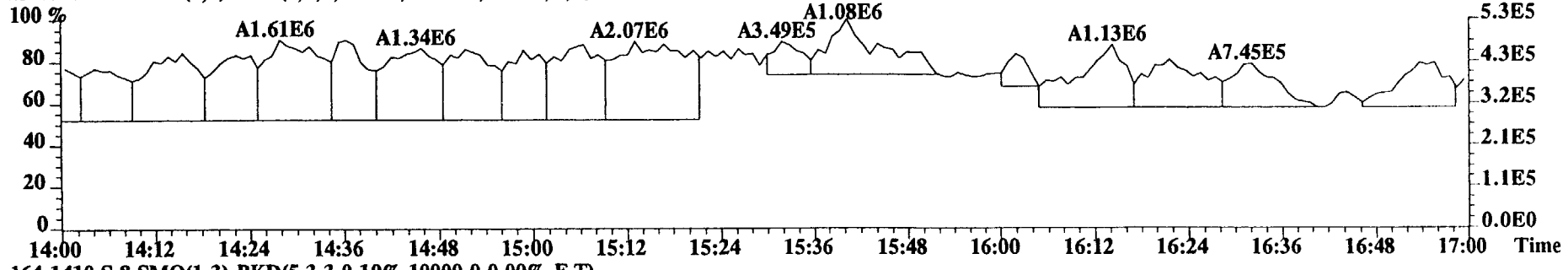
File:29OC98V4 #1-510 Acq:29-OCT-1998 21:10:34 GC EI+ Voltage SIR 70SE
Sample#8 Text:SB1029B :Solvent Blank :C Exp:PAHAIR
152.0626 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



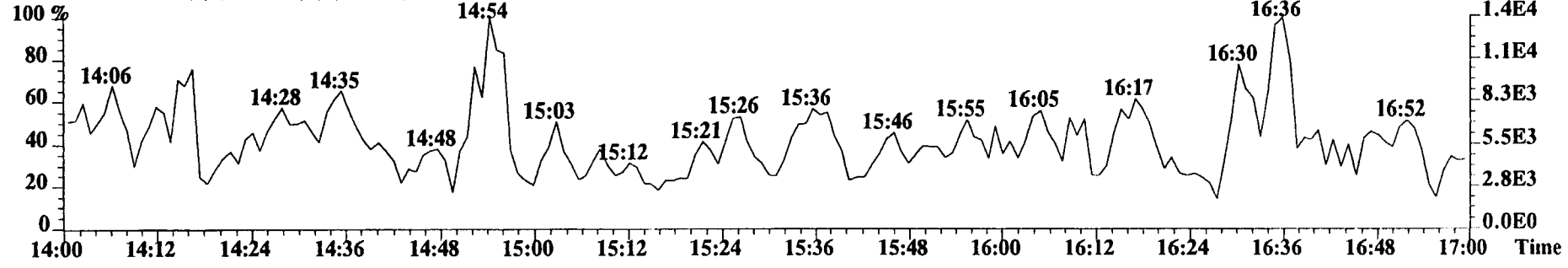
160.1128 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



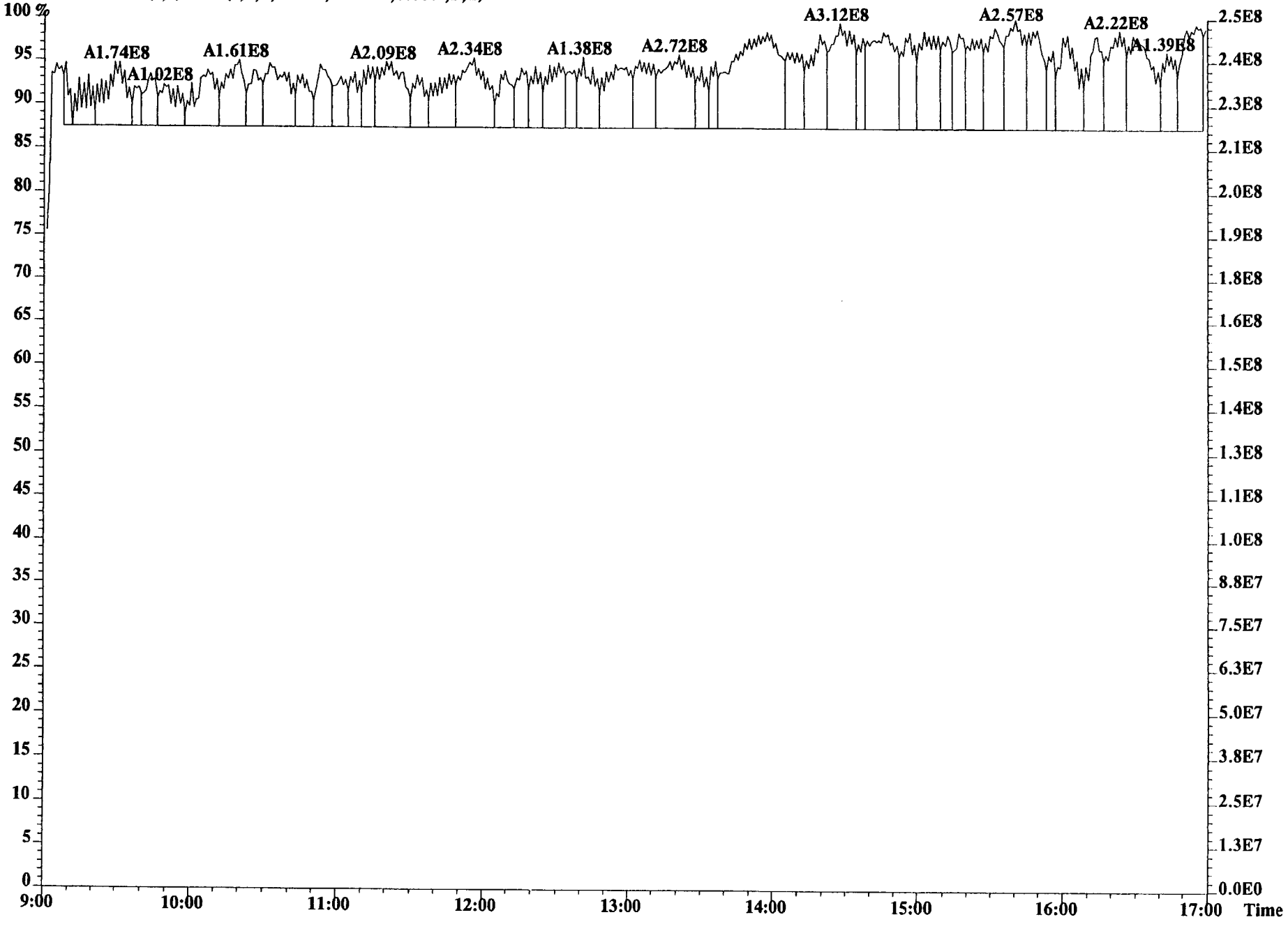
154.0782 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

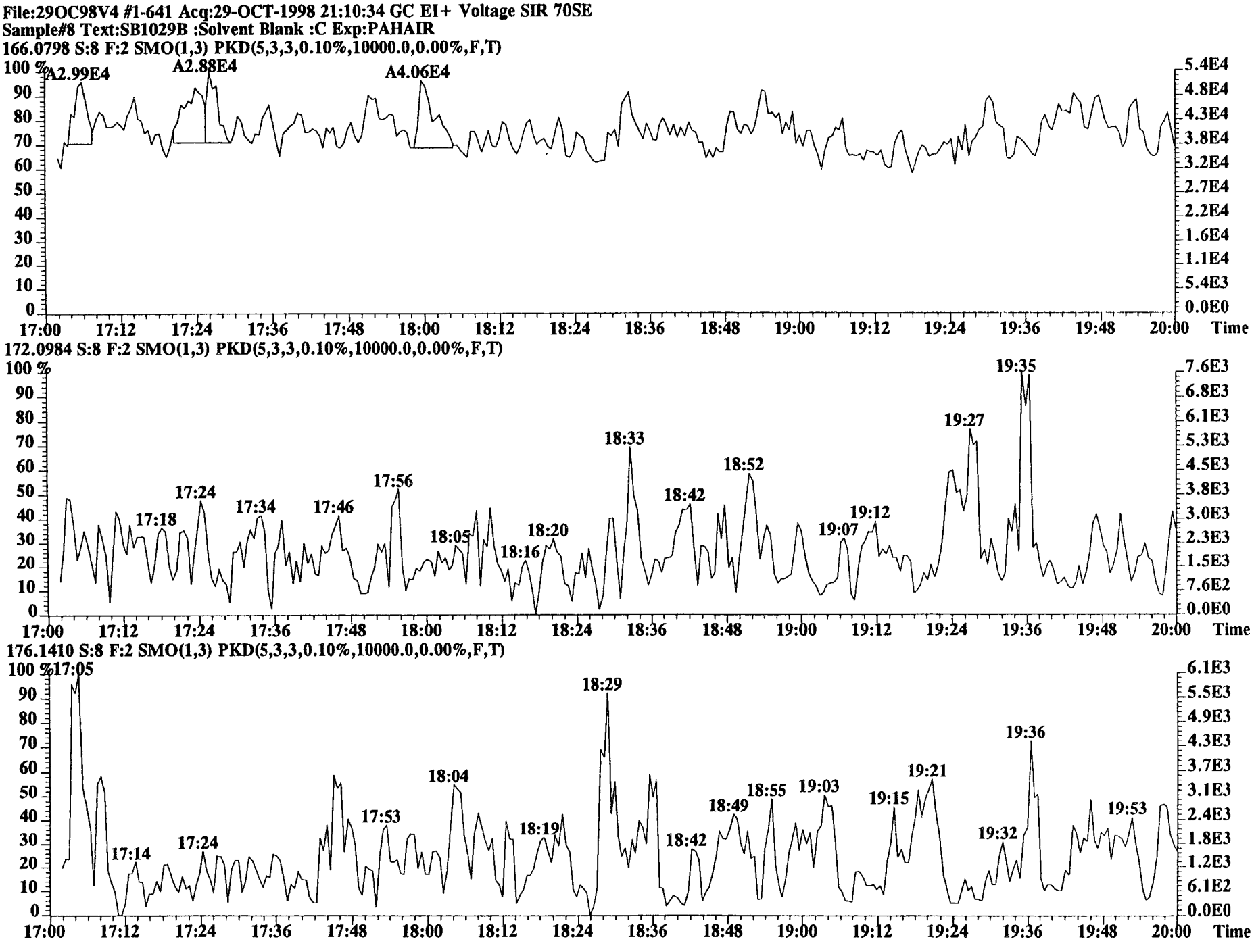


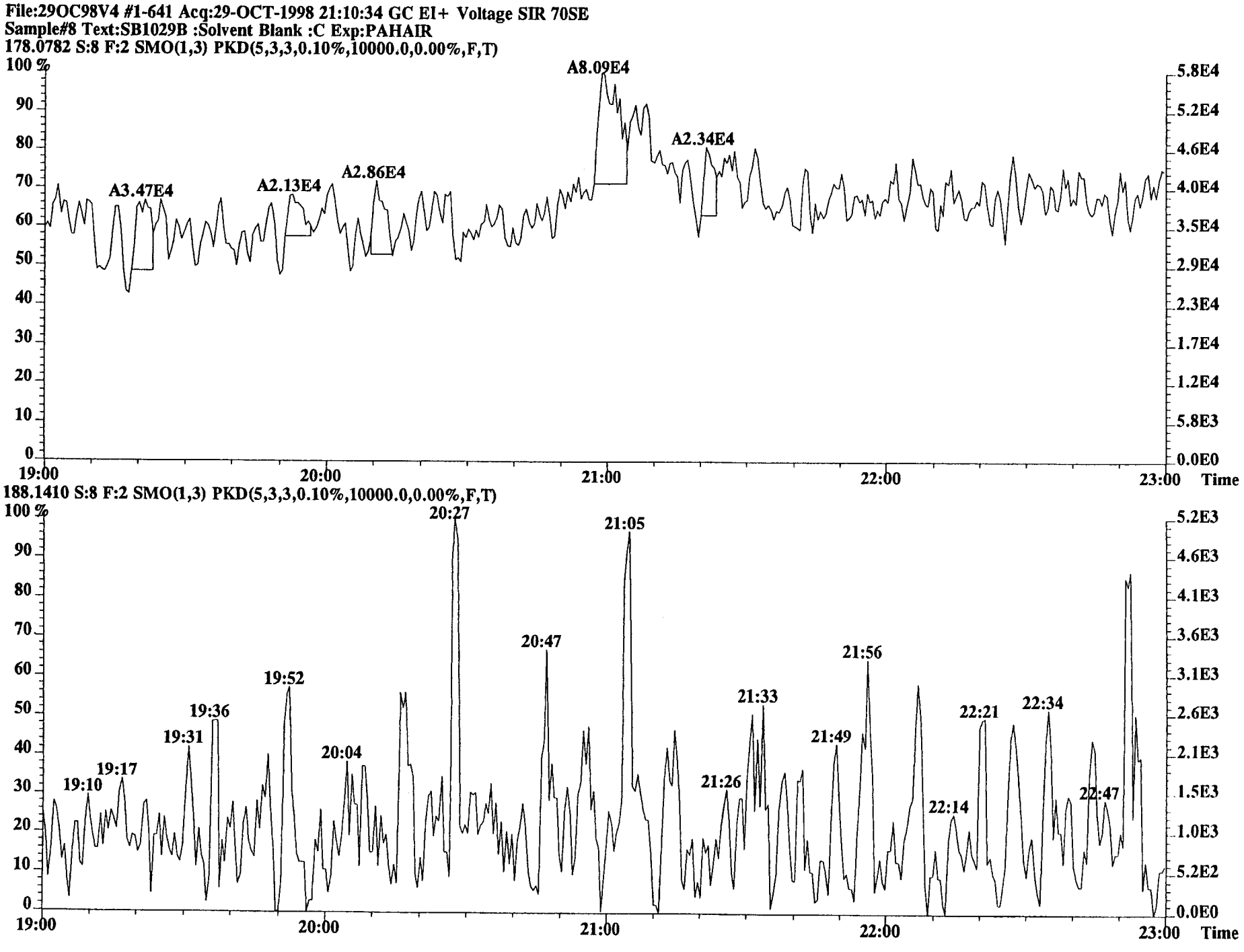
164.1410 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

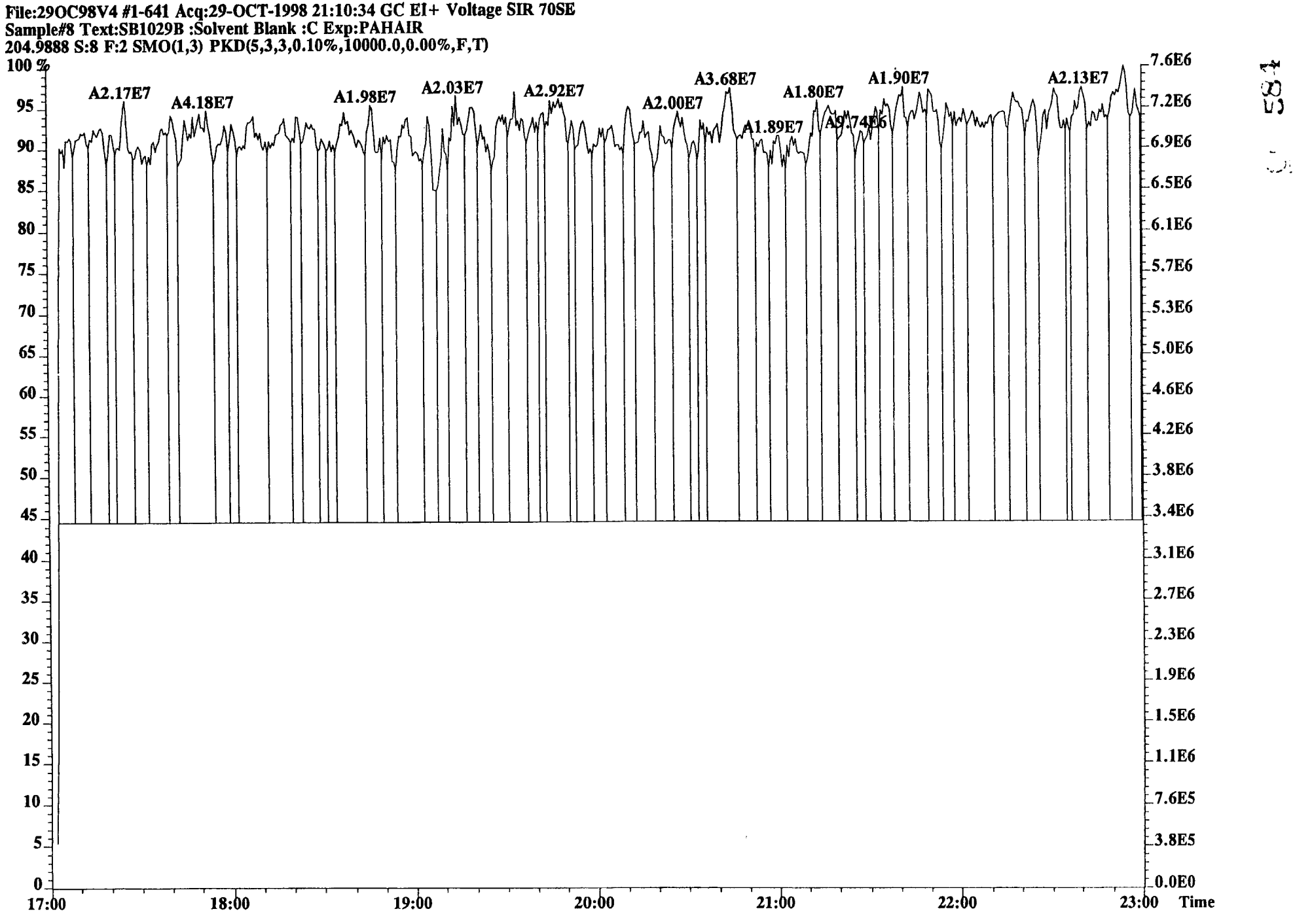


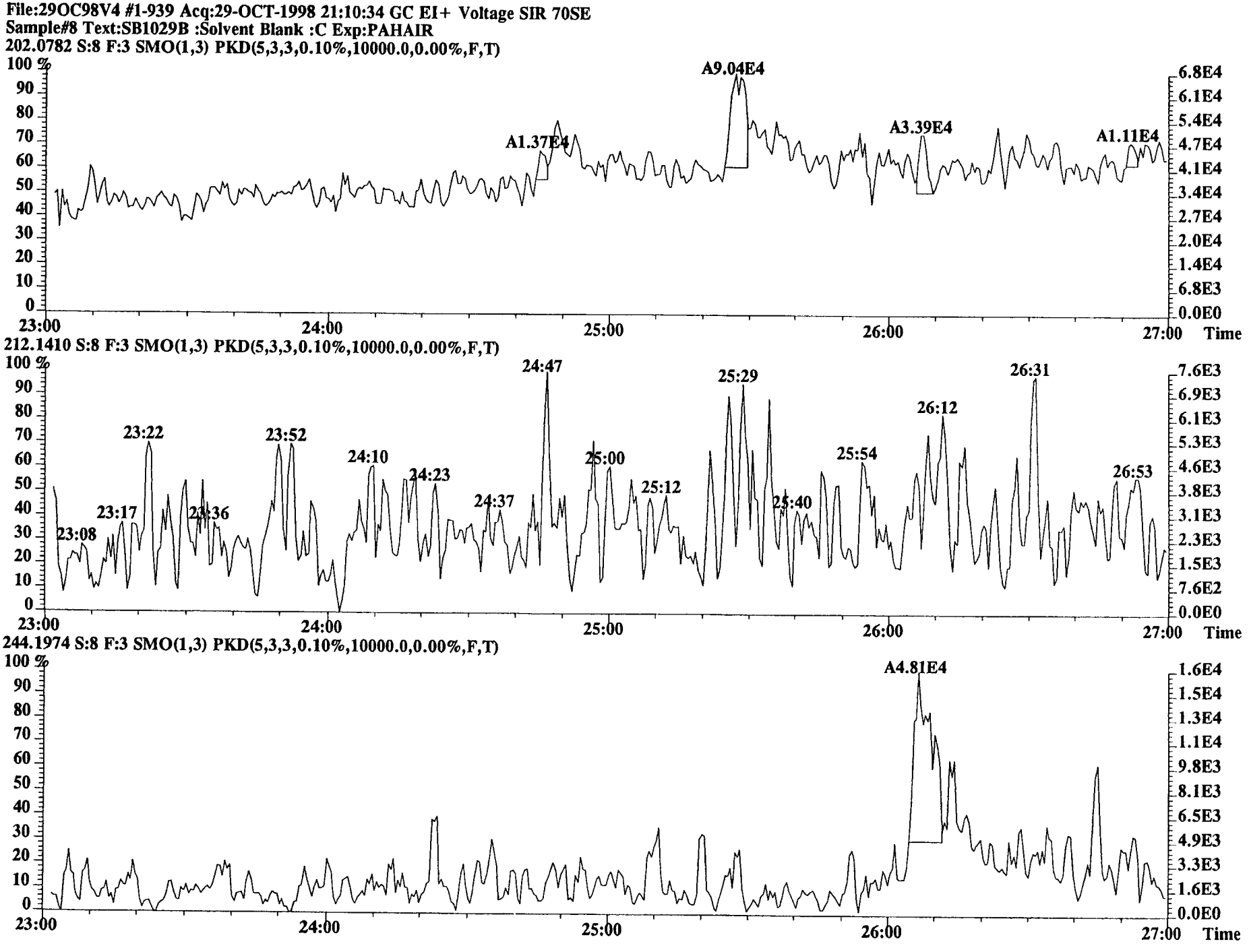
File:29OC98V4 #1-510 Acq:29-OCT-1998 21:10:34 GC EI+ Voltage SIR 70SE
Sample#8 Text:SB1029B :Solvent Blank :C Exp:PAHAIR
130.9920 S:8 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



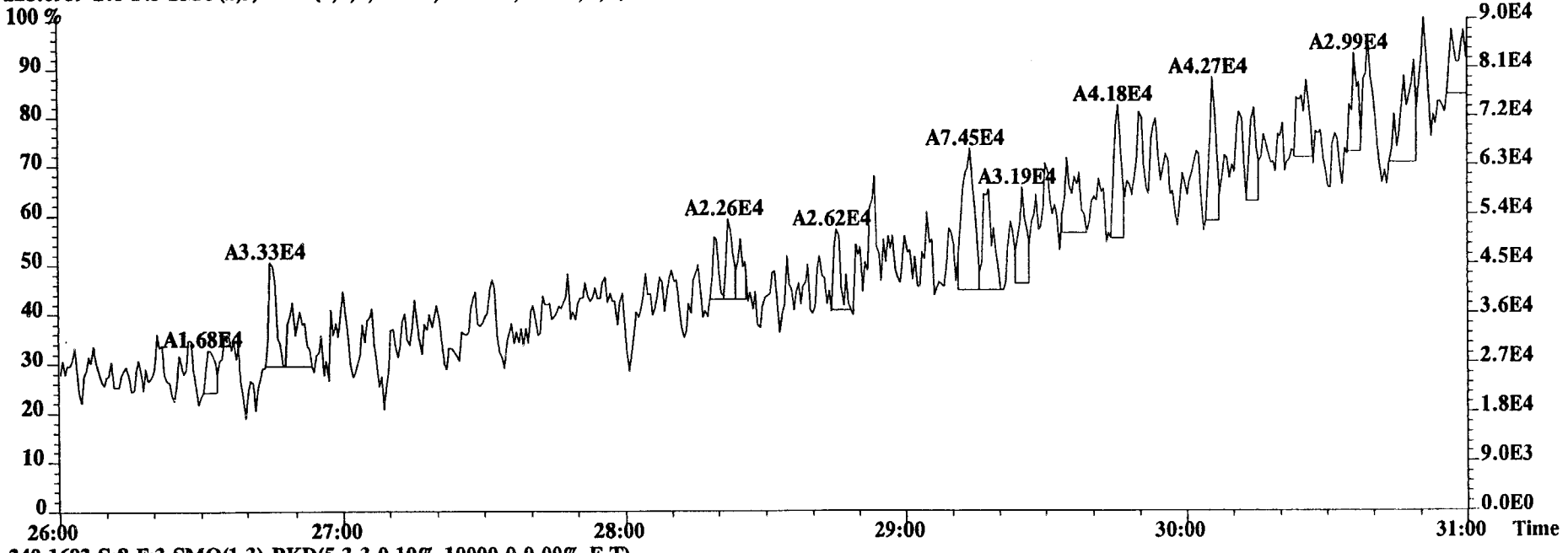

File:29OC98V4 #1-641 Acq:29-OCT-1998 21:10:34 GC EI+ Voltage SIR 70SE
Sample#8 Text:SB1029B :Solvent Blank :C Exp:PAHAIR
166.0798 S:8 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.99E4
A2.88E4
A4.06E4
172.0984 S:8 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
17:18
17:24
17:34
17:46
17:56
18:05
18:16
18:20
18:33
18:42
18:52
19:07
19:12
19:27
19:35
176.1410 S:8 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
17:05
17:14
17:24
17:53
18:04
18:19
18:29
18:42
18:49
18:55
19:03
19:15
19:21
19:32
19:36
19:53
Time


File:29OC98V4 #1-641 Acq:29-OCT-1998 21:10:34 GC EI+ Voltage SIR 70SE
Sample#8 Text:SB1029B :Solvent Blank :C Exp:PAHAIR
178.0782 S:8 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A8.09E4
A2.34E4
A3.47E4
A2.13E4
A2.86E4
188.1410 S:8 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
20:27
21:05
20:47
21:56
19:52
21:33
19:36
19:31
22:21
22:34
21:49
20:04
19:17
19:10
21:26
22:14
22:47
Time

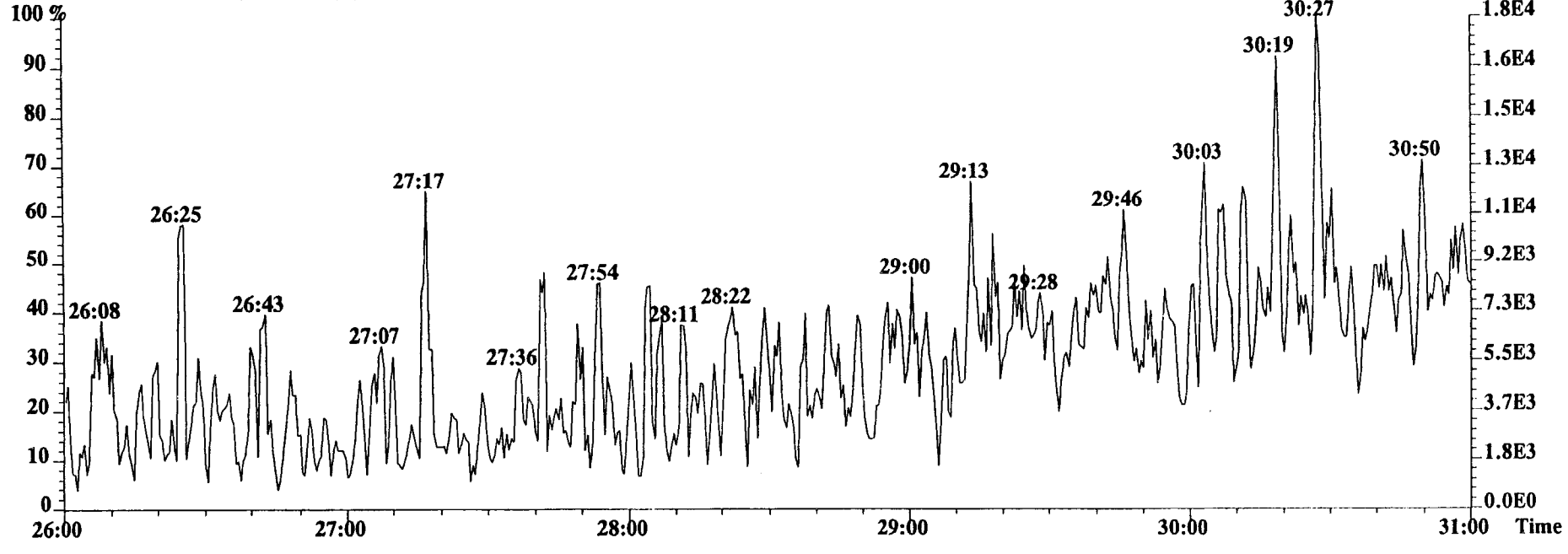

File:29OC98V4 #1-641 Acq:29-OCT-1998 21:10:34 GC EI+ Voltage SIR 70SE
Sample#8 Text:SB1029B :Solvent Blank :C Exp:PAHAIR
204.9888 S:8 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A2.17E7
A4.18E7
A1.98E7
A2.03E7
A2.92E7
A2.00E7
A3.68E7
A1.89E7
A1.80E7
A9.74E6
A1.90E7
A2.13E7
7.6E6
7.2E6
6.9E6
6.5E6
6.1E6
5.7E6
5.3E6
5.0E6
4.6E6
4.2E6
3.8E6
3.4E6
3.1E6
2.7E6
2.3E6
1.9E6
1.5E6
1.1E6
7.6E5
3.8E5
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

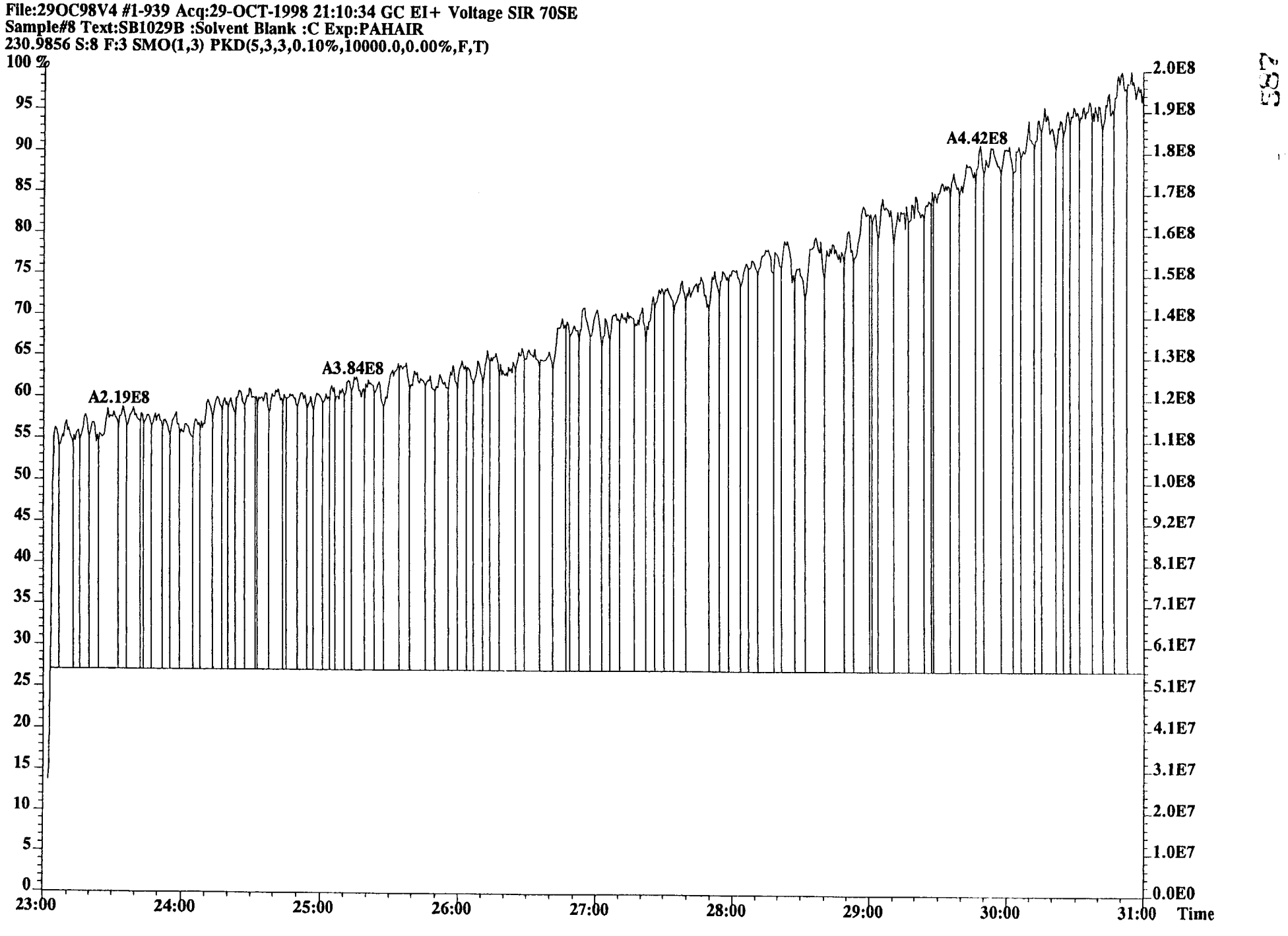

File:29OC98V4 #1-939 Acq:29-OCT-1998 21:10:34 GC EI+ Voltage SIR 70SE
Sample#8 Text:SB1029B :Solvent Blank :C Exp:PAHAIR
202.0782 S:8 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A9.04E4
A1.37E4
A3.39E4
A1.11E4
212.1410 S:8 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
24:47
25:29
26:31
26:12
23:22
23:52
24:10
25:00
25:54
26:53
24:23
25:12
24:37
25:40
23:17
23:36
23:08
244.1974 S:8 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.81E4
100 %
Time

File:29OC98V4 #1-939 Acq:29-OCT-1998 21:10:34 GC EI+ Voltage SIR 70SE
Sample#8 Text:SB1029B :Solvent Blank :C Exp:PAHAIR
228.0939 S:8 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

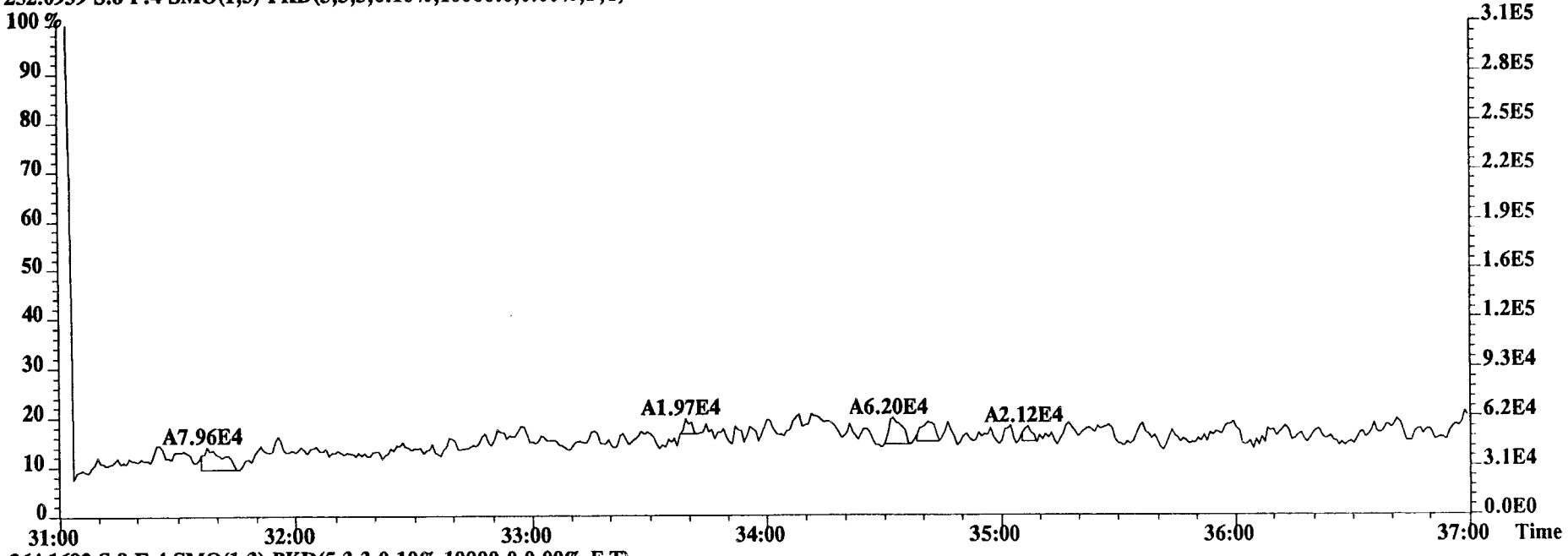


240.1692 S:8 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

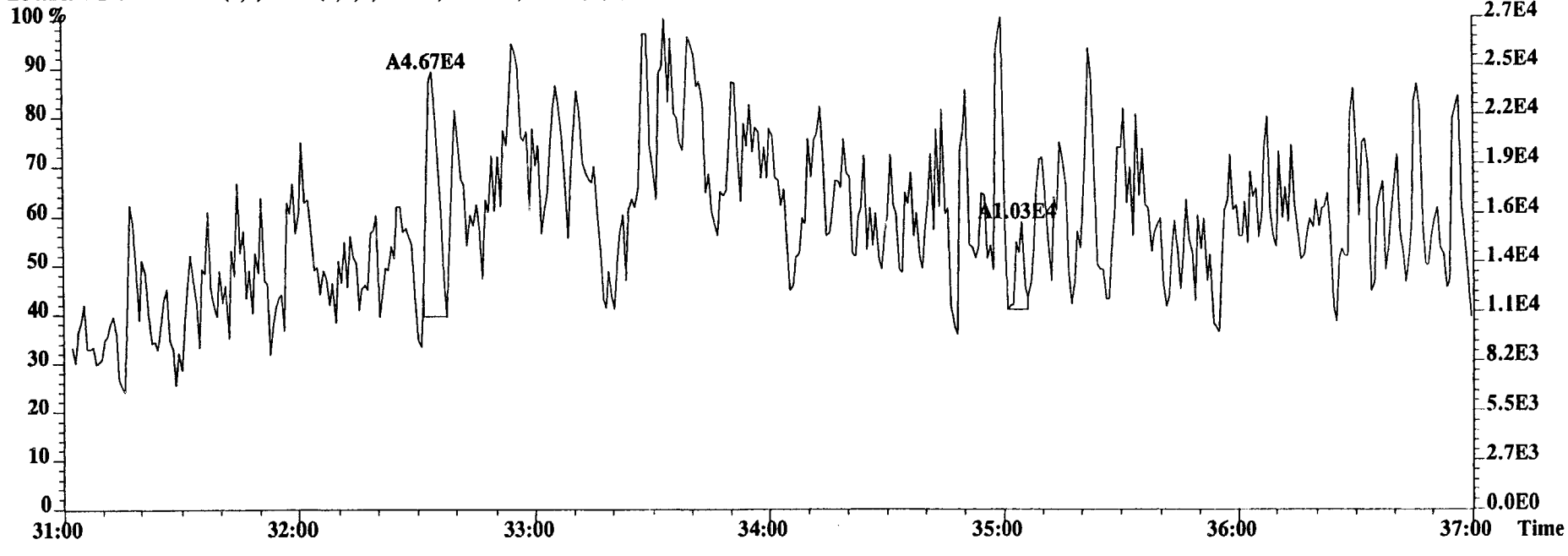



File:29OC98V4 #1-939 Acq:29-OCT-1998 21:10:34 GC EI+ Voltage SIR 70SE
Sample#8 Text:SB1029B :Solvent Blank :C Exp:PAHAIR
230.9856 S:8 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A2.19E8
A3.84E8
A4.42E8
2.0E8
1.9E8
1.8E8
1.7E8
1.6E8
1.5E8
1.4E8
1.3E8
1.2E8
1.1E8
1.0E8
9.2E7
8.1E7
7.1E7
6.1E7
5.1E7
4.1E7
3.1E7
2.0E7
1.0E7
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time

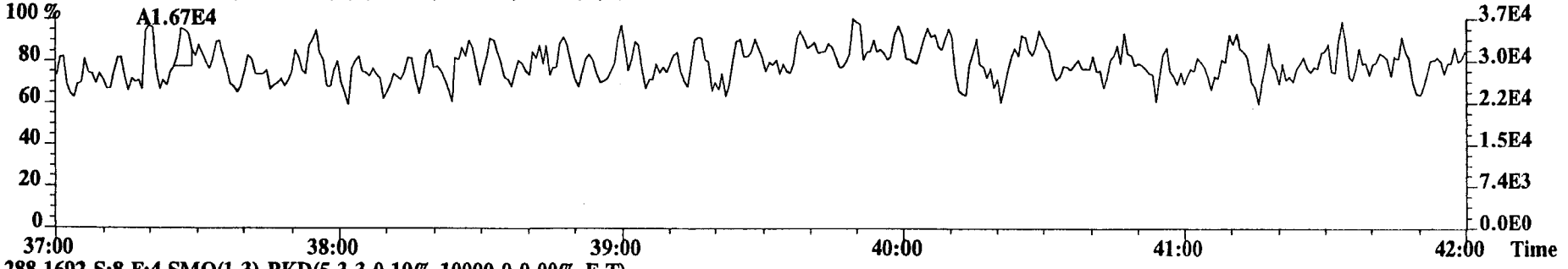
File:29OC98V4 #1-878 Acq:29-OCT-1998 21:10:34 GC EI+ Voltage SIR 70SE
Sample#8 Text:SB1029B :Solvent Blank :C Exp:PAHAIR
252.0939 S:8 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



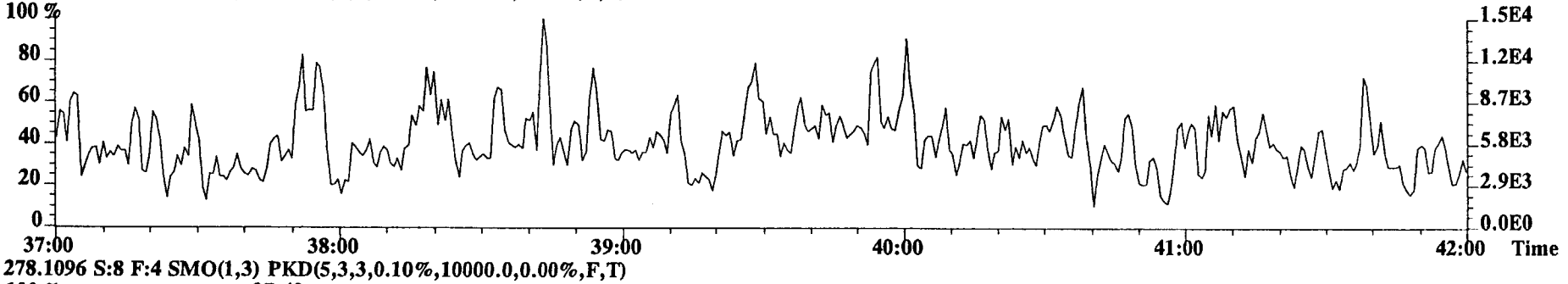
264.1692 S:8 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



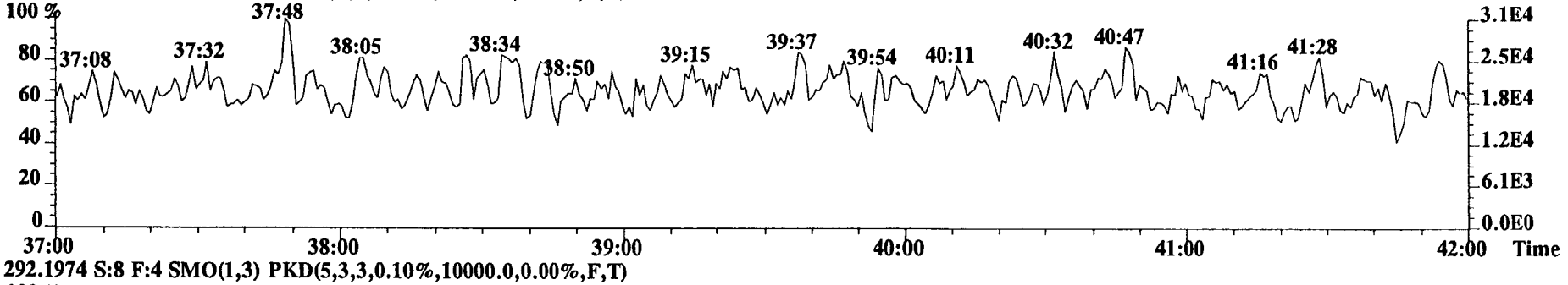
File:29OC98V4 #1-878 Acq:29-OCT-1998 21:10:34 GC EI+ Voltage SIR 70SE
Sample#8 Text:SB1029B :Solvent Blank :C Exp:PAHAIR
276.0939 S:8 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



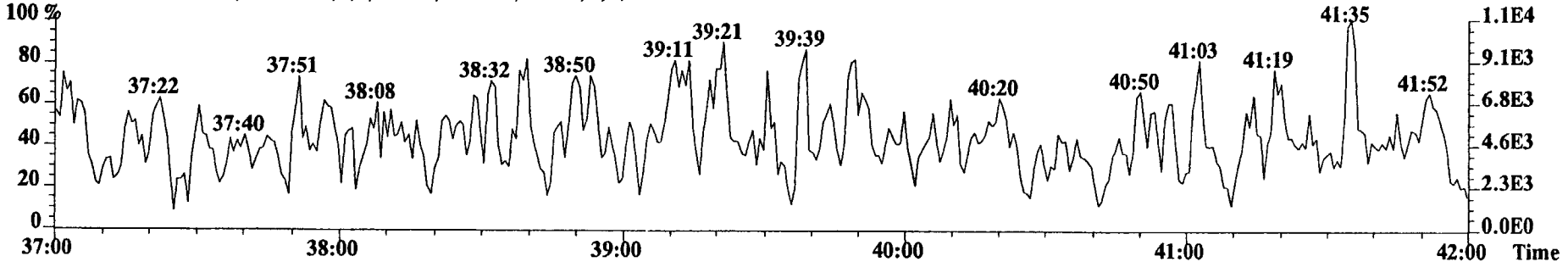
288.1692 S:8 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

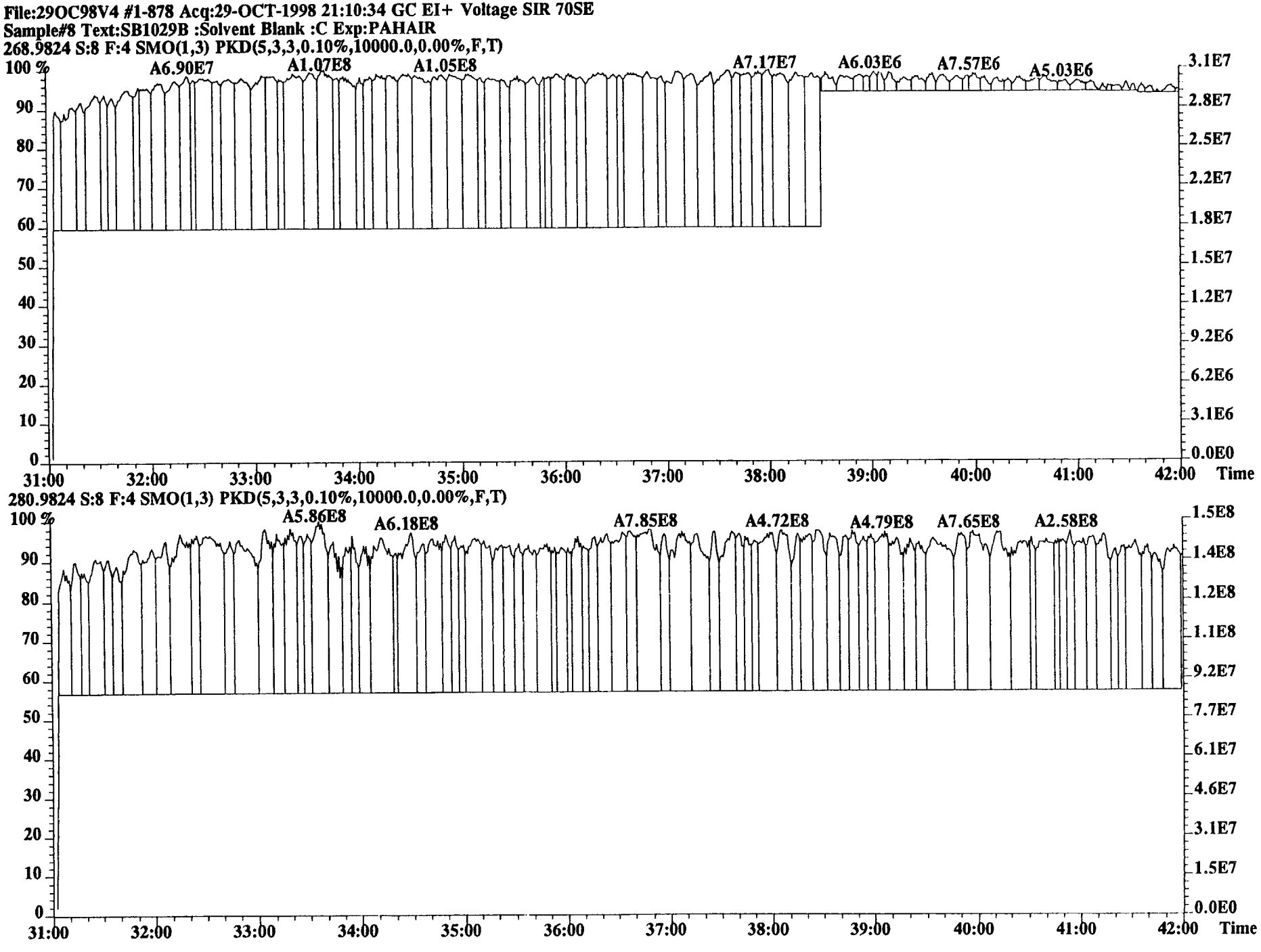


278.1096 S:8 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



292.1974 S:8 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)




File:29OC98V4 #1-878 Acq:29-OCT-1998 21:10:34 GC EI+ Voltage SIR 70SE
Sample#8 Text:SB1029B :Solvent Blank :C Exp:PAHAIR
268.9824 S:8 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A6.90E7
A1.07E8
A1.05E8
A7.17E7
A6.03E6
A7.57E6
A5.03E6
3.1E7
2.8E7
2.5E7
2.2E7
1.8E7
1.5E7
1.2E7
9.2E6
6.2E6
3.1E6
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time
280.9824 S:8 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A5.86E8
A6.18E8
A7.85E8
A4.72E8
A4.79E8
A7.65E8
A2.58E8
1.5E8
1.4E8
1.2E8
1.1E8
9.2E7
7.7E7
6.1E7
4.6E7
3.1E7
1.5E7
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time

590

QUANTERRA INCORPORATED
West Sacramento

Daily Standard Checklist
Dioxin/Furan High Res

STD ID ST1030A **Method ID** 429air **Column ID** DB-5 **Instr ID** VG-4

Standard Solution 956-64 **Prepared By** SMA **Prepared Date** 11-02-98

Analyzed By SMA/AM **Date Analyzed** 10-30-98

Reviewed By Deri Stone **Date Reviewed** 11-03-98

ANALYSIS OF DAILY STANDARD	INITIATED	REVIEWED
Standard, CPSM, and solvent blank present?	✓/NA	✓/NA
Copy of Instrument logfile present?	✓	✓
CPSM blow up and peak profile present?	NA/✓	NA/✓
Curve summary present?	✓	✓
Summary of 1613A criteria present?	NA	NA
Daily standard within method specified limits*?	✓	✓
Daily ion abundance ratios within limits?	NA	NA
CPSM valley < 25%?	NA	NA
~~CPSM~~ window correct?	NA/✓	✓
Samples analyzed within 12 hrs of daily standard?	✓	✓

COMMENTS:
No cpsm in PAH's analysis.

* For NCASI 551, Control Limit (CL) = +/- 20% from curve RRFs for all analytes.
For Method 8290, CL = +/- 20% from curve RRFs for native analytes, CL = +/- 30% from curve RRFs for labeled compounds.
For Method 1613A, see 3rd Revision to Method 1613 Performance Specifications, Table 7.

ass Spec : VG-4 Results : 30OC98V4031.RES : PAHAIRCAL3.TRG
C Column : DB-5 Date analyzed : 30-OCT-98
Data file : 30OC98V4 ST1030A :CS-3 :956-64 : : Ex
Weight : 1

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	pg	% Dev
d10-2-Methylnaphthalene	78684600	1.00	Y	12: 28	Y	-1.00	100.00	
d8-Naphthalene	139825400	1.00	Y	10: 13	Y	1.78	100.00	-21
Naphthalene	153251600	1.00	Y	10: 16	Y	1.10	100.00	-11
2-Methylnaphthalene	70172200	1.00	Y	12: 34	Y	0.50	100.00	-10
d8-Acenaphthylene	103173000	1.00	Y	15: 28	Y	1.31	100.00	8
Acenaphthylene	87923600	1.00	Y	15: 31	Y	0.85	100.00	-10
d10-Acenaphthene	65038200	1.00	Y	16: 1	Y	0.83	100.00	11
Acenaphthene	59601000	1.00	Y	16: 8	Y	0.92	100.00	-26
d10-Anthracene	49881400	1.00	Y	20: 55	Y	-1.00	100.00	
d10-Fluorene	73075400	1.00	Y	17: 42	Y	1.46	100.00	3
Fluorene	60563400	1.00	Y	17: 47	Y	0.83	100.00	-29
d10-Phenanthrene	155005800	1.00	Y	20: 46	Y	3.11	100.00	11
Phenanthrene	123196000	1.00	Y	20: 50	Y	0.79	100.00	-11
Anthracene	112909800	1.00	Y	20: 59	Y	0.73	100.00	-9
d14-Terphenyl	127810400	1.00	Y	26: 0	Y	-2.00	100.00	
d10-Fluoranthene	143799600	1.00	Y	24: 36	Y	1.13	100.00	-20
Fluoranthene	153031600	1.00	Y	24: 40	Y	1.06	100.00	-4
d10-Pyrene	159392600	1.00	Y	25: 17	Y	1.25	100.00	-18
Pyrene	180647000	1.00	Y	25: 21	Y	1.13	100.00	-6
d12-Benzo(a)anthracene	107231400	1.00	Y	29: 8	Y	0.84	100.00	-7
Benzo(a)anthracene	109481400	1.00	Y	29: 12	Y	1.02	100.00	-15
d12-Chrysene	172908800	1.00	Y	29: 15	Y	1.35	100.00	6
Chrysene	147111000	1.00	Y	29: 20	Y	0.85	100.00	-22
d12-Benzo(e)pyrene	229522000	1.00	Y	33: 22	Y	0.00	100.00	
d12-Benzo(b)fluoranthene	110222800	1.00	Y	32: 28	Y	0.48	100.00	6
Benzo(b)fluoranthene	115912400	1.00	Y	32: 34	Y	1.05	100.00	-10
d12-Benzo(k)fluoranthene	222508000	1.00	Y	32: 34	Y	0.97	100.00	2
Benzo(k)fluoranthene	276998000	1.00	Y	32: 38	Y	1.24	100.00	7
d12-Benzo(a)pyrene	163626400	1.00	Y	33: 32	Y	0.71	100.00	5
Benzo(e)pyrene	284102000	1.00	Y	33: 27	Y	1.74	100.00	6
Benzo(a)pyrene	187480200	1.00	Y	33: 38	Y	1.15	100.00	7
d12-Perylene	153983800	1.00	Y	33: 49	Y	0.67	100.00	6
Perylene	303846000	1.00	Y	33: 55	Y	1.97	100.00	15
d12-Indeno(123-cd)pyrene	120288800	1.00	Y	38: 1	Y	0.52	100.00	18
Indeno(123-cd)pyrene	59200000	1.00	Y	38: 8	Y	0.49	100.00	-21
d14-Dibenz(ah)anthracene	69941000	1.00	Y	38: 5	Y	0.30	100.00	24
Dibenz(ah)anthracene	83626600	1.00	Y	38: 15	Y	1.20	100.00	-15
d12-Benzo(ghi)perylene	163634200	1.00	Y	39: 12	Y	0.71	100.00	23
Benzo(ghi)perylene	144641400	1.00	Y	39: 21	Y	0.88	100.00	-13
d10-Fluorene	73075400	1.00	Y	17: 42	Y	0.32	100.00	
13C-Fluorene	59403200	1.00	Y	17: 47	Y	0.81	100.00	

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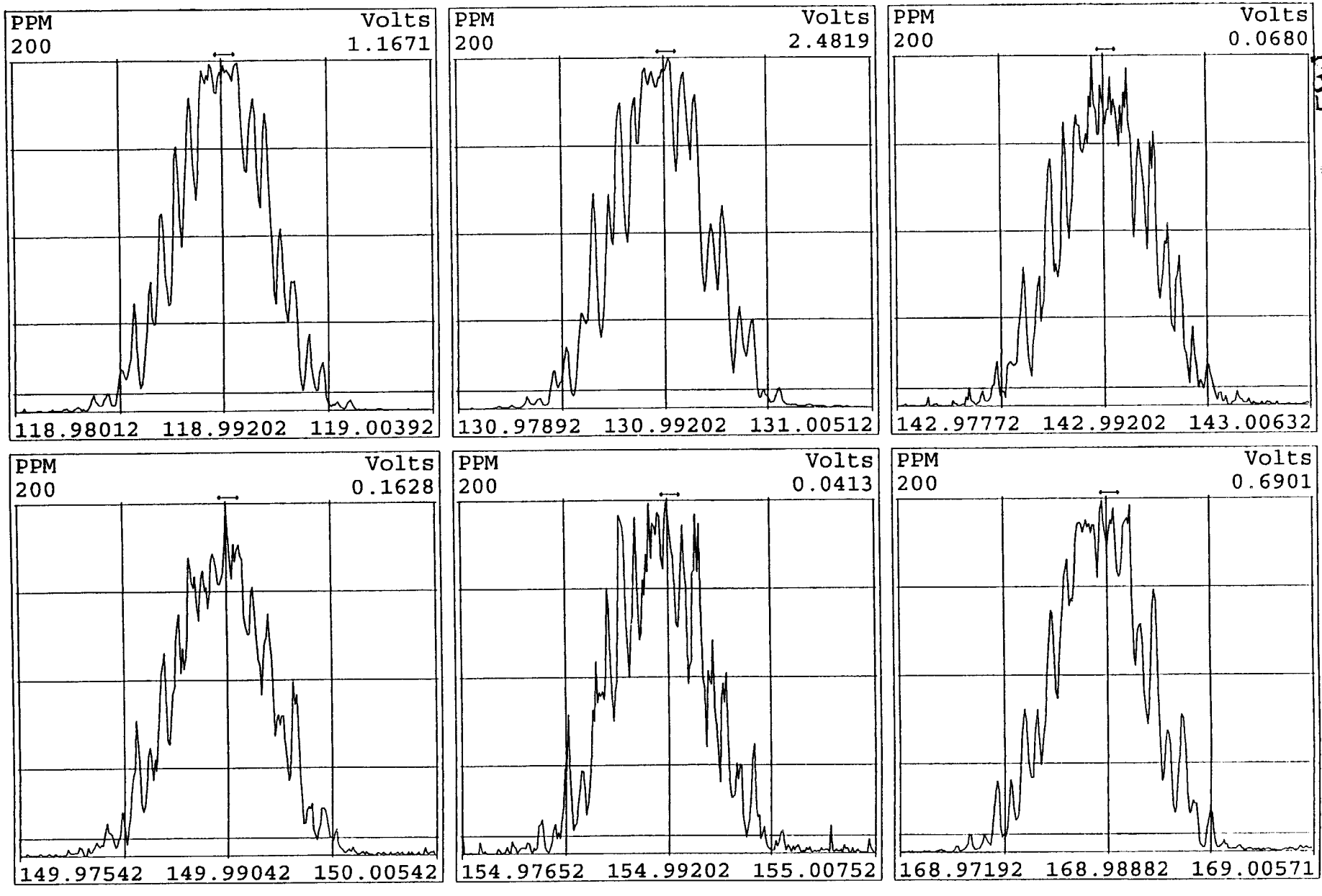
FILE	SAMP No. (1)	LAB. SAMP No	CUSTOMER ID	CLEAN UP 1 (SDS)	CLEAN UP 2 (D2)	TYPE (1)	CONCn.
30OC98V4	1	ST1030	CS-3	956-64			1
30OC98V4	2	SB1030	Solvent Blank	C-8			1
30OC98V4	3	ST1030A	CS-3	956-64			1
30OC98V4	4	SB1030A	Solvent Blank	C-8			1
30OC98V4	5	301802-1MB	METHOD BLANK	AIR	PAH	VSE-26	0.50
30OC98V4	6	301802-1LC	LCS				0.50
30OC98V4	7	301802-4	10X DIL.				0.50
30OC98V4	8	301802-5	10X DIL.				0.50
30OC98V4	9	301802-6	10X DIL.				0.50
30OC98V4	10	301802-7	10X DIL.				0.50
30OC98V4	11	301802-8	10X DIL.				0.50
30OC98V4	12	301802-9	10X DIL.				0.50
30OC98V4	13	301802-10	10X DIL.				0.50
30OC98V4	14	301802-11	10X DIL.				0.50
30OC98V4	15	301802-12	10X DIL.				0.50
30OC98V4	16	301802-13	10X DIL.				0.50
30OC98V4	17	301802-14	10X DIL.				0.50
30OC98V4	18	SB1029E	Solvent Blank	C-8			1
30OC98V4	19						
30OC98V4	20						
30OC98V4	21						
30OC98V4	22						
30OC98V4	23						
30OC98V4	24						
30OC98V4	25						
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30OC98V4	42						
30OC98V4	43						
30OC98V4	44						
30OC98V4	45						
30OC98V4	46		SMA, AM 10-30-98				
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30OC98V4	49						
30OC98V4	50						

DUPED

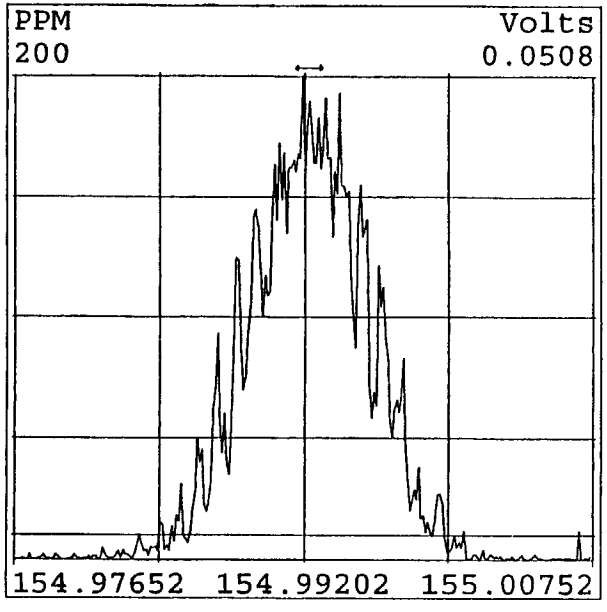
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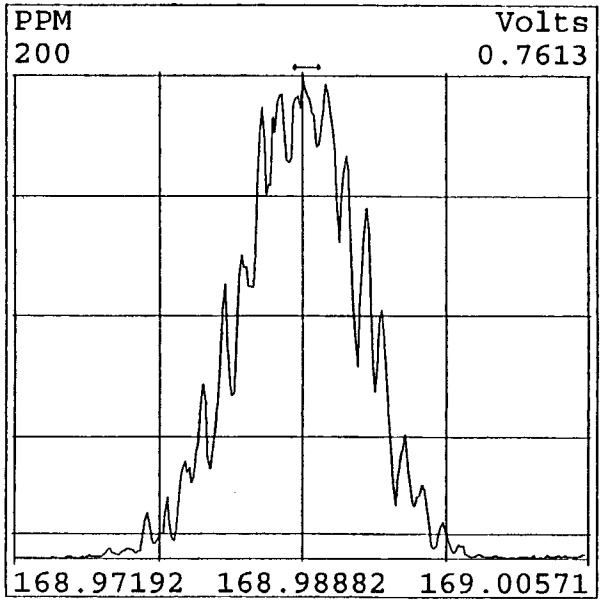
593 SMA 11-02

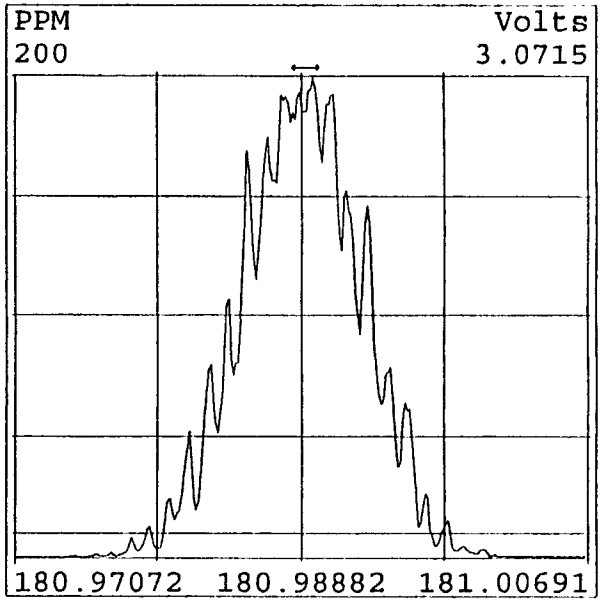
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Experiment:PAHAIR Function:1 Reference:PFK

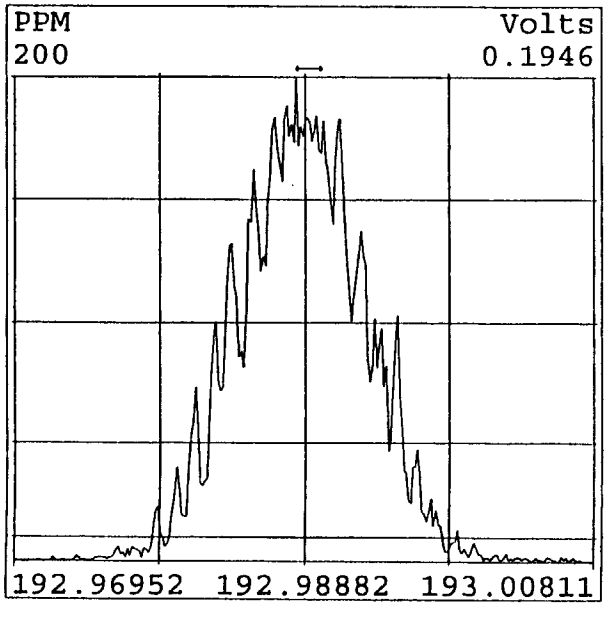


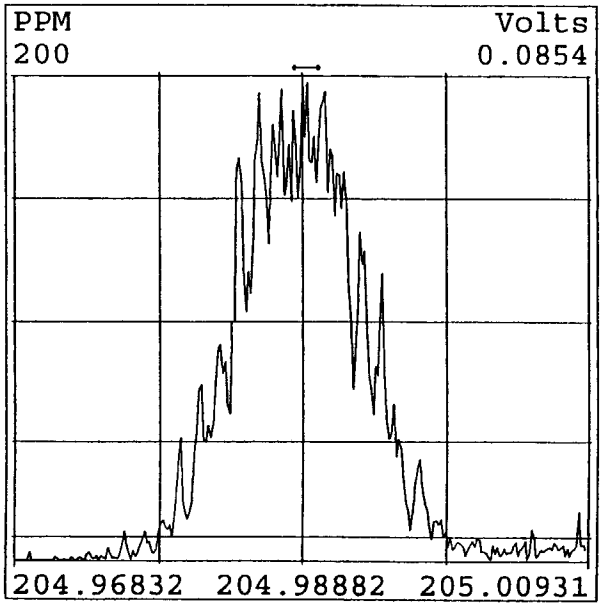
Peak Locate Examination:30-OCT-1998:16:39 File:30OC98V4
Experiment:PAHAIR Function:2 Reference:PFK



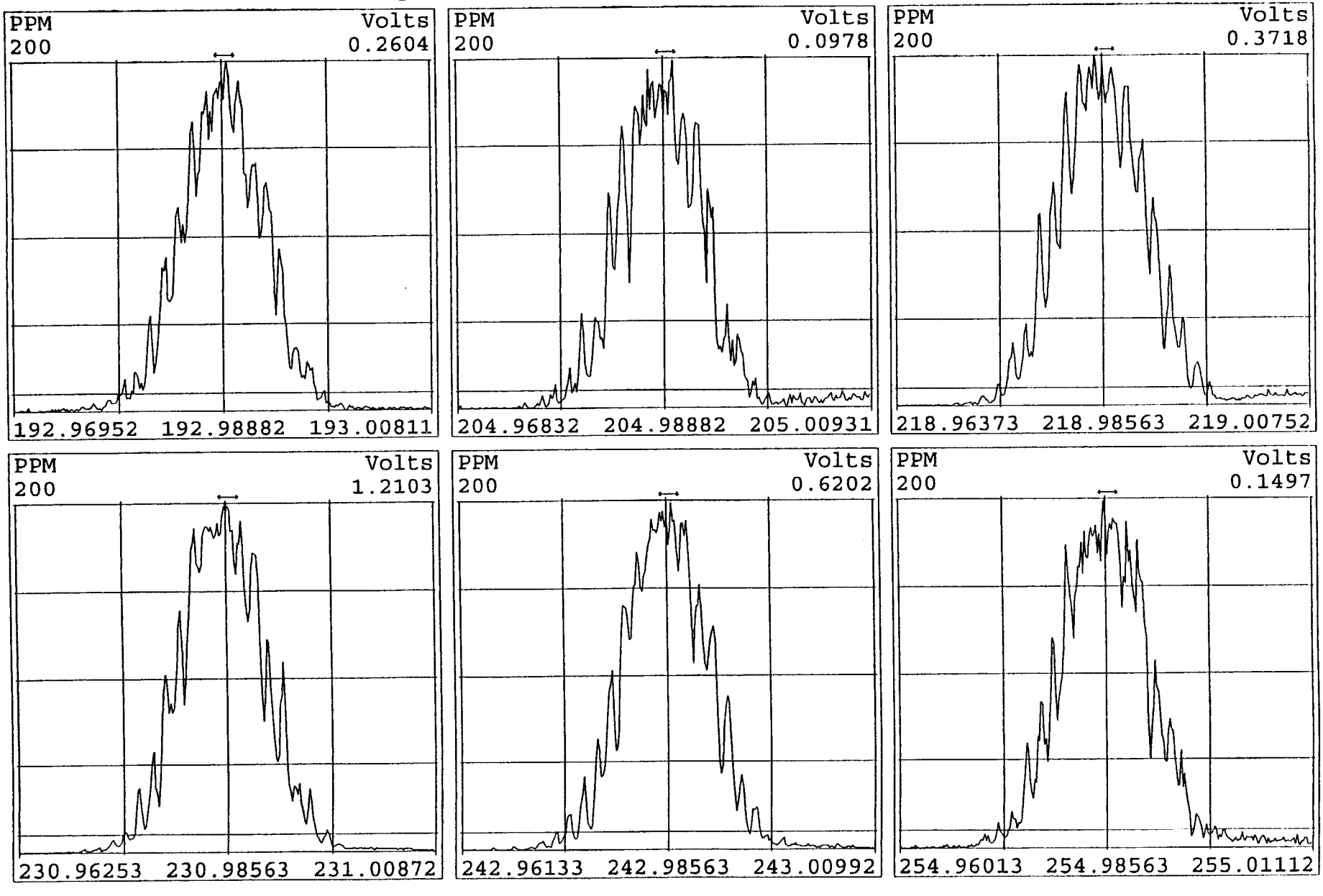




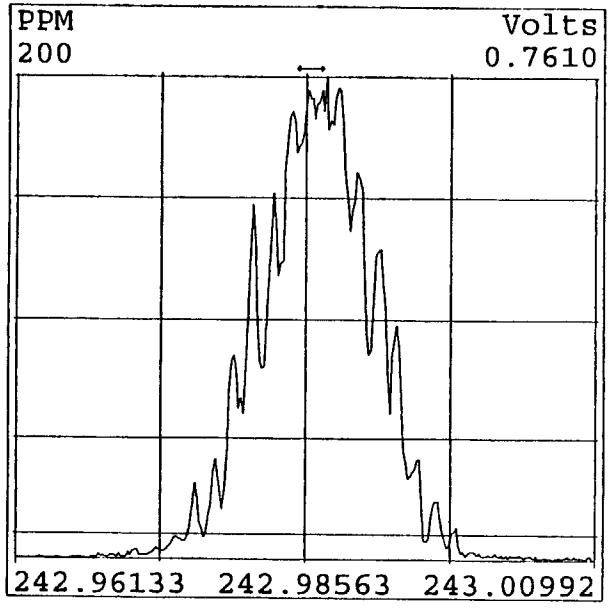


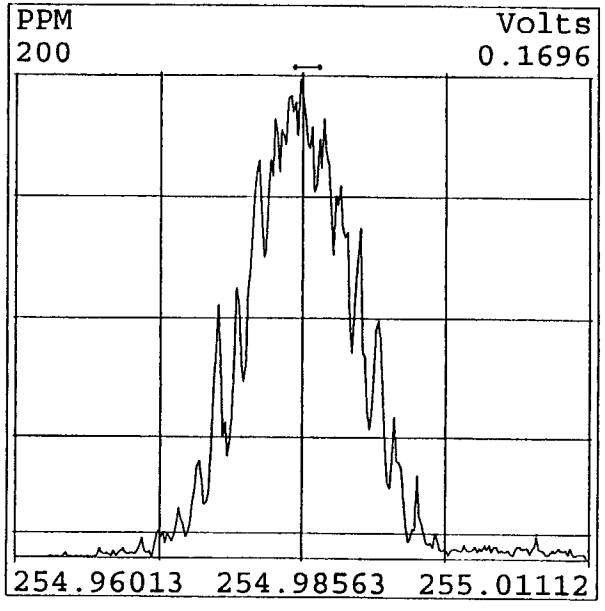


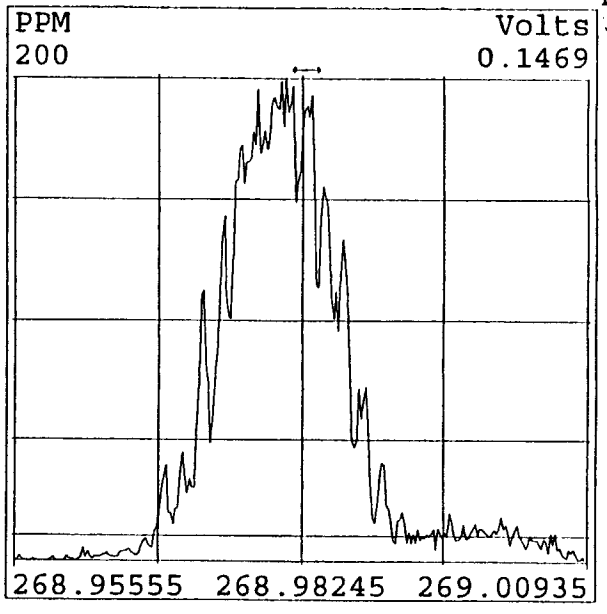
Peak Locate Examination:30-OCT-1998:16:40 File:30OC98V4
Experiment:PAHAIR Function:3 Reference:PFK

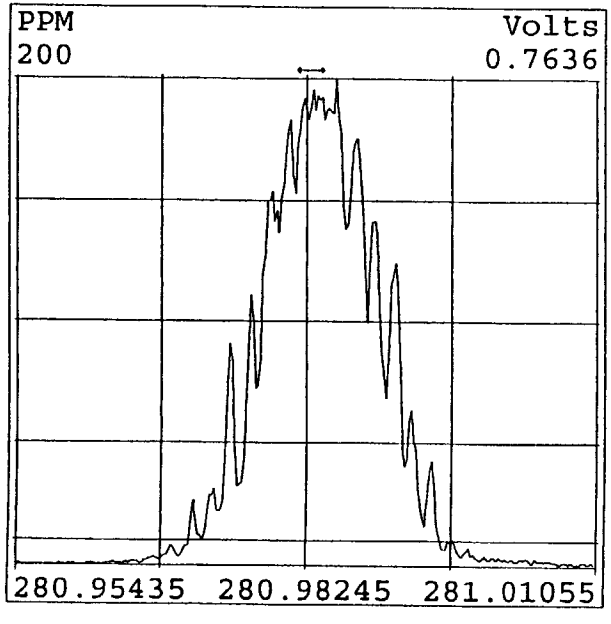


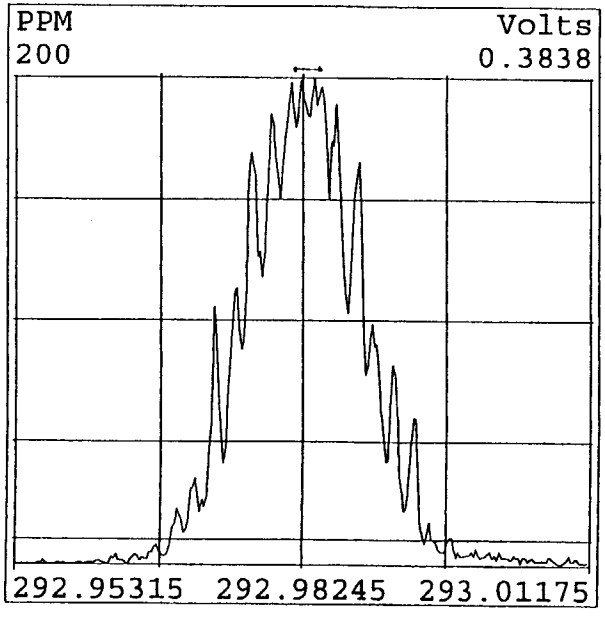
Peak Locate Examination:30-OCT-1998:16:41 File:30OC98V4
Experiment:PAHAIR Function:4 Reference:PFK











94 2553

02-NOV-1998 08:06:34 AM

Dioxin Furan CALIBRATION TABLE

Mass Spec : VG-4
GC Column : DB-5
265-04A,B,D,E,956-64

File name : PAHAIR102998V4.RRF
Date analyzed : 29-OCT-98

Mult.: 350

INITIAL CALIBRATION CURVE

		Mean	S.D.	%RSD	1	2	3	4	5	6	7	8	9	10
d8-Naphthalene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				185.11	205.87	228.31	244.46	256.61					
	RRF	2.24	0.289	12.900	1.85	2.06	2.28	2.44	2.57					
Naphthalene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				13.76	61.93	113.47	231.43	609.70					
	RRF	1.23	0.094	7.707	1.38	1.24	1.13	1.16	1.22					
2-Methylnaphthalene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				6.91	29.85	51.39	97.93	255.67					
	RRF	0.56	0.084	14.909	0.69	0.60	0.51	0.49	0.51					
d8-Acenaphthylene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				131.95	128.38	114.60	122.45	109.50					
	RRF	1.21	0.093	7.696	1.32	1.28	1.15	1.22	1.10					
Acenaphthylene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				9.55	48.30	90.68	178.19	500.84					
	RRF	0.94	0.045	4.773	0.95	0.97	0.91	0.89	1.00					
d10-Acenaphthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				83.11	77.72	76.15	77.96	57.36					
	RRF	0.74	0.099	13.310	0.83	0.78	0.76	0.78	0.57					
Acenaphthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				10.98	62.63	151.76	215.88	641.50					
	RRF	1.25	0.177	14.178	1.10	1.25	1.52	1.08	1.28					
d10-Fluorene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				153.24	135.78	140.61	141.09	139.72					
	RRF	1.42	0.066	4.625	1.53	1.36	1.41	1.41	1.40					
Fluorene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				8.53	58.18	117.21	249.15	684.13					
	RRF	1.16	0.191	16.420	0.85	1.16	1.17	1.25	1.37					
d10-Phenanthrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				308.98	263.63	276.27	272.04	282.87					
	RRF	2.81	0.173	6.145	3.09	2.64	2.76	2.72	2.83					
Phenanthrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				9.70	46.13	81.87	168.14	460.23					
	RRF	0.89	0.063	7.028	0.97	0.92	0.82	0.84	0.92					
Anthracene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				8.13	42.20	77.06	153.96	402.42					
	RRF	0.80	0.031	3.901	0.81	0.84	0.77	0.77	0.80					
d10-Fluoranthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				118.94	136.07	145.72	150.34	154.31					
	RRF	1.41	0.141	10.009	1.19	1.36	1.46	1.50	1.54					
Fluoranthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				14.14	55.12	99.77	200.49	521.18					
	RRF	1.11	0.174	15.653	1.41	1.10	1.00	1.00	1.04					
d10-Pyrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				129.03	143.24	158.81	161.45	166.55					
	RRF	1.52	0.154	10.160	1.29	1.43	1.59	1.61	1.67					
Pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				16.74	59.11	104.58	204.18	551.22					
	RRF	1.21	0.269	22.353	1.67	1.18	1.05	1.02	1.10					

Mass Spec : VG-4
GC Column : DB-5
265-04A,B,D,E,956-64

File name : PAHAIR102998V4.RRF
Date analyzed : 29-OCT-98

INITIAL CALIBRATION CURVE

Mult.: 350

		Mean	S.D.	%RSD	1	2	3	4	5	6	7	8	9	10
d12-Benzo(a)anthracene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				68.20	70.96	127.65	89.95	93.26					
	RRF	0.90	0.238	26.446	0.68	0.71	1.28	0.90	0.93					
Benzo(a)anthracene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				11.85	64.84	102.61	234.26	671.78					
	RRF	1.20	0.124	10.269	1.18	1.30	1.03	1.17	1.34					
d12-Chrysene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				109.94	119.85	127.65	136.79	145.35					
	RRF	1.28	0.139	10.855	1.10	1.20	1.28	1.37	1.45					
Chrysene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				10.44	56.47	102.61	215.75	571.04					
	RRF	1.08	0.051	4.716	1.04	1.13	1.03	1.08	1.14					
d12-Benzo(b)fluoranthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				41.05	45.84	49.22	45.10	45.72					
	RRF	0.45	0.029	6.414	0.41	0.46	0.49	0.45	0.46					
Benzo(b)fluoranthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				12.56	61.73	95.82	228.66	622.27					
	RRF	1.17	0.125	10.717	1.26	1.23	0.96	1.14	1.24					
d12-Benzo(k)fluoranthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				91.66	94.95	96.52	94.09	96.82					
	RRF	0.95	0.021	2.203	0.92	0.95	0.97	0.94	0.97					
Benzo(k)fluoranthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				12.71	63.16	119.14	210.18	522.11					
	RRF	1.16	0.111	9.525	1.27	1.26	1.19	1.05	1.04					
d12-Benzo(a)pyrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				65.24	66.86	69.56	67.87	68.82					
	RRF	0.68	0.017	2.504	0.65	0.67	0.70	0.68	0.69					
Benzo(e)pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				18.05	89.03	157.16	302.58	767.23					
	RRF	1.64	0.140	8.557	1.80	1.78	1.57	1.51	1.53					
Benzo(a)pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				11.71	60.46	102.44	200.46	476.32					
	RRF	1.07	0.112	10.437	1.17	1.21	1.02	1.00	0.95					
d12-Perylene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				64.89	58.55	68.21	62.00	61.45					
	RRF	0.63	0.037	5.829	0.65	0.59	0.68	0.62	0.61					
Perylene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				16.93	98.08	162.24	324.02	835.41					
	RRF	1.71	0.142	8.297	1.69	1.96	1.62	1.62	1.67					
d12-Indeno(123-cd)pyrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				44.86	44.54	44.08	43.39	45.40					
	RRF	0.44	0.008	1.722	0.45	0.45	0.44	0.43	0.45					
Indeno(123-cd)pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				5.85	35.13	60.26	127.89	287.53					
	RRF	0.62	0.052	8.352	0.59	0.70	0.60	0.64	0.58					
d14-Dibenz(ah)anthracene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				20.73	24.39	25.35	26.10	26.33					
	RRF	0.25	0.023	9.286	0.21	0.24	0.25	0.26	0.26					

Mass Spec : VG-4
GC Column : DB-5
265-04A,B,D,E,956-64

File name : PAHAIR102998V4.RRF
Date analyzed : 29-OCT-98

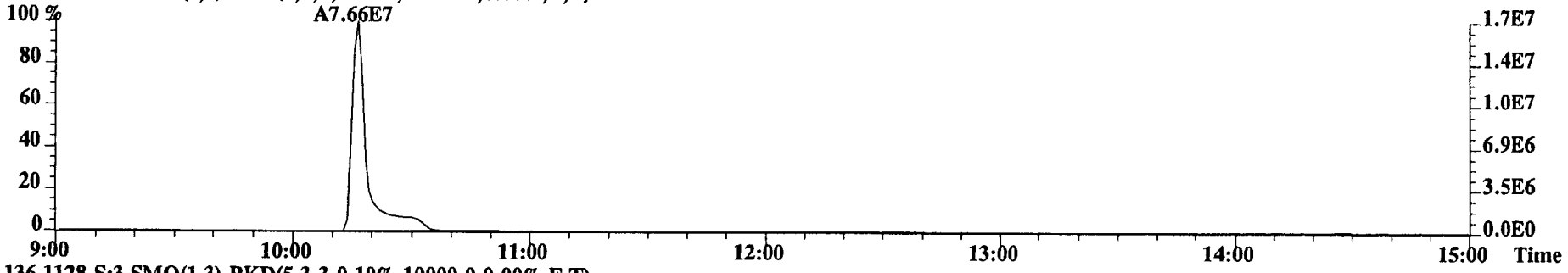
Mult.: 350

INITIAL CALIBRATION CURVE

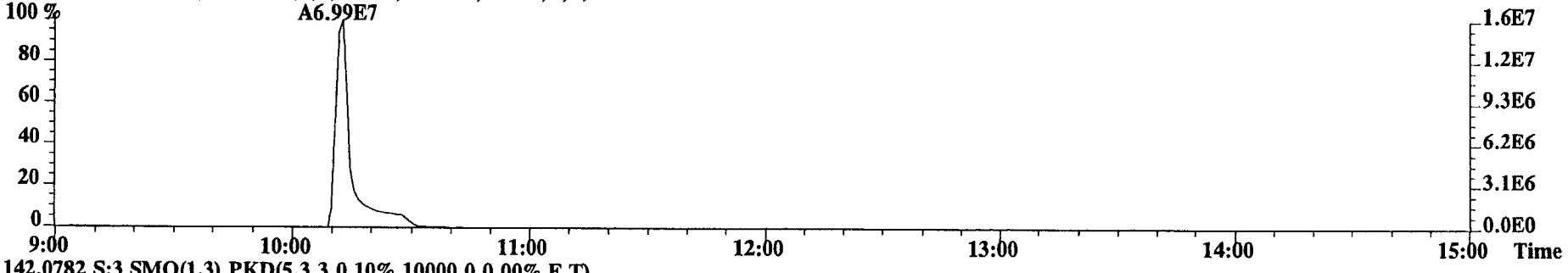
		Mean	S.D.	%RSD	1	2	3	4	5	6	7	8	9	10
Dibenz(ah)anthracene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				12.92	69.25	143.15	281.33	751.34					
	RRF	1.40	0.077	5.452	1.29	1.38	1.43	1.41	1.50					
d12-Benzo(ghi)perylene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				59.24	54.17	59.73	58.78	57.94					
	RRF	0.58	0.022	3.838	0.59	0.54	0.60	0.59	0.58					
Benzo(ghi)perylene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				8.58	51.44	109.18	211.25	522.58					
	RRF	1.02	0.091	8.984	0.86	1.03	1.09	1.06	1.05					
	Amount													
	RF				0	0	0	0	0					
	RRF	0	0	0										

039

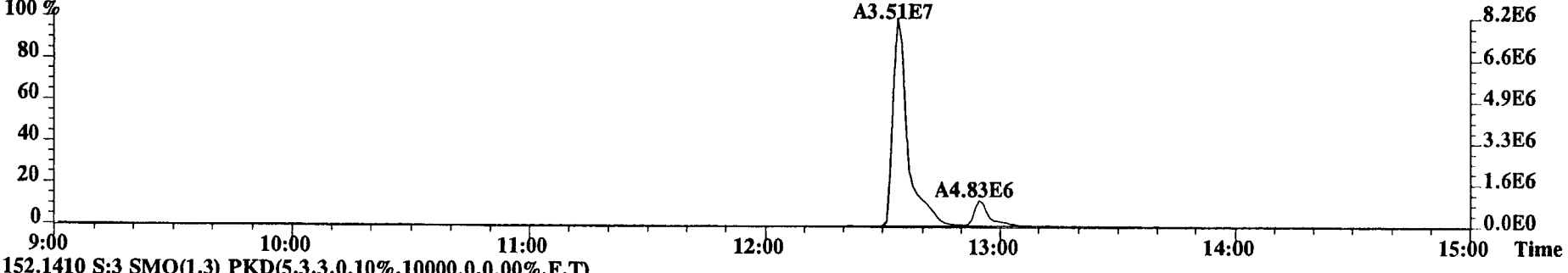
File:30OC98V4 #1-510 Acq:30-OCT-1998 18:23:22 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1030A :CS-3 :956-64 : : Exp:PAHAIR
128.0626 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



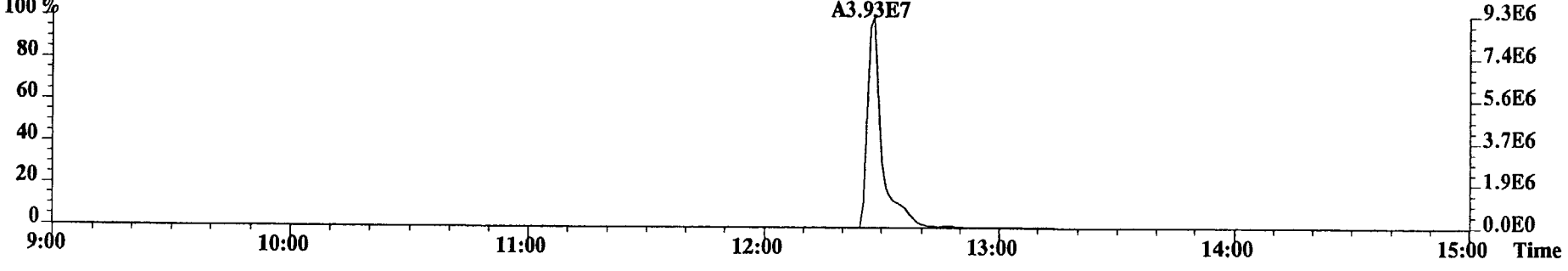
136.1128 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



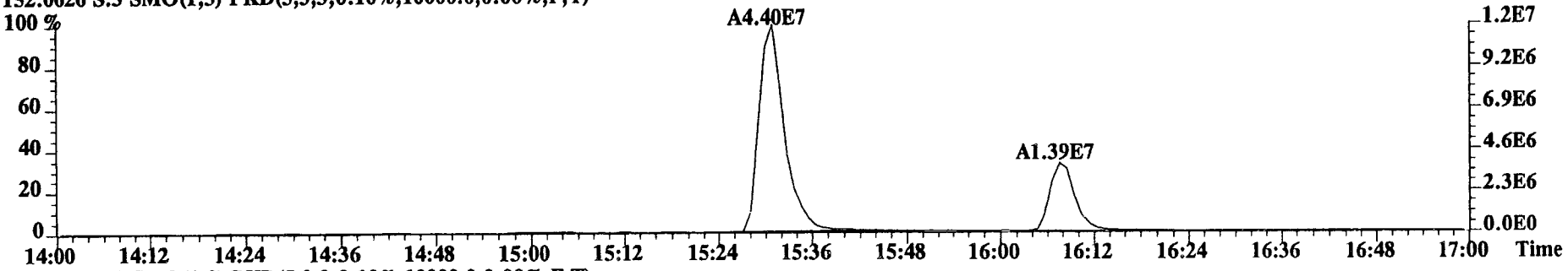
142.0782 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



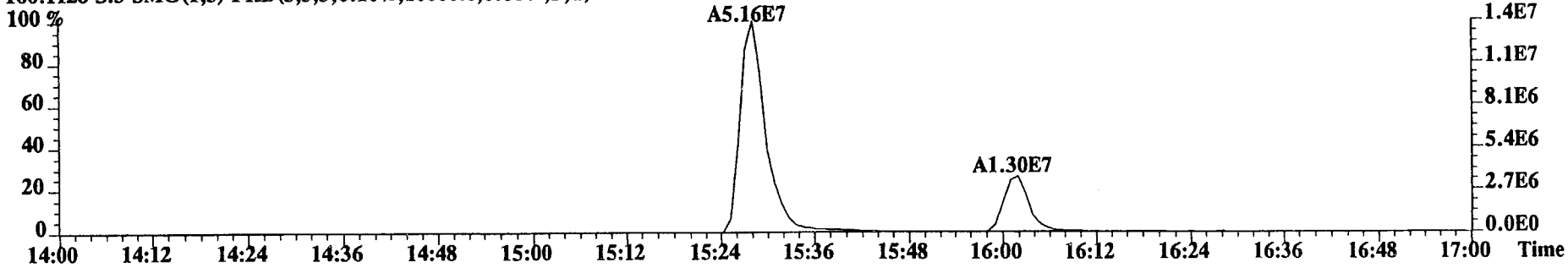
152.1410 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



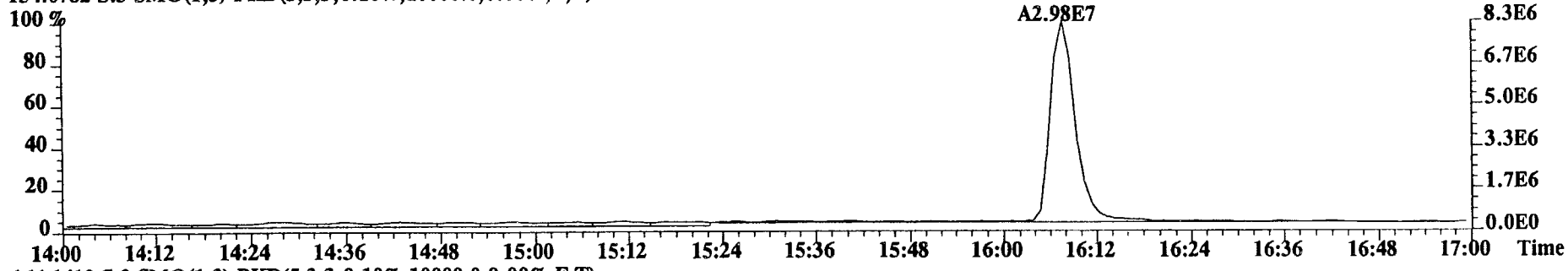
File:30OC98V4 #1-510 Acq:30-OCT-1998 18:23:22 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1030A :CS-3 :956-64 : : Exp:PAHAIR
152.0626 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



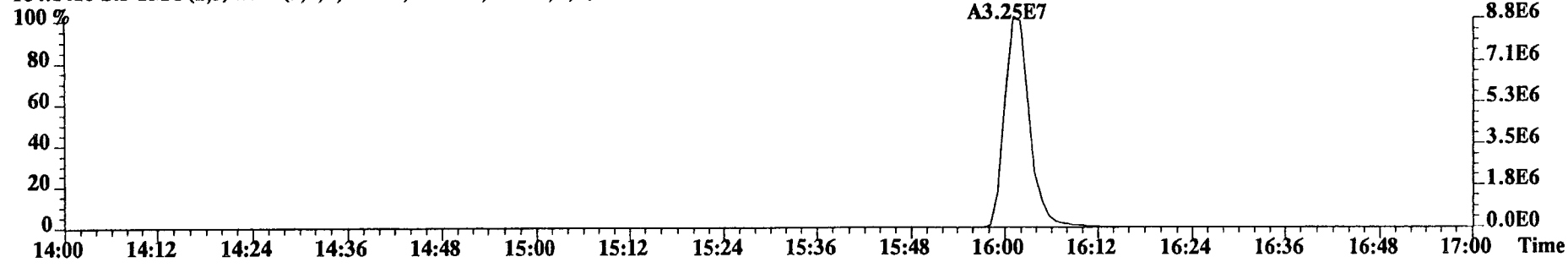
160.1128 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



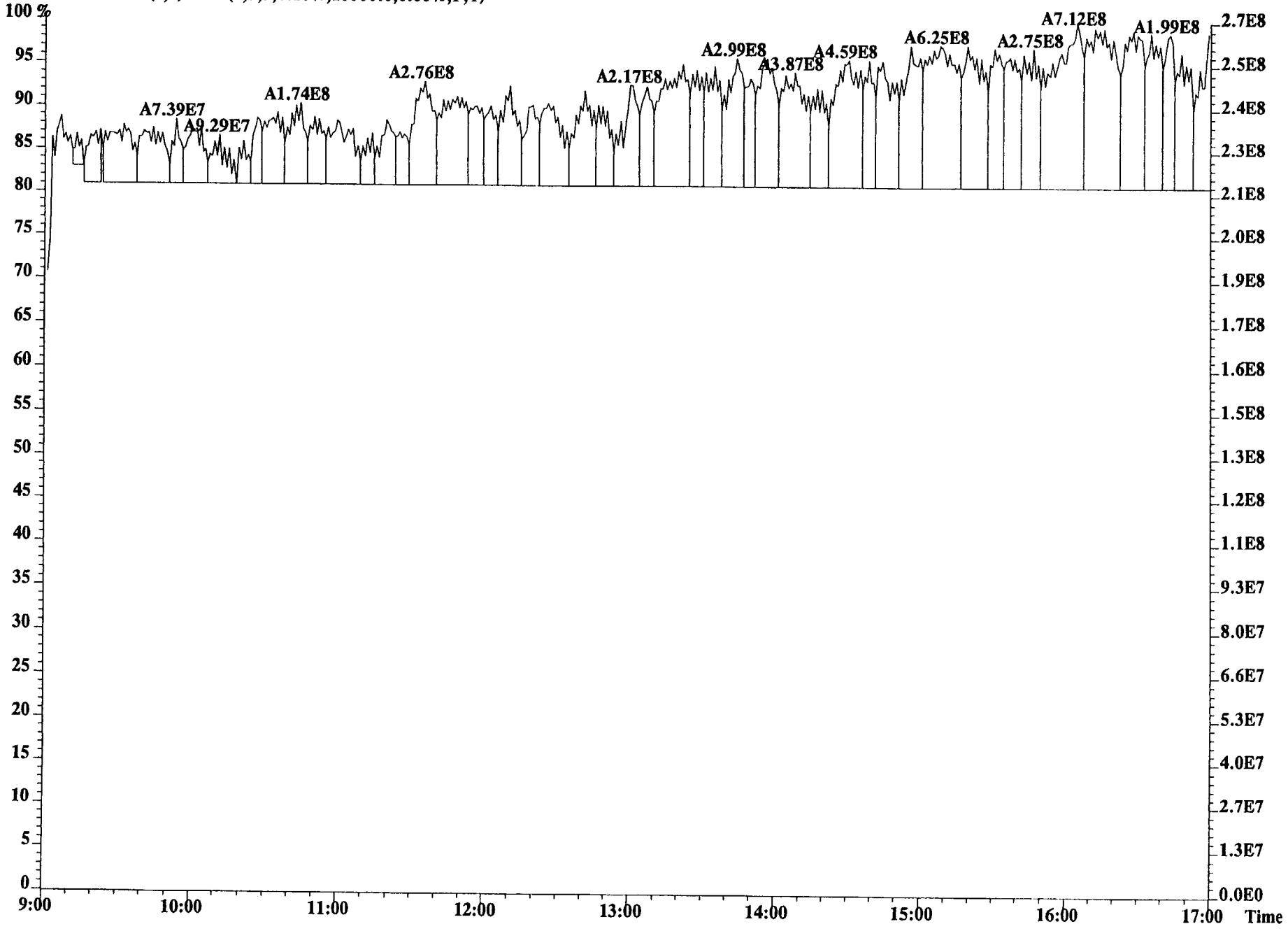
154.0782 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



164.1410 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

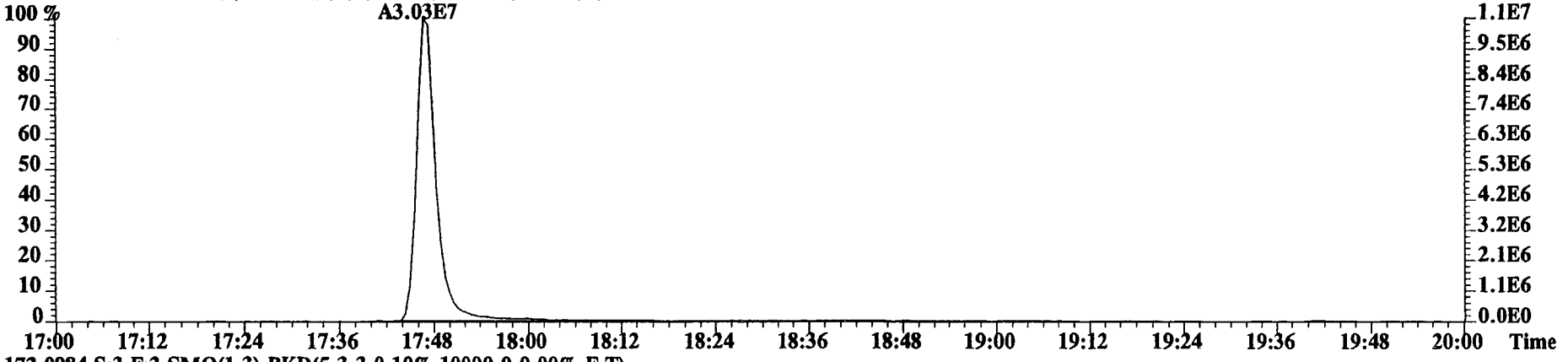


File:30OC98V4 #1-510 Acq:30-OCT-1998 18:23:22 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1030A :CS-3 :956-64 : : Exp:PAHAIR
130.9920 S:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

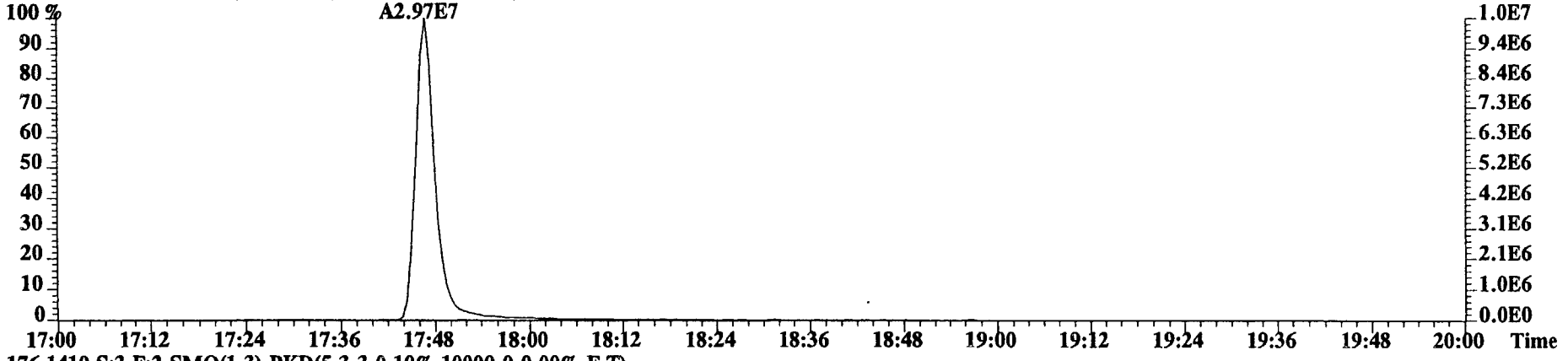


693

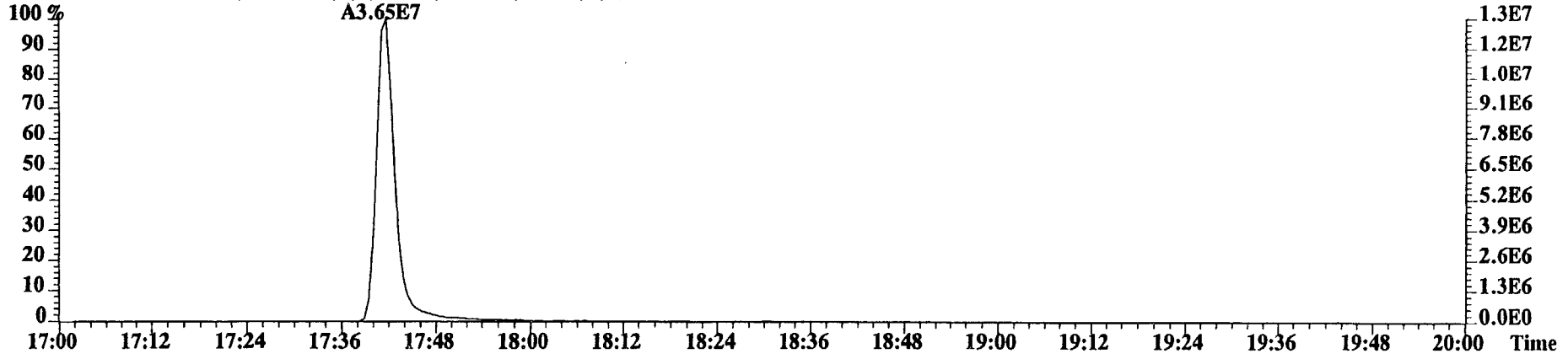
File:30OC98V4 #1-641 Acq:30-OCT-1998 18:23:22 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1030A :CS-3 :956-64 : : Exp:PAHAIR
166.0798 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



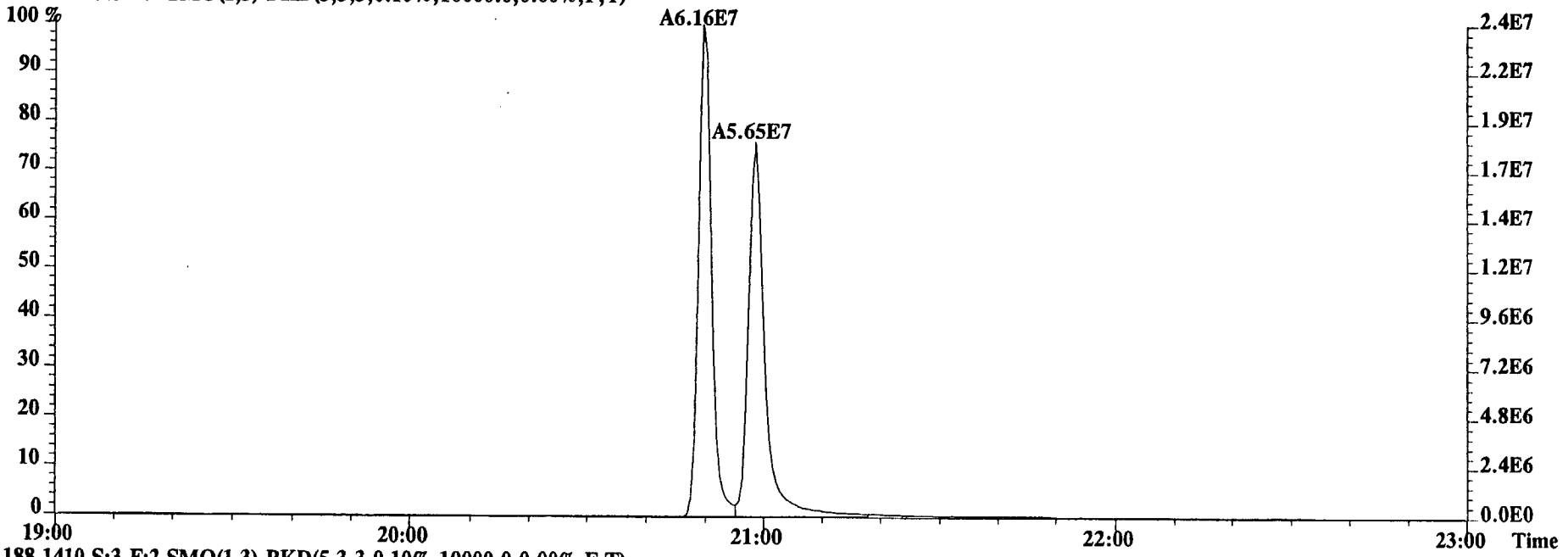
172.0984 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



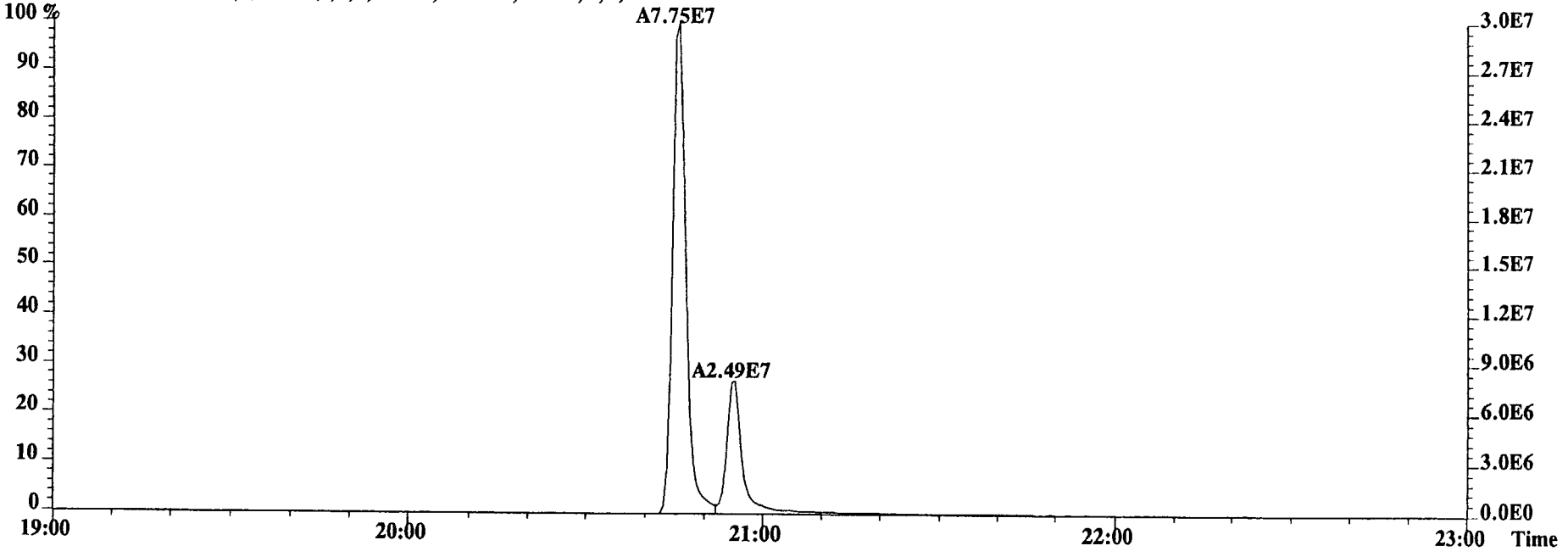
176.1410 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



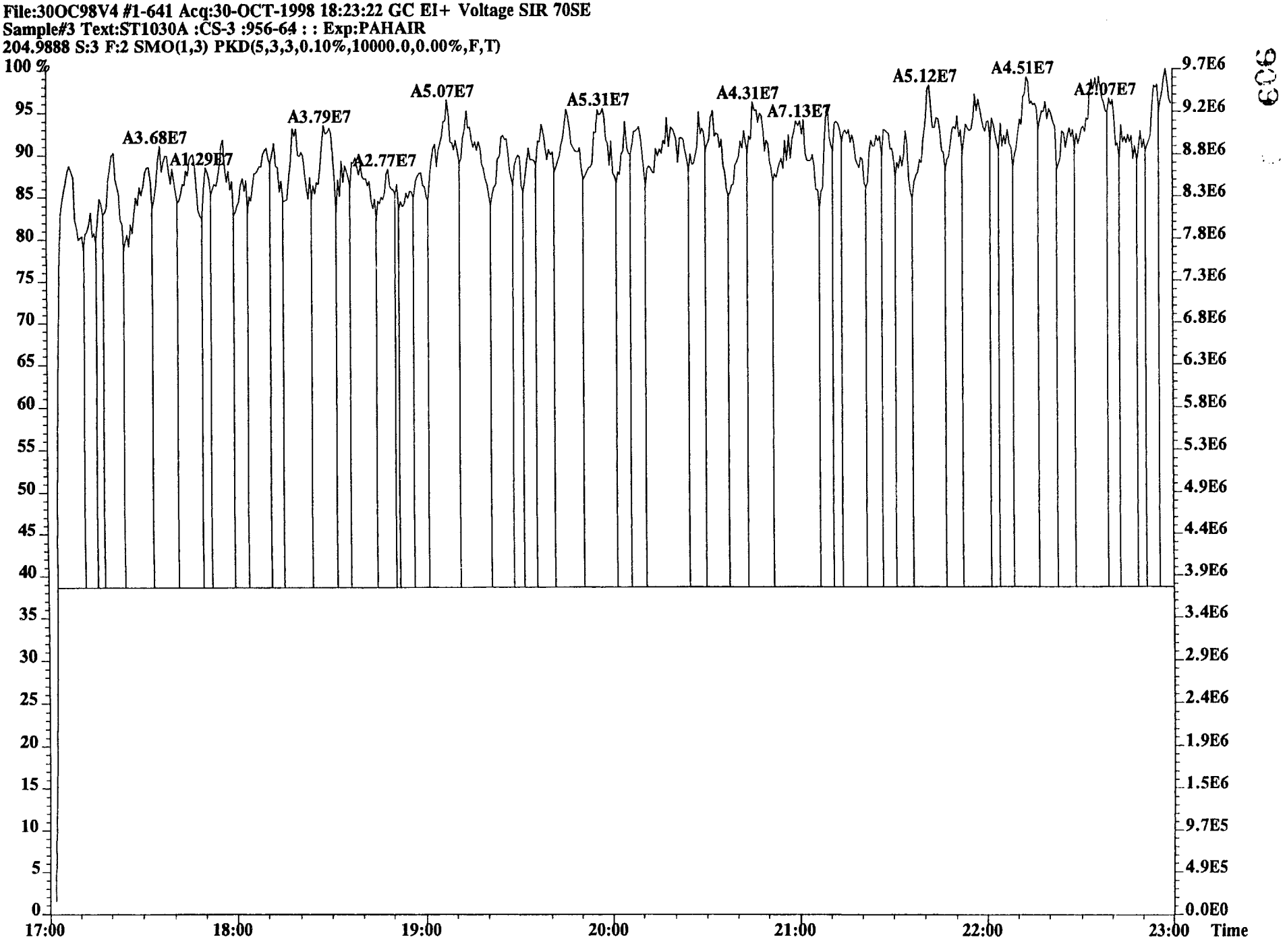
File:30OC98V4 #1-641 Acq:30-OCT-1998 18:23:22 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1030A :CS-3 :956-64 : : Exp:PAHAIR
178.0782 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

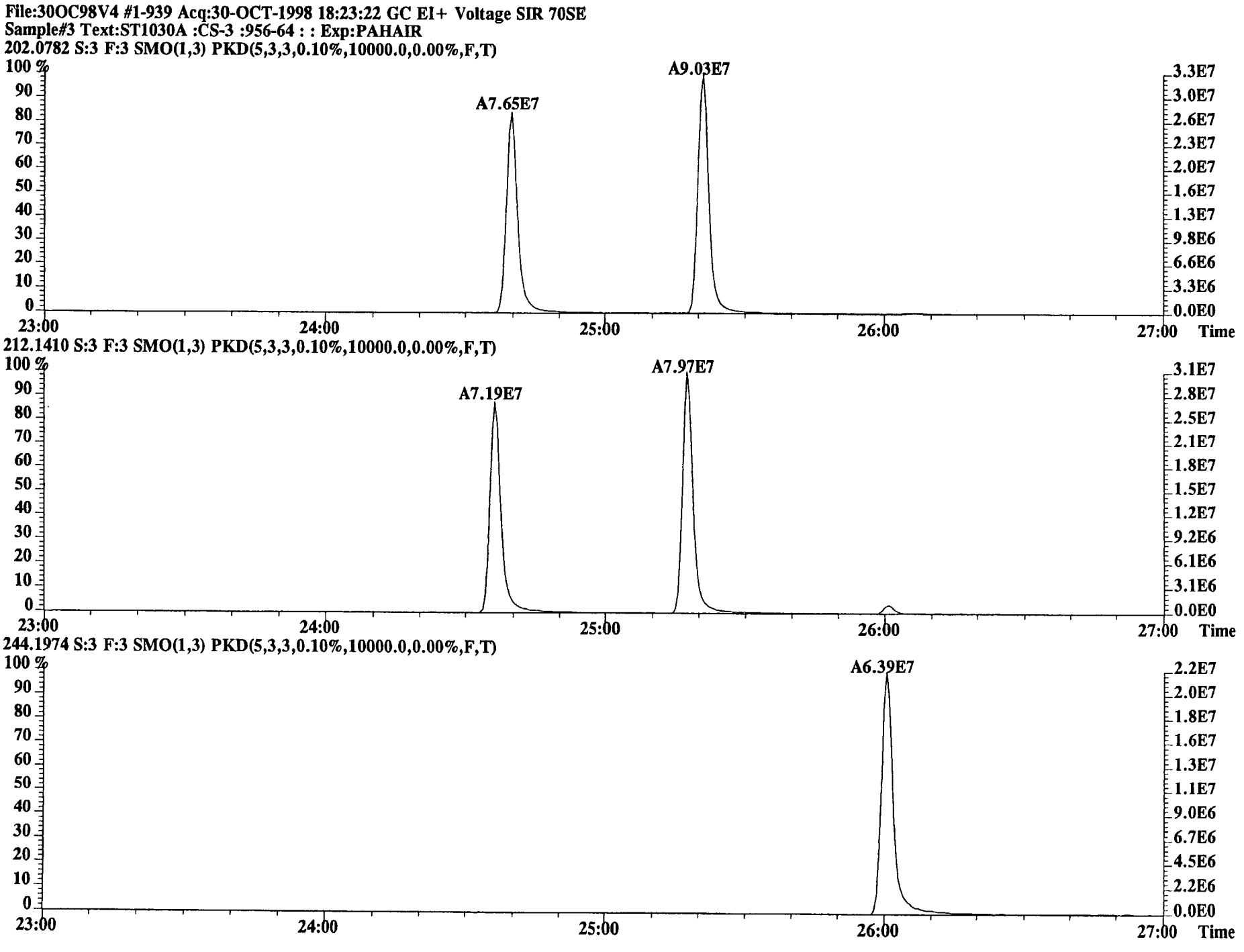


188.1410 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

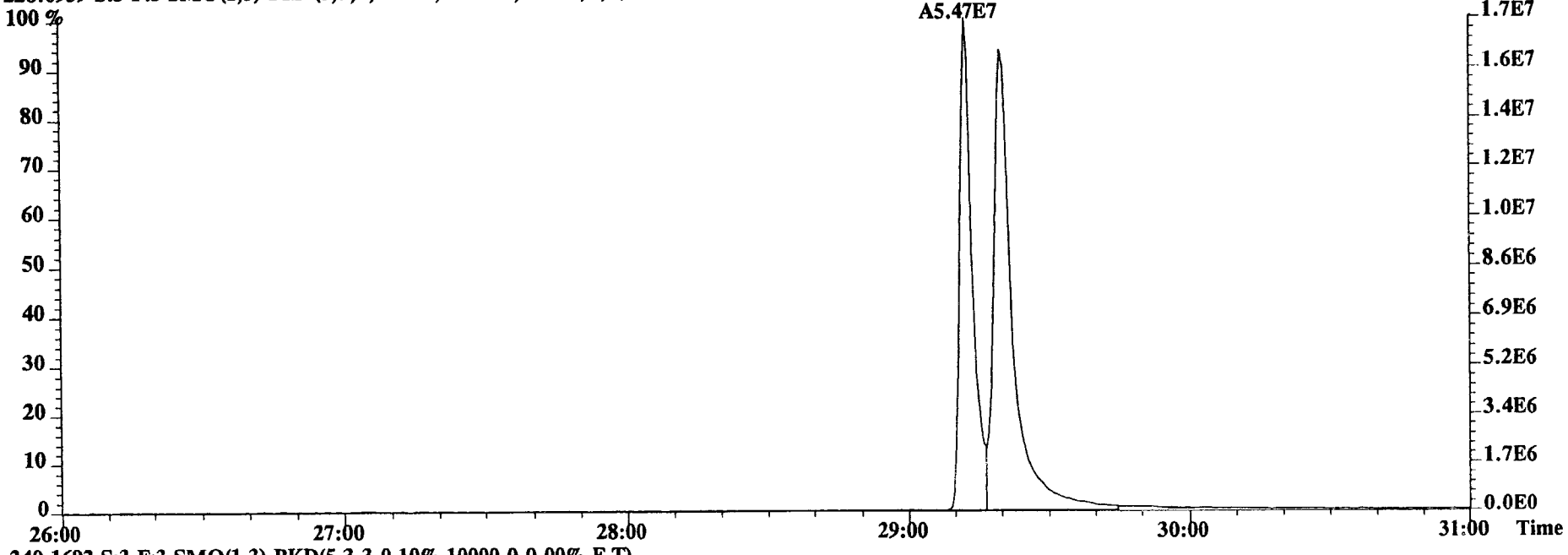


605

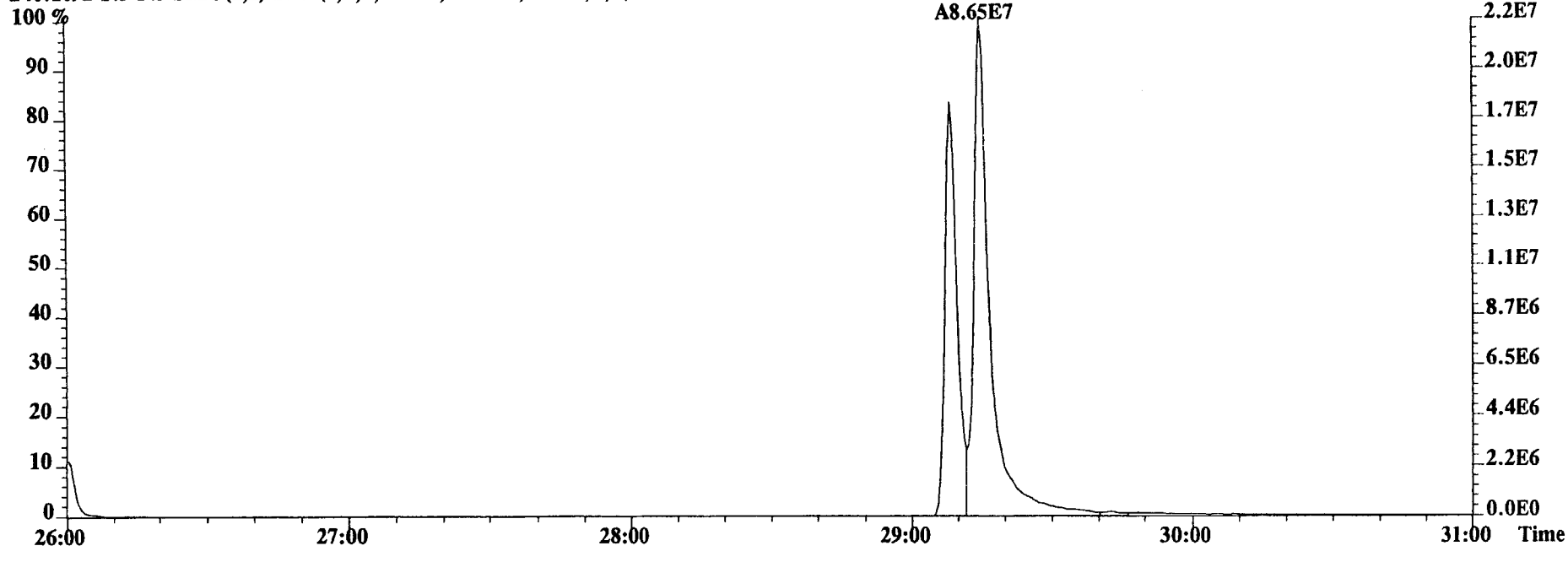

File:30OC98V4 #1-641 Acq:30-OCT-1998 18:23:22 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1030A :CS-3 :956-64 : : Exp:PAHAIR
204.9888 S:3 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A3.68E7
A1.29E7
A3.79E7
A2.77E7
A5.07E7
A5.31E7
A4.31E7
A7.13E7
A5.12E7
A4.51E7
A2.07E7
9.7E6
9.2E6
8.8E6
8.3E6
7.8E6
7.3E6
6.8E6
6.3E6
5.8E6
5.3E6
4.9E6
4.4E6
3.9E6
3.4E6
2.9E6
2.4E6
1.9E6
1.5E6
9.7E5
4.9E5
0.0E0
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

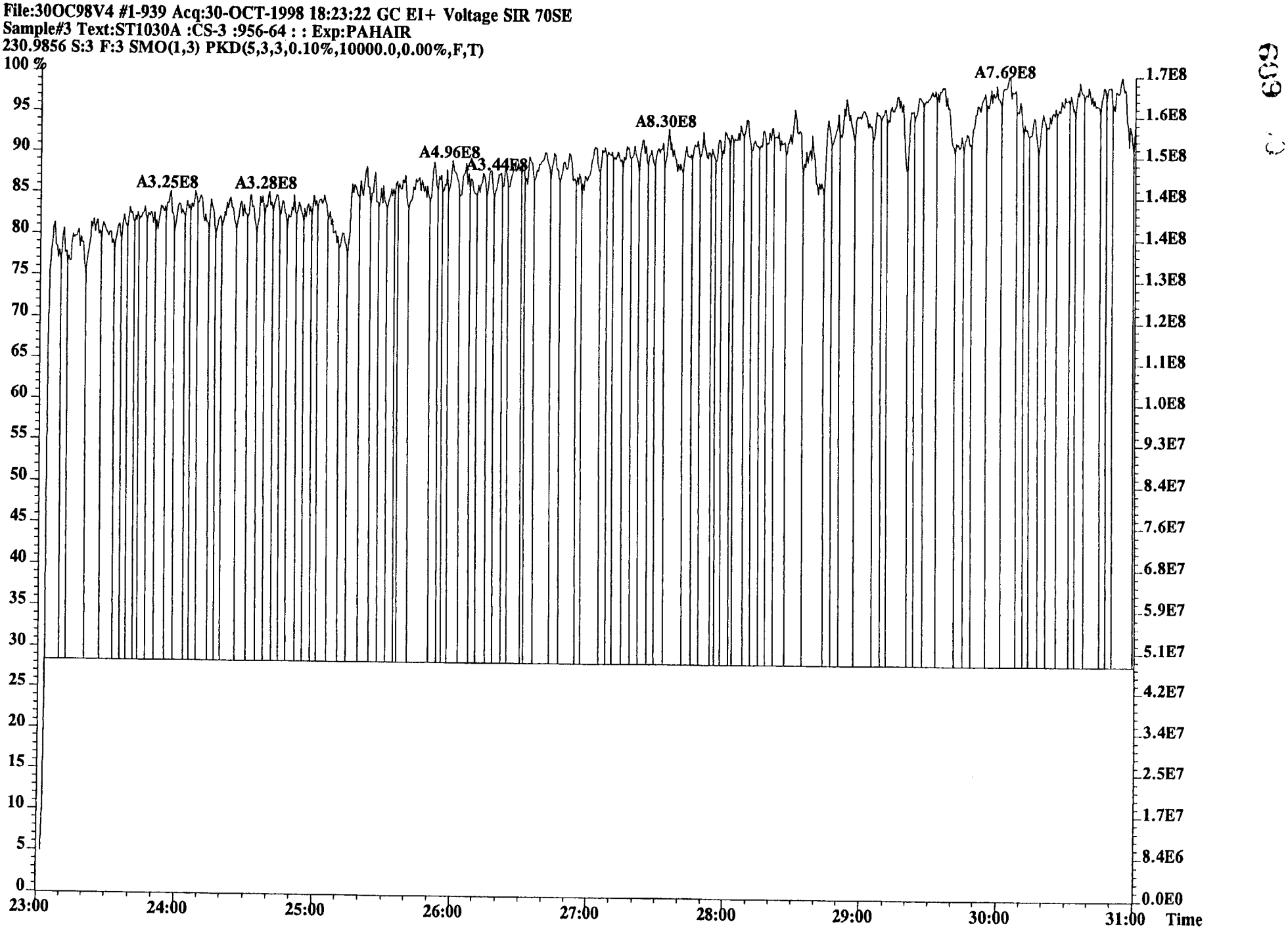

File:30OC98V4 #1-939 Acq:30-OCT-1998 18:23:22 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1030A :CS-3 :956-64 : : Exp:PAHAIR
202.0782 S:3 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.65E7
A9.03E7
212.1410 S:3 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.19E7
A7.97E7
244.1974 S:3 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A6.39E7
100 %
90
80
70
60
50
40
30
20
10
0
23:00
24:00
25:00
26:00
27:00
Time
3.3E7
3.0E7
2.6E7
2.3E7
2.0E7
1.6E7
1.3E7
9.8E6
6.6E6
3.3E6
0.0E0
3.1E7
2.8E7
2.5E7
2.1E7
1.8E7
1.5E7
1.2E7
9.2E6
6.1E6
3.1E6
0.0E0
2.2E7
2.0E7
1.8E7
1.6E7
1.3E7
1.1E7
9.0E6
6.7E6
4.5E6
2.2E6
0.0E0

File:30OC98V4 #1-939 Acq:30-OCT-1998 18:23:22 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1030A :CS-3 :956-64 : : Exp:PAHAIR
228.0939 S:3 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

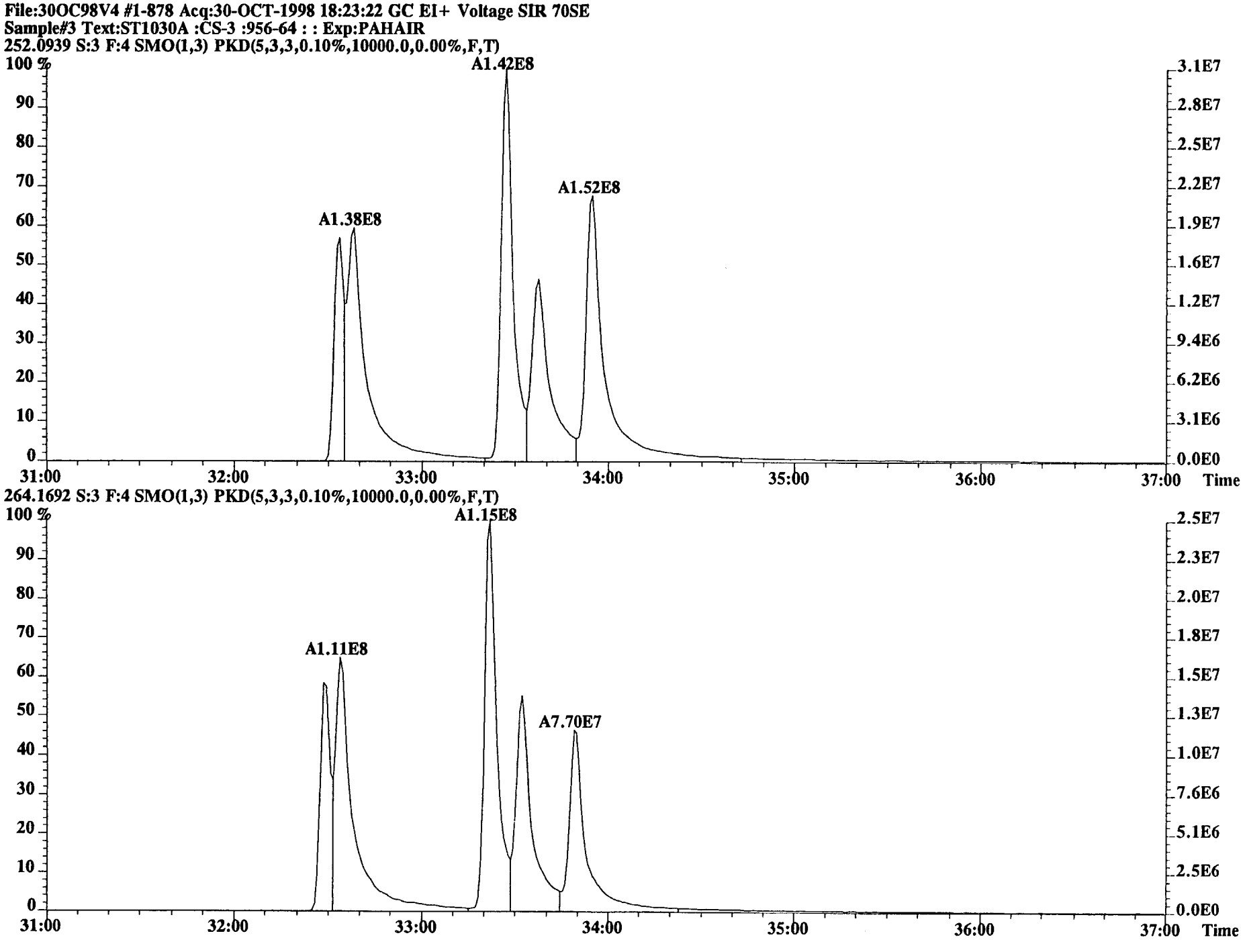


240.1692 S:3 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

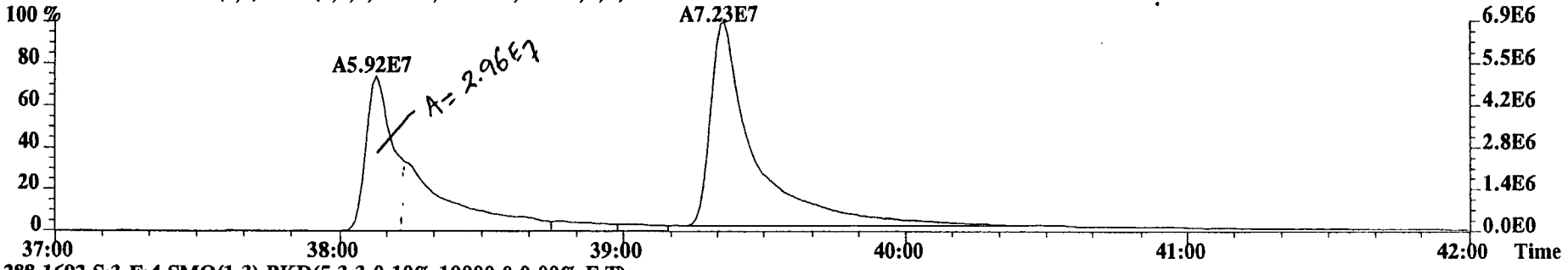



File:30OC98V4 #1-939 Acq:30-OCT-1998 18:23:22 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1030A :CS-3 :956-64 : : Exp:PAHAIR
230.9856 S:3 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A3.25E8
A3.28E8
A4.96E8
A3.44E8
A8.30E8
A7.69E8
1.7E8
1.6E8
1.5E8
1.4E8
1.4E8
1.3E8
1.2E8
1.1E8
1.0E8
9.3E7
8.4E7
7.6E7
6.8E7
5.9E7
5.1E7
4.2E7
3.4E7
2.5E7
1.7E7
8.4E6
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time

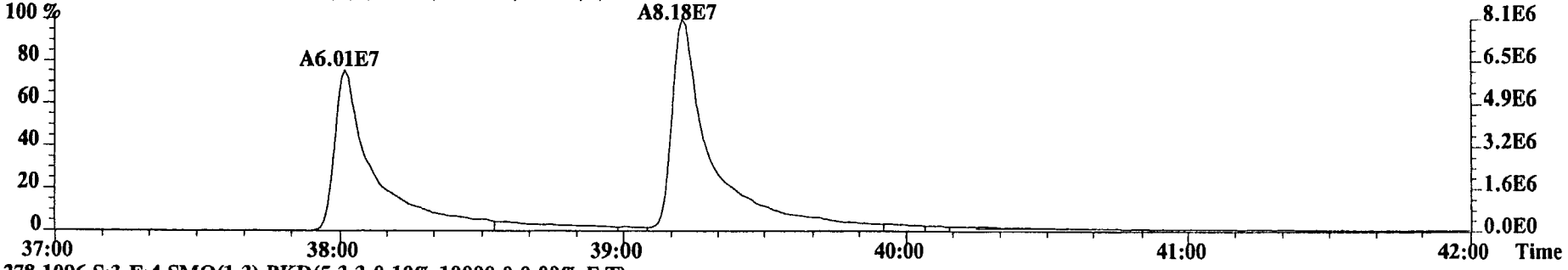
609


File:30OC98V4 #1-878 Acq:30-OCT-1998 18:23:22 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1030A :CS-3 :956-64 : : Exp:PAHAIR
252.0939 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.42E8
A1.52E8
A1.38E8
264.1692 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.15E8
A1.11E8
A7.70E7
100 %
90
80
70
60
50
40
30
20
10
0
3.1E7
2.8E7
2.5E7
2.2E7
1.9E7
1.6E7
1.2E7
9.4E6
6.2E6
3.1E6
0.0E0
2.5E7
2.3E7
2.0E7
1.8E7
1.5E7
1.3E7
1.0E7
7.6E6
5.1E6
2.5E6
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
Time

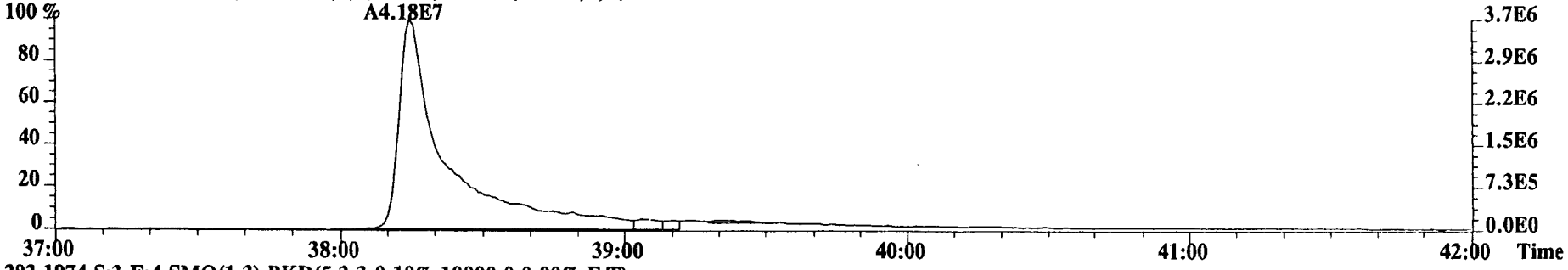
File:30OC98V4 #1-878 Acq:30-OCT-1998 18:23:22 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1030A :CS-3 :956-64 : : Exp:PAHAIR
276.0939 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



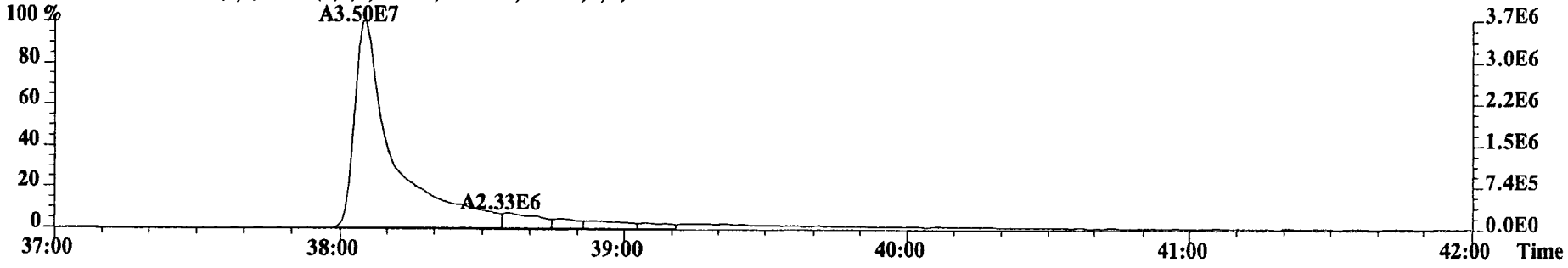
288.1692 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

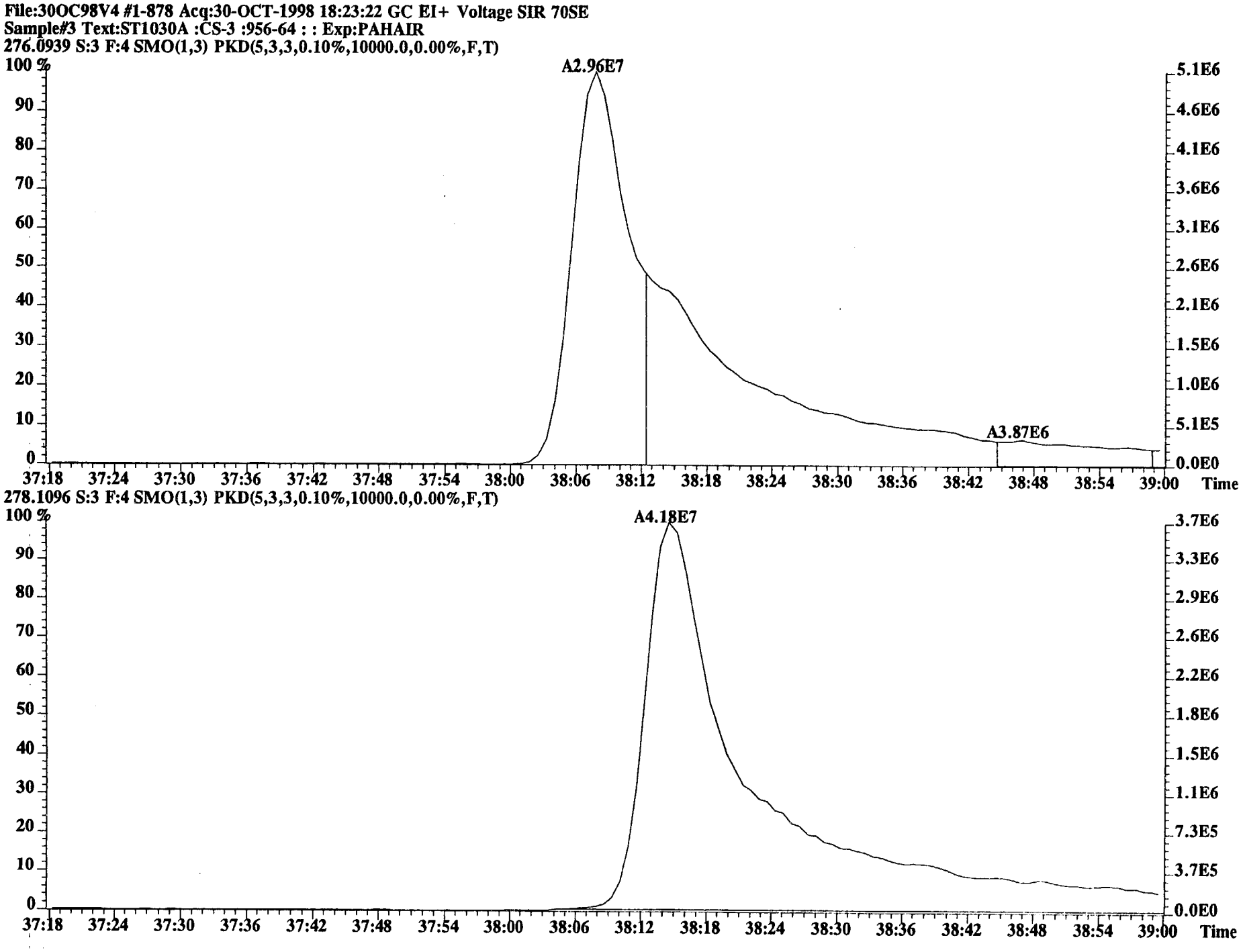


278.1096 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

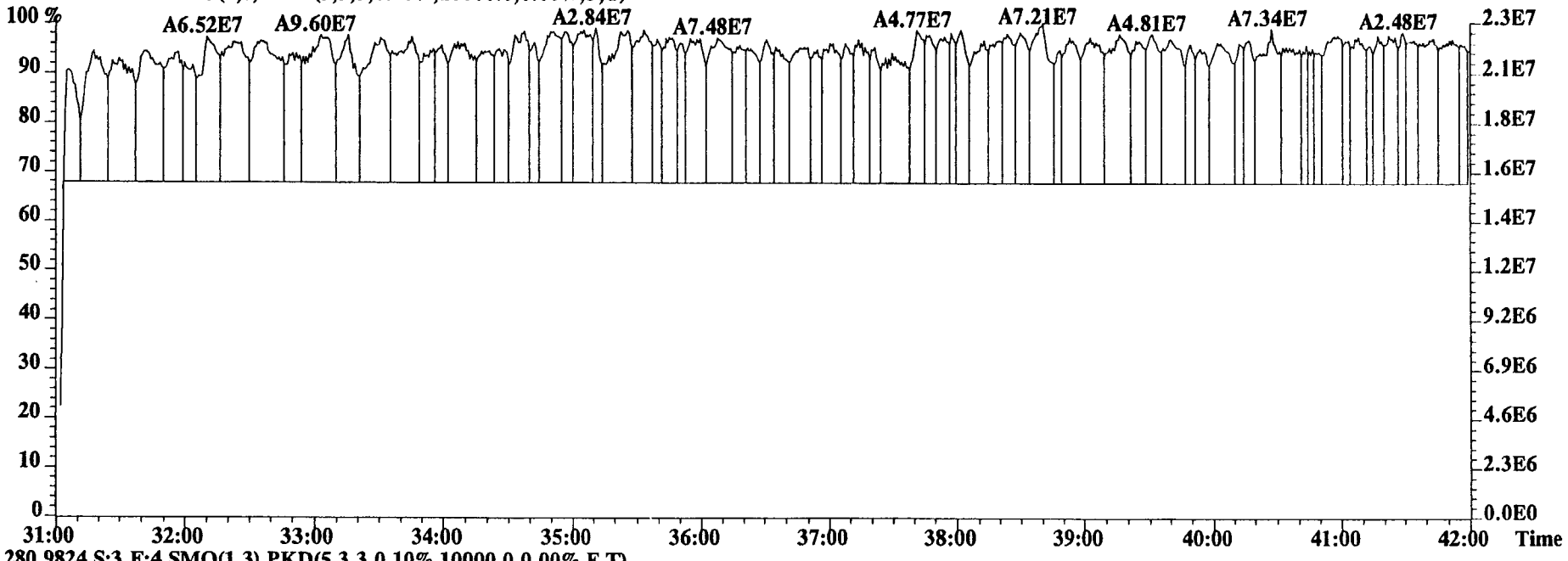


292.1974 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

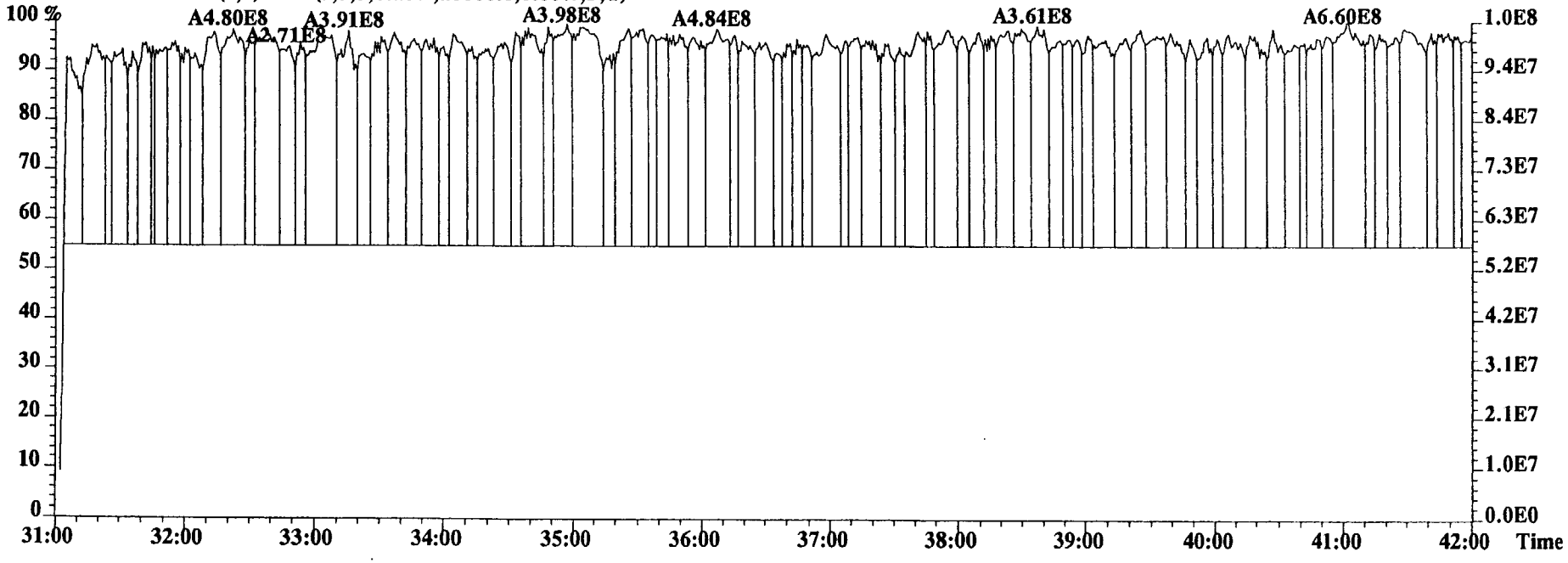


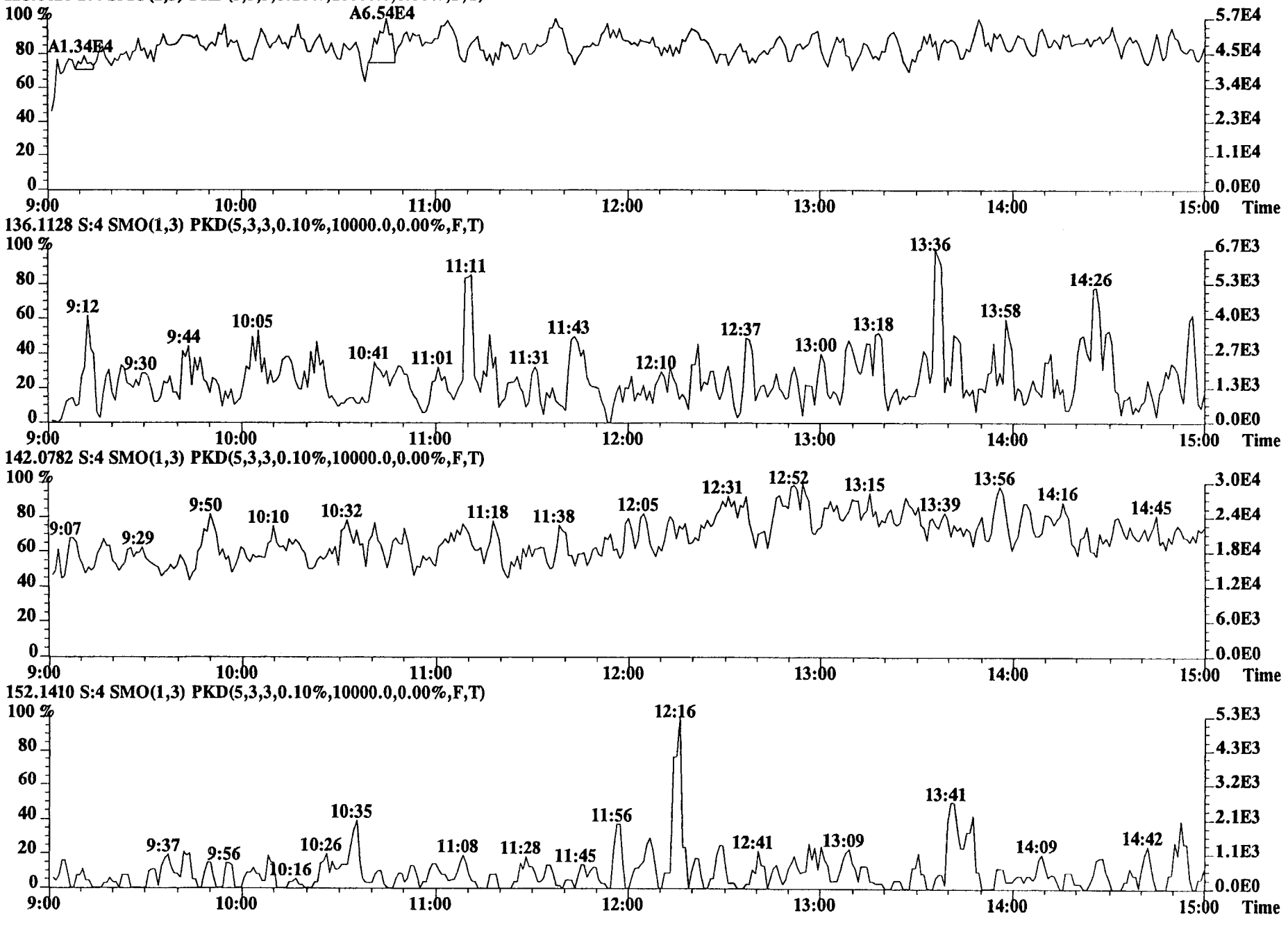

File:30OC98V4 #1-878 Acq:30-OCT-1998 18:23:22 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1030A :CS-3 :956-64 : : Exp:PAHAIR
276.0939 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.96E7
A3.87E6
278.1096 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.18E7
100 %
90
80
70
60
50
40
30
20
10
0
5.1E6
4.6E6
4.1E6
3.6E6
3.1E6
2.6E6
2.1E6
1.5E6
1.0E6
5.1E5
0.0E0
3.7E6
3.3E6
2.9E6
2.6E6
2.2E6
1.8E6
1.5E6
1.1E6
7.3E5
3.7E5
0.0E0
37:18
37:24
37:30
37:36
37:42
37:48
37:54
38:00
38:06
38:12
38:18
38:24
38:30
38:36
38:42
38:48
38:54
39:00
Time

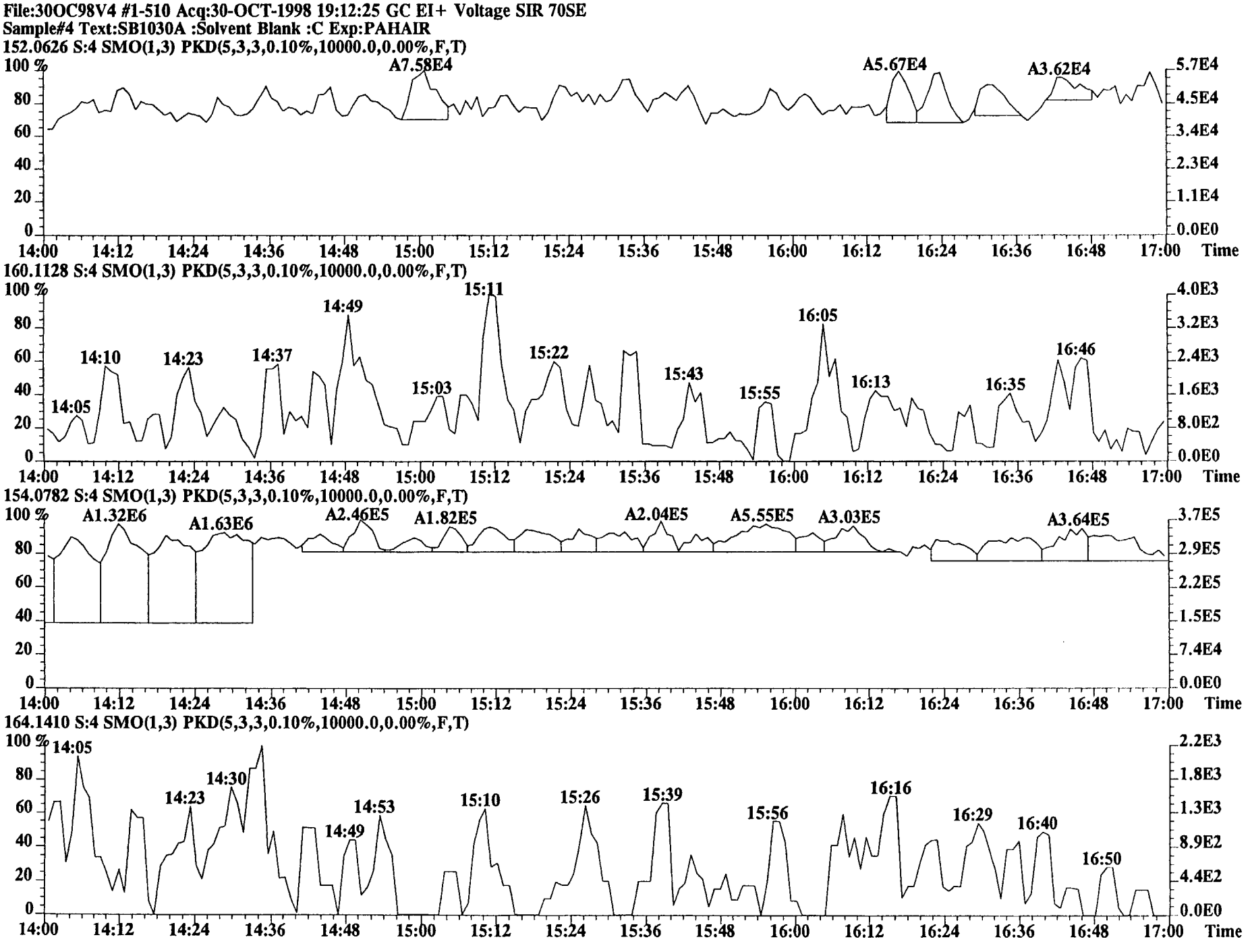
File:30OC98V4 #1-878 Acq:30-OCT-1998 18:23:22 GC EI+ Voltage SIR 70SE
Sample#3 Text:ST1030A :CS-3 :956-64 : : Exp:PAHAIR
268.9824 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



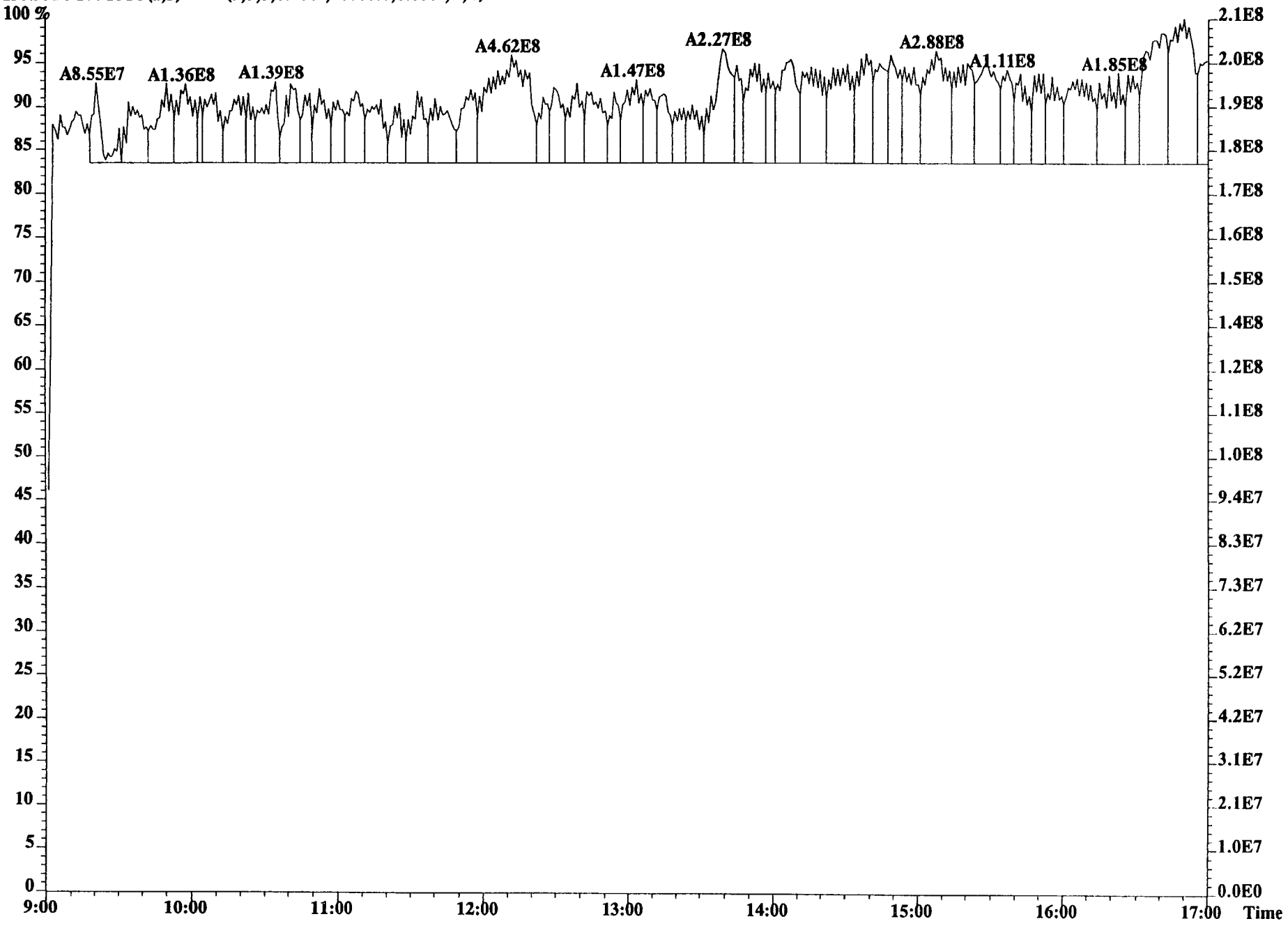
280.9824 S:3 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



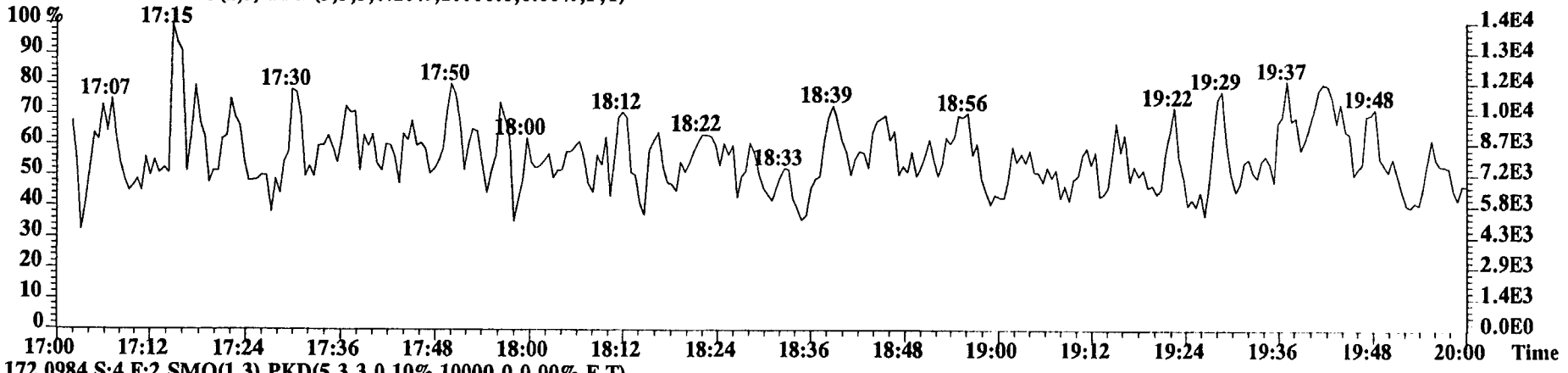

File:30OC98V4 #1-510 Acq:30-OCT-1998 19:12:25 GC EI+ Voltage SIR 70SE
Sample#4 Text:SB1030A :Solvent Blank :C Exp:PAHAIR
128.0626 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.34E4
A6.54E4
136.1128 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
9:12
9:30
9:44
10:05
10:41
11:01
11:11
11:31
11:43
12:10
12:37
13:00
13:18
13:36
13:58
14:26
142.0782 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
9:07
9:29
9:50
10:10
10:32
11:18
11:38
12:05
12:31
12:52
13:15
13:39
13:56
14:16
14:45
152.1410 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
9:37
9:56
10:16
10:26
10:35
11:08
11:28
11:45
11:56
12:16
12:41
13:09
13:41
14:09
14:42
100 %
80
60
40
20
0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
Time
5.7E4
4.5E4
3.4E4
2.3E4
1.1E4
0.0E0
6.7E3
5.3E3
4.0E3
2.7E3
1.3E3
0.0E0
3.0E4
2.4E4
1.8E4
1.2E4
6.0E3
0.0E0
5.3E3
4.3E3
3.2E3
2.1E3
1.1E3
0.0E0


File:30OC98V4 #1-510 Acq:30-OCT-1998 19:12:25 GC EI+ Voltage SIR 70SE
Sample#4 Text:SB1030A :Solvent Blank :C Exp:PAHAIR
152.0626 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A7.58E4
A5.67E4
A3.62E4
160.1128 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
14:05
14:10
14:23
14:37
14:49
15:03
15:11
15:22
15:43
15:55
16:05
16:13
16:35
16:46
154.0782 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.32E6
A1.63E6
A2.46E5
A1.82E5
A2.04E5
A5.55E5
A3.03E5
A3.64E5
164.1410 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
14:05
14:23
14:30
14:49
14:53
15:10
15:26
15:39
15:56
16:16
16:29
16:40
16:50
100 %
80
60
40
20
0
5.7E4
4.5E4
3.4E4
2.3E4
1.1E4
0.0E0
4.0E3
3.2E3
2.4E3
1.6E3
8.0E2
3.7E5
2.9E5
2.2E5
1.5E5
7.4E4
2.2E3
1.8E3
1.3E3
8.9E2
4.4E2
14:00
14:12
14:24
14:36
14:48
15:00
15:12
15:24
15:36
15:48
16:00
16:12
16:24
16:36
16:48
17:00
Time

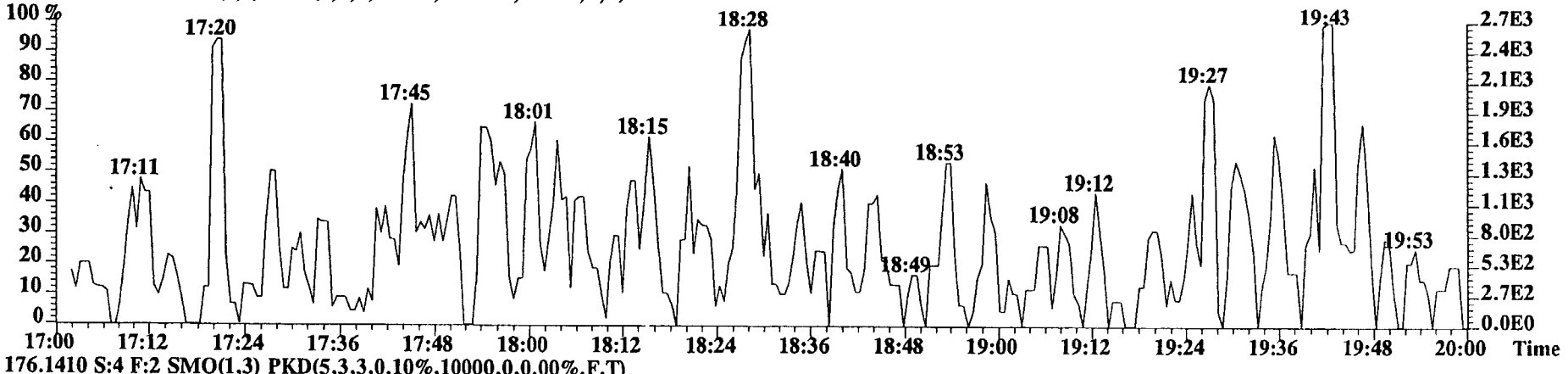
File:30OC98V4 #1-510 Acq:30-OCT-1998 19:12:25 GC EI+ Voltage SIR 70SE
Sample#4 Text:SB1030A :Solvent Blank :C Exp:PAHAIR
130.9920 S:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



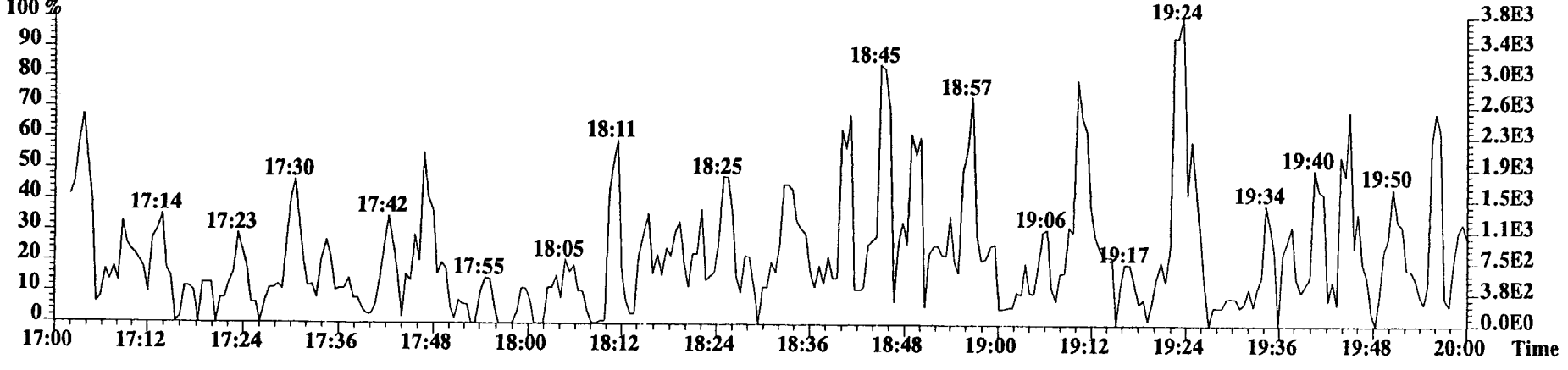
File:30OC98V4 #1-641 Acq:30-OCT-1998 19:12:25 GC EI+ Voltage SIR 70SE
Sample#4 Text:SB1030A :Solvent Blank :C Exp:PAHAIR
166.0798 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



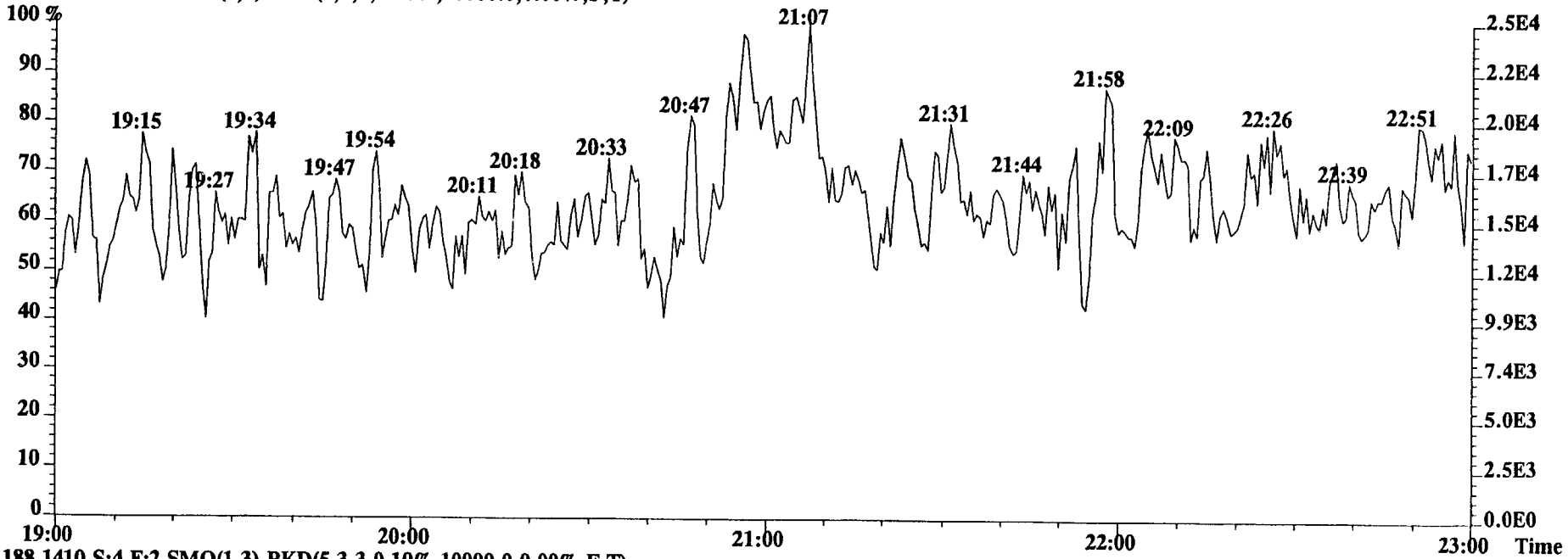
172.0984 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



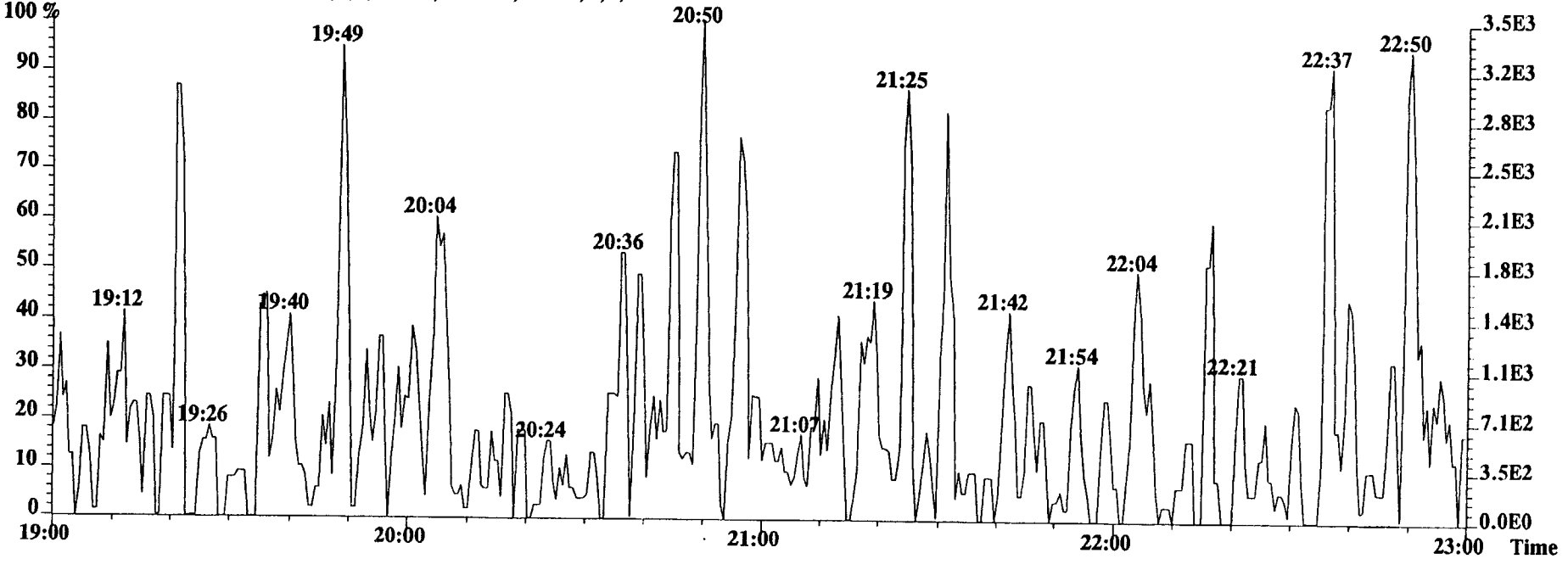
176.1410 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

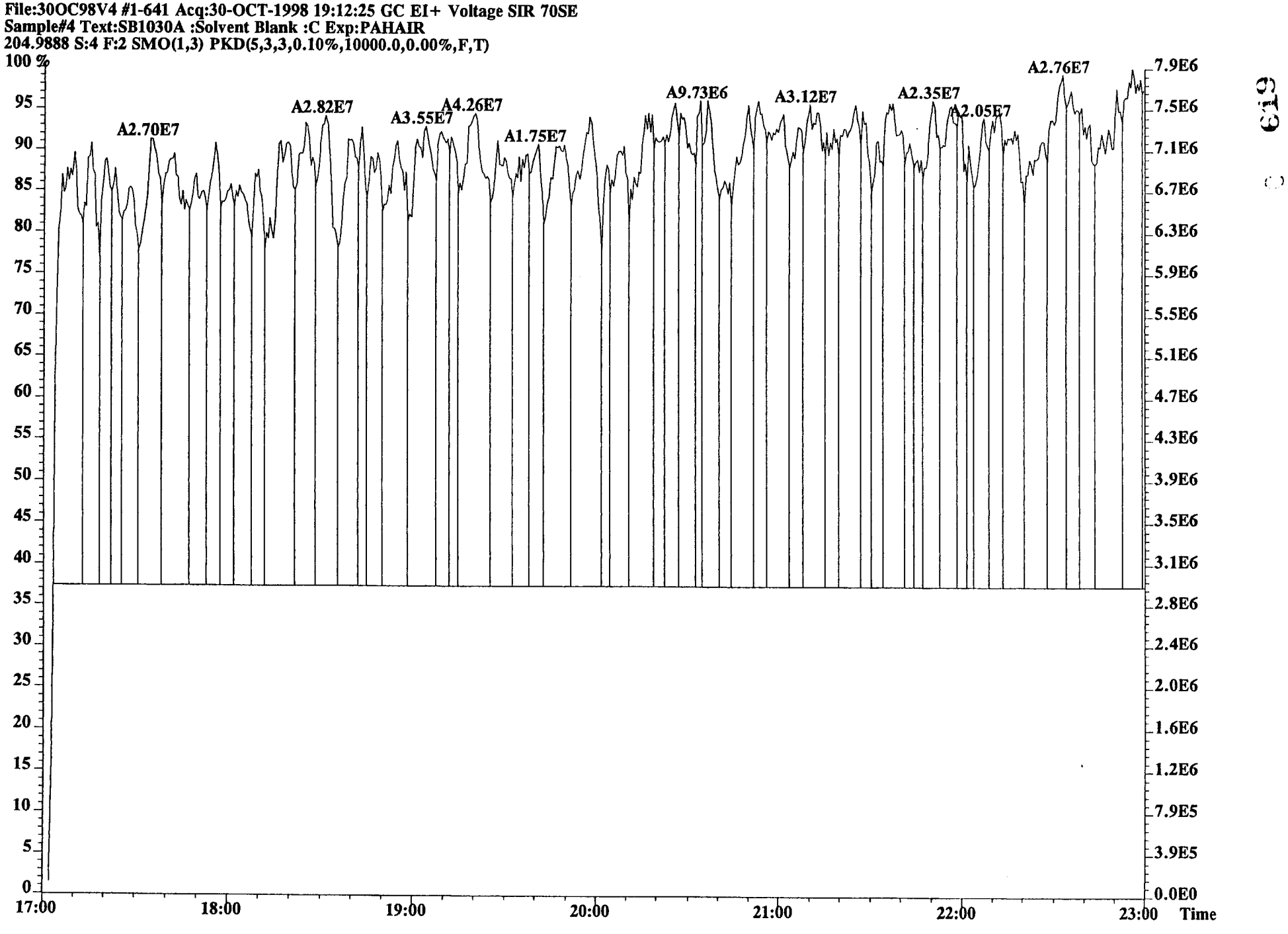


File:30OC98V4 #1-641 Acq:30-OCT-1998 19:12:25 GC EI+ Voltage SIR 70SE
Sample#4 Text:SB1030A :Solvent Blank :C Exp:PAHAIR
178.0782 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

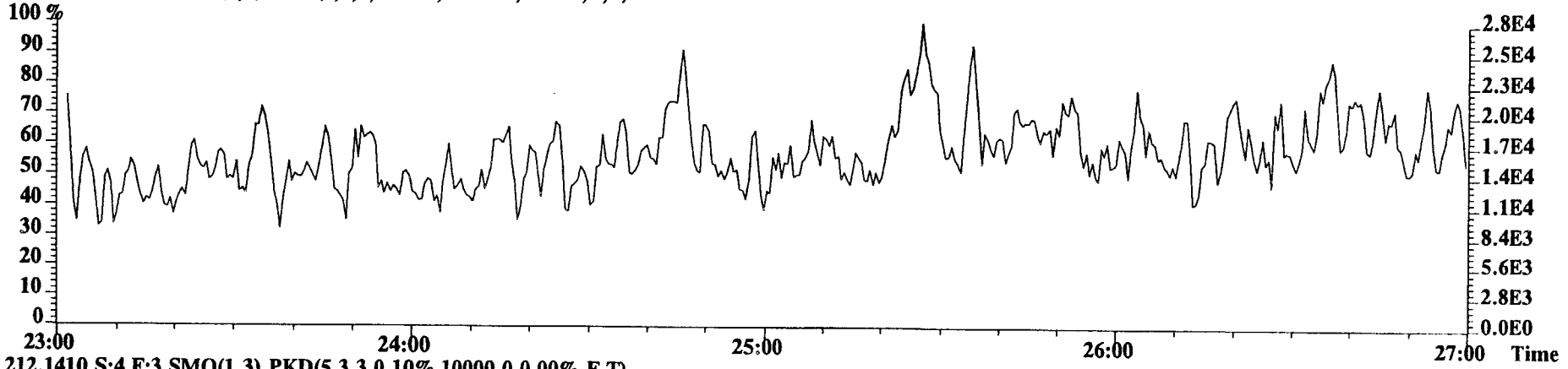


188.1410 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

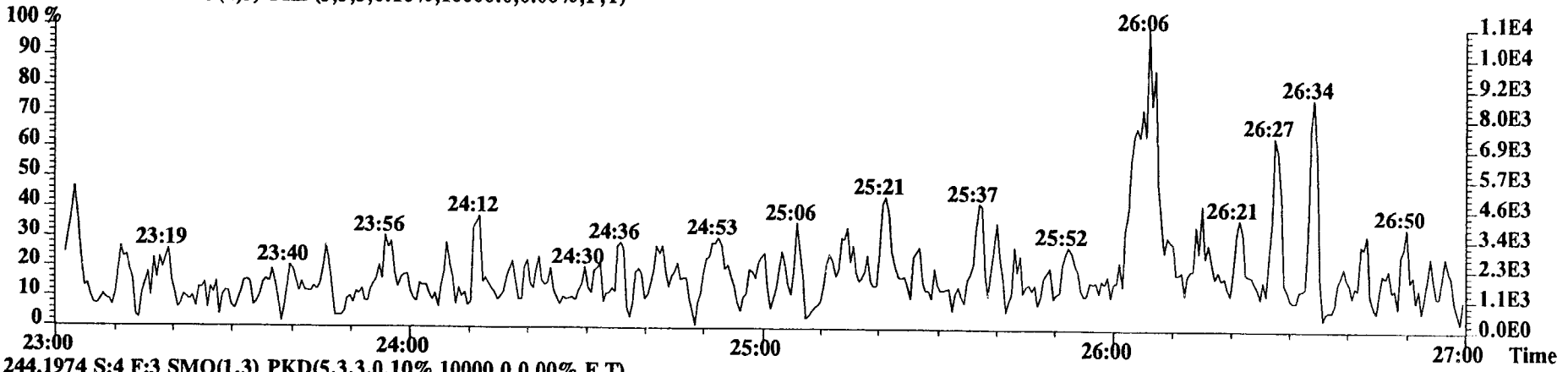



File:30OC98V4 #1-641 Acq:30-OCT-1998 19:12:25 GC EI+ Voltage SIR 70SE
Sample#4 Text:SB1030A :Solvent Blank :C Exp:PAHAIR
204.9888 S:4 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A2.70E7
A2.82E7
A3.55E7
A4.26E7
A1.75E7
A9.73E6
A3.12E7
A2.35E7
A2.05E7
A2.76E7
7.9E6
7.5E6
7.1E6
6.7E6
6.3E6
5.9E6
5.5E6
5.1E6
4.7E6
4.3E6
3.9E6
3.5E6
3.1E6
2.8E6
2.4E6
2.0E6
1.6E6
1.2E6
7.9E5
3.9E5
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

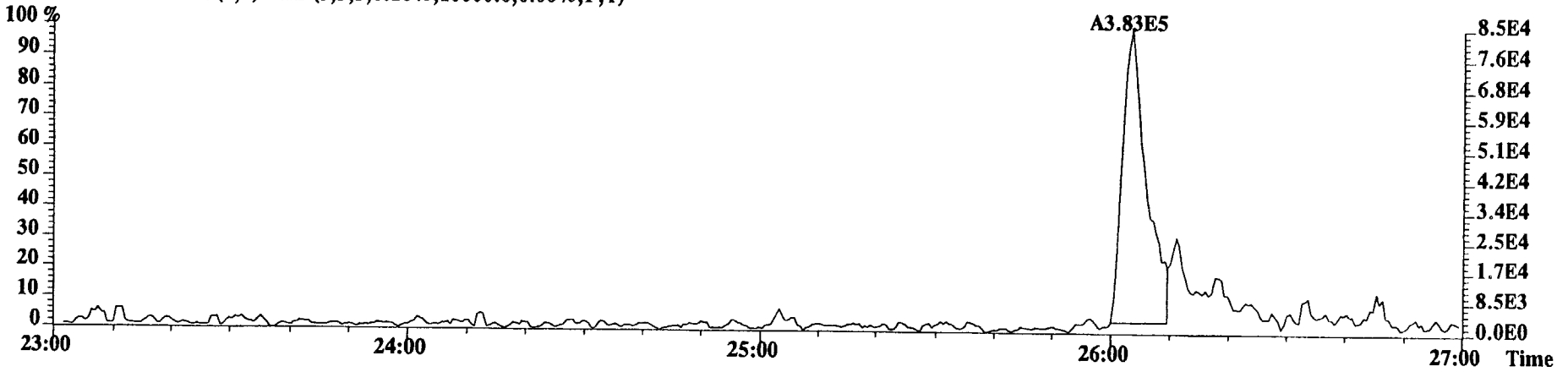
File:30OC98V4 #1-939 Acq:30-OCT-1998 19:12:25 GC EI+ Voltage SIR 70SE
Sample#4 Text:SB1030A :Solvent Blank :C Exp:PAHAIR
202.0782 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

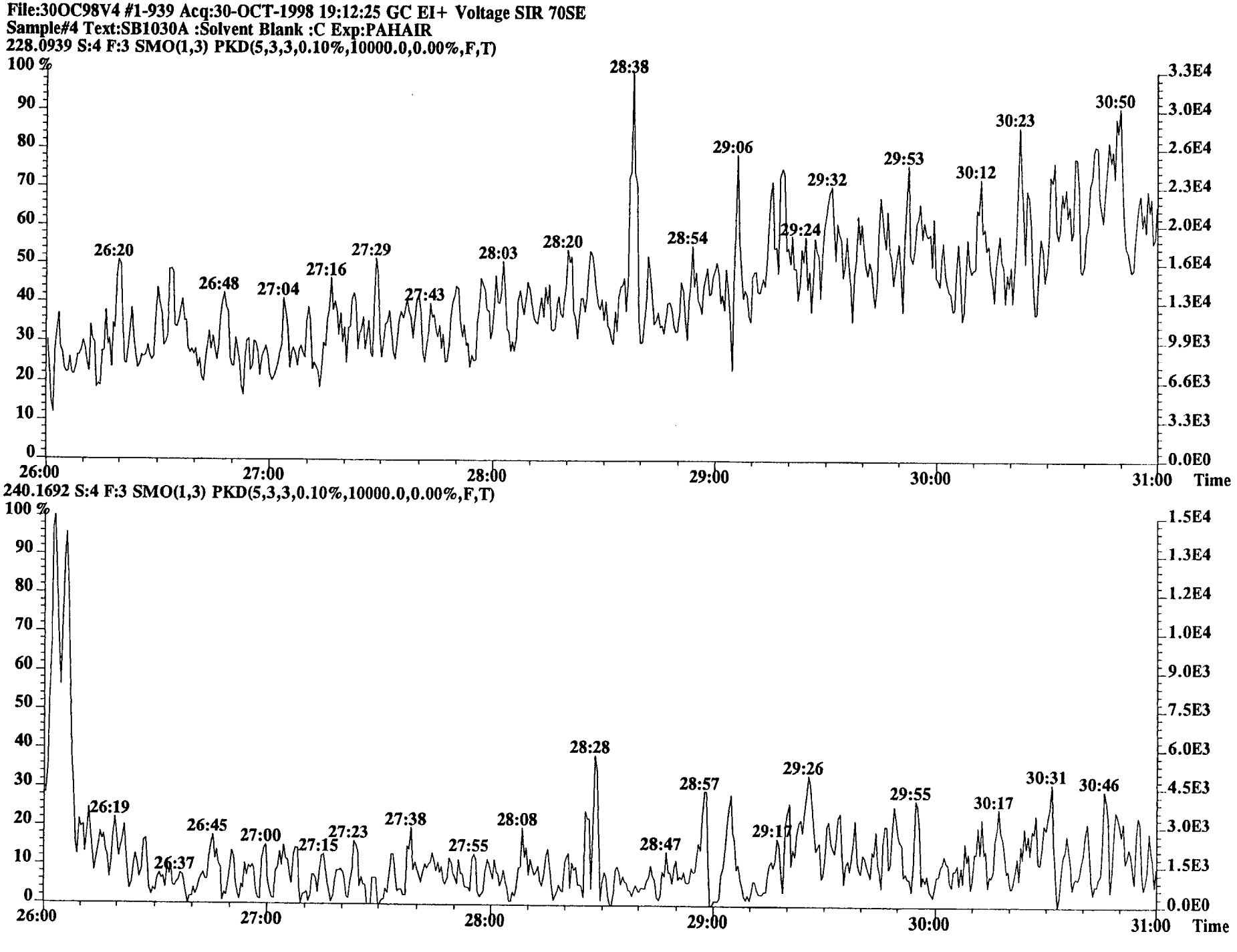


212.1410 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

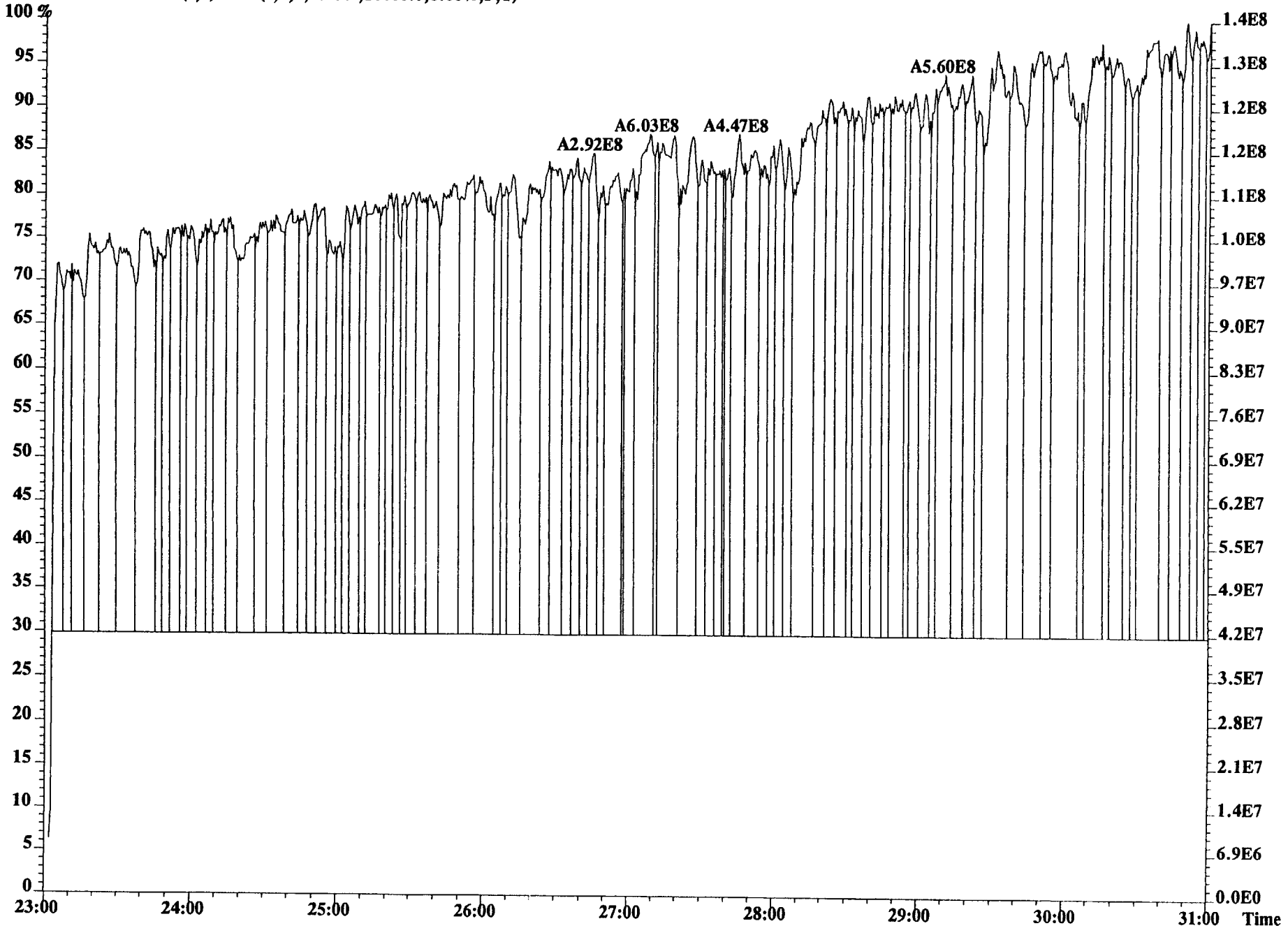


244.1974 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

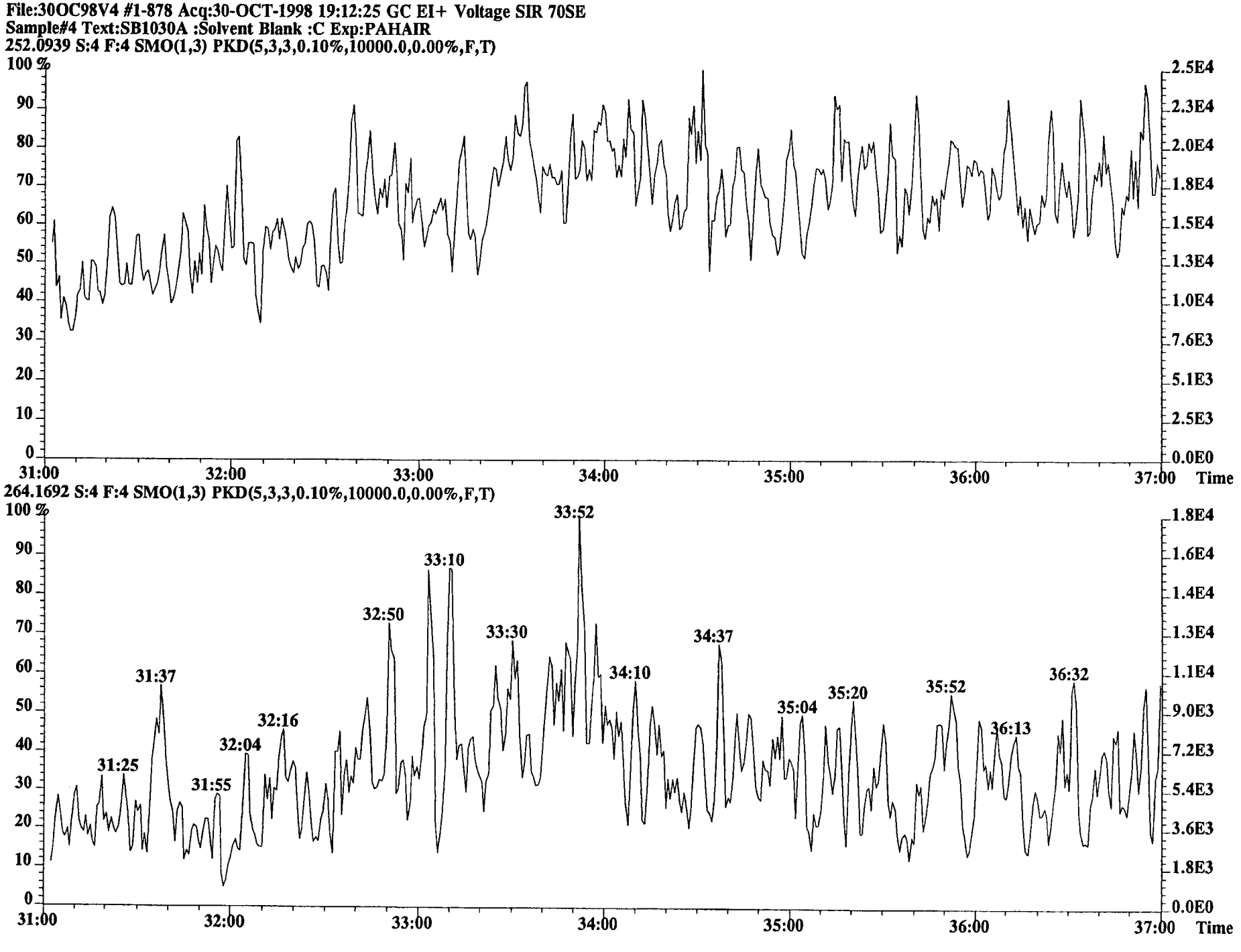


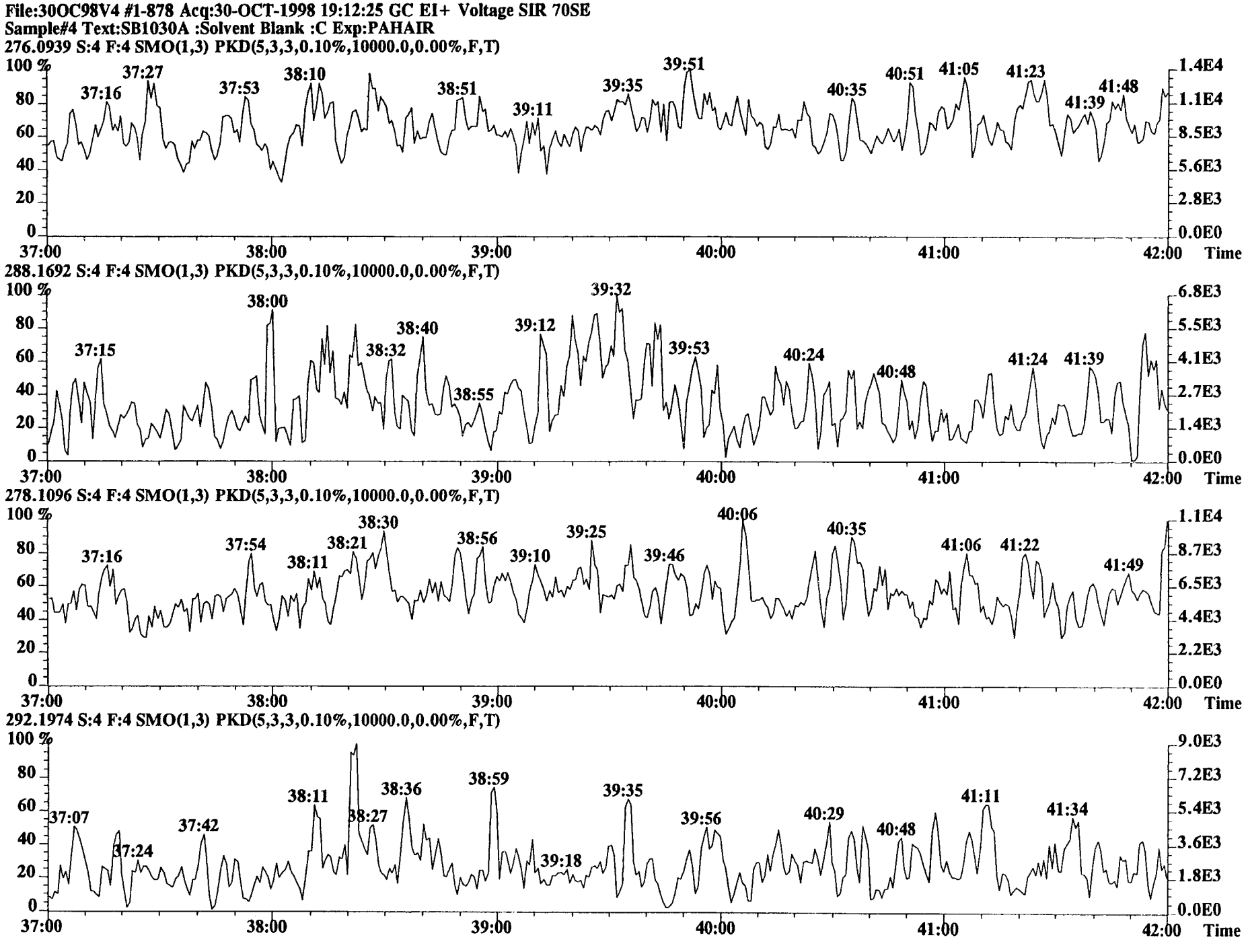

File:30OC98V4 #1-939 Acq:30-OCT-1998 19:12:25 GC EI+ Voltage SIR 70SE
Sample#4 Text:SB1030A :Solvent Blank :C Exp:PAHAIR
228.0939 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
90
80
70
60
50
40
30
20
10
0
26:20
26:48
27:04
27:16
27:29
27:43
28:03
28:20
28:38
28:54
29:06
29:24
29:32
29:53
30:12
30:23
30:50
3.3E4
3.0E4
2.6E4
2.3E4
2.0E4
1.6E4
1.3E4
9.9E3
6.6E3
3.3E3
0.0E0
26:00
27:00
28:00
29:00
30:00
31:00
Time
240.1692 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
90
80
70
60
50
40
30
20
10
0
26:19
26:37
26:45
27:00
27:15
27:23
27:38
27:55
28:08
28:28
28:47
28:57
29:17
29:26
29:55
30:17
30:31
30:46
1.5E4
1.3E4
1.2E4
1.0E4
9.0E3
7.5E3
6.0E3
4.5E3
3.0E3
1.5E3
0.0E0
26:00
27:00
28:00
29:00
30:00
31:00
Time

File:30OC98V4 #1-939 Acq:30-OCT-1998 19:12:25 GC EI+ Voltage SIR 70SE
Sample#4 Text:SB1030A :Solvent Blank :C Exp:PAHAIR
230.9856 S:4 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

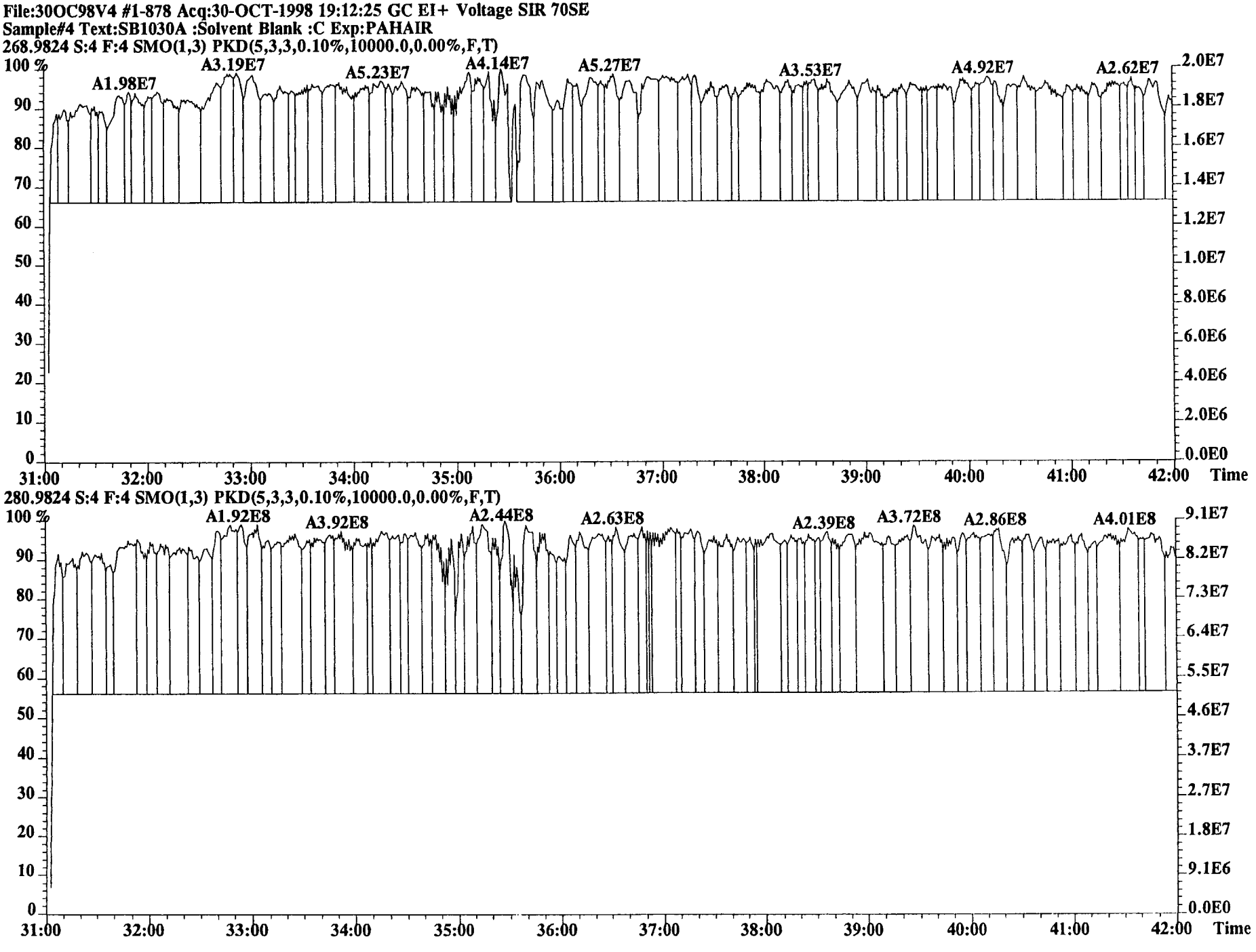


E222


File:30OC98V4 #1-878 Acq:30-OCT-1998 19:12:25 GC EI+ Voltage SIR 70SE
Sample#4 Text:SB1030A :Solvent Blank :C Exp:PAHAIR
252.0939 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
90
80
70
60
50
40
30
20
10
0
2.5E4
2.3E4
2.0E4
1.8E4
1.5E4
1.3E4
1.0E4
7.6E3
5.1E3
2.5E3
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
Time
264.1692 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
90
80
70
60
50
40
30
20
10
0
1.8E4
1.6E4
1.4E4
1.3E4
1.1E4
9.0E3
7.2E3
5.4E3
3.6E3
1.8E3
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
Time
31:25
31:37
31:55
32:04
32:16
32:50
33:10
33:30
33:52
34:10
34:37
35:04
35:20
35:52
36:13
36:32


File:30OC98V4 #1-878 Acq:30-OCT-1998 19:12:25 GC EI+ Voltage SIR 70SE
Sample#4 Text:SB1030A :Solvent Blank :C Exp:PAHAIR
276.0939 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
288.1692 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
278.1096 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
292.1974 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
Time
37:00
38:00
39:00
40:00
41:00
42:00

624


File:30OC98V4 #1-878 Acq:30-OCT-1998 19:12:25 GC EI+ Voltage SIR 70SE
Sample#4 Text:SB1030A :Solvent Blank :C Exp:PAHAIR
268.9824 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.98E7
A3.19E7
A5.23E7
A4.14E7
A5.27E7
A3.53E7
A4.92E7
A2.62E7
2.0E7
1.8E7
1.6E7
1.4E7
1.2E7
1.0E7
8.0E6
6.0E6
4.0E6
2.0E6
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time
280.9824 S:4 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.92E8
A3.92E8
A2.44E8
A2.63E8
A2.39E8
A3.72E8
A2.86E8
A4.01E8
9.1E7
8.2E7
7.3E7
6.4E7
5.5E7
4.6E7
3.7E7
2.7E7
1.8E7
9.1E6
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time

QUANTERRA INCORPORATED
West Sacramento

Daily Standard Checklist
Dioxin/Furan High Res

STD ID ST1102 Method ID 429-air Column ID DB-5 Instr ID VG-4

Standard Solution 956-64 Prepared By SMA Prepared Date 11-03-98

Analyzed By SMA Date Analyzed 11-02-98

Reviewed By Deri Stone Date Reviewed 11/3/98

ANALYSIS OF DAILY STANDARD	INITIATED	REVIEWED
Standard, CPSM, and solvent blank present?	✓/NA	✓/NA
Copy of Instrument logfile present?	✓	✓
CPSM blow up and peak profile present?	NA/✓	NA/✓
Curve summary present?	✓	✓
Summary of 1613A criteria present?	NA	NA
Daily standard within method specified limits*?	✓*	✓*
Daily ion abundance ratios within limits?	NA	NA
CPSM valley < 25%?	NA	NA
CPSM window correct?	✓	✓
Samples analyzed within 12 hrs of daily standard?	✓	✓

COMMENTS:

* All the samples except MB & LCS were the dilution of the original extracts and analyzed only Naphthalene which the std meets all the criteria for these analytes. (MB/LCS being RT'd)

* For NCASI 551, Control Limit (CL) = +/- 20% from curve RRFs for all analytes.
For Method 8290, CL = +/- 20% from curve RRFs for native analytes, CL = +/- 30% from curve RRFs for labeled compounds.
For Method 1613A, see 3rd Revision to Method 1613 Performance Specifications, Table 7.

02-NOV-1998 02:17:04 PM Dioxin Furan ConCal RESULTS

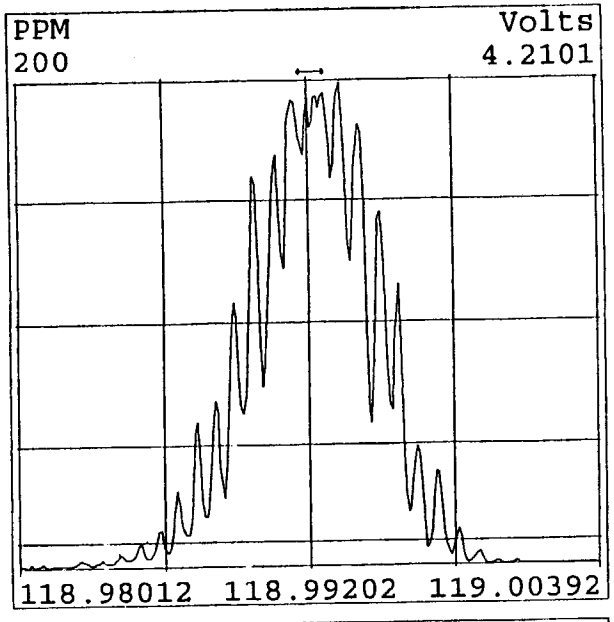
Mass Spec : VG-4 Results : 02NO98V4011.RES : PAHAIRCAL3.TRG
GC Column : DB-5 Date analyzed : 02-NOV-98
Data file : 02NO98V4 ST1102 :CS-3 :956-64 : : Ex
Weight : 1

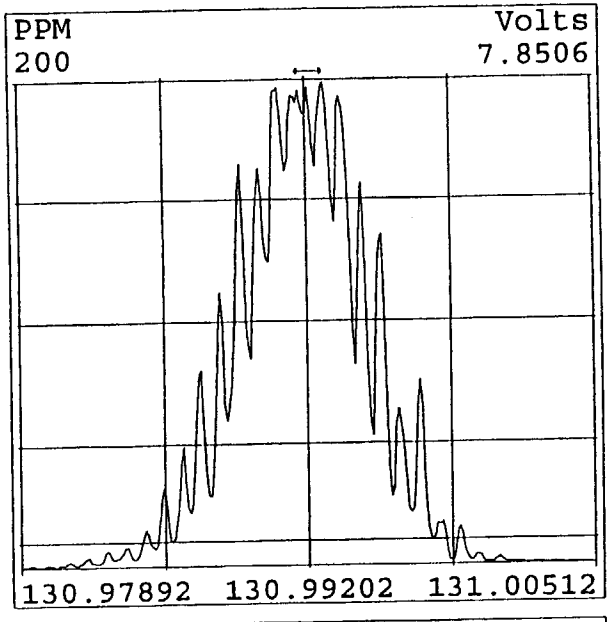
Name	Total Response	Isotope Ratio	R. T. mm:ss		RRF	pg	% Dev
d10-2-Methylnaphthalene	245650000	1.00 Y	12: 27	Y	-2.00	100.00	
d8-Naphthalene	392372000	1.00 Y	10: 12	Y	1.60	100.00	-29
Naphthalene	376806000	1.00 Y	10: 15	Y	0.96	100.00	-22
2-Methylnaphthalene	233866000	1.00 Y	12: 33	Y	0.60	100.00	6
d8-Acenaphthylene	311446000	1.00 Y	15: 27	Y	1.27	100.00	4
Acenaphthylene	274072000	1.00 Y	15: 30	Y	0.88	100.00	-7
d10-Acenaphthene	187525800	1.00 Y	16: 1	Y	0.76	100.00	3
Acenaphthene	173015800	1.00 Y	16: 7	Y	0.92	100.00	-26
d10-Anthracene	146180800	1.00 Y	20: 55	Y	-1.00	100.00	
d10-Fluorene	200060000	1.00 Y	17: 41	Y	1.37	100.00	-4
Fluorene	153632400	1.00 Y	17: 47	Y	0.77	100.00	34
d10-Phenanthrene	486852000	1.00 Y	20: 45	Y	3.33	100.00	19
Phenanthrene	390094000	1.00 Y	20: 50	Y	0.80	100.00	-10
Anthracene	327574000	1.00 Y	20: 58	Y	0.67	100.00	-16
d14-Terphenyl	354414000	1.00 Y	26: 0	Y	-2.00	100.00	
d10-Fluoranthene	401422000	1.00 Y	24: 36	Y	1.13	100.00	-20
Fluoranthene	401064000	1.00 Y	24: 39	Y	1.00	100.00	-10
d10-Pyrene	430946000	1.00 Y	25: 18	Y	1.22	100.00	-20
Pyrene	432528000	1.00 Y	25: 21	Y	1.00	100.00	-17
d12-Benzo(a)anthracene	257072000	1.00 Y	29: 8	Y	0.73	100.00	-19
Benzo(a)anthracene	261228000	1.00 Y	29: 12	Y	1.02	100.00	-16
d12-Chrysene	376372000	1.00 Y	29: 15	Y	1.06	100.00	-17
Chrysene	334774000	1.00 Y	29: 20	Y	0.89	100.00	-18
d12-Benzo(e)pyrene	432370000	1.00 Y	33: 22	Y	0.00	100.00	
d12-Benzo(b)fluoranthene	224986000	1.00 Y	32: 29	Y	0.52	100.00	15
Benzo(b)fluoranthene	261590000	1.00 Y	32: 33	Y	1.16	100.00	0
d12-Benzo(k)fluoranthene	511774000	1.00 Y	32: 33	Y	1.18	100.00	25
Benzo(k)fluoranthene	508994000	1.00 Y	32: 38	Y	0.99	100.00	-15
d12-Benzo(a)pyrene	306100000	1.00 Y	33: 32	Y	0.71	100.00	5
Benzo(e)pyrene	448584000	1.00 Y	33: 27	Y	1.47	100.00	-11
Benzo(a)pyrene	302732000	1.00 Y	33: 37	Y	0.99	100.00	-8
d12-Perylene	267180000	1.00 Y	33: 49	Y	0.62	100.00	-2
Perylene	458194000	1.00 Y	33: 55	Y	1.71	100.00	0
d12-Indeno(123-cd)pyrene	231944000	1.00 Y	38: 1	Y	0.54	100.00	21
Indeno(123-cd)pyrene	118200000	1.00 Y	38: 8	Y	0.51	100.00	-18
d14-Dibenz(ah)anthracene	138739800	1.00 Y	38: 5	Y	0.32	100.00	31
Dibenz(ah)anthracene	141252600	1.00 Y	38: 14	Y	1.02	100.00	-27
d12-Benzo(ghi)perylene	299526000	1.00 Y	39: 12	Y	0.69	100.00	19
Benzo(ghi)perylene	252360000	1.00 Y	39: 21	Y	0.84	100.00	-17
d10-Fluorene	200060000	1.00 Y	17: 41	Y	0.46	100.00	
13C-Fluorene	160217000	1.00 Y	17: 46	Y	0.80	100.00	

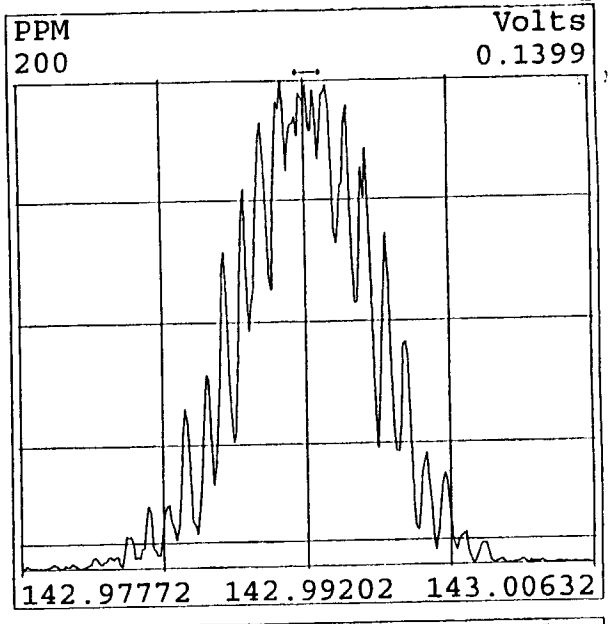
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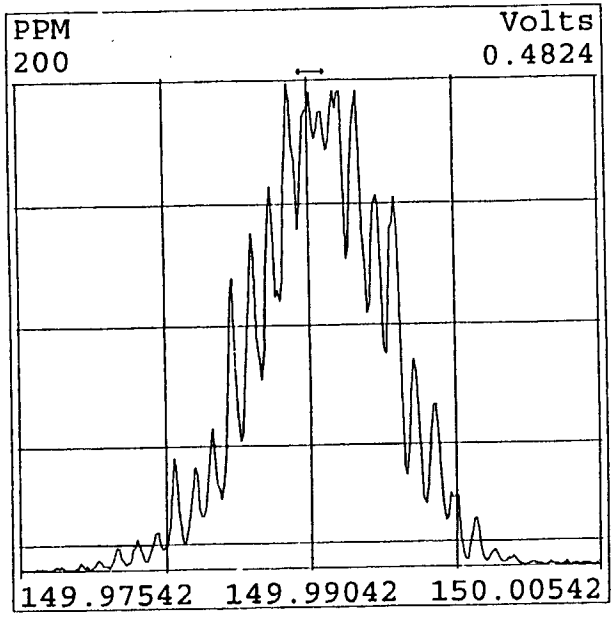
FILE	SAMP No. (1)	LAB. SAMP No	CUSTOMER ID	CLEAN UP 1 (SDS)	CLEAN UP 2 (D2)	TYPE (1)	CONCn.	
02NO98V4	1	ST1102	CS-3	956-64			1	
02NO98V4	2	SB1102	Solvent Blank	C-8			1	
02NO98V4	3	301802-1MB	METHOD BLANK	AIR	PAH	VSE-26	0.50	
02NO98V4	4	301802-1LC	LCS				0.50	
02NO98V4	5	302050-1	CLXTM 1:20 DL	AIR	PAH	VSE-25	0.333	
02NO98V4	6	302050-3	CLXTQ 1:40 DL				0.333	
02NO98V4	7	302050-5	CLXTV 1:20 DL				0.333	
02NO98V4	8	302050-7	CLXTX 1:40 DL				0.333	
02NO98V4	9	301802-1	100X DIL.	AIR	PAH	VSE-26	0.50	
02NO98V4	10	301802-2	100X DIL.				0.50	
02NO98V4	11	301802-3	100X DIL.				0.50	
02NO98V4	12	301802-4	100X DIL.				0.50	
02NO98V4	13	301802-6	100X DIL.				0.50	
02NO98V4	14	302050-2	002CLXTP	STRAIN	PAH	VSE-25	0.333	
02NO98V4	15	302050-8	006 CLXV0				0.333	
02NO98V4	16	ST1102A	CS-3	956-64			1	Std out
02NO98V4	17	SB1102A	Solvent Blank	C-8			1	
02NO98V4	18	302050-1MB	METHOD BLANK L	STRAIN	PAH	VSE-25	0.333	
02NO98V4	19	302050-1LA	302050-1LCS L				0.333	
02NO98V4	20	302050-1M	METHOD BLANK J	STRAIN	PAH	VSE-25	0.333	
02NO98V4	21	302050-1LC	302050-1LCS J				0.333	
02NO98V4	22	302050-4	004 CLXTR	STRAIN	PAH	VSE-25	0.333	
02NO98V4	23	302050-6	006 CLXTW				0.333	
02NO98V4	24							
02NO98V4	25							
02NO98V4	26							
02NO98V4	27							
02NO98V4	28							
02NO98V4	29							
02NO98V4	30							
02NO98V4	31							
02NO98V4	32							
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02NO98V4	37							
02NO98V4	38							
02NO98V4	39							
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02NO98V4	43							
02NO98V4	44							
02NO98V4	45							
02NO98V4	46		SMA, 11-02-98					
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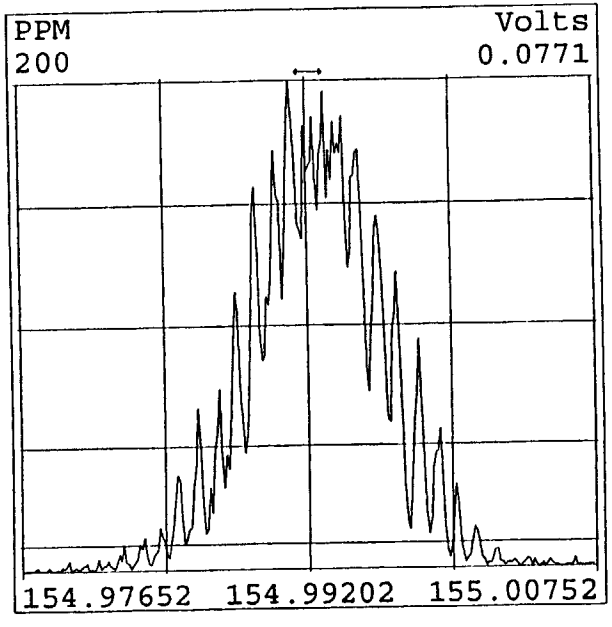
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Experiment:PAHAIR Function:1 Reference:PFK

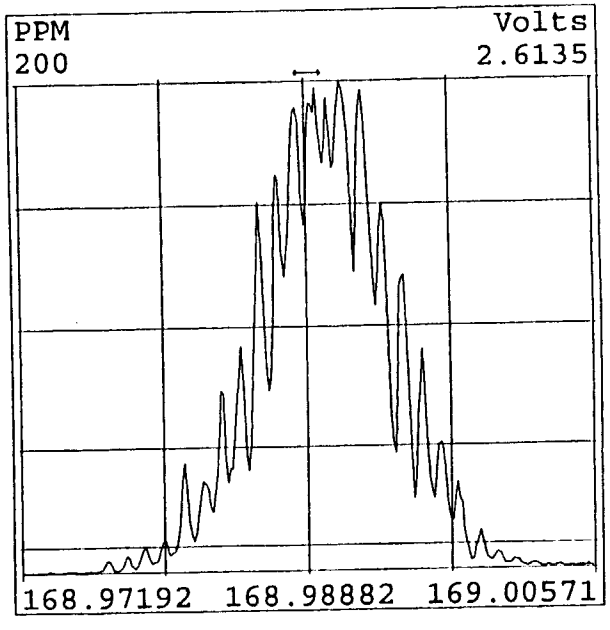




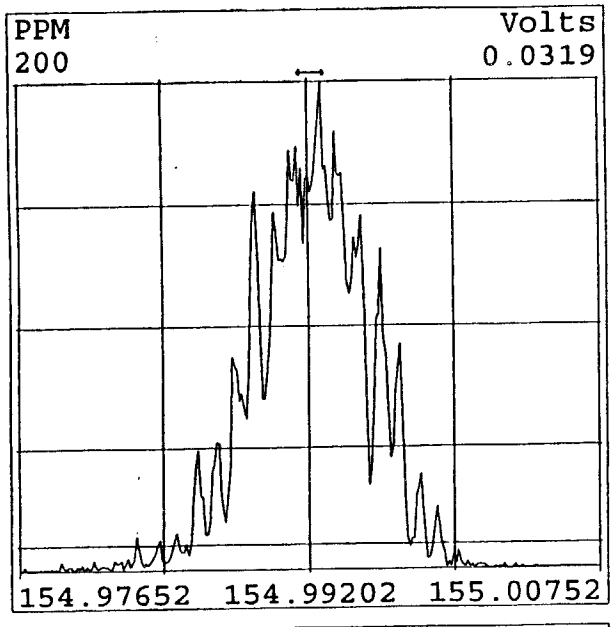


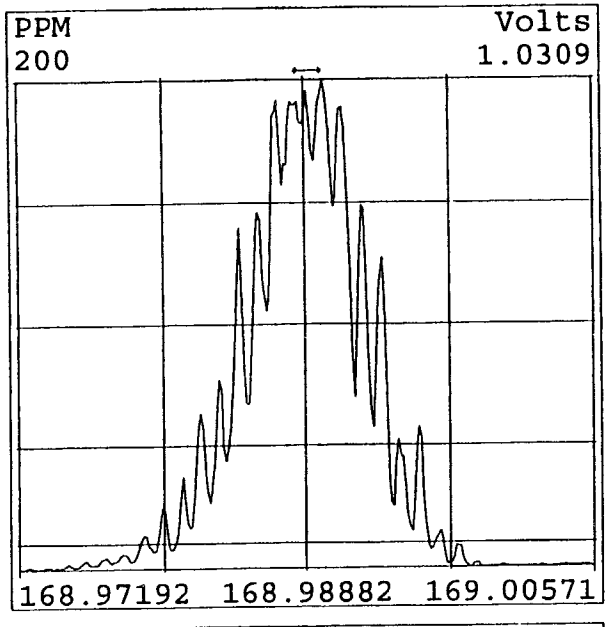


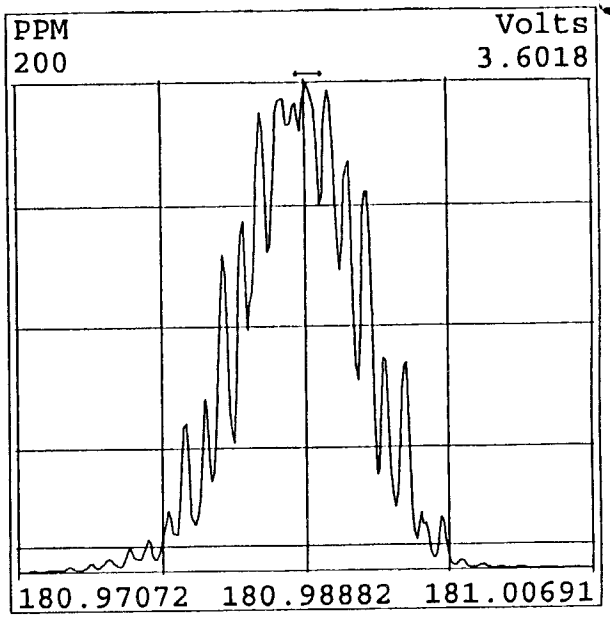


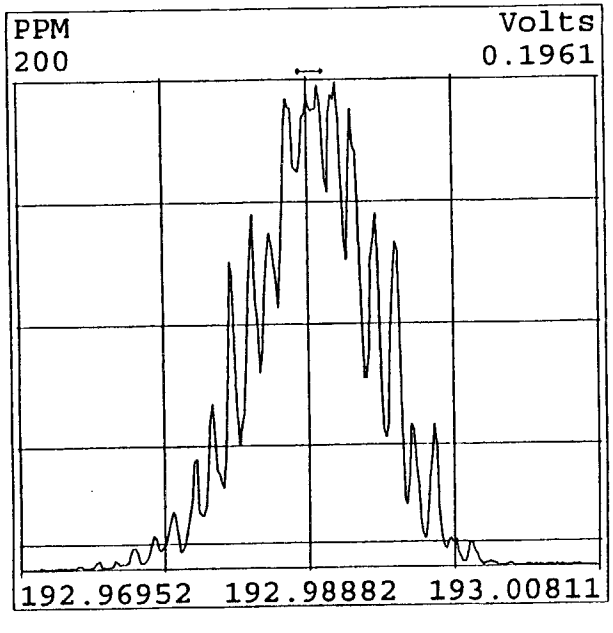


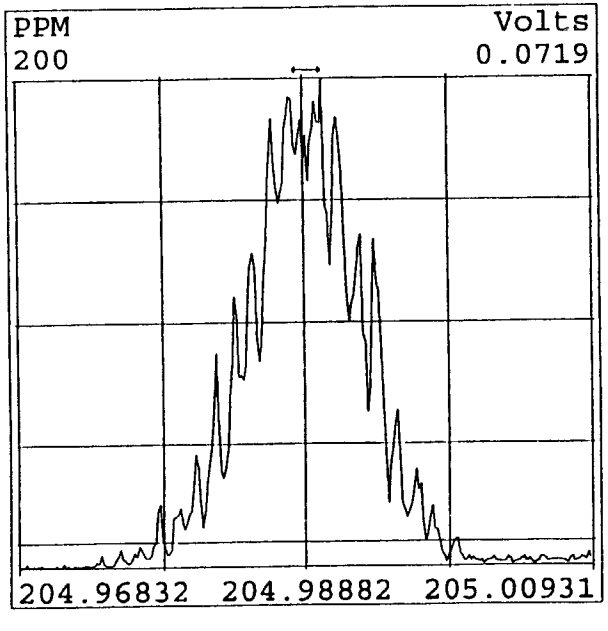
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Experiment:PAHAIR Function:2 Reference:PFK



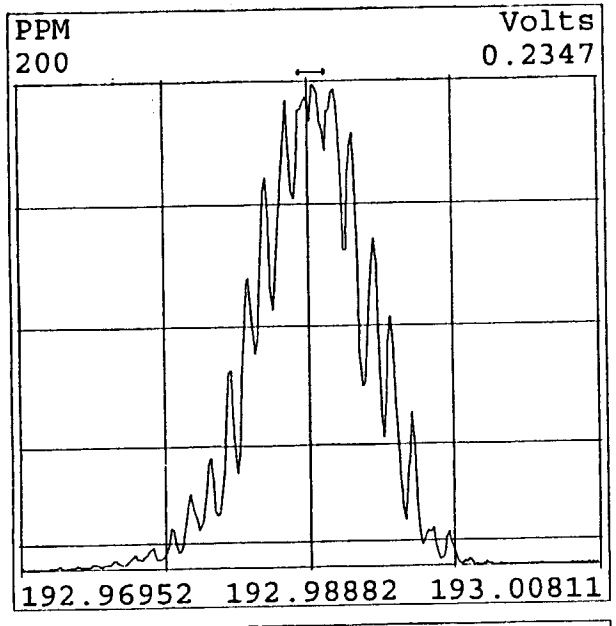


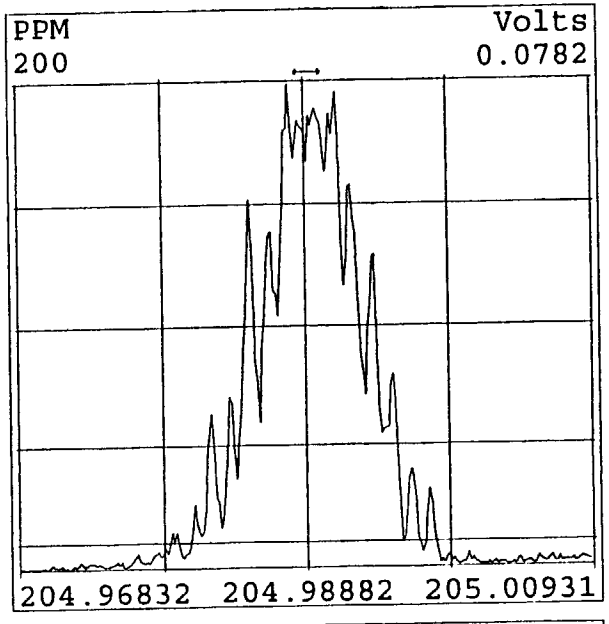


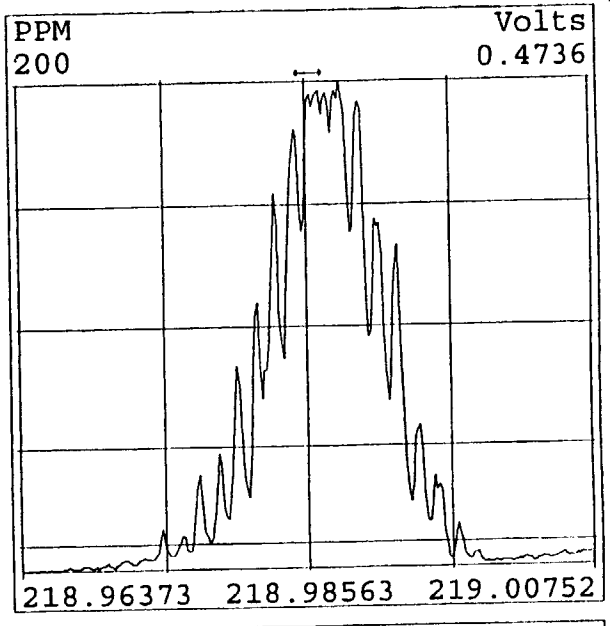


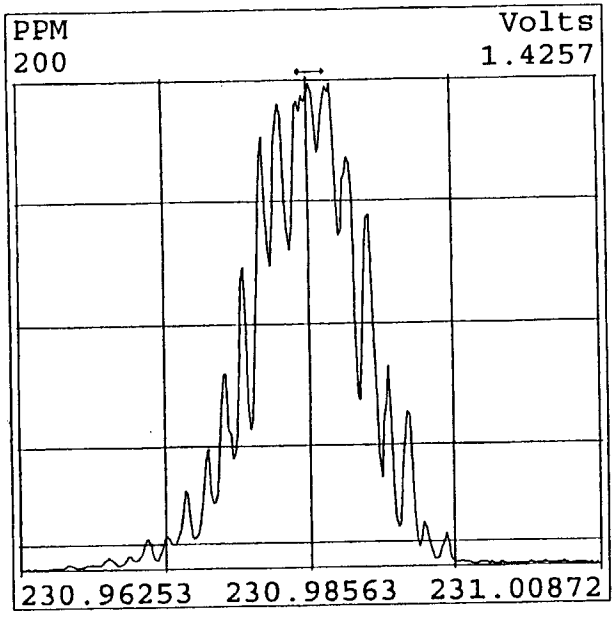


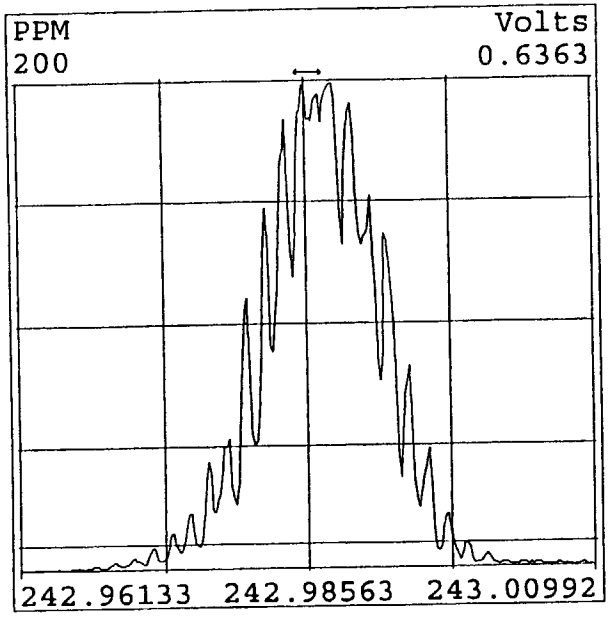
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Experiment:PAHAIR Function:3 Reference:PFK

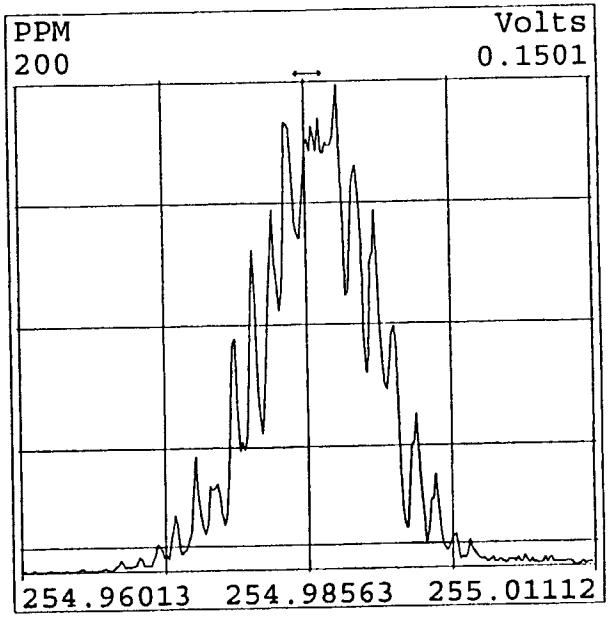




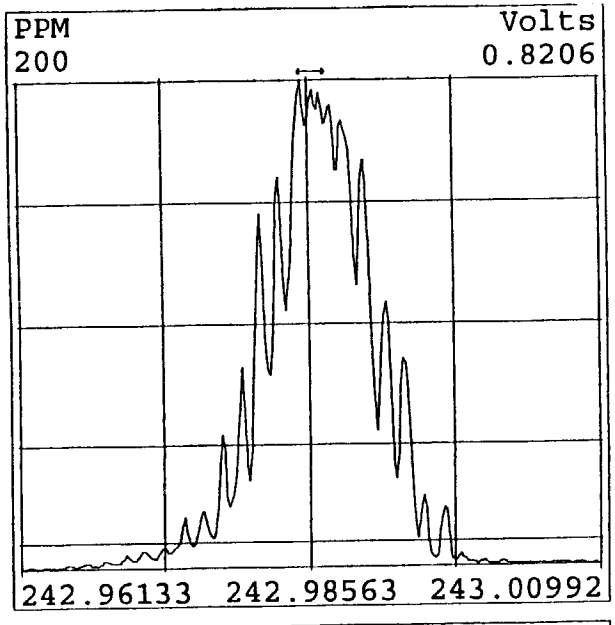


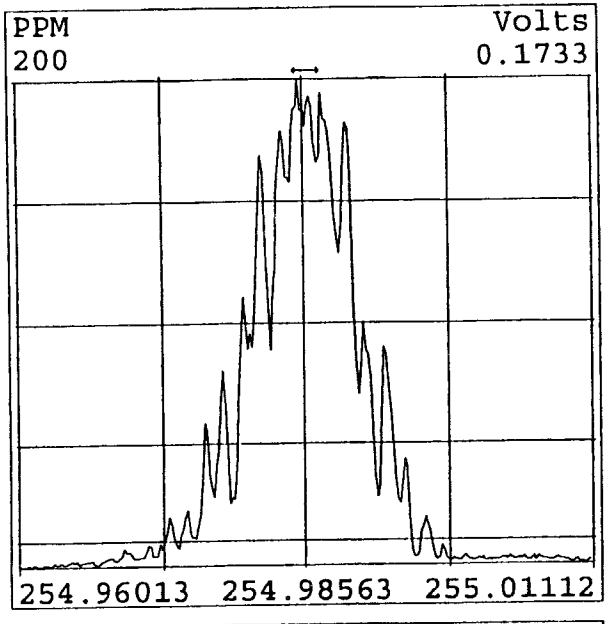


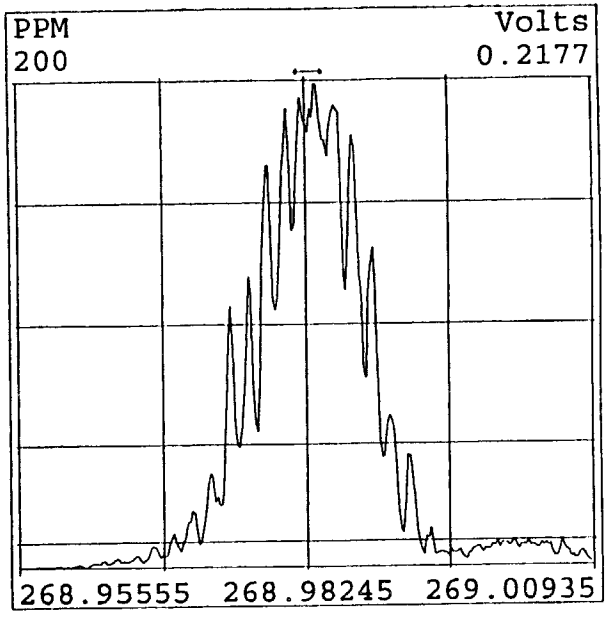


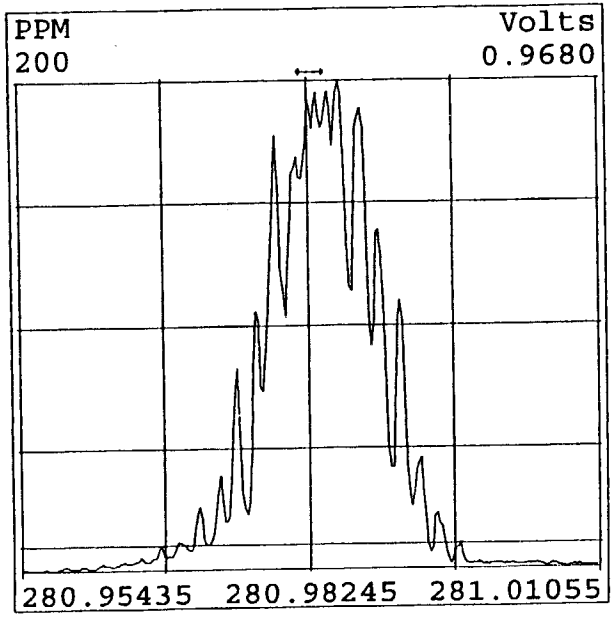


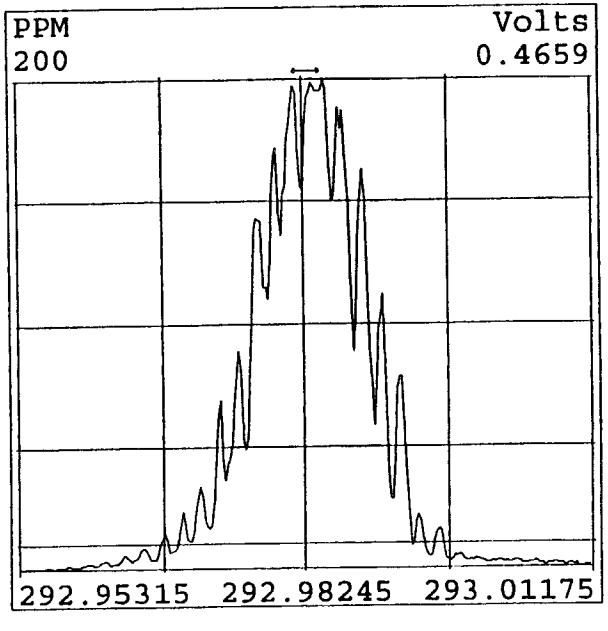
Peak Locate Examination: 2-NOV-1998:13:12 File:02NO98V4
Experiment:PAHAIR Function:4 Reference:PFK











02-NOV-1998 02:20:04 PM

Dioxin Furan CALIBRATION TABLE

Mass Spec : VG-4
GC Column : DB-5
265-04A,B,D,E,956-64

File name : PAHAIR102998V4.RRF
Date analyzed : 29-OCT-98

E33

INITIAL CALIBRATION CURVE

Mult.: 350

		Mean	S.D.	%RSD	1	2	3	4	5	6	7	8	9	10
d8-Naphthalene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				185.11	205.87	228.31	244.46	256.61					
	RRF	2.24	0.289	12.900	1.85	2.06	2.28	2.44	2.57					
Naphthalene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				13.76	61.93	113.47	231.43	609.70					
	RRF	1.23	0.094	7.707	1.38	1.24	1.13	1.16	1.22					
2-Methylnaphthalene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				6.91	29.85	51.39	97.93	255.67					
	RRF	0.56	0.084	14.909	0.69	0.60	0.51	0.49	0.51					
d8-Acenaphthylene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				131.95	128.38	114.60	122.45	109.50					
	RRF	1.21	0.093	7.696	1.32	1.28	1.15	1.22	1.10					
Acenaphthylene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				9.55	48.30	90.68	178.19	500.84					
	RRF	0.94	0.045	4.773	0.95	0.97	0.91	0.89	1.00					
d10-Acenaphthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				83.11	77.72	76.15	77.96	57.36					
	RRF	0.74	0.099	13.310	0.83	0.78	0.76	0.78	0.57					
Acenaphthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				10.98	62.63	151.76	215.88	641.50					
	RRF	1.25	0.177	14.178	1.10	1.25	1.52	1.08	1.28					
d10-Fluorene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				153.24	135.78	140.61	141.09	139.72					
	RRF	1.42	0.066	4.625	1.53	1.36	1.41	1.41	1.40					
Fluorene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				8.53	58.18	117.21	249.15	684.13					
	RRF	1.16	0.191	16.420	0.85	1.16	1.17	1.25	1.37					
d10-Phenanthrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				308.98	263.63	276.27	272.04	282.87					
	RRF	2.81	0.173	6.145	3.09	2.64	2.76	2.72	2.83					
Phenanthrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				9.70	46.13	81.87	168.14	460.23					
	RRF	0.89	0.063	7.028	0.97	0.92	0.82	0.84	0.92					
Anthracene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				8.13	42.20	77.06	153.96	402.42					
	RRF	0.80	0.031	3.901	0.81	0.84	0.77	0.77	0.80					
d10-Fluoranthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				118.94	136.07	145.72	150.34	154.31					
	RRF	1.41	0.141	10.009	1.19	1.36	1.46	1.50	1.54					
Fluoranthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				14.14	55.12	99.77	200.49	521.18					
	RRF	1.11	0.174	15.653	1.41	1.10	1.00	1.00	1.04					
d10-Pyrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				129.03	143.24	158.81	161.45	166.55					
	RRF	1.52	0.154	10.160	1.29	1.43	1.59	1.61	1.67					
Pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				16.74	59.11	104.58	204.18	551.22					
	RRF	1.21	0.269	22.353	1.67	1.18	1.05	1.02	1.10					

Dioxin Furan CALIBRATION TABLE

Mass Spec : VG-4
GC Column : DB-5
265-04A,B,D,E,956-64

File name : PAHAIR102998V4.RRF
Date analyzed : 29-OCT-98

Mult.: 350

INITIAL CALIBRATION CURVE

		Mean	S.D.	%RSD	1	2	3	4	5	6	7	8	9	10
d12-Benzo(a)anthracene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				68.20	70.96	127.65	89.95	93.26					
	RRF	0.90	0.238	26.446	0.68	0.71	1.28	0.90	0.93					
Benzo(a)anthracene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				11.85	64.84	102.61	234.26	671.78					
	RRF	1.20	0.124	10.269	1.18	1.30	1.03	1.17	1.34					
d12-Chrysene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				109.94	119.85	127.65	136.79	145.35					
	RRF	1.28	0.139	10.855	1.10	1.20	1.28	1.37	1.45					
Chrysene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				10.44	56.47	102.61	215.75	571.04					
	RRF	1.08	0.051	4.716	1.04	1.13	1.03	1.08	1.14					
d12-Benzo(b)fluoranthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				41.05	45.84	49.22	45.10	45.72					
	RRF	0.45	0.029	6.414	0.41	0.46	0.49	0.45	0.46					
Benzo(b)fluoranthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				12.56	61.73	95.82	228.66	622.27					
	RRF	1.17	0.125	10.717	1.26	1.23	0.96	1.14	1.24					
d12-Benzo(k)fluoranthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				91.66	94.95	96.52	94.09	96.82					
	RRF	0.95	0.021	2.203	0.92	0.95	0.97	0.94	0.97					
Benzo(k)fluoranthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				12.71	63.16	119.14	210.18	522.11					
	RRF	1.16	0.111	9.525	1.27	1.26	1.19	1.05	1.04					
d12-Benzo(a)pyrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				65.24	66.86	69.56	67.87	68.82					
	RRF	0.68	0.017	2.504	0.65	0.67	0.70	0.68	0.69					
Benzo(e)pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				18.05	89.03	157.16	302.58	767.23					
	RRF	1.64	0.140	8.557	1.80	1.78	1.57	1.51	1.53					
Benzo(a)pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				11.71	60.46	102.44	200.46	476.32					
	RRF	1.07	0.112	10.437	1.17	1.21	1.02	1.00	0.95					
d12-Perylene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				64.89	58.55	68.21	62.00	61.45					
	RRF	0.63	0.037	5.829	0.65	0.59	0.68	0.62	0.61					
Perylene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				16.93	98.08	162.24	324.02	835.41					
	RRF	1.71	0.142	8.297	1.69	1.96	1.62	1.62	1.67					
d12-Indeno(123-cd)pyrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				44.86	44.54	44.08	43.39	45.40					
	RRF	0.44	0.008	1.722	0.45	0.45	0.44	0.43	0.45					
Indeno(123-cd)pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				5.85	35.13	60.26	127.89	287.53					
	RRF	0.62	0.052	8.352	0.59	0.70	0.60	0.64	0.58					
d14-Dibenz(ah)anthracene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				20.73	24.39	25.35	26.10	26.33					
	RRF	0.25	0.023	9.286	0.21	0.24	0.25	0.26	0.26					

C314

02-NOV-1998 02:20:12 PM

Dioxin Furan CALIBRATION TABLE

Mass Spec : VG-4
GC Column : DB-5
265-04A,B,D,E,956-64

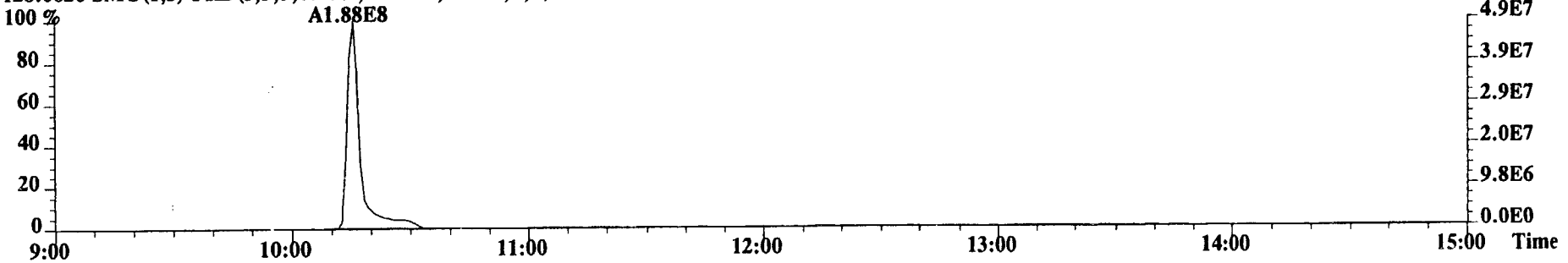
File name : PAHAIR102998V4.RRF
Date analyzed : 29-OCT-98

INITIAL CALIBRATION CURVE

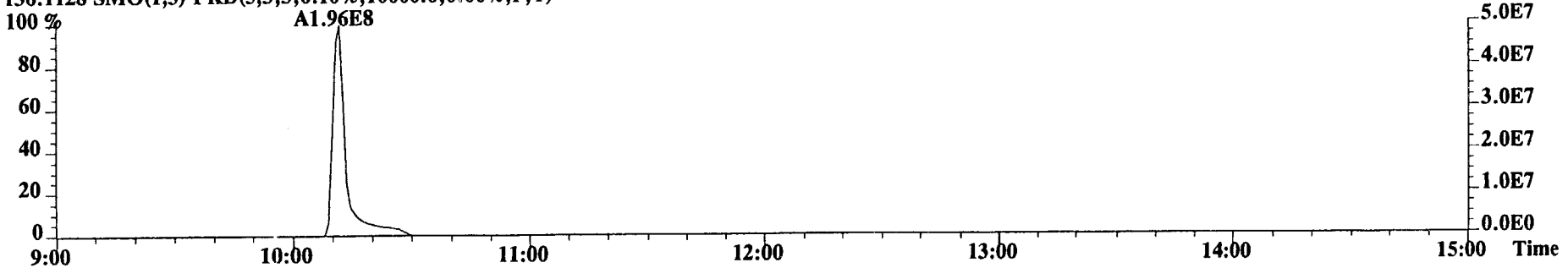
Mult.: 350

		Mean	S.D.	%RSD	1	2	3	4	5	6	7	8	9	10
Dibenz(ah)anthracene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				12.92	69.25	143.15	281.33	751.34					
	RRF	1.40	0.077	5.452	1.29	1.38	1.43	1.41	1.50					
d12-Benzo(ghi)perylene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				59.24	54.17	59.73	58.78	57.94					
	RRF	0.58	0.022	3.838	0.59	0.54	0.60	0.59	0.58					
Benzo(ghi)perylene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				8.58	51.44	109.18	211.25	522.58					
	RRF	1.02	0.091	8.984	0.86	1.03	1.09	1.06	1.05					
	Amount				0	0	0	0	0					
	RF													
	RRF	0	0	0										

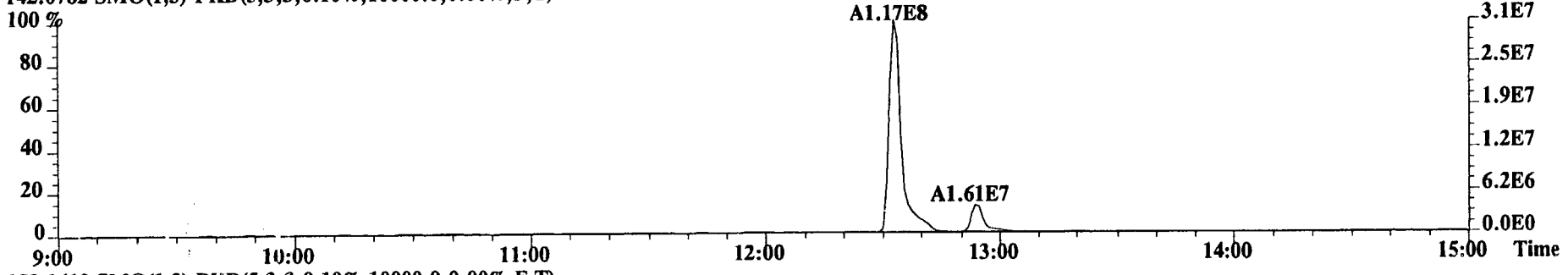
File:02NO98V4 #1-510 Acq: 2-NOV-1998 13:13:33 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1102 :CS-3 :956-64 : : Exp:PAHAIR
128.0626 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



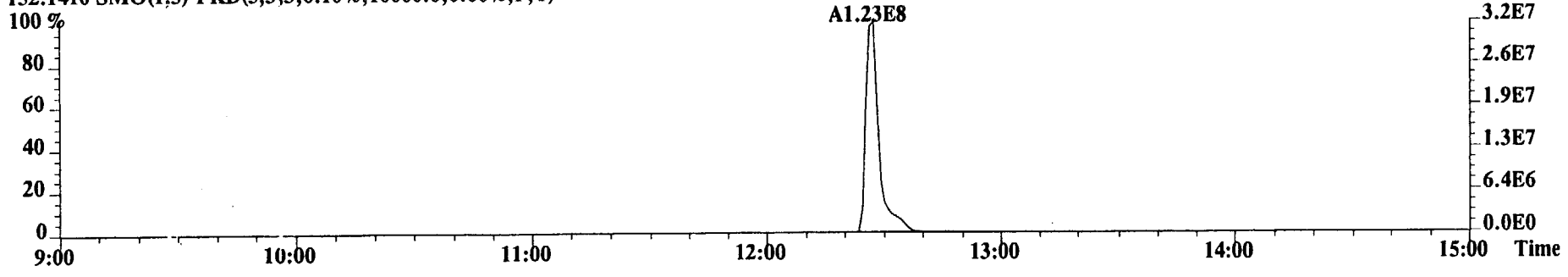
136.1128 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



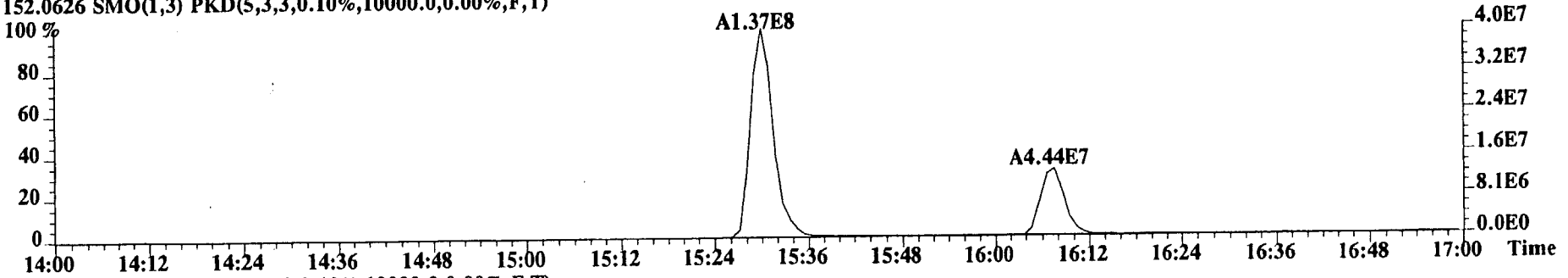
142.0782 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



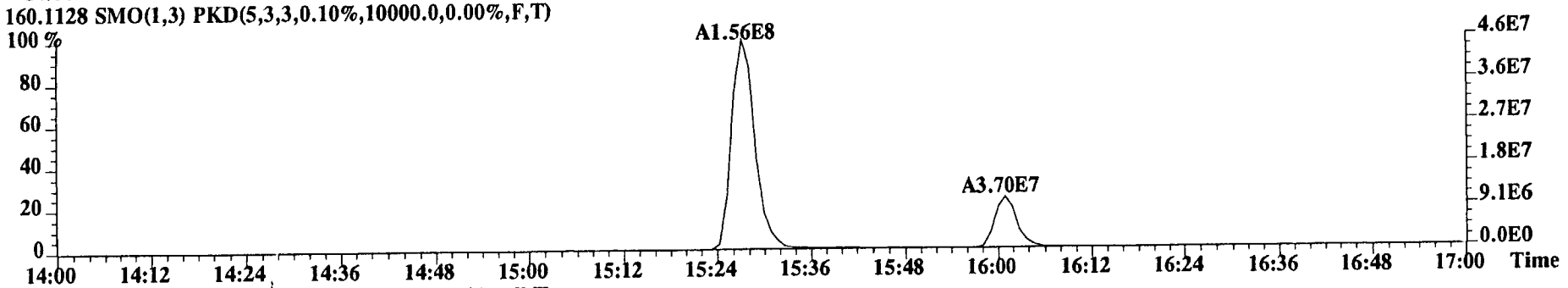
152.1410 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



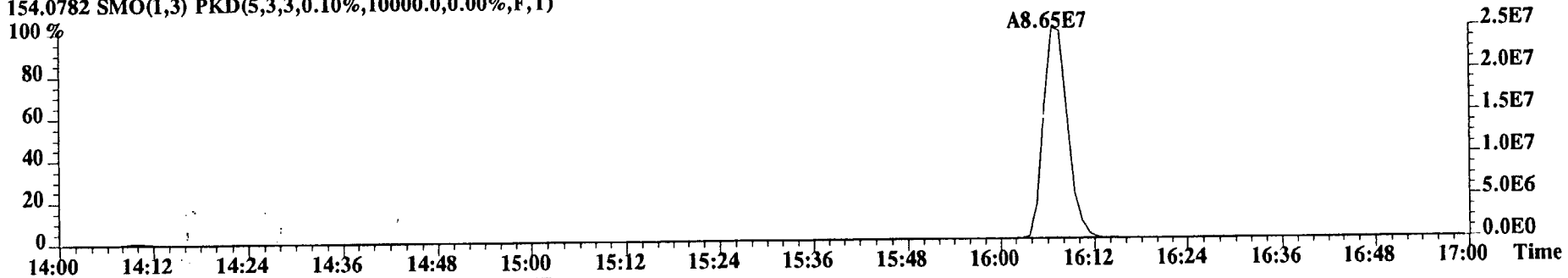
File:02NO98V4 #1-510 Acq: 2-NOV-1998 13:13:33 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1102 :CS-3 :956-64 : : Exp:PAHAIR
152.0626 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



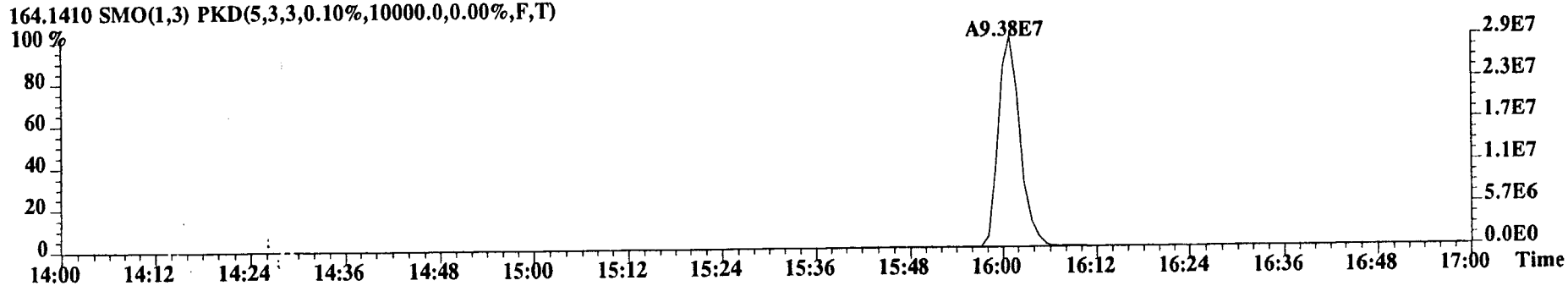
160.1128 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

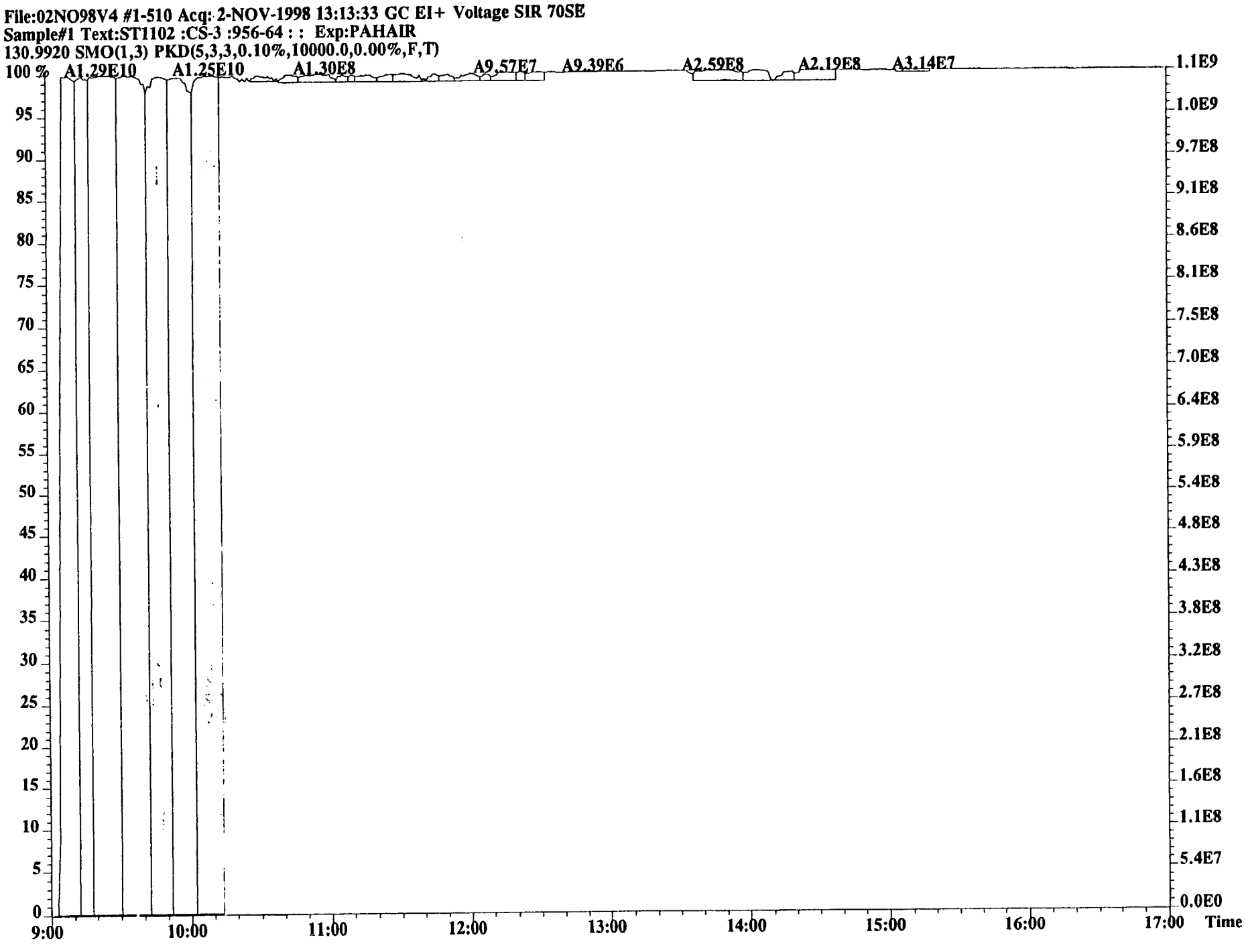


154.0782 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

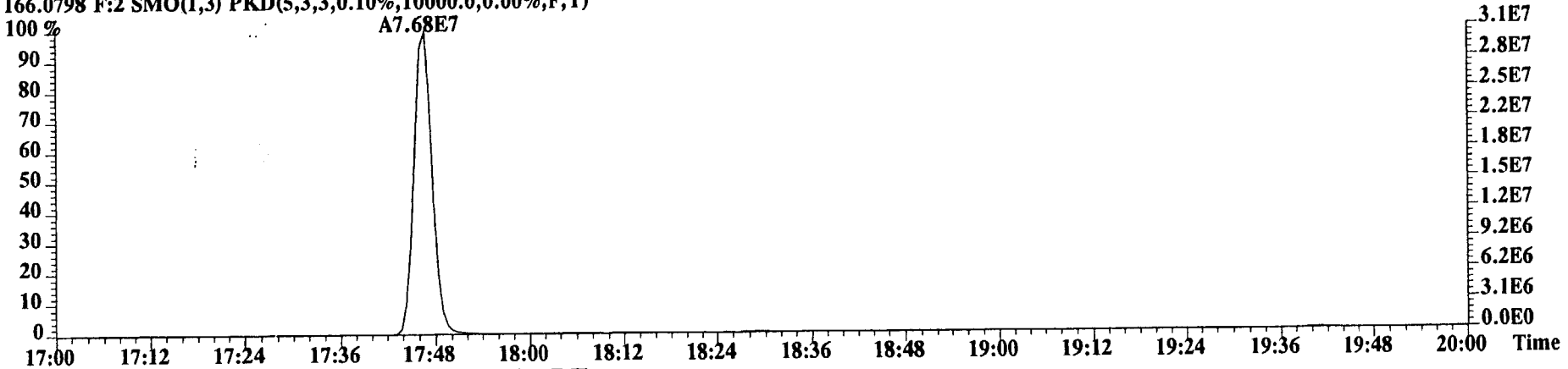


164.1410 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

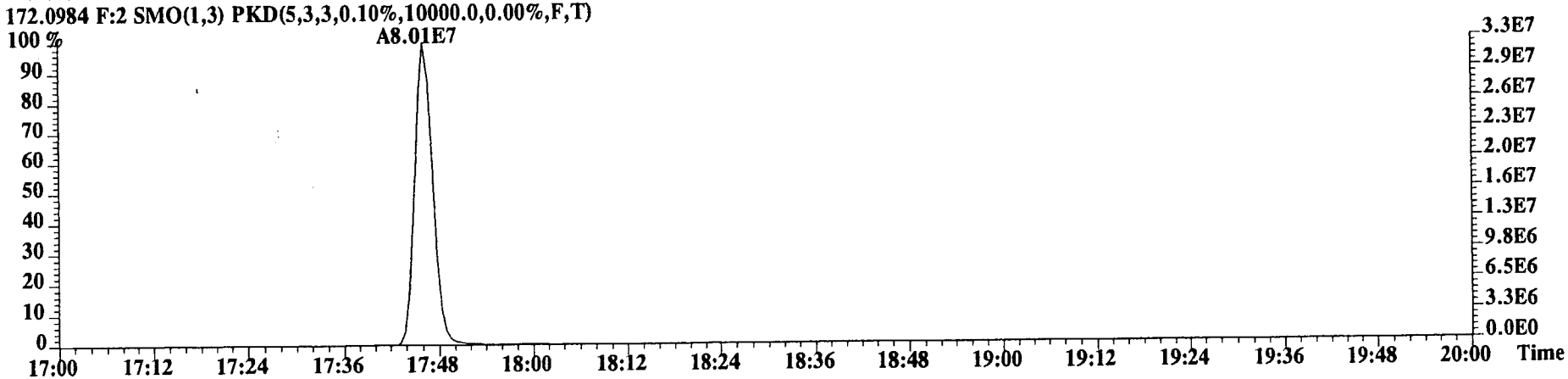



File:02NO98V4 #1-510 Acq: 2-NOV-1998 13:13:33 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1102 :CS-3 :956-64 : : Exp:PAHAIR
130.9920 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.29E10
A1.25E10
A1.30E8
A9.57E7
A9.39E6
A2.59E8
A2.19E8
A3.14E7
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
1.1E9
1.0E9
9.7E8
9.1E8
8.6E8
8.1E8
7.5E8
7.0E8
6.4E8
5.9E8
5.4E8
4.8E8
4.3E8
3.8E8
3.2E8
2.7E8
2.1E8
1.6E8
1.1E8
5.4E7
0.0E0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
Time

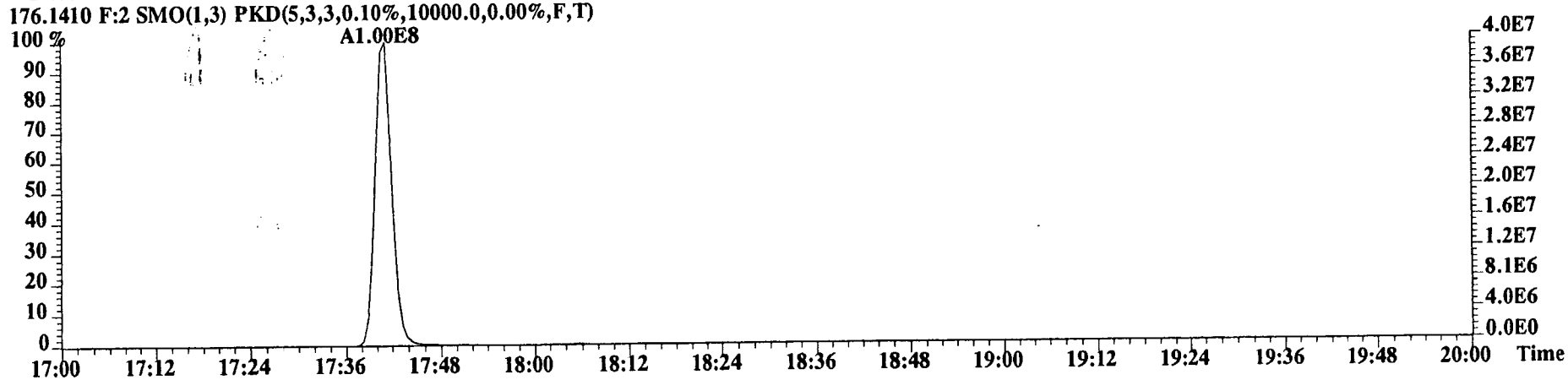
File:02NO98V4 #1-641 Acq: 2-NOV-1998 13:13:33 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1102 :CS-3 :956-64 : : Exp:PAHAIR
166.0798 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



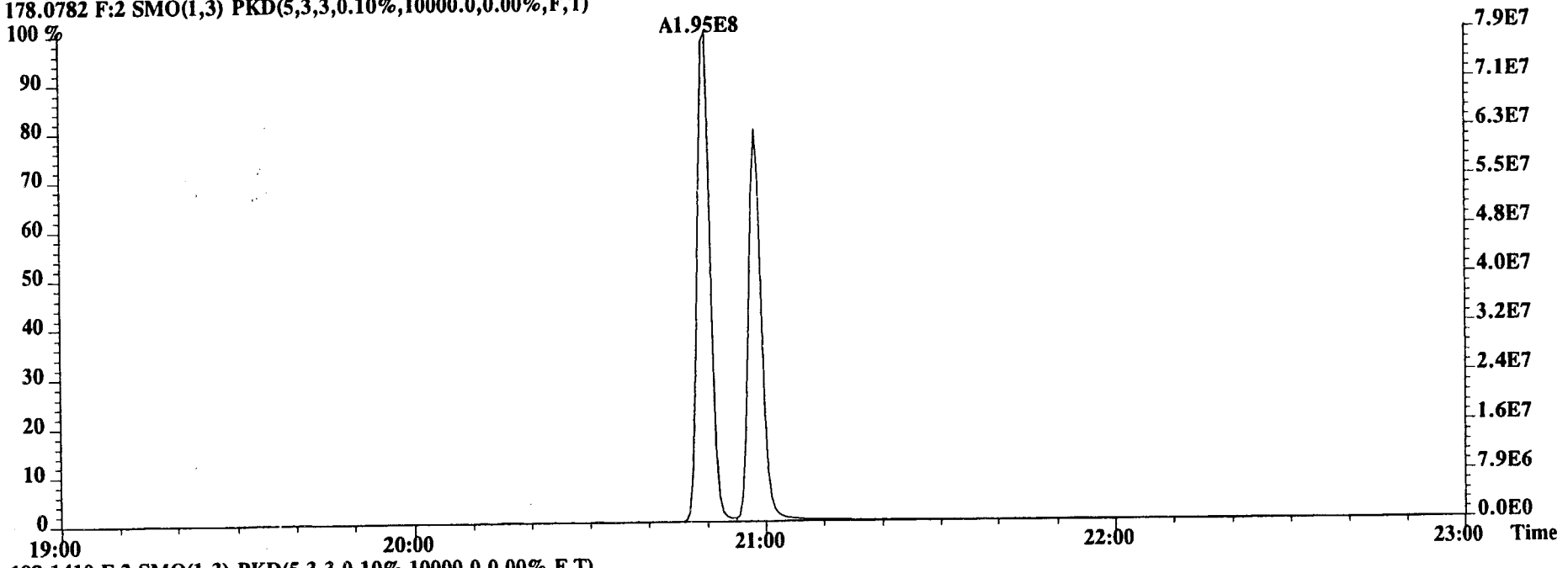
172.0984 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



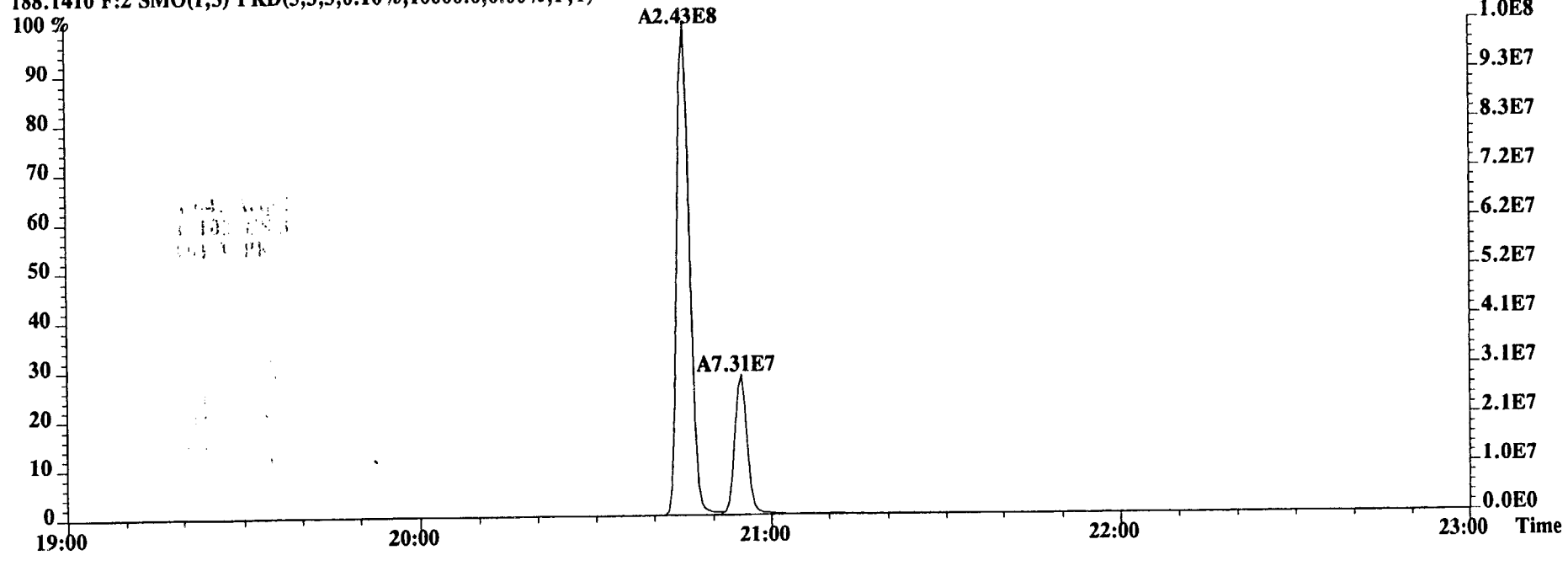
176.1410 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

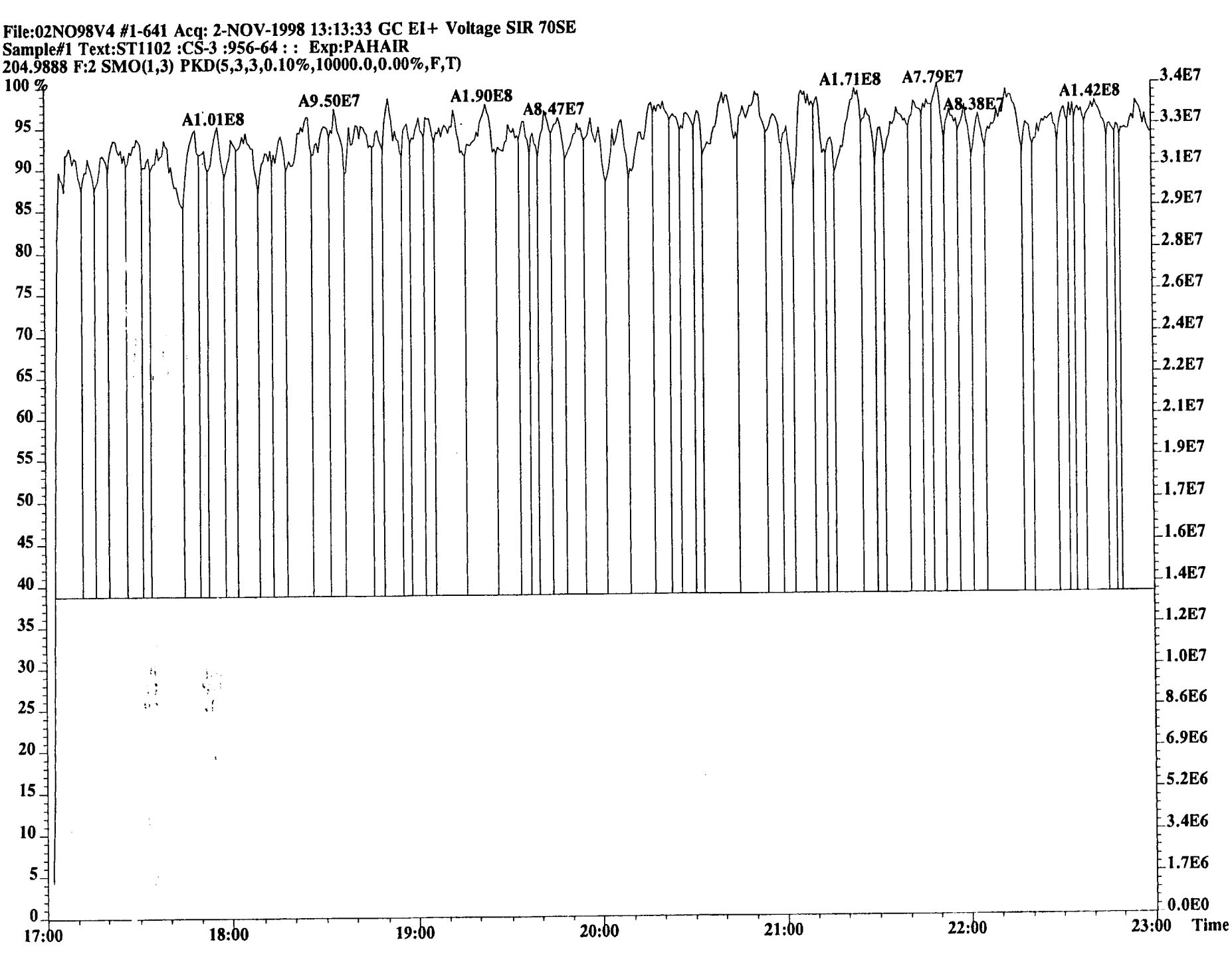


File:02NO98V4 #1-641 Acq: 2-NOV-1998 13:13:33 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1102 :CS-3 :956-64 : : Exp:PAHAIR
178.0782 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

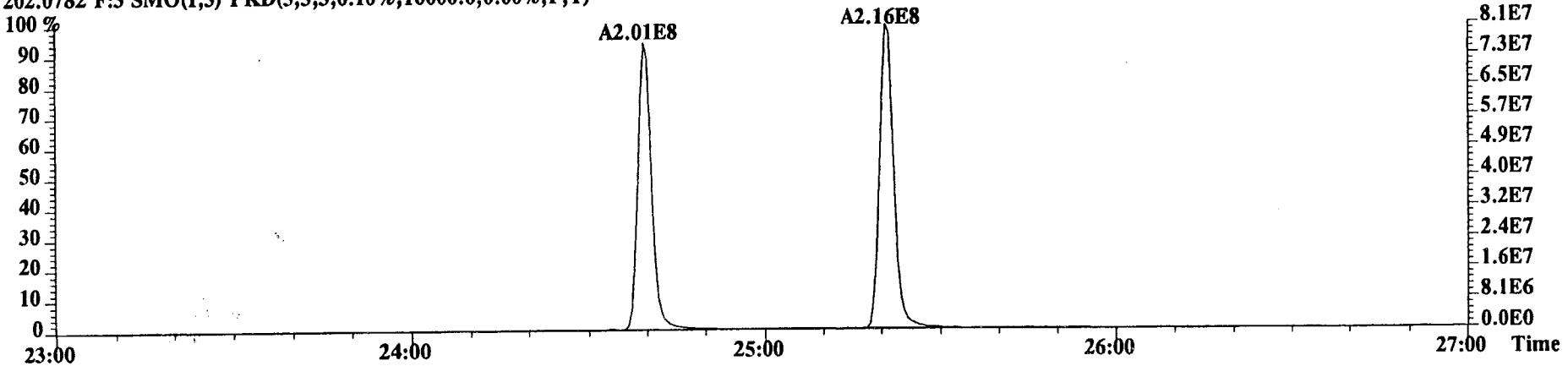


188.1410 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

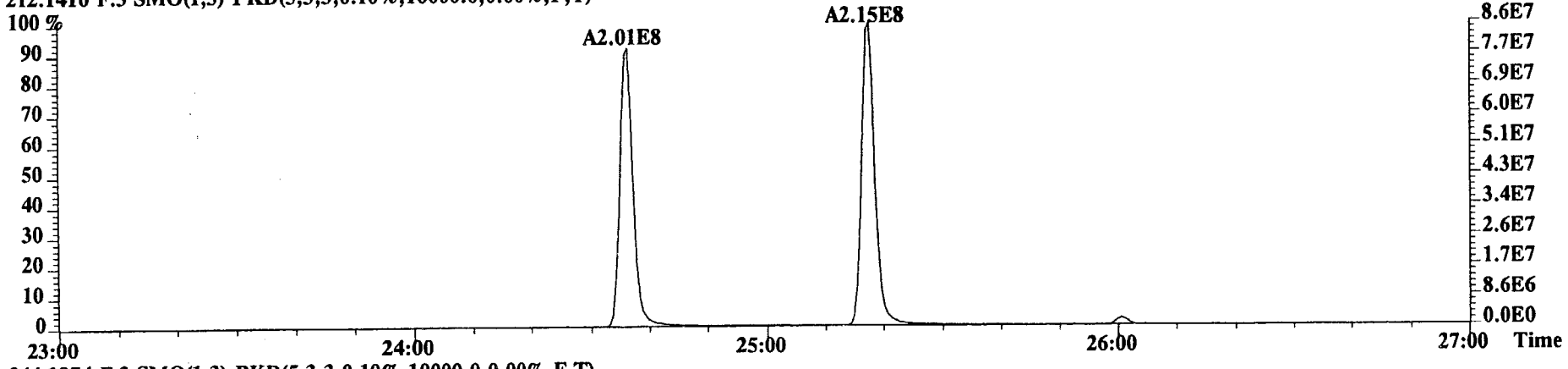



File:02NO98V4 #1-641 Acq: 2-NOV-1998 13:13:33 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1102 :CS-3 :956-64 : : Exp:PAHAIR
204.9888 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
641
A1.01E8
A9.50E7
A1.90E8
A8.47E7
A1.71E8
A7.79E7
A8.38E7
A1.42E8
100 %
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
3.4E7
3.3E7
3.1E7
2.9E7
2.8E7
2.6E7
2.4E7
2.2E7
2.1E7
1.9E7
1.7E7
1.6E7
1.4E7
1.2E7
1.0E7
8.6E6
6.9E6
5.2E6
3.4E6
1.7E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

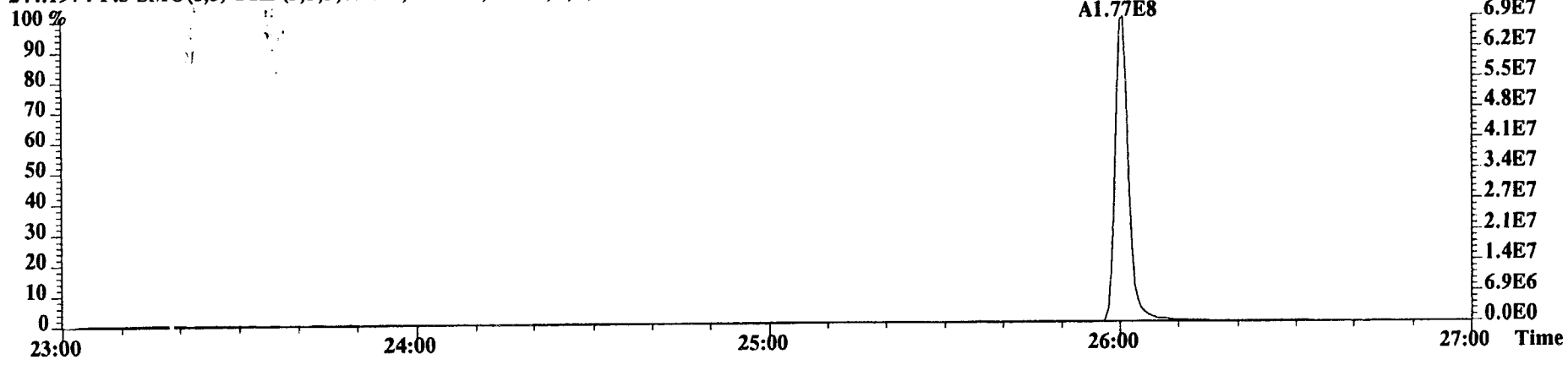
File:02NO98V4 #1-938 Acq: 2-NOV-1998 13:13:33 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1102 :CS-3 :956-64 : : Exp:PAHAIR
202.0782 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



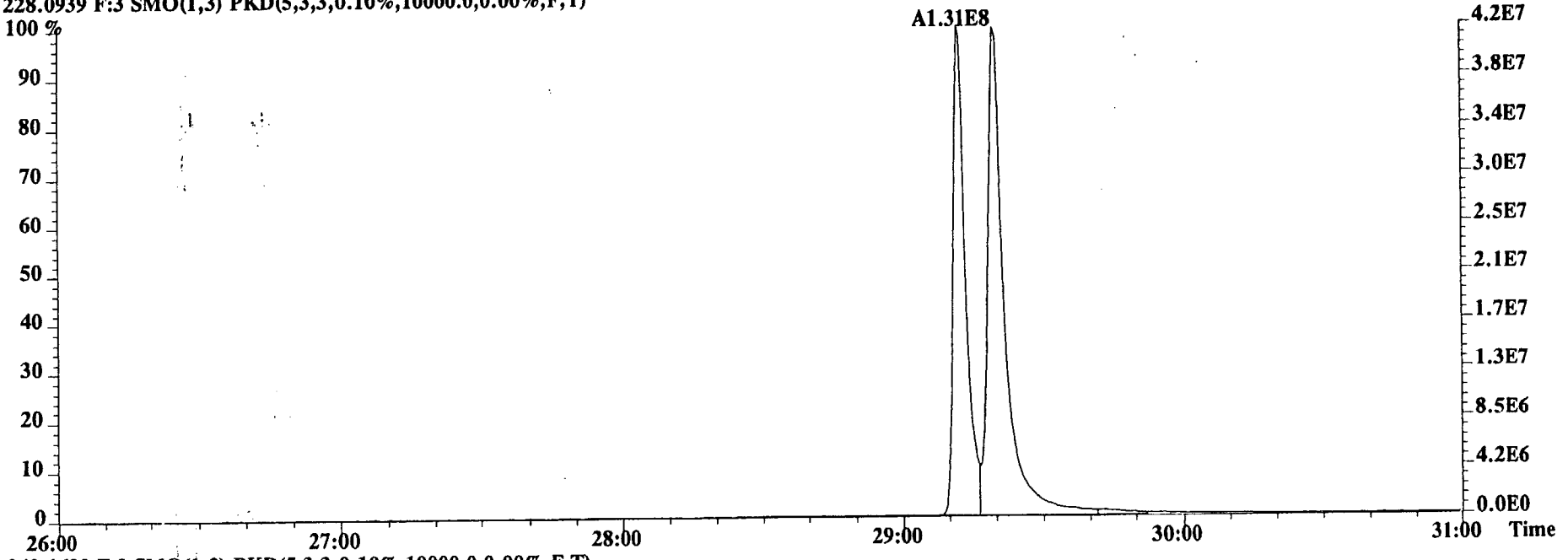
212.1410 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



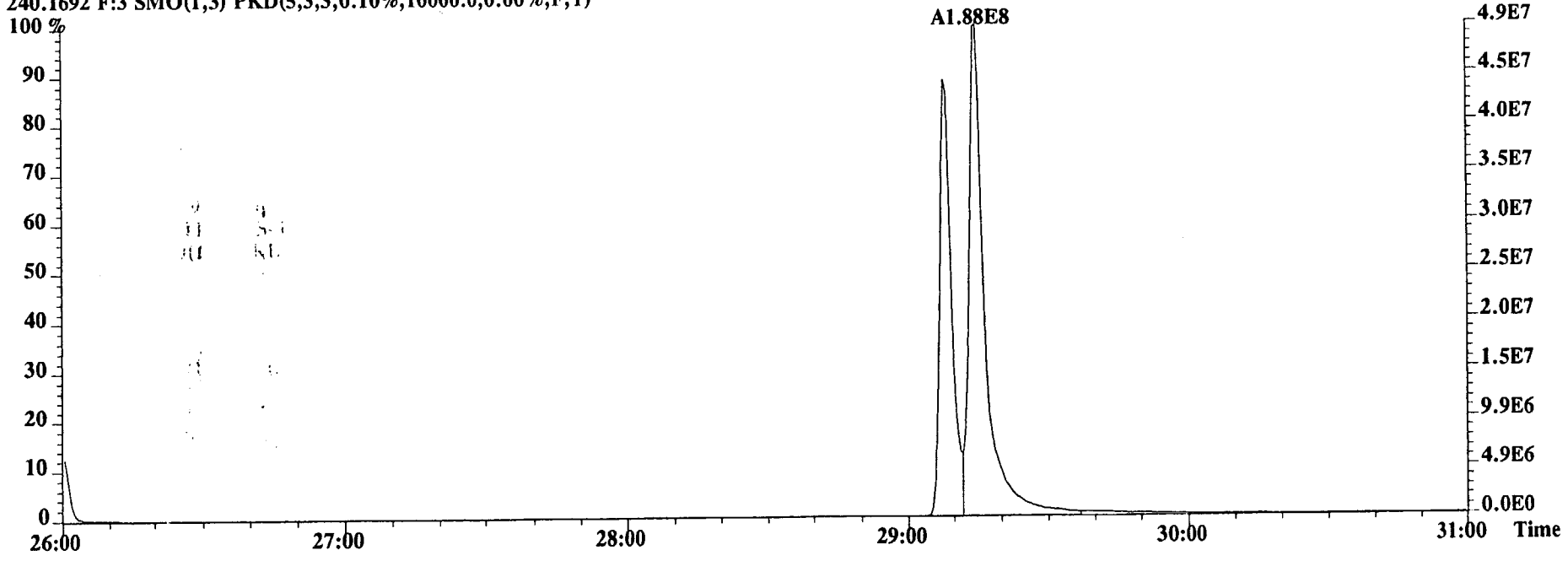
244.1974 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



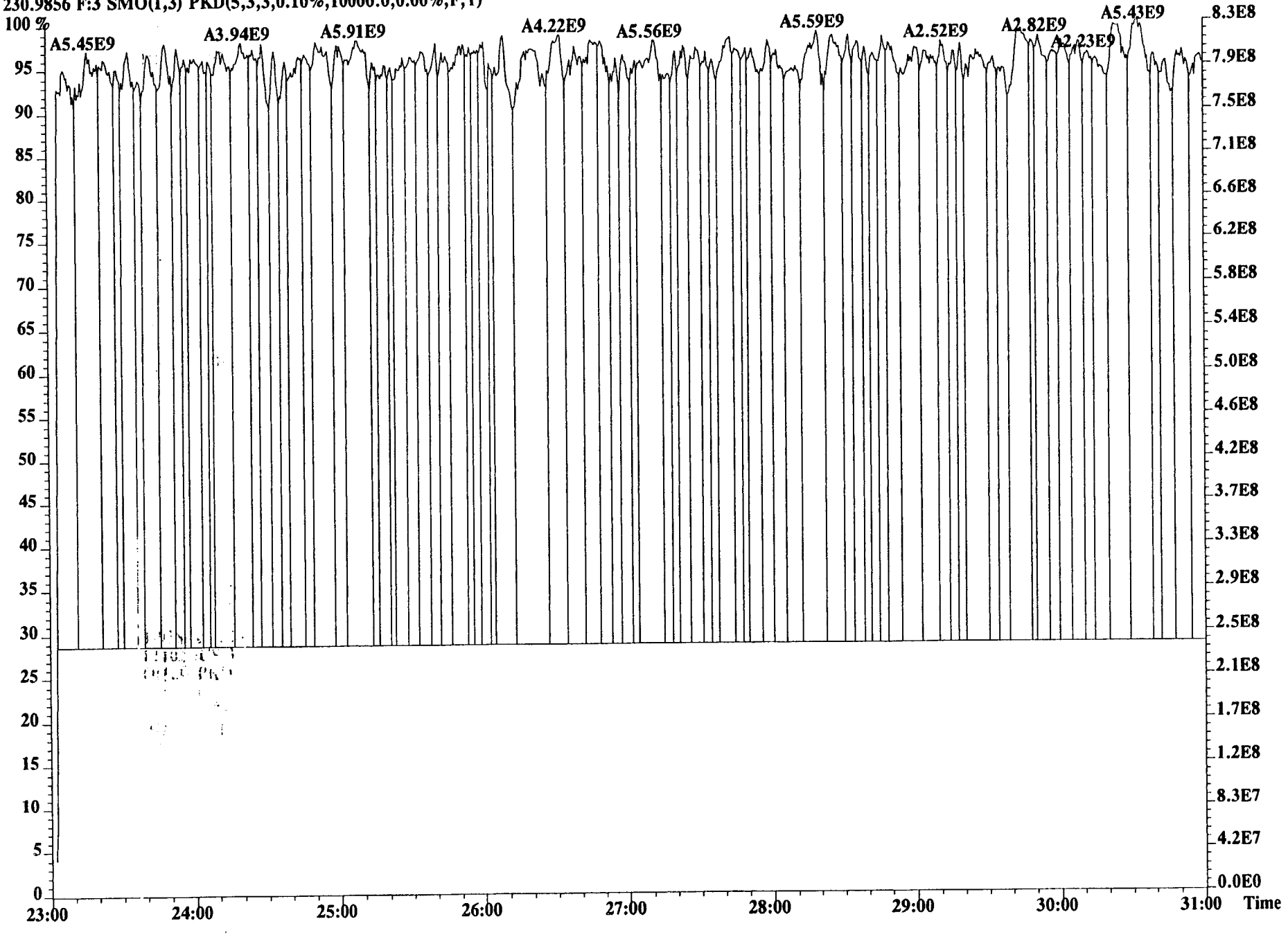
File:02NO98V4 #1-938 Acq: 2-NOV-1998 13:13:33 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1102 :CS-3 :956-64 : : Exp:PAHAIR
228.0939 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



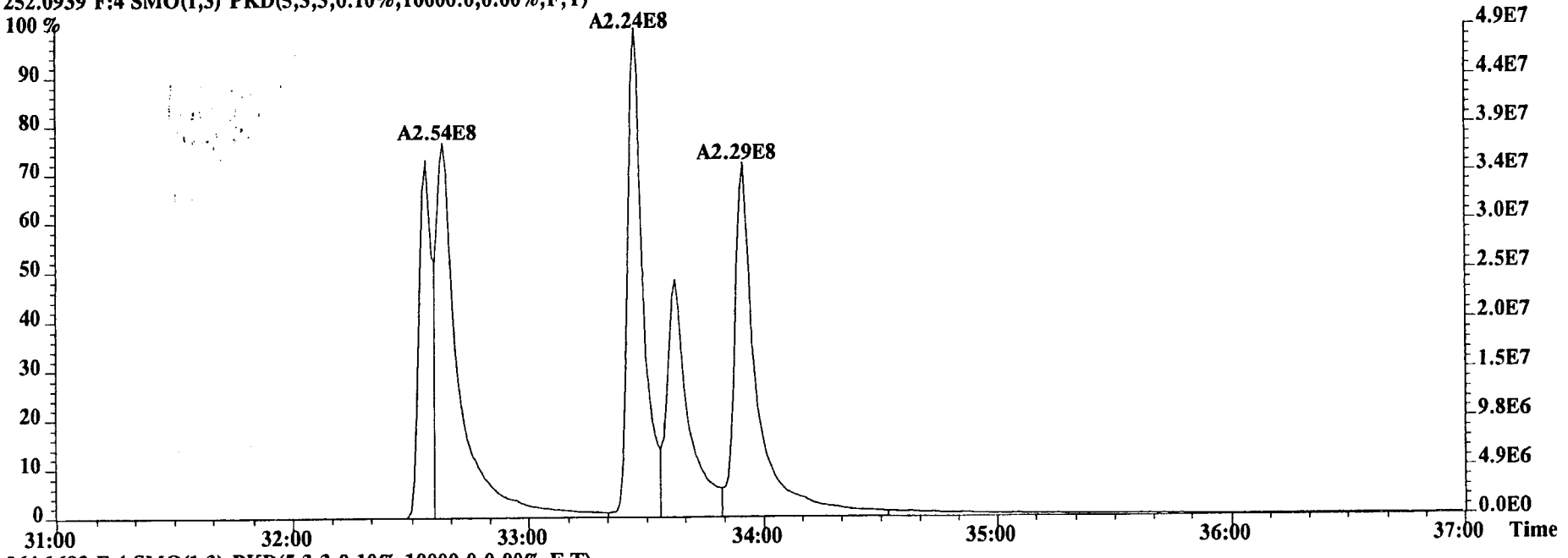
240.1692 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



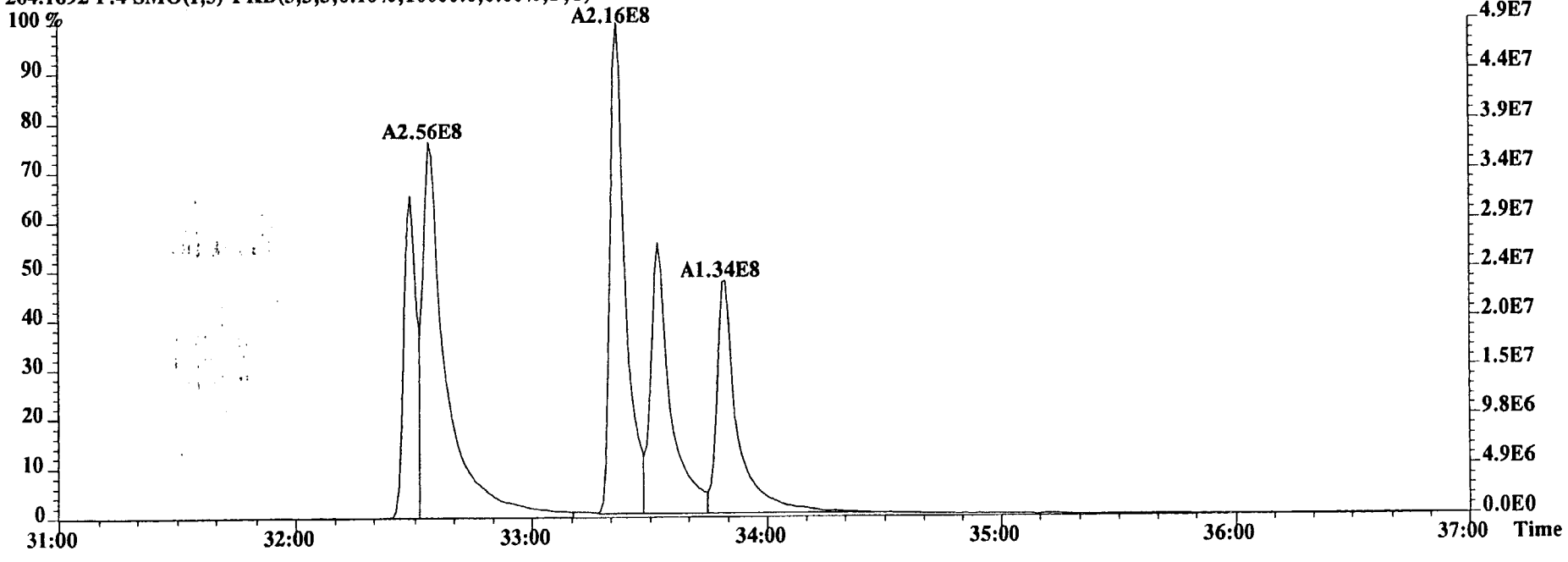
File:02NO98V4 #1-938 Acq: 2-NOV-1998 13:13:33 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1102 :CS-3 :956-64 : : Exp:PAHAIR
230.9856 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



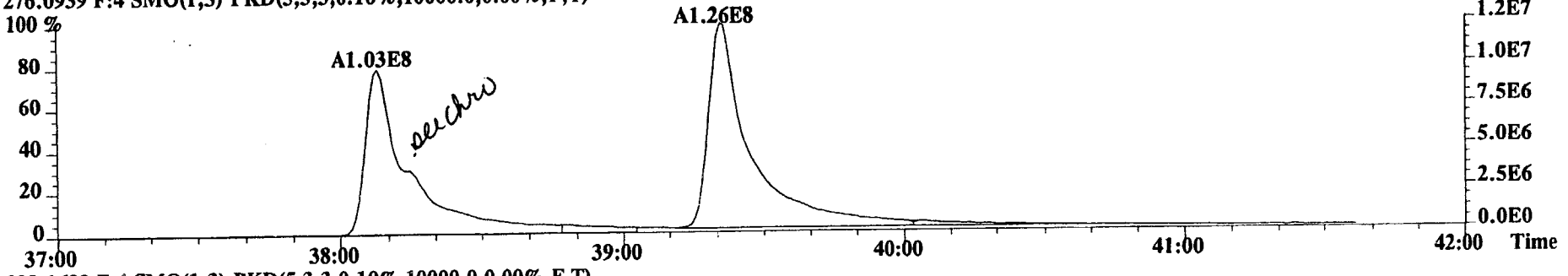
File:02NO98V4 #1-759 Acq: 2-NOV-1998 13:13:33 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1102 :CS-3 :956-64 : : Exp:PAHAIR
252.0939 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



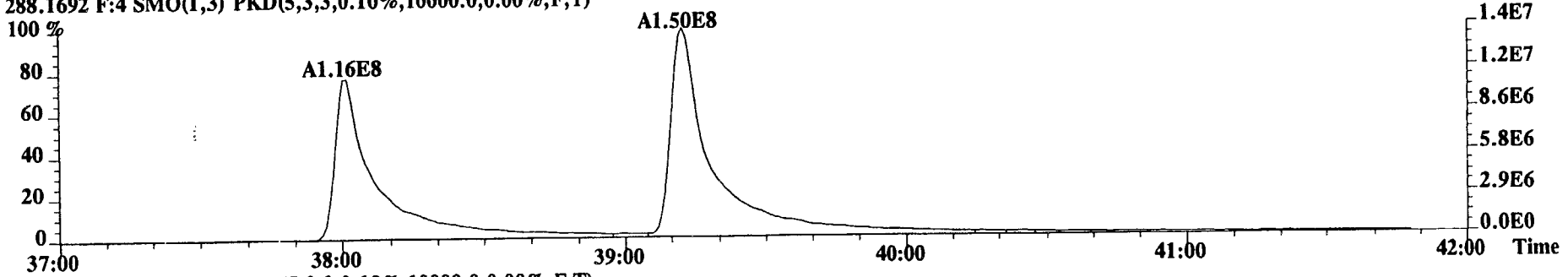
264.1692 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



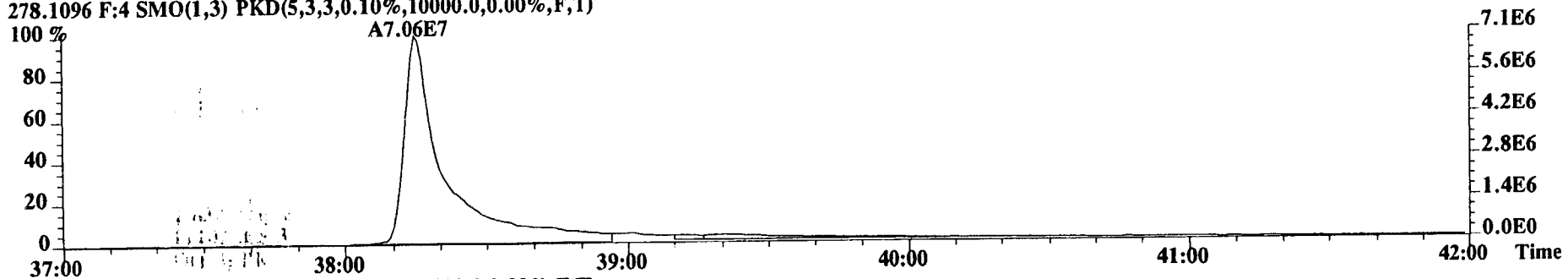
File:02NO98V4 #1-832 Acq: 2-NOV-1998 13:13:33 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1102 :CS-3 :956-64 : : Exp:PAHAIR
276.0939 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



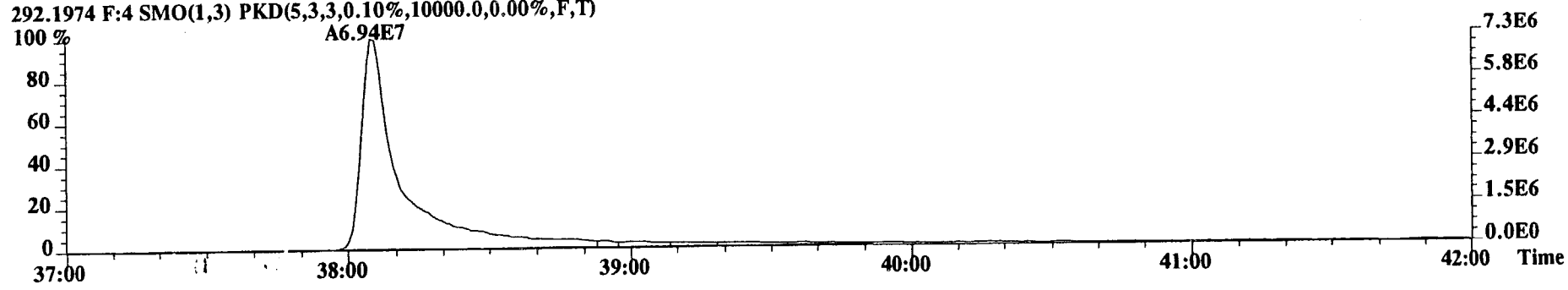
288.1692 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



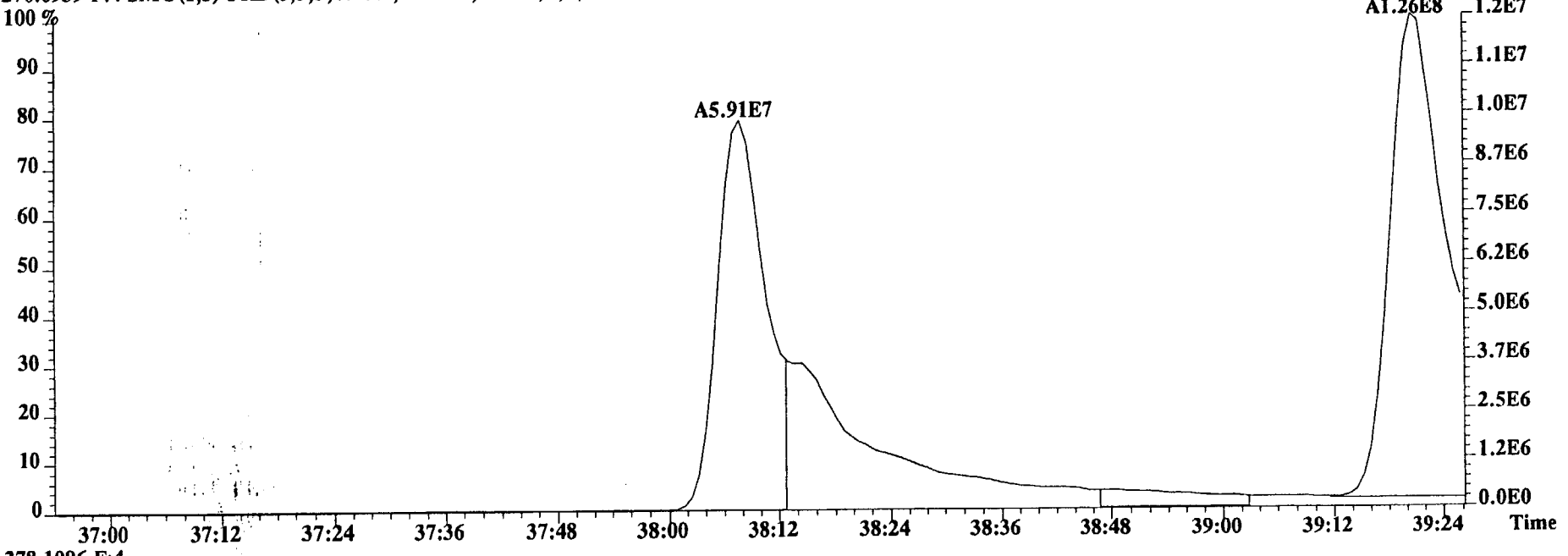
278.1096 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



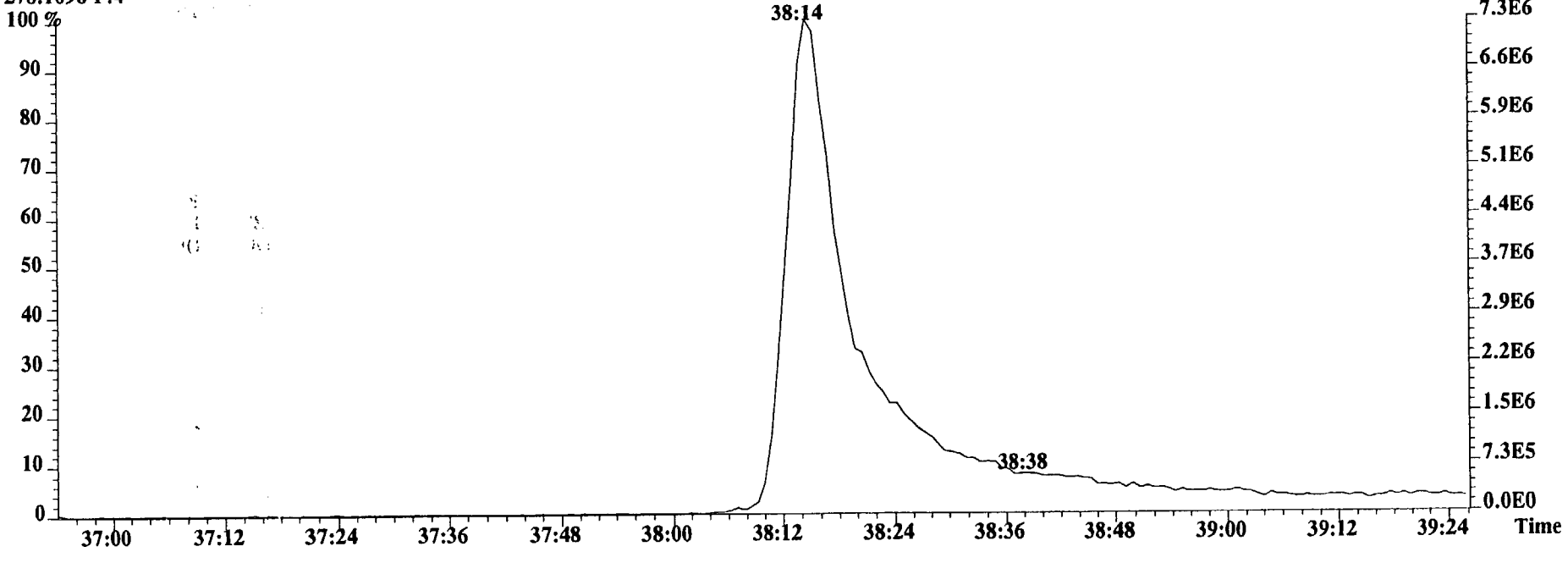
292.1974 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

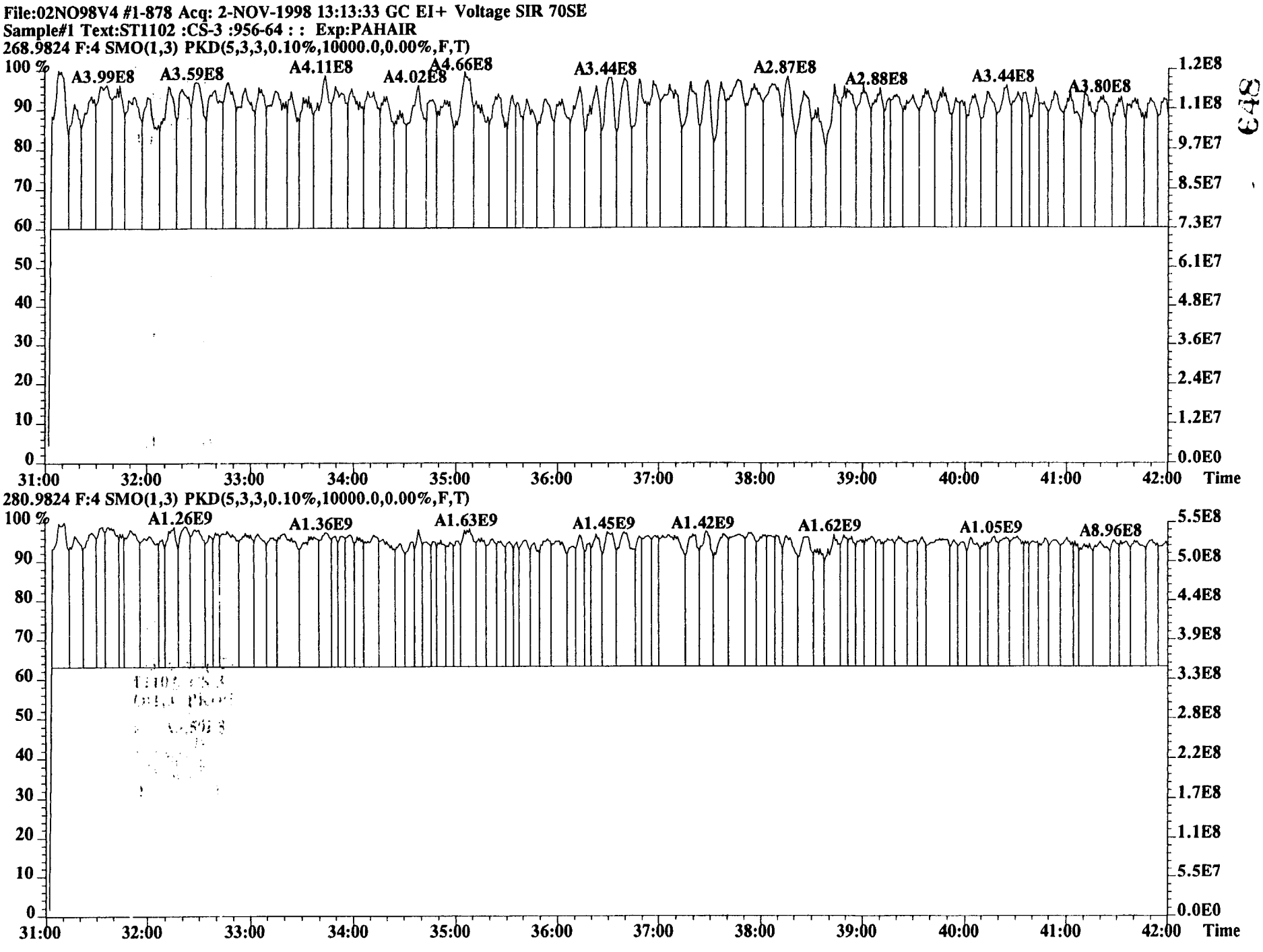


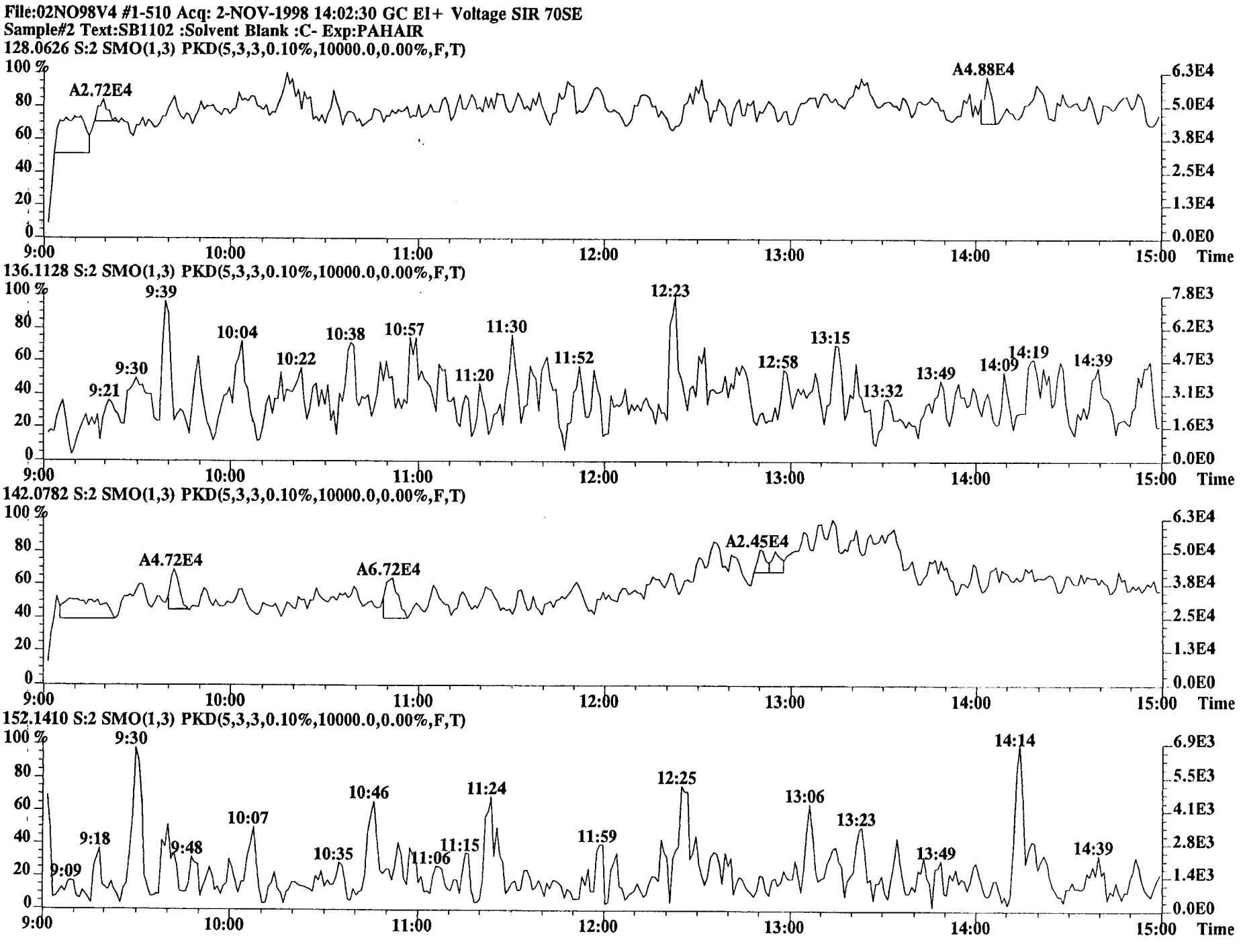
File:02NO98V4 #1-878 Acq: 2-NOV-1998 13:13:33 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1102 :CS-3 :956-64 : : Exp:PAHAIR
276.0939 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



278.1096 F:4

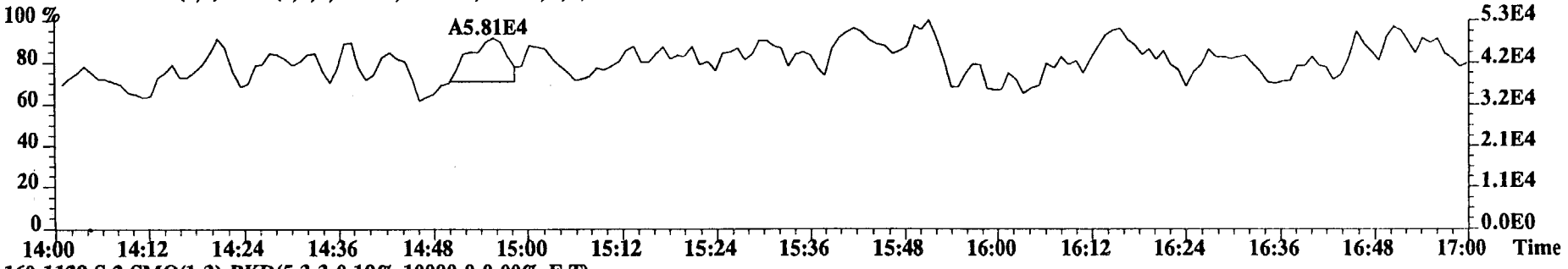



File:02NO98V4 #1-878 Acq: 2-NOV-1998 13:13:33 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1102 :CS-3 :956-64 : : Exp:PAHAIR
268.9824 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A3.99E8
A3.59E8
A4.11E8
A4.02E8
A4.66E8
A3.44E8
A2.87E8
A2.88E8
A3.44E8
A3.80E8
280.9824 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A1.26E9
A1.36E9
A1.63E9
A1.45E9
A1.42E9
A1.62E9
A1.05E9
A8.96E8
100 %
90
80
70
60
50
40
30
20
10
0
1.2E8
1.1E8
9.7E7
8.5E7
7.3E7
6.1E7
4.8E7
3.6E7
2.4E7
1.2E7
0.0E0
5.5E8
5.0E8
4.4E8
3.9E8
3.3E8
2.8E8
2.2E8
1.7E8
1.1E8
5.5E7
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time

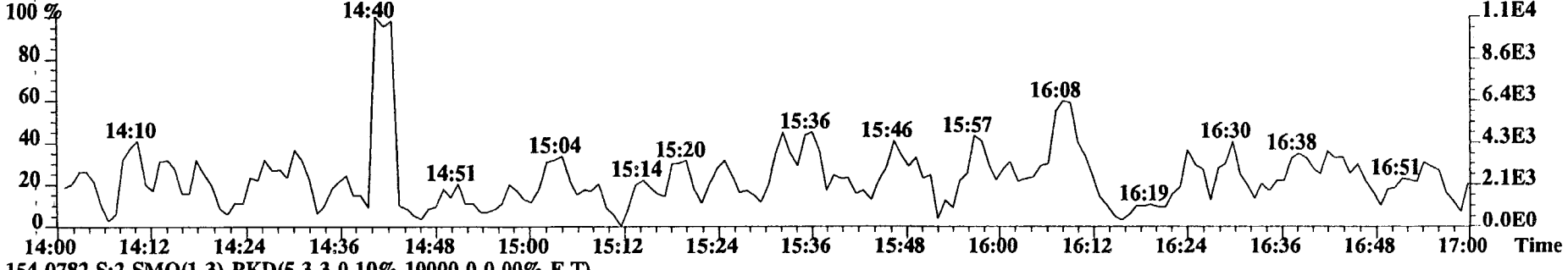

File:02NO98V4 #1-510 Acq: 2-NOV-1998 14:02:30 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1102 :Solvent Blank :C- Exp:PAHAIR
128.0626 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A2.72E4
A4.88E4
136.1128 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
9:21
9:30
9:39
10:04
10:22
10:38
10:57
11:20
11:30
11:52
12:23
12:58
13:15
13:32
13:49
14:09
14:19
14:39
142.0782 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
A4.72E4
A6.72E4
A2.45E4
152.1410 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
9:09
9:18
9:30
9:48
10:07
10:35
10:46
11:06
11:15
11:24
11:59
12:25
13:06
13:23
13:49
14:14
14:39
100 %
80
60
40
20
0
9:00
10:00
11:00
12:00
13:00
14:00
15:00
Time
6.3E4
5.0E4
3.8E4
2.5E4
1.3E4
0.0E0
7.8E3
6.2E3
4.7E3
3.1E3
1.6E3
6.9E3
5.5E3
4.1E3
2.8E3
1.4E3

649

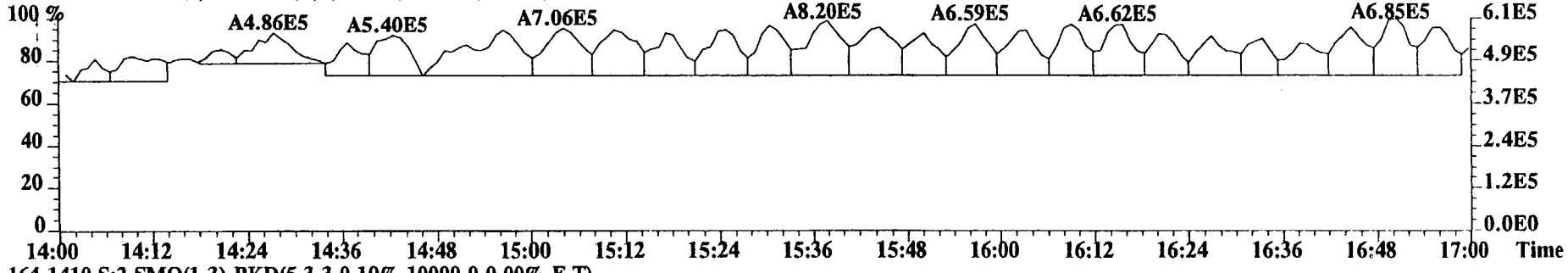
File:02NO98V4 #1-510 Acq: 2-NOV-1998 14:02:30 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1102 :Solvent Blank :C- Exp:PAHAIR
152.0626 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



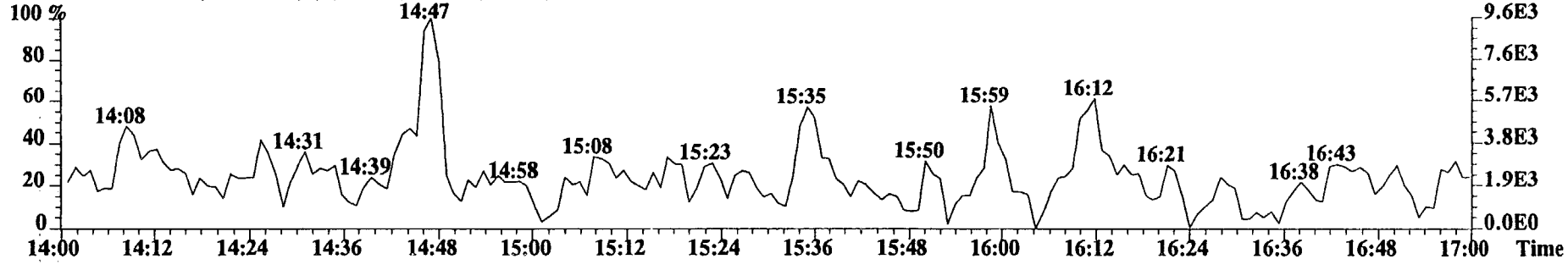
160.1128 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



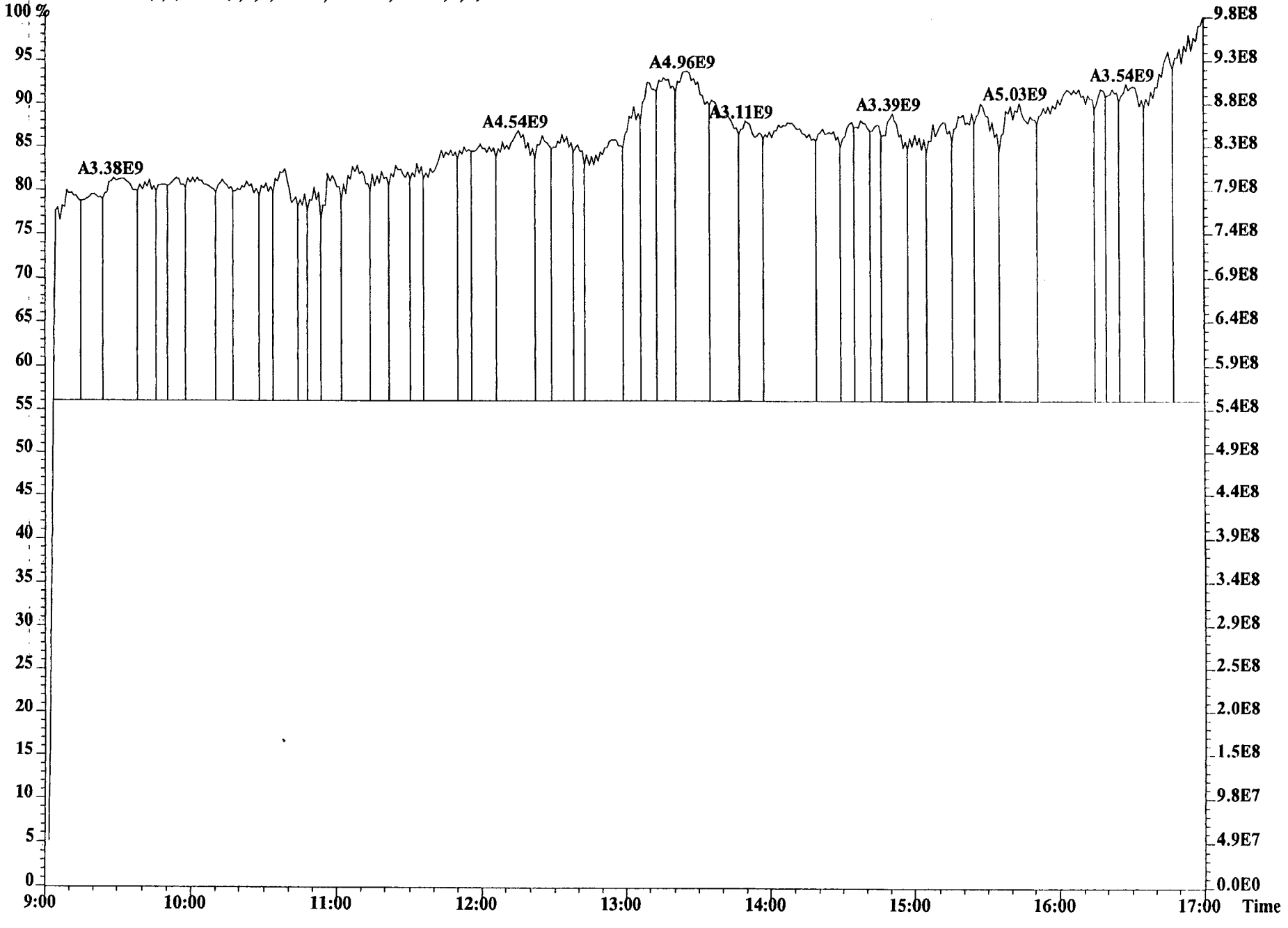
154.0782 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



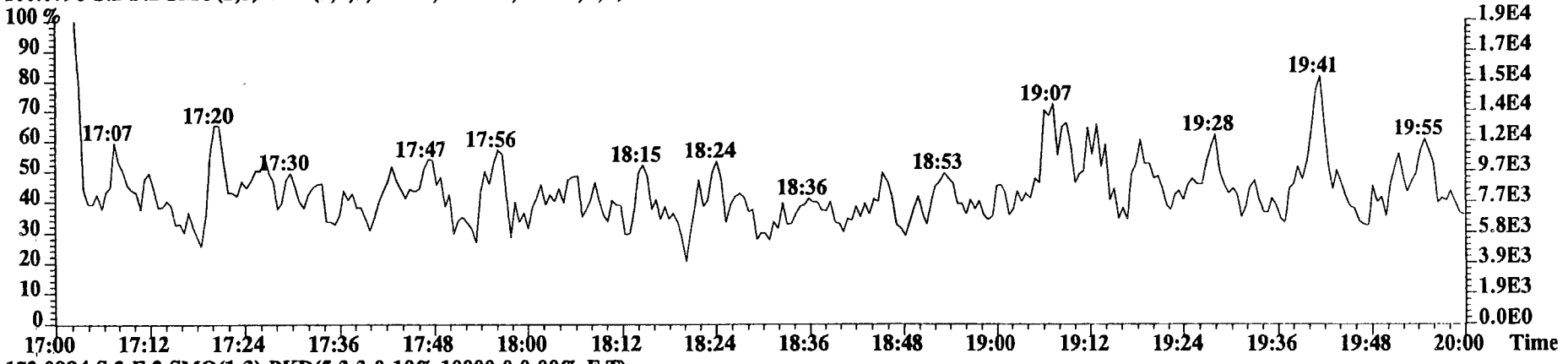
164.1410 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



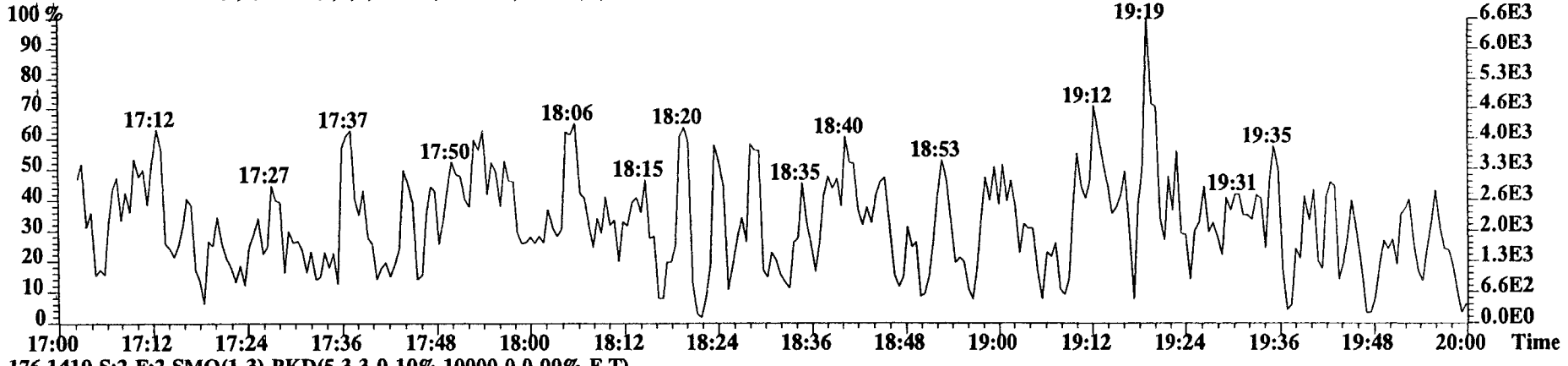
File:02NO98V4 #1-510 Acq: 2-NOV-1998 14:02:30 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1102 :Solvent Blank :C- Exp:PAHAIR
130.9920 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



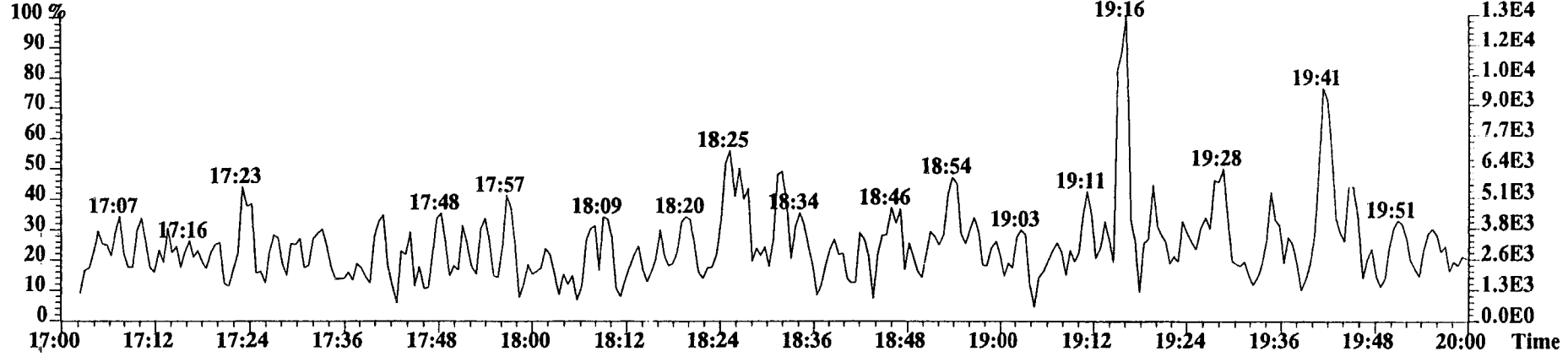
File:02NO98V4 #1-640 Acq: 2-NOV-1998 14:02:30 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1102 :Solvent Blank :C- Exp:PAHAIR
166.0798 S:2 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



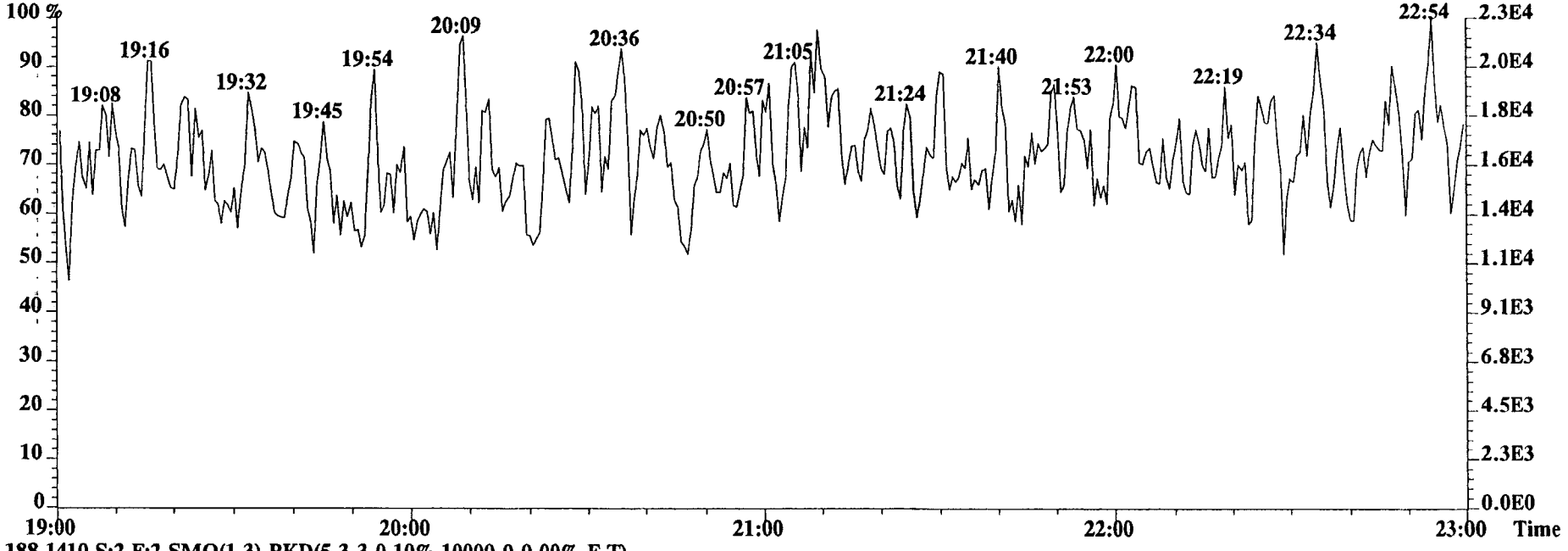
172.0984 S:2 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



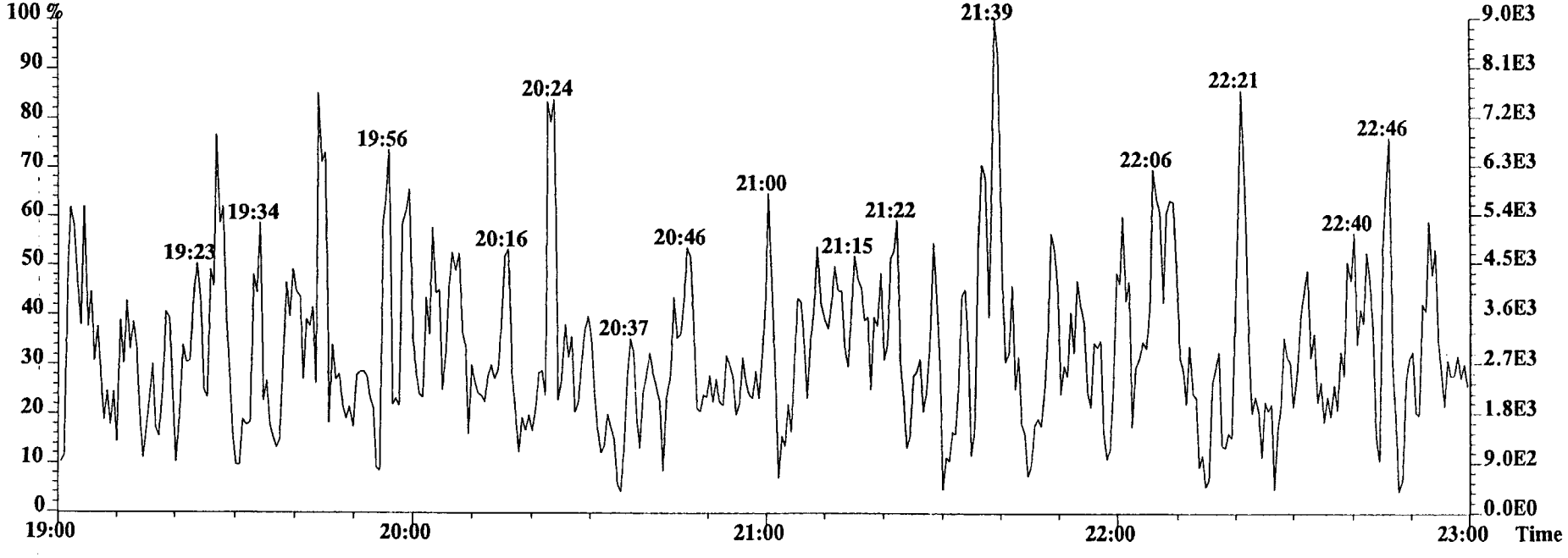
176.1410 S:2 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



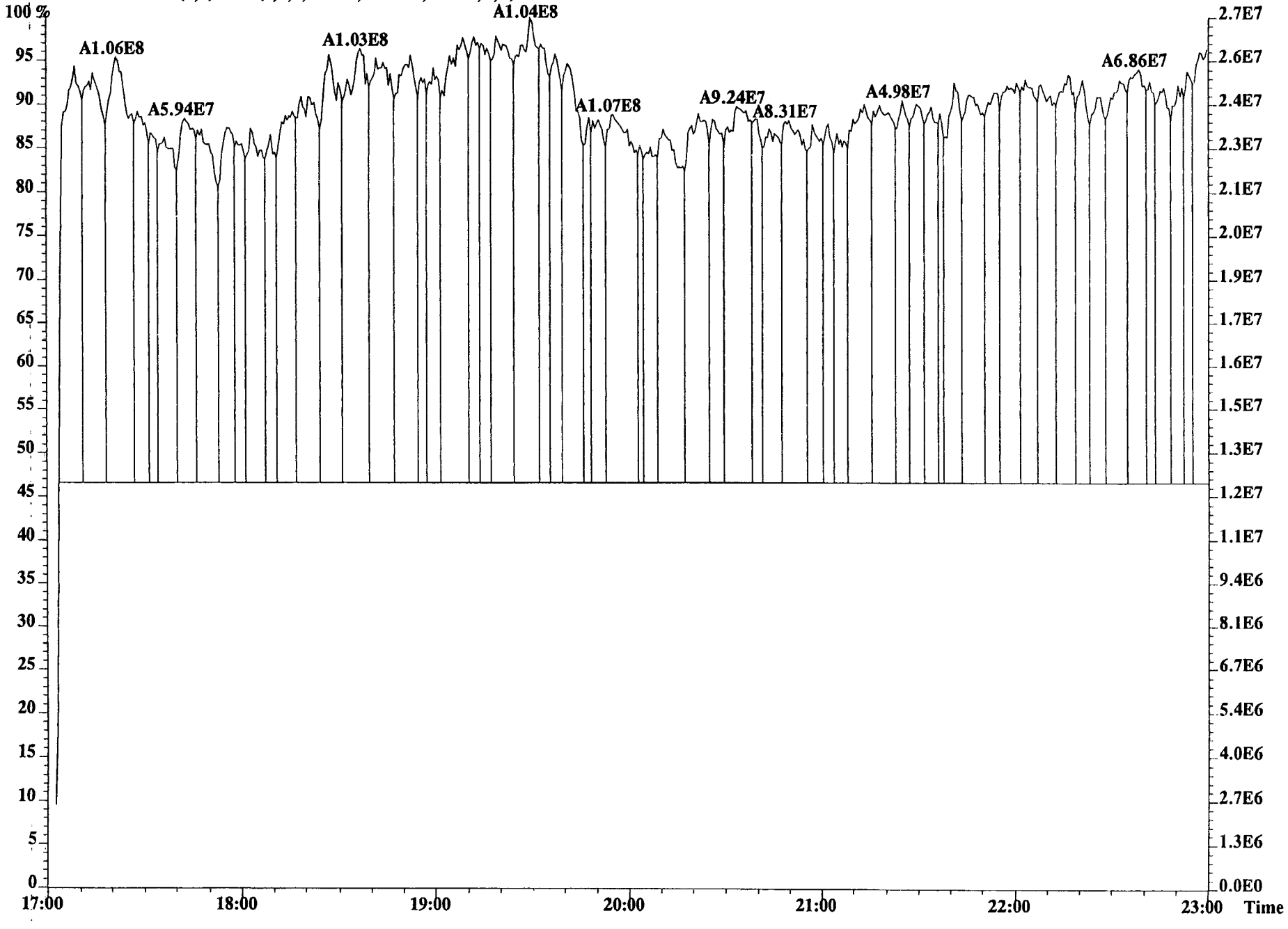
File:02NO98V4 #1-640 Acq: 2-NOV-1998 14:02:30 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1102 :Solvent Blank :C- Exp:PAHAIR
178.0782 S:2 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



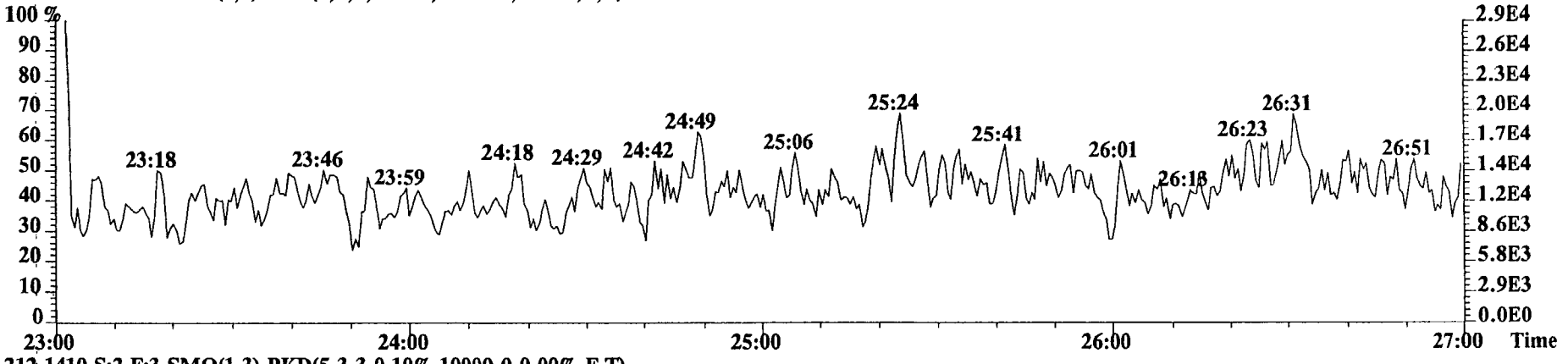
188.1410 S:2 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



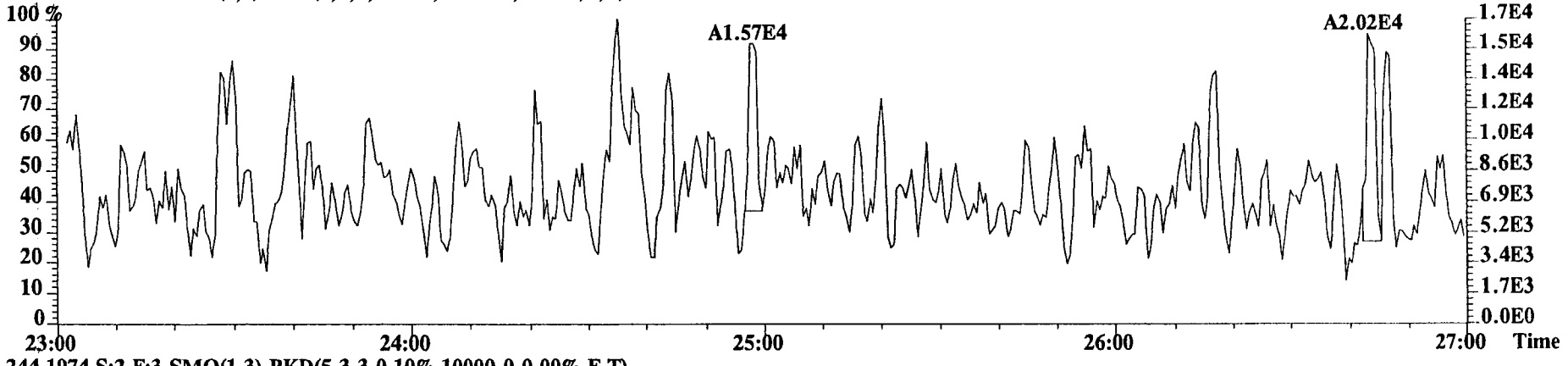
File:02NO98V4 #1-640 Acq: 2-NOV-1998 14:02:30 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1102 :Solvent Blank :C- Exp:PAHAIR
204.9888 S:2 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



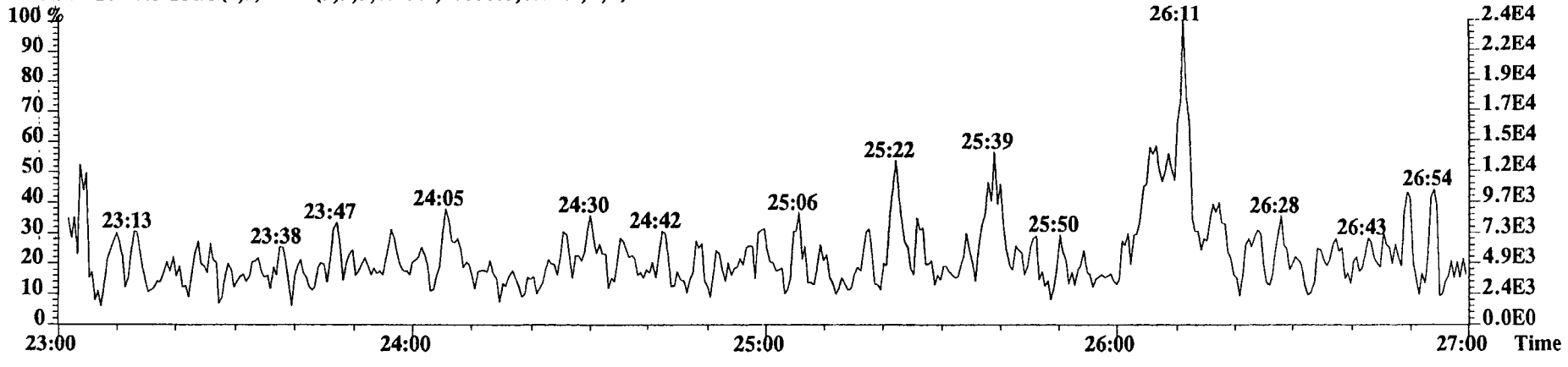
File:02NO98V4 #1-938 Acq: 2-NOV-1998 14:02:30 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1102 :Solvent Blank :C- Exp:PAHAIR
202.0782 S:2 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



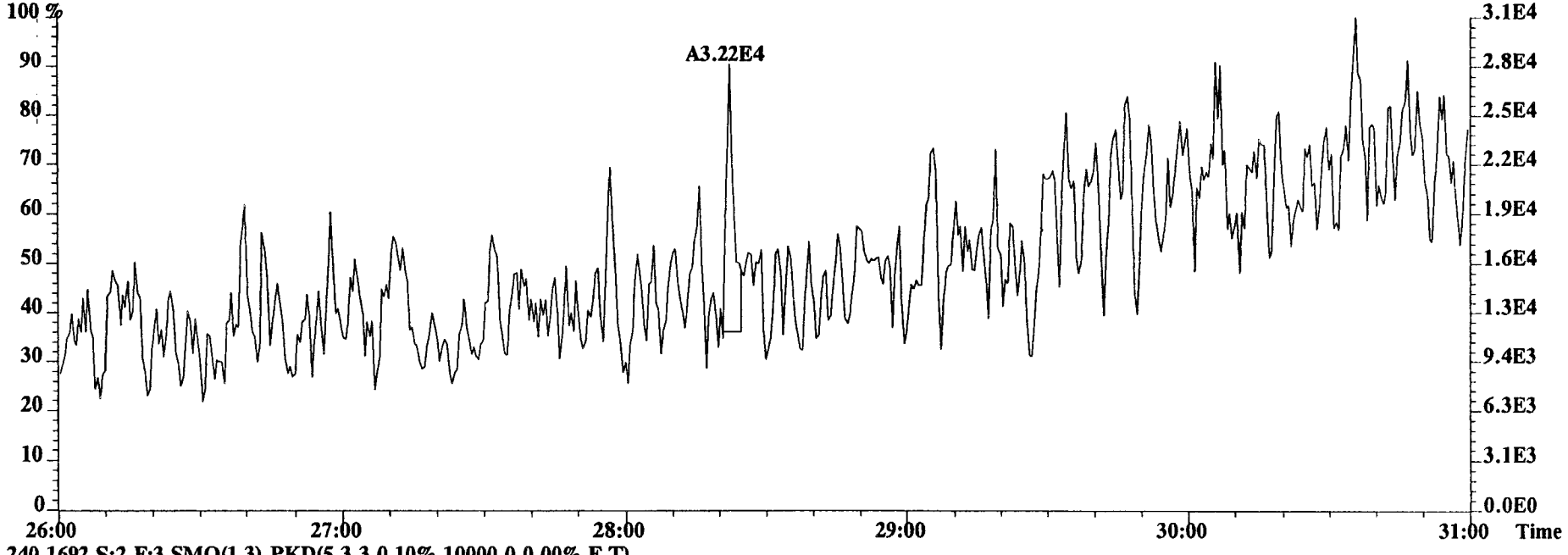
212.1410 S:2 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



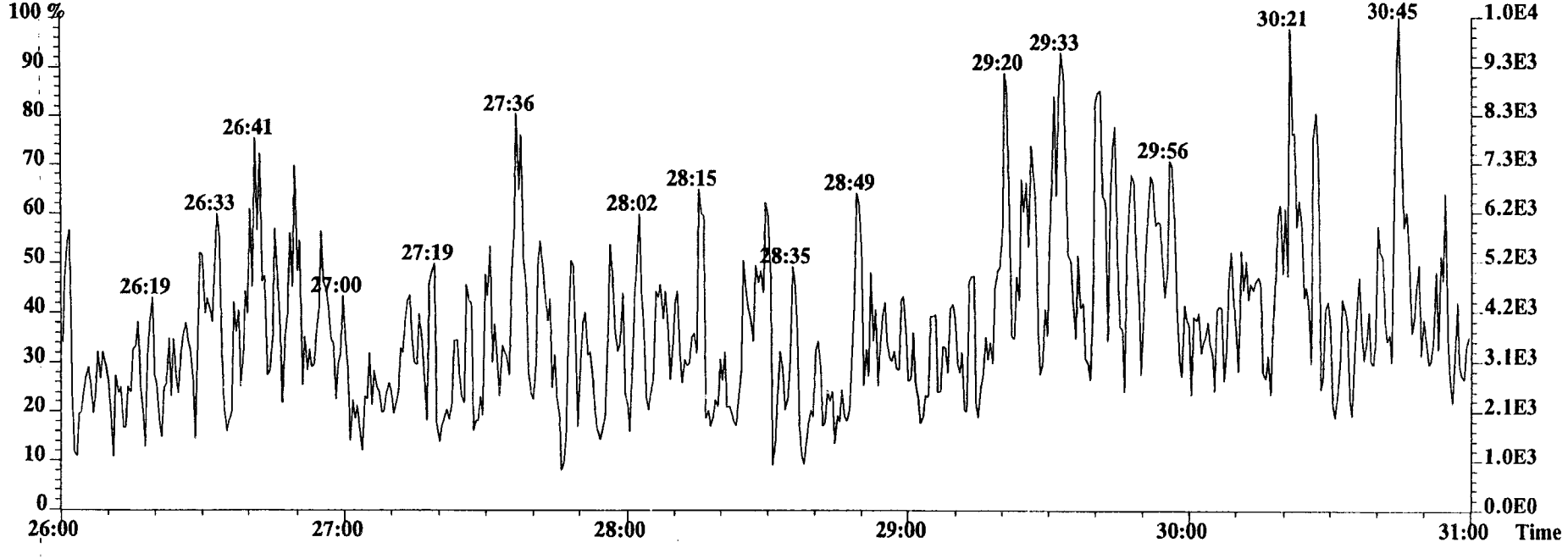
244.1974 S:2 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



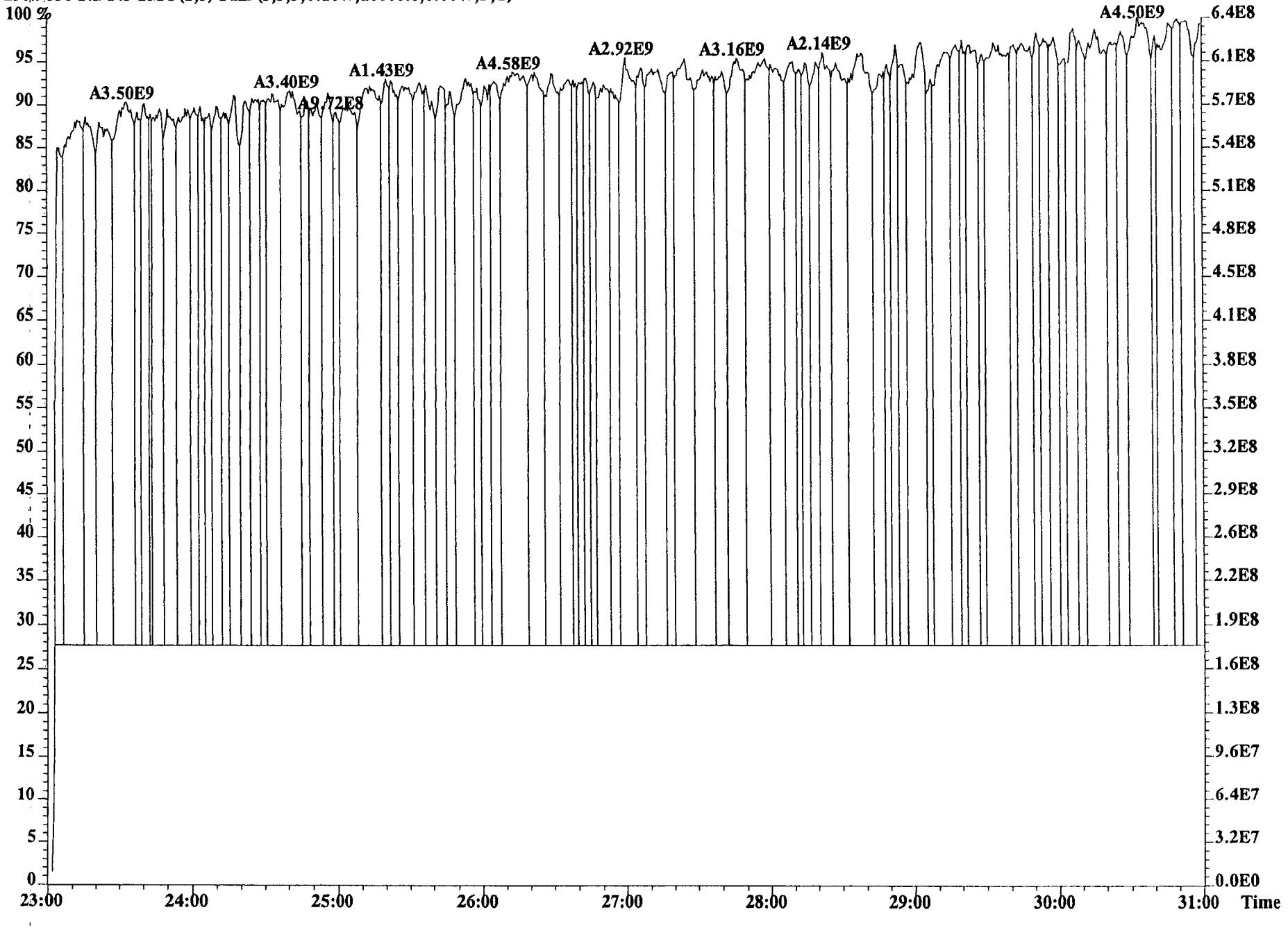
File:02NO98V4 #1-938 Acq: 2-NOV-1998 14:02:30 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1102 :Solvent Blank :C- Exp:PAHAIR
228.0939 S:2 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

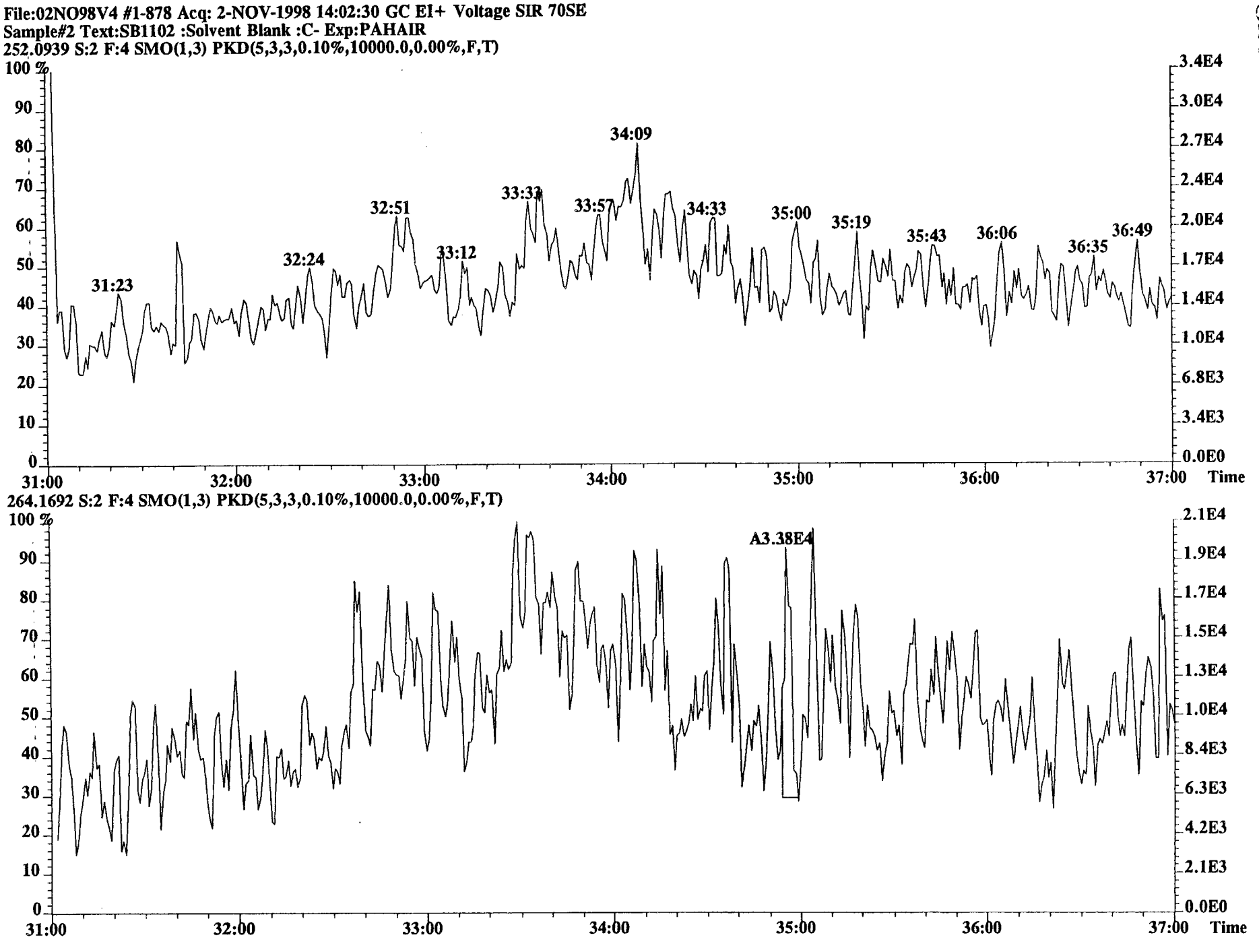


240.1692 S:2 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

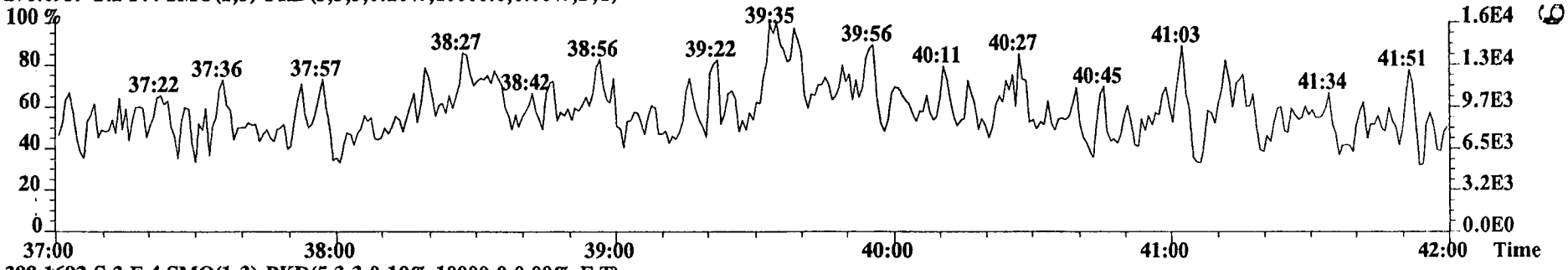


File:02NO98V4 #1-938 Acq: 2-NOV-1998 14:02:30 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1102 :Solvent Blank :C- Exp:PAHAIR
230.9856 S:2 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

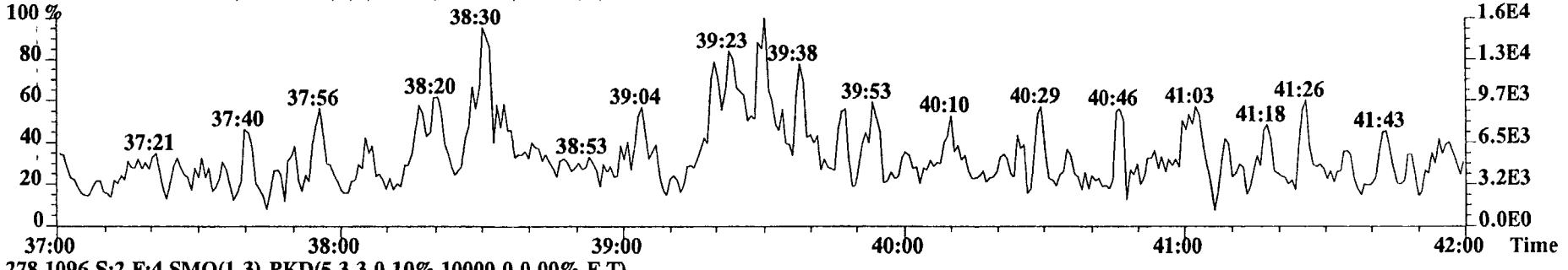



File:02NO98V4 #1-878 Acq: 2-NOV-1998 14:02:30 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1102 :Solvent Blank :C- Exp:PAHAIR
252.0939 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
90
80
70
60
50
40
30
20
10
0
31:23
32:24
32:51
33:12
33:33
33:57
34:09
34:33
35:00
35:19
35:43
36:06
36:35
36:49
3.4E4
3.0E4
2.7E4
2.4E4
2.0E4
1.7E4
1.4E4
1.0E4
6.8E3
3.4E3
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
Time
264.1692 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
90
80
70
60
50
40
30
20
10
0
A3.38E4
2.1E4
1.9E4
1.7E4
1.5E4
1.3E4
1.0E4
8.4E3
6.3E3
4.2E3
2.1E3
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
Time

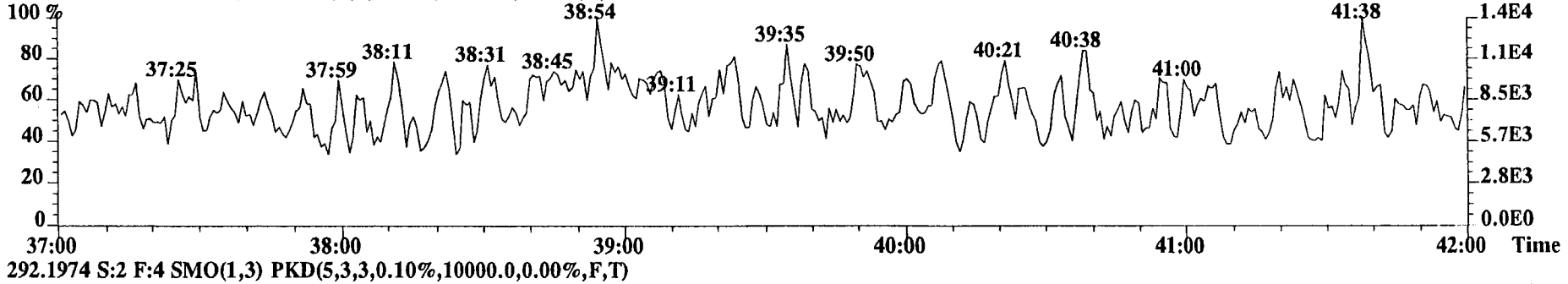
File:02NO98V4 #1-878 Acq: 2-NOV-1998 14:02:30 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1102 :Solvent Blank :C- Exp:PAHAIR
276.0939 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



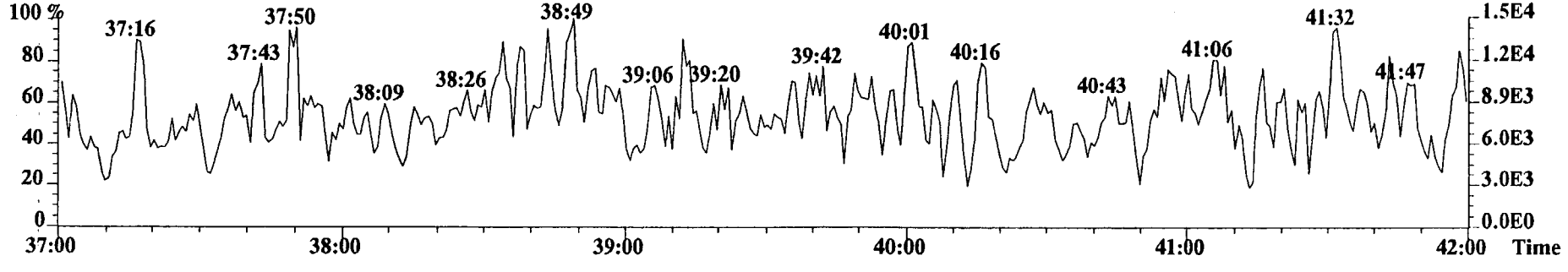
288.1692 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

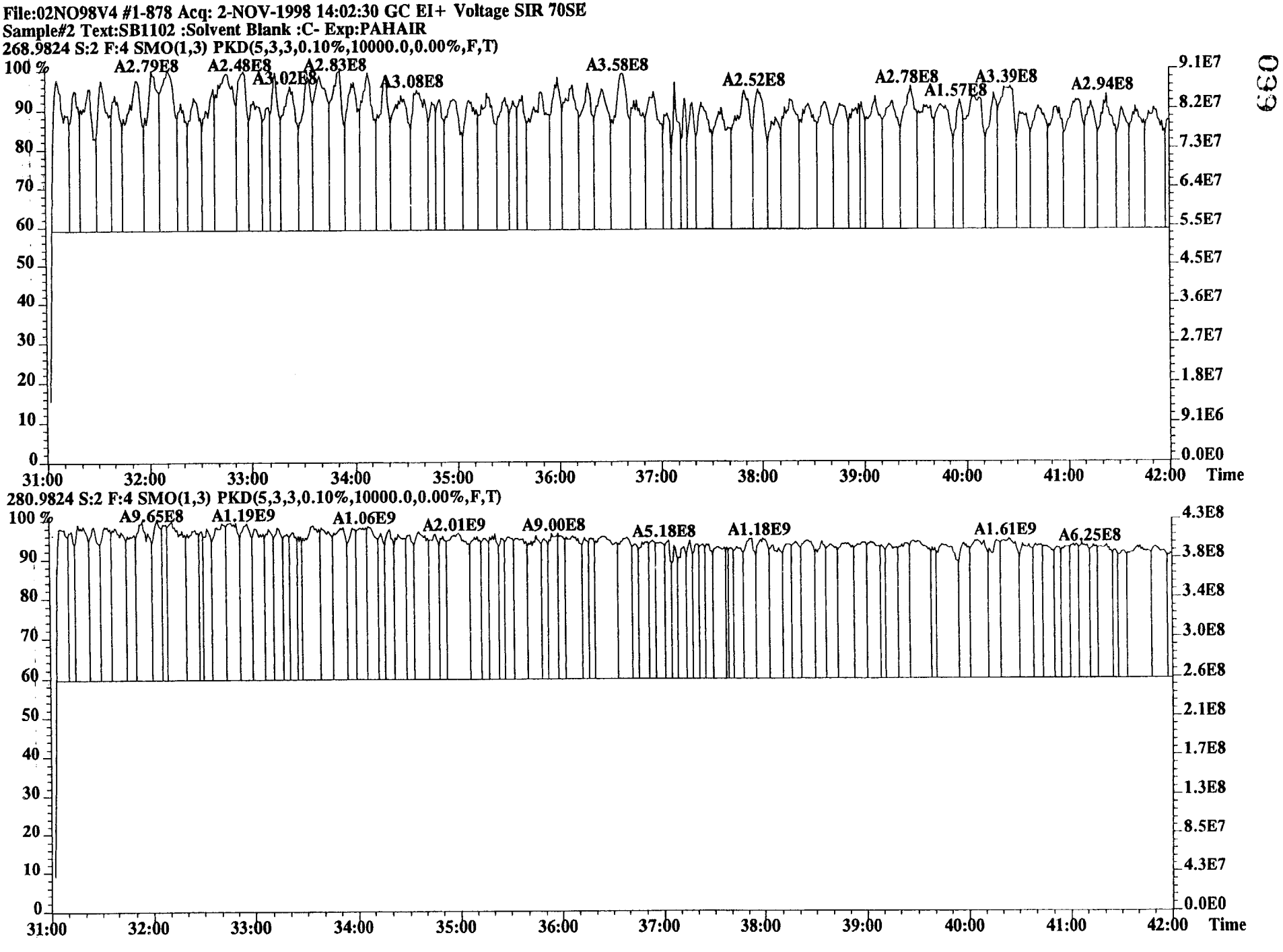


278.1096 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



292.1974 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)




File:02NO98V4 #1-878 Acq: 2-NOV-1998 14:02:30 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1102 :Solvent Blank :C- Exp:PAHAIR
268.9824 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A2.79E8
A2.48E8
A3.02E8
A2.83E8
A3.08E8
A3.58E8
A2.52E8
A2.78E8
A1.57E8
A3.39E8
A2.94E8
9.1E7
8.2E7
7.3E7
6.4E7
5.5E7
4.5E7
3.6E7
2.7E7
1.8E7
9.1E6
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time
280.9824 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A9.65E8
A1.19E9
A1.06E9
A2.01E9
A9.00E8
A5.18E8
A1.18E9
A1.61E9
A6.25E8
4.3E8
3.8E8
3.4E8
3.0E8
2.6E8
2.1E8
1.7E8
1.3E8
8.5E7
4.3E7
0.0E0
31:00
32:00
33:00
34:00
35:00
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time
039

QUANTERRA INCORPORATED
West Sacramento

Daily Standard Checklist
Dioxin/Furan High Res

STD ID ST1103 **Method ID** 429-Air **Column ID** DB-5 **Instr ID** VG-4

Standard Solution 956-64 **Prepared By** SMA **Prepared Date** 11-03-98

Analyzed By SMA **Date Analyzed** 11-03-98

Reviewed By CRICKEN **Date Reviewed** 11-03-98

ANALYSIS OF DAILY STANDARD	INITIATED	REVIEWED
Standard, CPSM, and solvent blank present?	✓/NA	✓/NA
Copy of Instrument logfile present?	✓	✓
CPSM blow up and peak profile present?	NA/✓	NA/✓
Curve summary present?	✓	✓
Summary of 1613A criteria present?	NA	NA
Daily standard within method specified limits*?	*✓	*✓
Daily ion abundance ratios within limits?	NA	NA
CPSM valley < 25%?	NA	NA
CPSM window correct?	NA/✓	NA/✓
Samples analyzed within 12 hrs of daily standard?	✓	✓

COMMENTS:
The std meets the target analyte Fluoranthene criteria for the daily std. The Samples associated with this std were analyzed only for Fluoranthene.

* For NCASI 551, Control Limit (CL) = +/- 20% from curve RRFs for all analytes.
For Method 8290, CL = +/- 20% from curve RRFs for native analytes, CL = +/- 30% from curve RRFs for labeled compounds.
For Method 1613A, see 3rd Revision to Method 1613 Performance Specifications, Table 7.

03-NOV-1998 05:27:38 PM 429AIR ConCal RESULTS

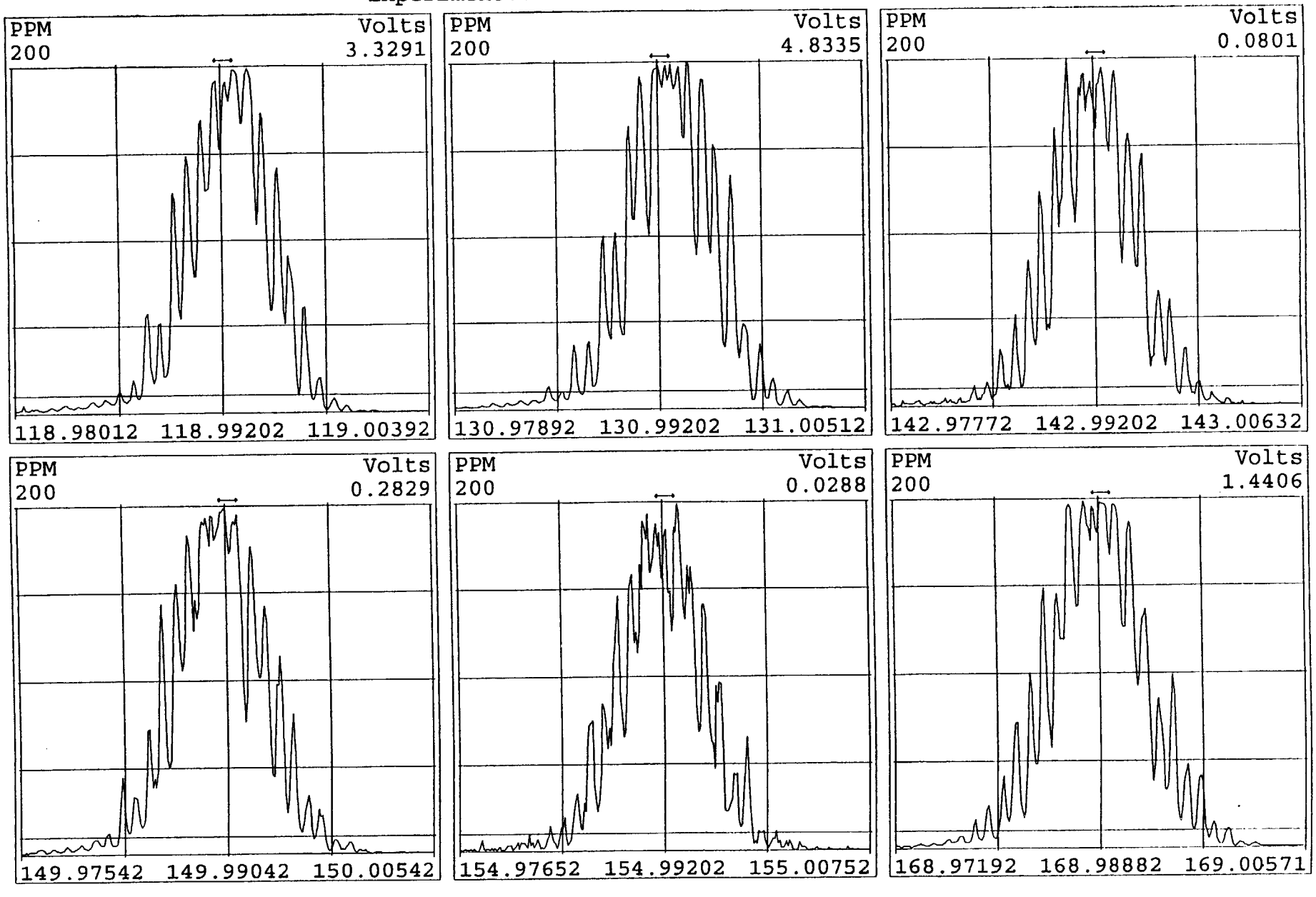
Mass Spec : VG-4 Results : 03NO98V4011.RES : PAHAIRCAL3.TRG
GC Column : DB-5 Date analyzed : 03-NOV-98
Data file : 03NO98V4 ST1103 : CS-3 : 956-64 : : Ex
Weight : 1

Name	Total Response	Isotope Ratio		R. T. mm:ss		RRF	ng	% Dev
d10-2-Methylnaphthalene	70790000	1.00	Y	12: 27	Y	-2.00	100.00	
d8-Naphthalene	118823800	1.00	Y	10: 11	Y	1.68	100.00	-25
Naphthalene	115287400	1.00	Y	10: 15	Y	0.97	100.00	-21
2-Methylnaphthalene	64625200	1.00	Y	12: 33	Y	0.54	100.00	-3
d8-Acenaphthylene	96372400	1.00	Y	15: 27	Y	1.36	100.00	12
Acenaphthylene	80647200	1.00	Y	15: 30	Y	0.84	100.00	-11
d10-Acenaphthene	57510000	1.00	Y	16: 1	Y	0.81	100.00	9
Acenaphthene	50136600	1.00	Y	16: 6	Y	0.87	100.00	-30
d10-Anthracene	36704600	1.00	Y	20: 54	Y	-2.00	100.00	
d10-Fluorene	52431800	1.00	Y	17: 41	Y	1.43	100.00	1
Fluorene	46997200	1.00	Y	17: 46	Y	0.90	100.00	-23
d10-Phenanthrene	116505600	1.00	Y	20: 45	Y	3.17	100.00	13
Phenanthrene	88536400	1.00	Y	20: 49	Y	0.76	100.00	-15
Anthracene	73569400	1.00	Y	20: 58	Y	0.63	100.00	-21
d14-Terphenyl	86874000	1.00	Y	25: 59	Y	-3.00	100.00	
d10-Fluoranthene	110307800	1.00	Y	24: 35	Y	1.27	100.00	-10
Fluoranthene	112977400	1.00	Y	24: 39	Y	1.02	100.00	-8
d10-Pyrene	113083200	1.00	Y	25: 17	Y	1.30	100.00	-14
Pyrene	122321400	1.00	Y	25: 20	Y	1.08	100.00	-10
d12-Benzo(a)anthracene	40504200	1.00	Y	29: 7	Y	0.47	100.00	-48
Benzo(a)anthracene	41743600	1.00	Y	29: 11	Y	1.03	100.00	-14
d12-Chrysene	77813200	1.00	Y	29: 14	Y	0.90	100.00	-30
Chrysene	67356200	1.00	Y	29: 19	Y	0.87	100.00	-20
d12-Benzo(e)pyrene	80135800	1.00	Y	33: 20	Y	-2.00	100.00	
d12-Benzo(b)fluoranthene	31441000	1.00	Y	32: 28	Y	0.39	100.00	-14
Benzo(b)fluoranthene	35896600	1.00	Y	32: 32	Y	1.14	100.00	-2
12-Benzo(k)fluoranthene	75922000	1.00	Y	32: 33	Y	0.95	100.00	0
Benzo(k)fluoranthene	76458000	1.00	Y	32: 37	Y	1.01	100.00	-13
d12-Benzo(a)pyrene	57249200	1.00	Y	33: 31	Y	0.71	100.00	6
Benzo(e)pyrene	88390600	1.00	Y	33: 25	Y	1.54	100.00	-6
Benzo(a)pyrene	56401000	1.00	Y	33: 36	Y	0.99	100.00	-8
d12-Perylene	52279400	1.00	Y	33: 48	Y	0.65	100.00	4
Perylene	89970000	1.00	Y	33: 53	Y	1.72	100.00	0
12-Indeno(123-cd)pyrene	26244400	1.00	Y	37: 59	Y	0.33	100.00	-26
Indeno(123-cd)pyrene	16700000	1.00	Y	38: 6	Y	0.64	100.00	2
d14-Dibenz(ah)anthracene	12360580	1.00	Y	38: 3	Y	0.15	100.00	-37
Dibenz(ah)anthracene	13821380	1.00	Y	38: 13	Y	1.12	100.00	-20
d12-Benzo(ghi)perylene	36605200	1.00	Y	39: 10	Y	0.46	100.00	-21
Benzo(ghi)perylene	36434600	1.00	Y	39: 19	Y	1.00	100.00	-2
d10-Fluorene	52431800	1.00	Y	17: 41	Y	0.65	100.00	-54
13C-Fluorene	42648200	1.00	Y	17: 46	Y	0.81	100.00	NoData

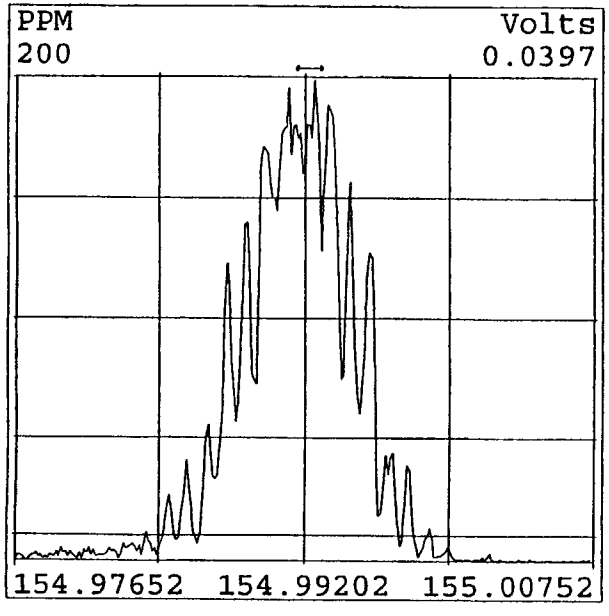
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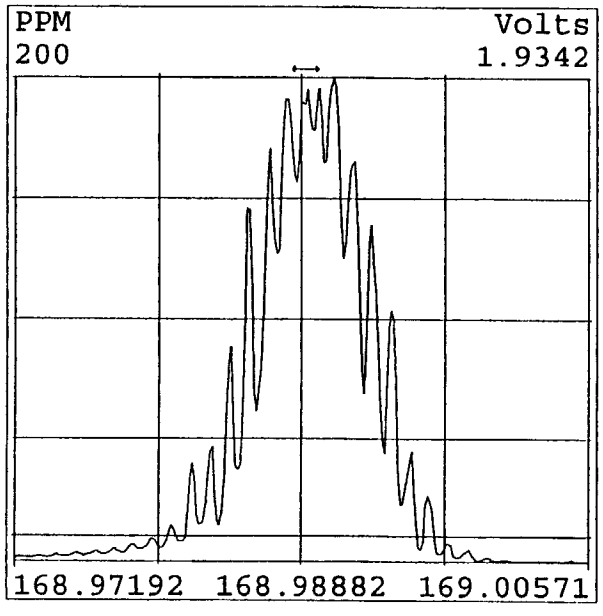
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03NO98V4	2	SB1103	Solvent Blank	C-8			1
03NO98V4	3	301802-1MB	METHOD BLANK	AIR	PAH	VSE-26	0.50
03NO98V4	4	301802-1LC	LCS				0.50
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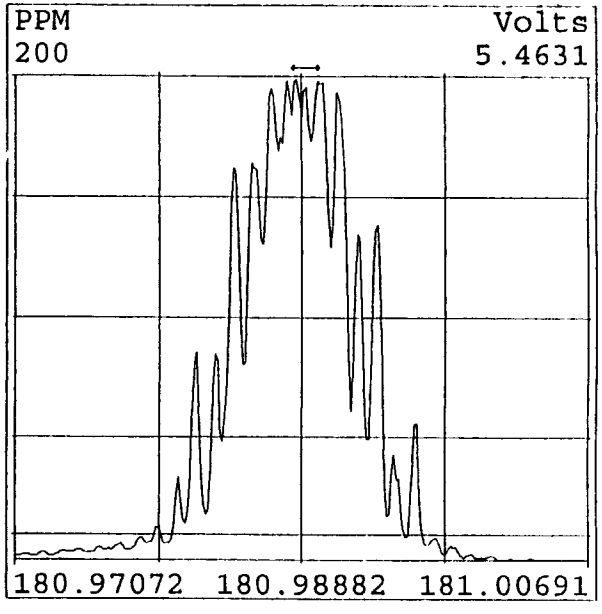
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Experiment:PAHAIR Function:1 Reference:PFK

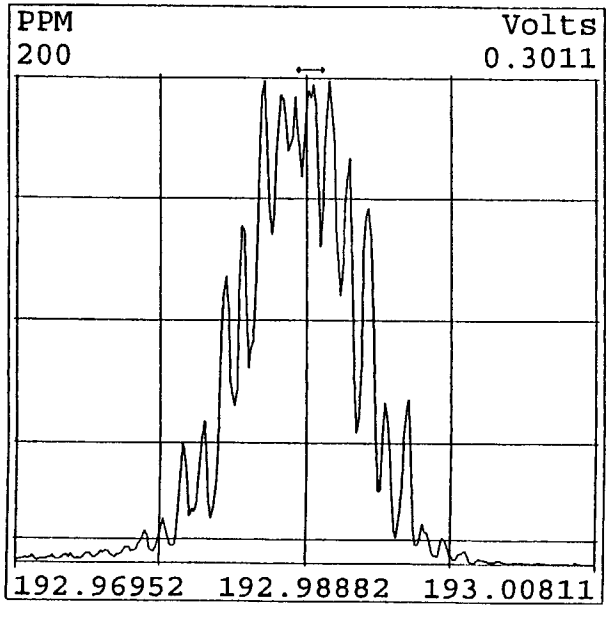


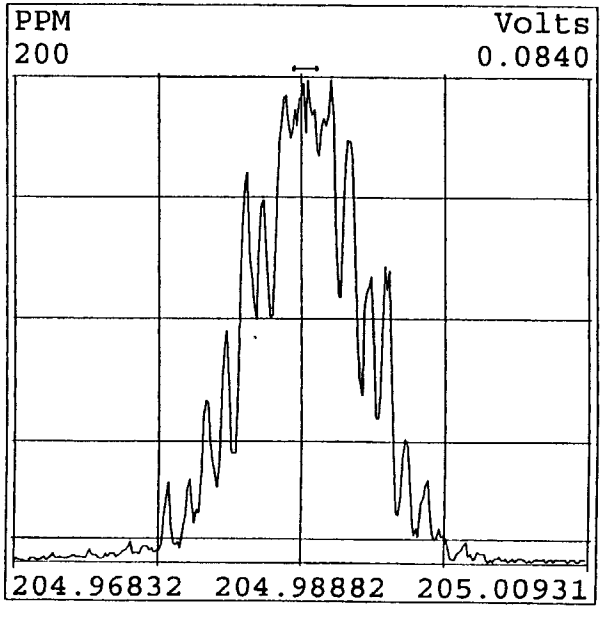
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Experiment:PAHAIR Function:2 Reference:PFK



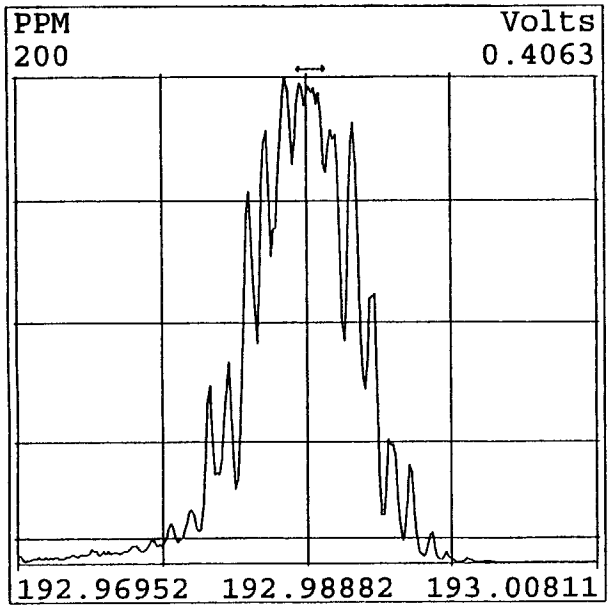


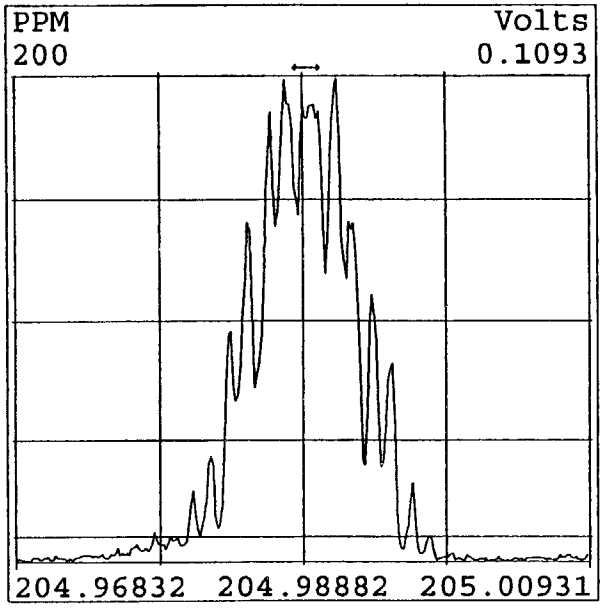


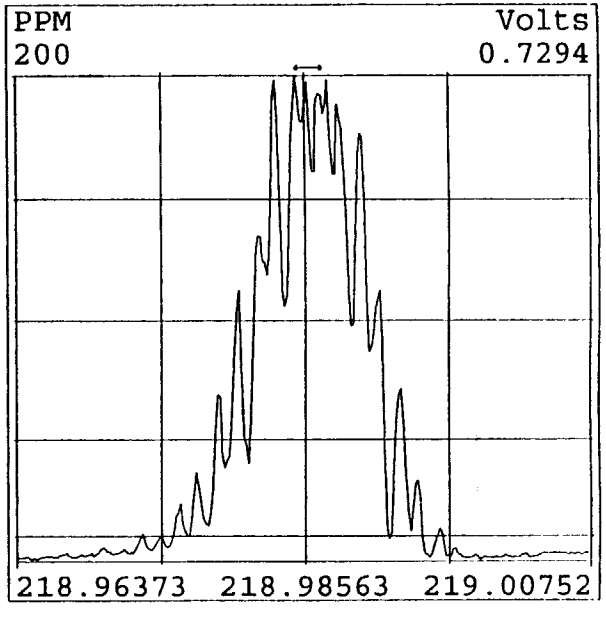


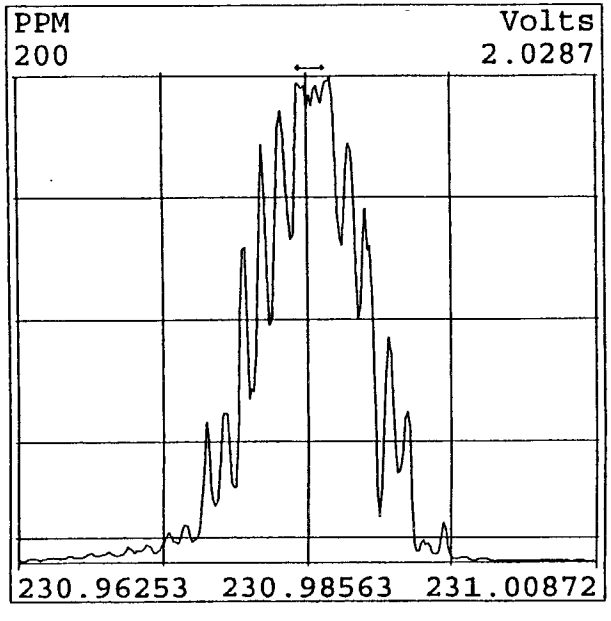


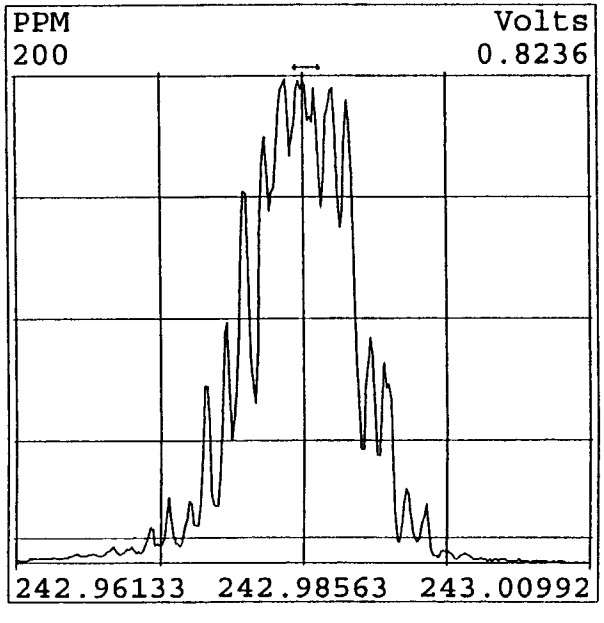
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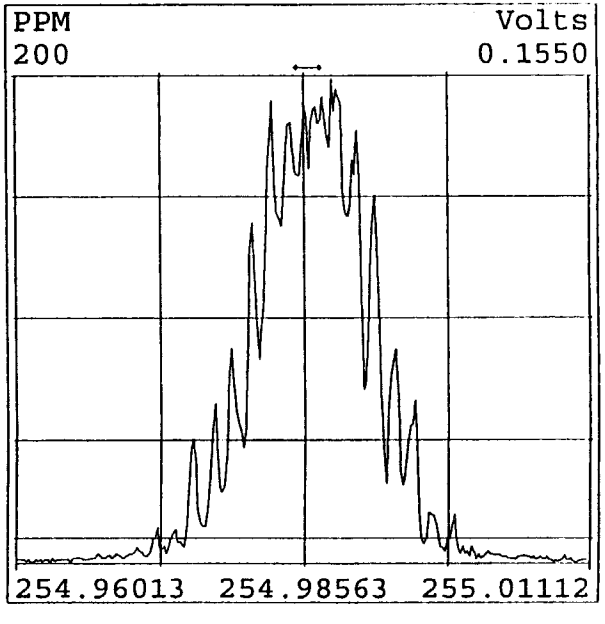




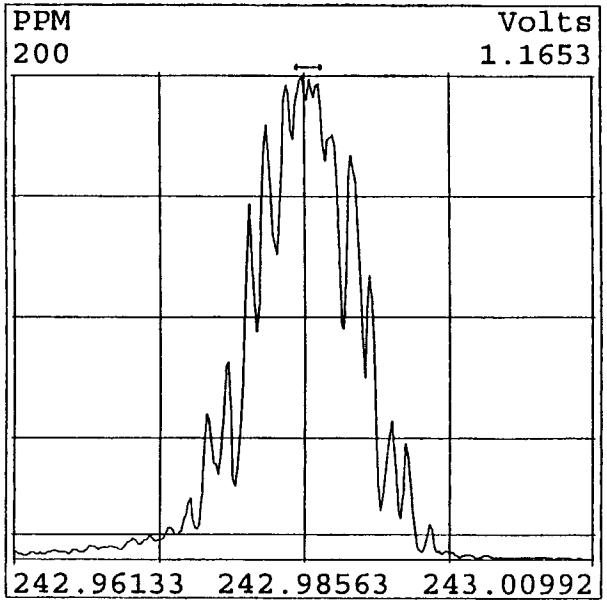


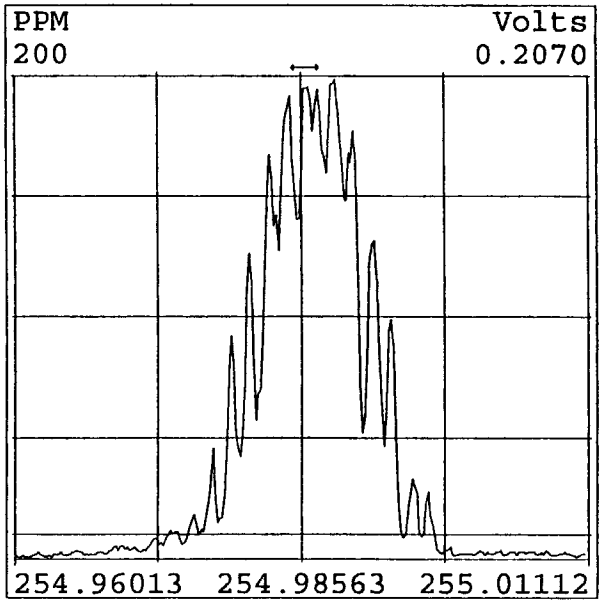


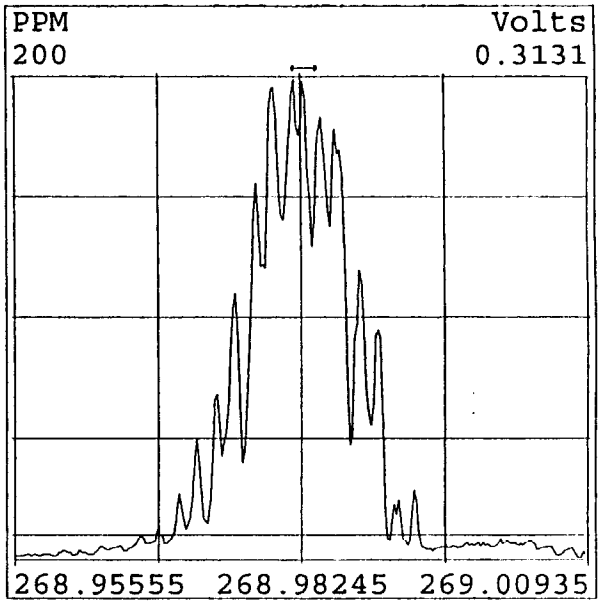


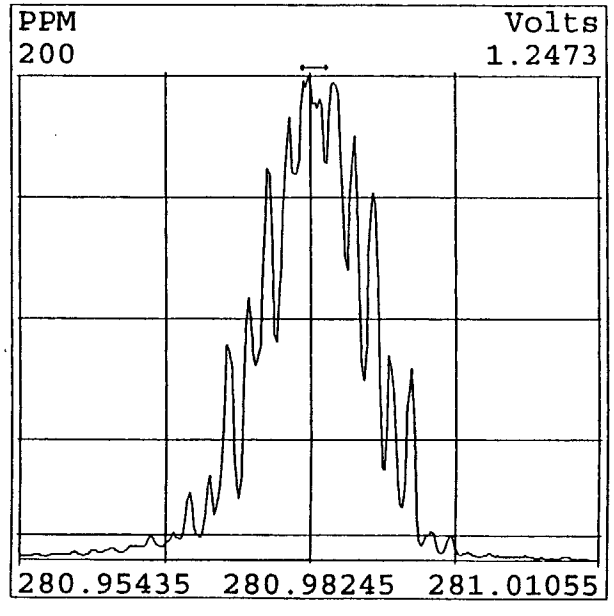


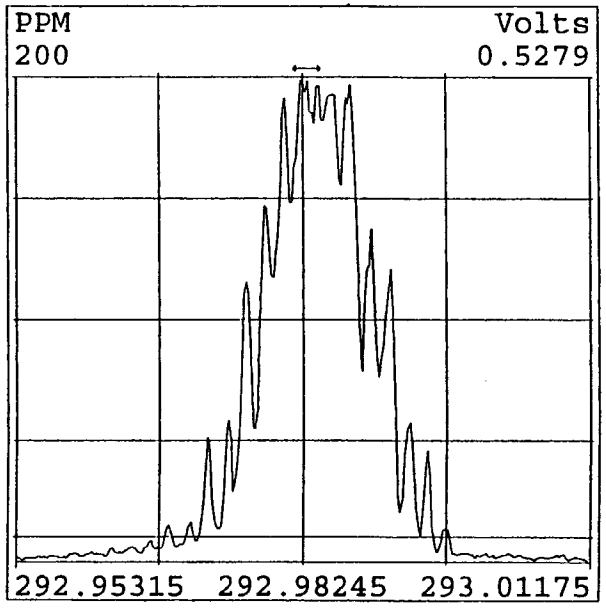
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02-NOV-1998 02:20:04 PM

Dioxin Furan CALIBRATION TABLE

Mass Spec : VG-4
GC Column : DB-5
265-04A,B,D,E,956-64

File name : PAHAIR102998V4.RRF
Date analyzed : 29-OCT-98

INITIAL CALIBRATION CURVE

Mult.: 350

		Mean	S.D.	%RSD	1	2	3	4	5	6	7	8	9	10
d8-Naphthalene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				185.11	205.87	228.31	244.46	256.61					
	RRF	2.24	0.289	12.900	1.85	2.06	2.28	2.44	2.57					
Naphthalene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				13.76	61.93	113.47	231.43	609.70					
	RRF	1.23	0.094	7.707	1.38	1.24	1.13	1.16	1.22					
2-Methylnaphthalene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				6.91	29.85	51.39	97.93	255.67					
	RRF	0.56	0.084	14.909	0.69	0.60	0.51	0.49	0.51					
d8-Acenaphthylene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				131.95	128.38	114.60	122.45	109.50					
	RRF	1.21	0.093	7.696	1.32	1.28	1.15	1.22	1.10					
Acenaphthylene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				9.55	48.30	90.68	178.19	500.84					
	RRF	0.94	0.045	4.773	0.95	0.97	0.91	0.89	1.00					
d10-Acenaphthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				83.11	77.72	76.15	77.96	57.36					
	RRF	0.74	0.099	13.310	0.83	0.78	0.76	0.78	0.57					
Acenaphthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				10.98	62.63	151.76	215.88	641.50					
	RRF	1.25	0.177	14.178	1.10	1.25	1.52	1.08	1.28					
d10-Fluorene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				153.24	135.78	140.61	141.09	139.72					
	RRF	1.42	0.066	4.625	1.53	1.36	1.41	1.41	1.40					
Fluorene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				8.53	58.18	117.21	249.15	684.13					
	RRF	1.16	0.191	16.420	0.85	1.16	1.17	1.25	1.37					
d10-Phenanthrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				308.98	263.63	276.27	272.04	282.87					
	RRF	2.81	0.173	6.145	3.09	2.64	2.76	2.72	2.83					
Phenanthrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				9.70	46.13	81.87	168.14	460.23					
	RRF	0.89	0.063	7.028	0.97	0.92	0.82	0.84	0.92					
Anthracene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				8.13	42.20	77.06	153.96	402.42					
	RRF	0.80	0.031	3.901	0.81	0.84	0.77	0.77	0.80					
d10-Fluoranthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				118.94	136.07	145.72	150.34	154.31					
	RRF	1.41	0.141	10.009	1.19	1.36	1.46	1.50	1.54					
Fluoranthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				14.14	55.12	99.77	200.49	521.18					
	RRF	1.11	0.174	15.653	1.41	1.10	1.00	1.00	1.04					
d10-Pyrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				129.03	143.24	158.81	161.45	166.55					
	RRF	1.52	0.154	10.160	1.29	1.43	1.59	1.61	1.67					
Pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				16.74	59.11	104.58	204.18	551.22					
	RRF	1.21	0.269	22.353	1.67	1.18	1.05	1.02	1.10					

Mass Spec : VG-4
GC Column : DB-5
265-04A,B,D,E,956-64

File name : PAHAIR102998V4.RRF
Date analyzed : 29-OCT-98

INITIAL CALIBRATION CURVE

Mult.: 350

		Mean	S.D.	%RSD	1	2	3	4	5	6	7	8	9	10
d12-Benzo(a)anthracene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				68.20	70.96	127.65	89.95	93.26					
	RRF	0.90	0.238	26.446	0.68	0.71	1.28	0.90	0.93					
Benzo(a)anthracene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				11.85	64.84	102.61	234.26	671.78					
	RRF	1.20	0.124	10.269	1.18	1.30	1.03	1.17	1.34					
d12-Chrysene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				109.94	119.85	127.65	136.79	145.35					
	RRF	1.28	0.139	10.855	1.10	1.20	1.28	1.37	1.45					
Chrysene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				10.44	56.47	102.61	215.75	571.04					
	RRF	1.08	0.051	4.716	1.04	1.13	1.03	1.08	1.14					
d12-Benzo(b)fluoranthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				41.05	45.84	49.22	45.10	45.72					
	RRF	0.45	0.029	6.414	0.41	0.46	0.49	0.45	0.46					
Benzo(b)fluoranthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				12.56	61.73	95.82	228.66	622.27					
	RRF	1.17	0.125	10.717	1.26	1.23	0.96	1.14	1.24					
d12-Benzo(k)fluoranthene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				91.66	94.95	96.52	94.09	96.82					
	RRF	0.95	0.021	2.203	0.92	0.95	0.97	0.94	0.97					
Benzo(k)fluoranthene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				12.71	63.16	119.14	210.18	522.11					
	RRF	1.16	0.111	9.525	1.27	1.26	1.19	1.05	1.04					
d12-Benzo(a)pyrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				65.24	66.86	69.56	67.87	68.82					
	RRF	0.68	0.017	2.504	0.65	0.67	0.70	0.68	0.69					
Benzo(e)pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				18.05	89.03	157.16	302.58	767.23					
	RRF	1.64	0.140	8.557	1.80	1.78	1.57	1.51	1.53					
Benzo(a)pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				11.71	60.46	102.44	200.46	476.32					
	RRF	1.07	0.112	10.437	1.17	1.21	1.02	1.00	0.95					
d12-Perylene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				64.89	58.55	68.21	62.00	61.45					
	RRF	0.63	0.037	5.829	0.65	0.59	0.68	0.62	0.61					
Perylene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				16.93	98.08	162.24	324.02	835.41					
	RRF	1.71	0.142	8.297	1.69	1.96	1.62	1.62	1.67					
d12-Indeno(123-cd)pyrene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				44.86	44.54	44.08	43.39	45.40					
	RRF	0.44	0.008	1.722	0.45	0.45	0.44	0.43	0.45					
Indeno(123-cd)pyrene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				5.85	35.13	60.26	127.89	287.53					
	RRF	0.62	0.052	8.352	0.59	0.70	0.60	0.64	0.58					
d14-Dibenz(ah)anthracene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				20.73	24.39	25.35	26.10	26.33					
	RRF	0.25	0.023	9.286	0.21	0.24	0.25	0.26	0.26					

02-NOV-1998 02:20:12 PM

Dioxin Furan CALIBRATION TABLE

Mass Spec : VG-4
GC Column : DB-5
265-04A,B,D,E,956-64

File name : PAHAIR102998V4.RRF
Date analyzed : 29-OCT-98

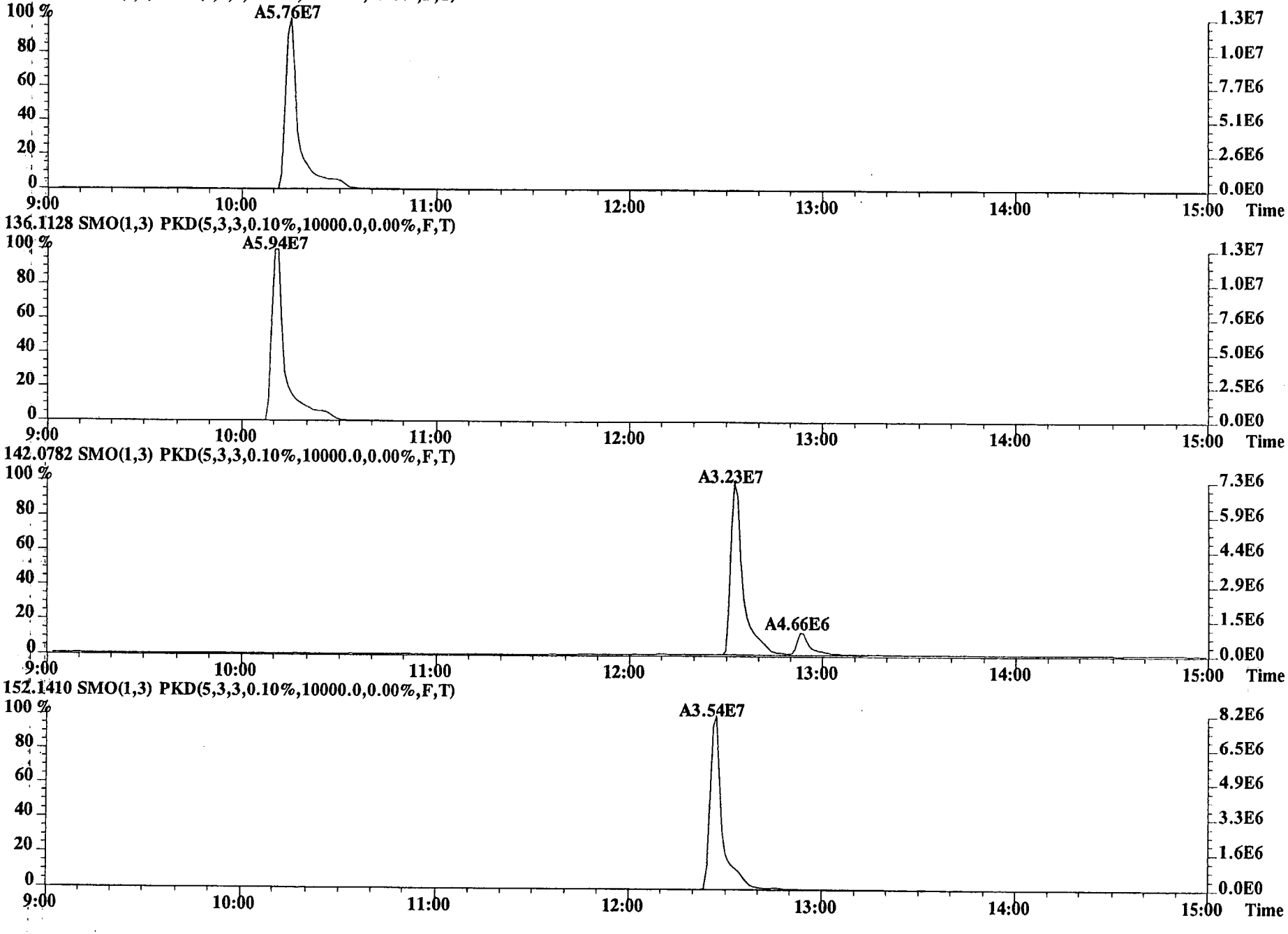
INITIAL CALIBRATION CURVE

Mult.: 350

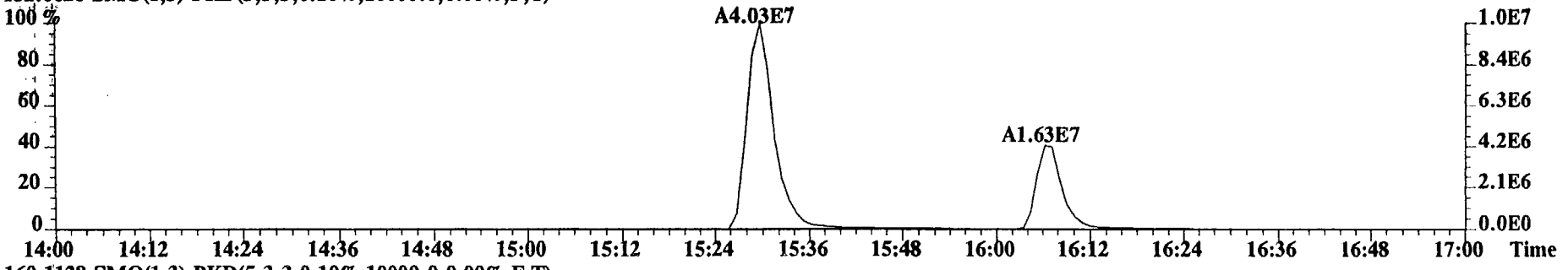
		Mean	S.D.	%RSD	1	2	3	4	5	6	7	8	9	10
Dibenz(ah)anthracene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				12.92	69.25	143.15	281.33	751.34					
	RRF	1.40	0.077	5.452	1.29	1.38	1.43	1.41	1.50					
d12-Benzo(ghi)perylene	Amount				100.00	100.00	100.00	100.00	100.00					
	RF				59.24	54.17	59.73	58.78	57.94					
	RRF	0.58	0.022	3.838	0.59	0.54	0.60	0.59	0.58					
Benzo(ghi)perylene	Amount				10.00	50.00	100.00	200.00	500.00					
	RF				8.58	51.44	109.18	211.25	522.58					
	RRF	1.02	0.091	8.984	0.86	1.03	1.09	1.06	1.05					
	Amount				0	0	0	0	0					
	RF													
	RRF	0	0	0										

0170

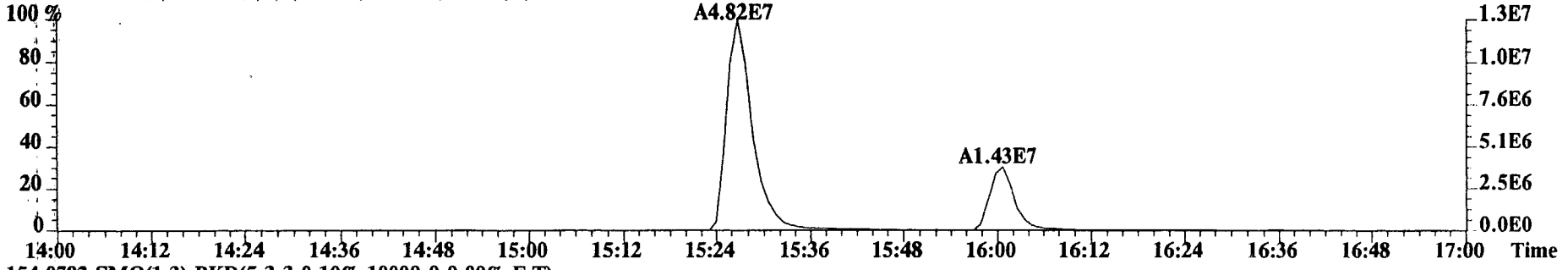
File:03NO98V4 #1-510 Acq: 3-NOV-1998 10:41:10 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1103 :CS-3 :956-64 : : Exp:PAHAIR



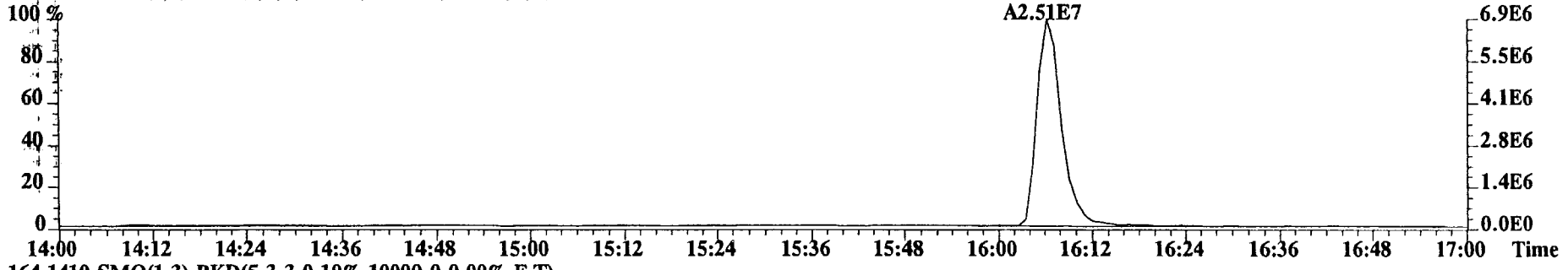
File:03NO98V4 #1-510 Acq: 3-NOV-1998 10:41:10 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1103 :CS-3 :956-64 : : Exp:PAHAIR
152.0626 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



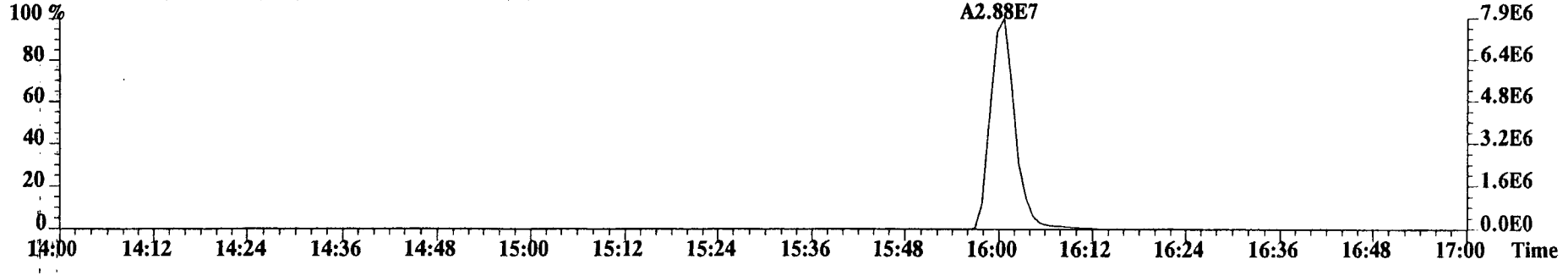
160.1128 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



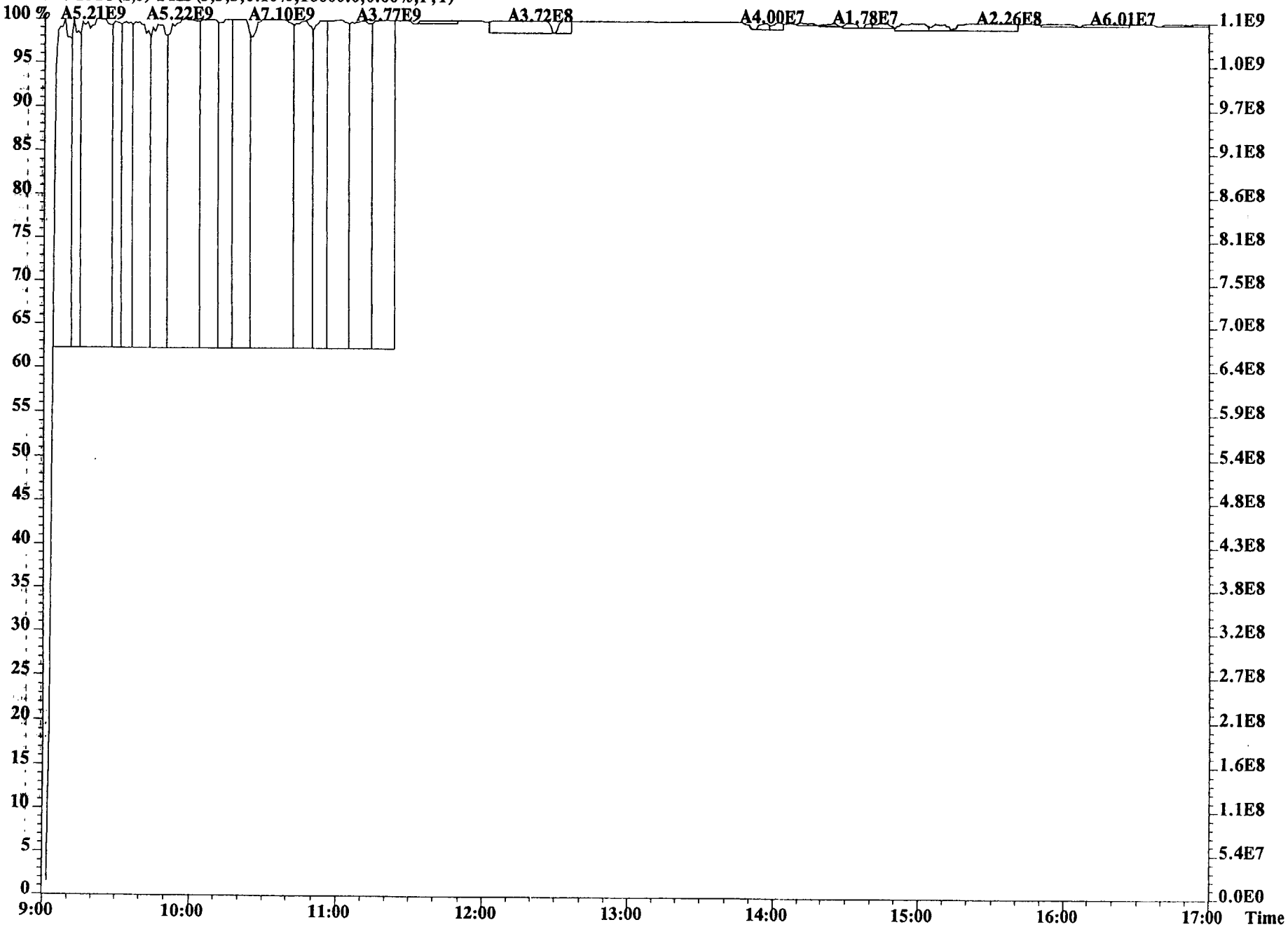
154.0782 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



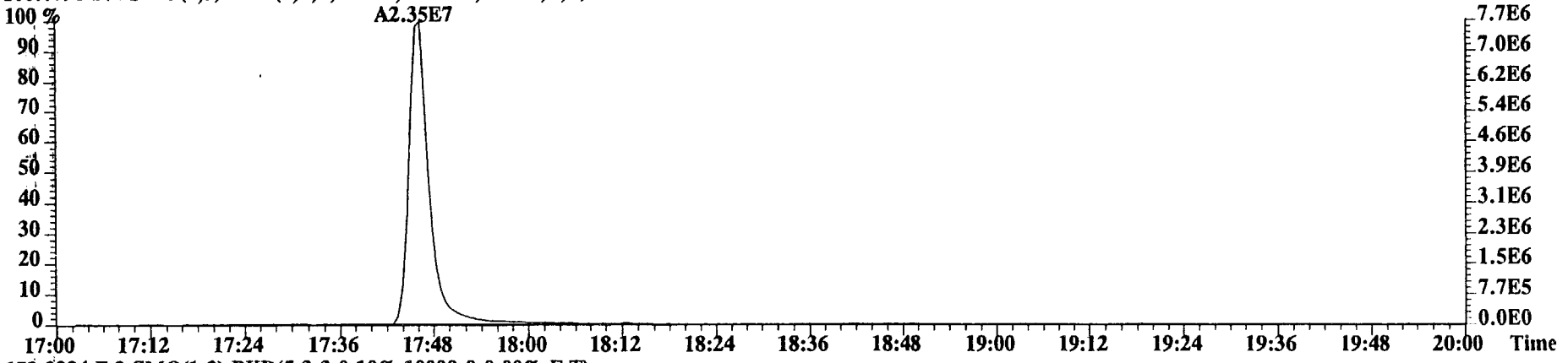
164.1410 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



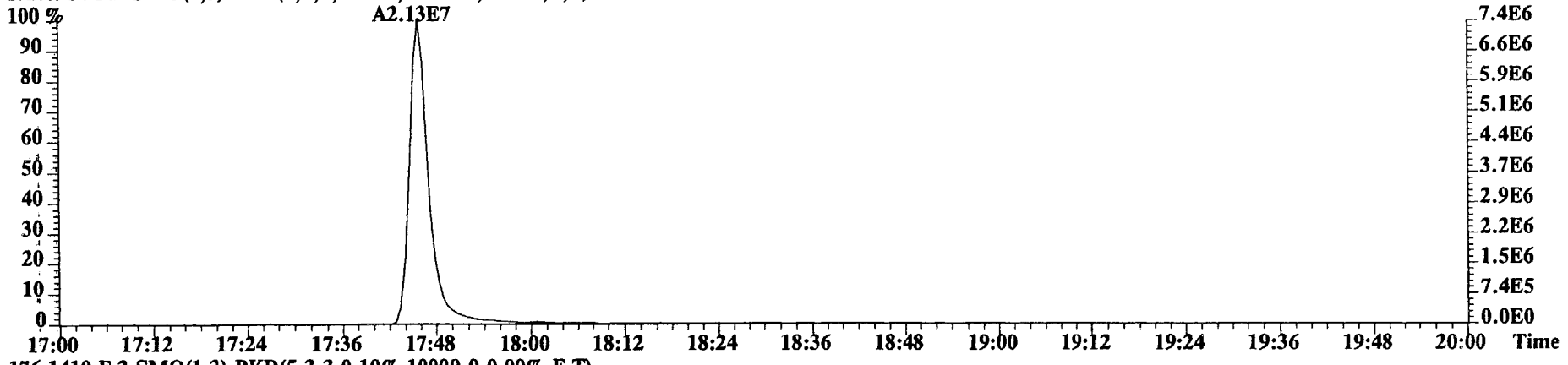
File:03NO98V4 #1-510 Acq: 3-NOV-1998 10:41:10 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1103 :CS-3 :956-64 : : Exp:PAHAIR
130.9920 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



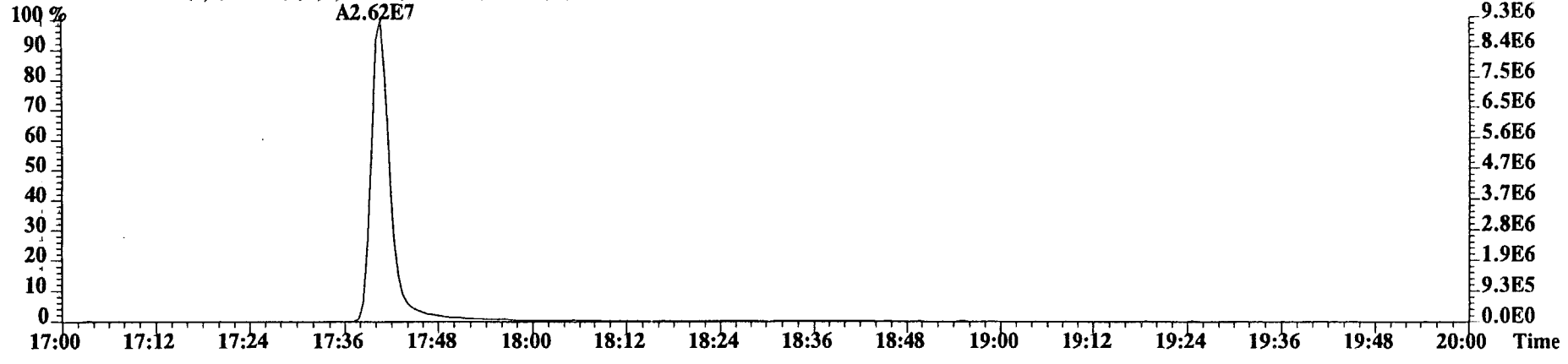
File:03NO98V4 #1-640 Acq: 3-NOV-1998 10:41:10 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1103 :CS-3 :956-64 : : Exp:PAHAIR
166.0798 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



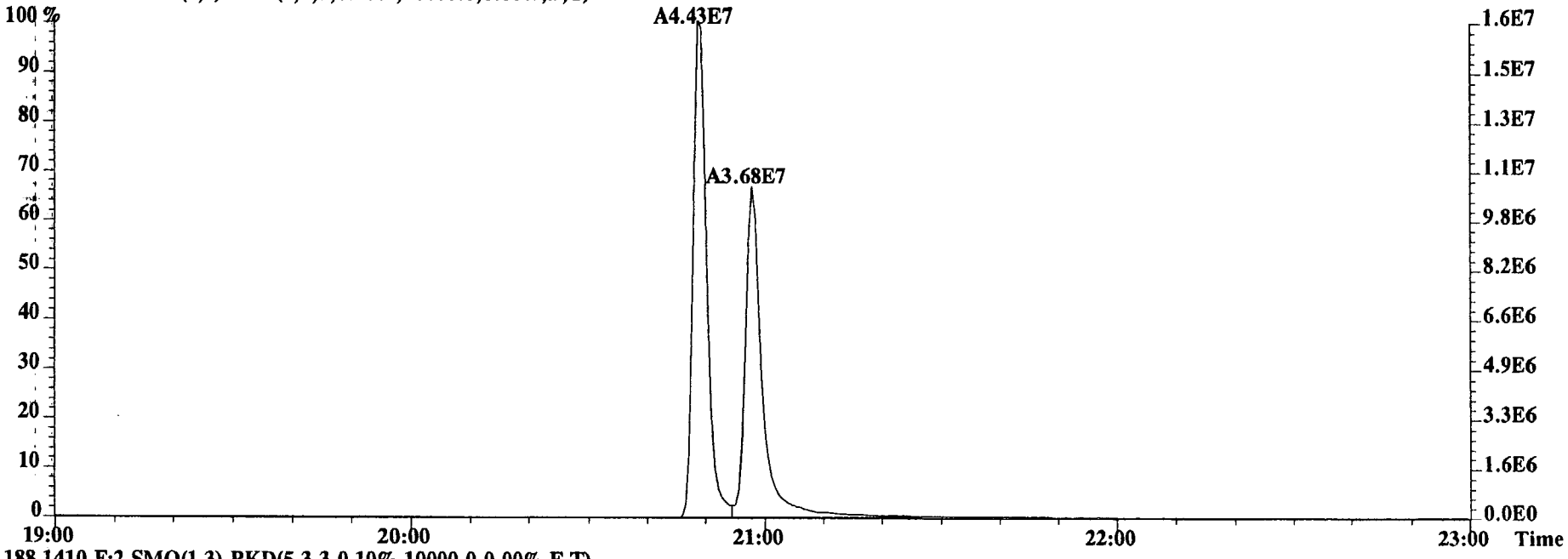
172.0984 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



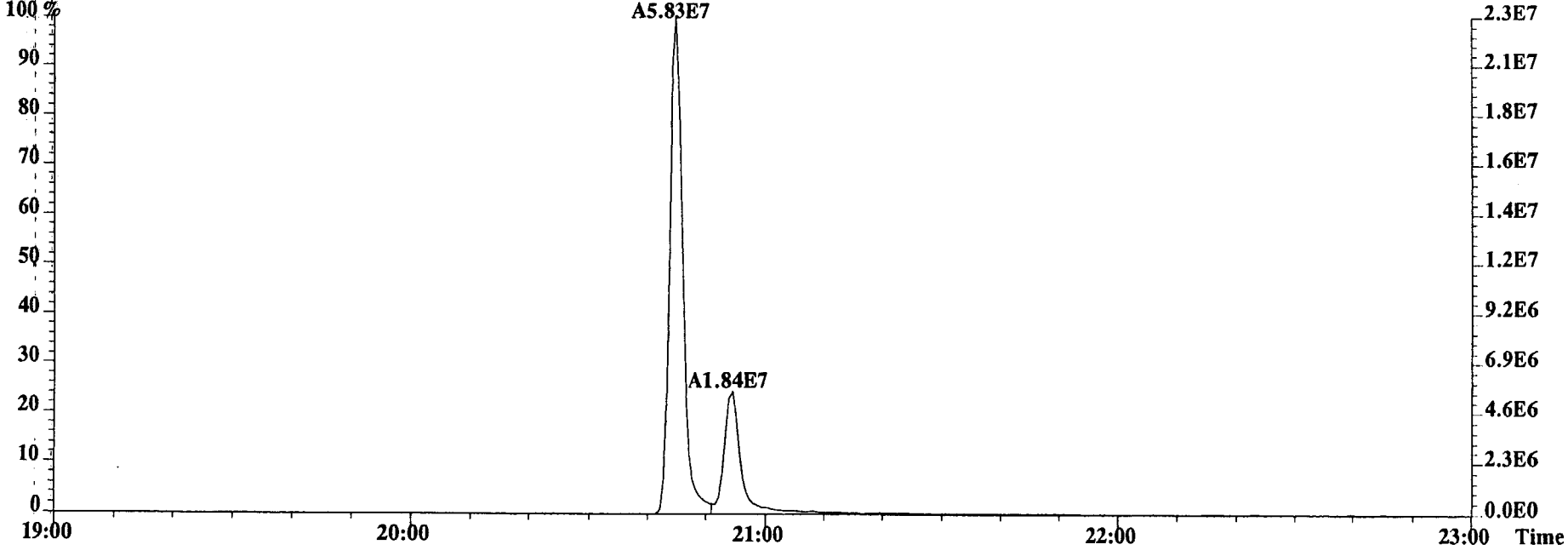
176.1410 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



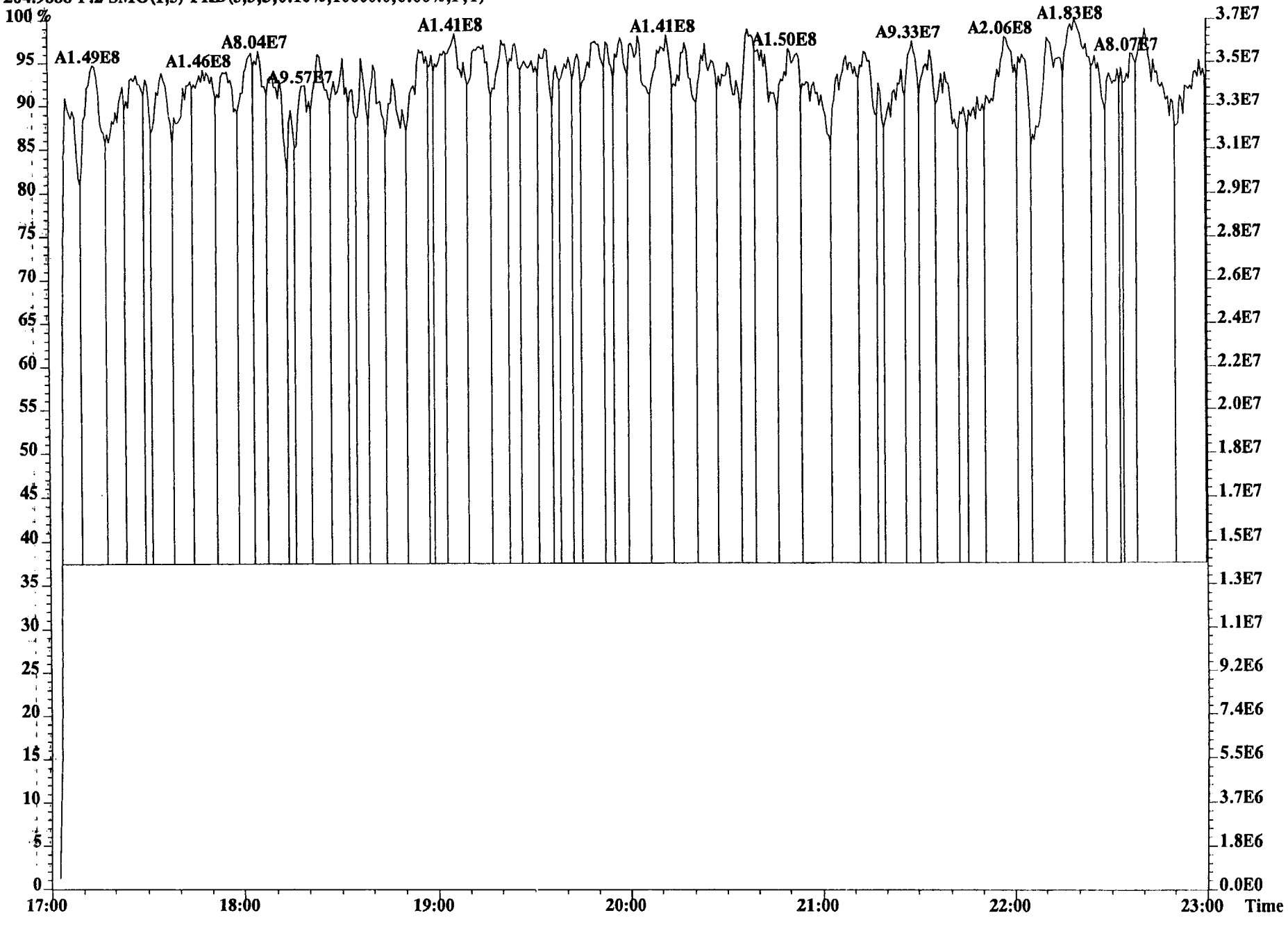
File:03NO98V4 #1-640 Acq: 3-NOV-1998 10:41:10 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1103 :CS-3 :956-64 : : Exp:PAHAIR
178.0782 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



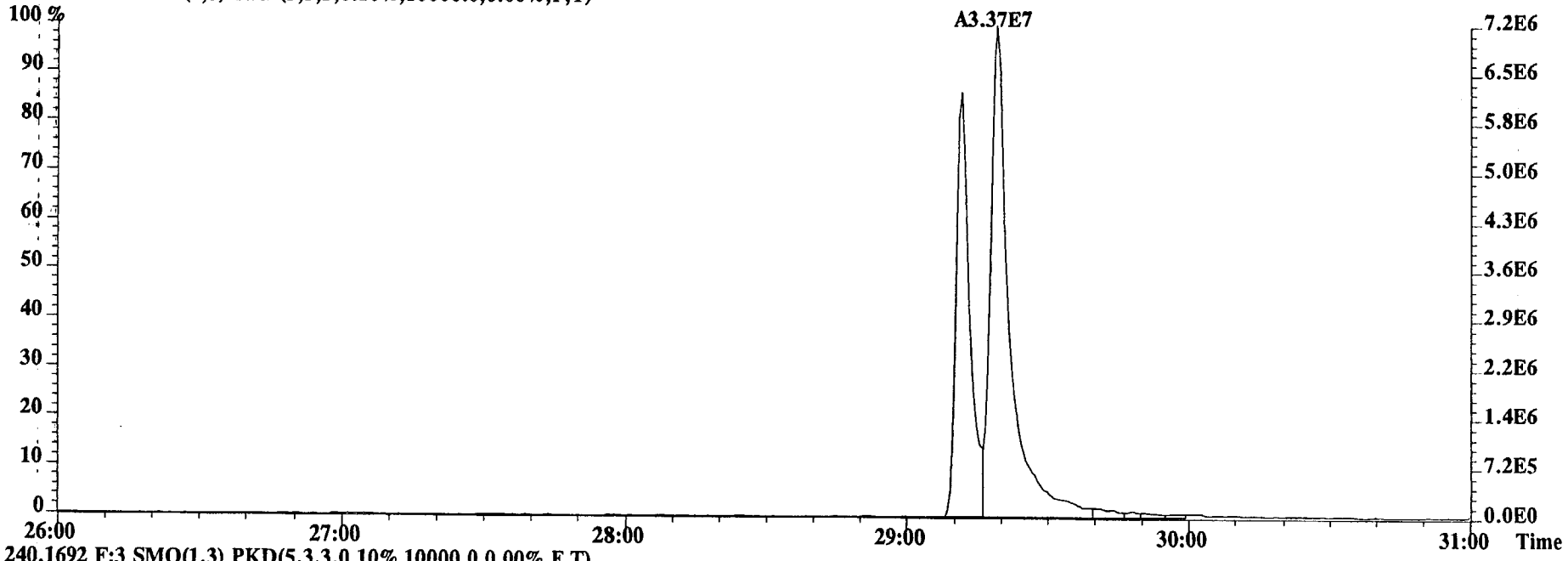
188.1410 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



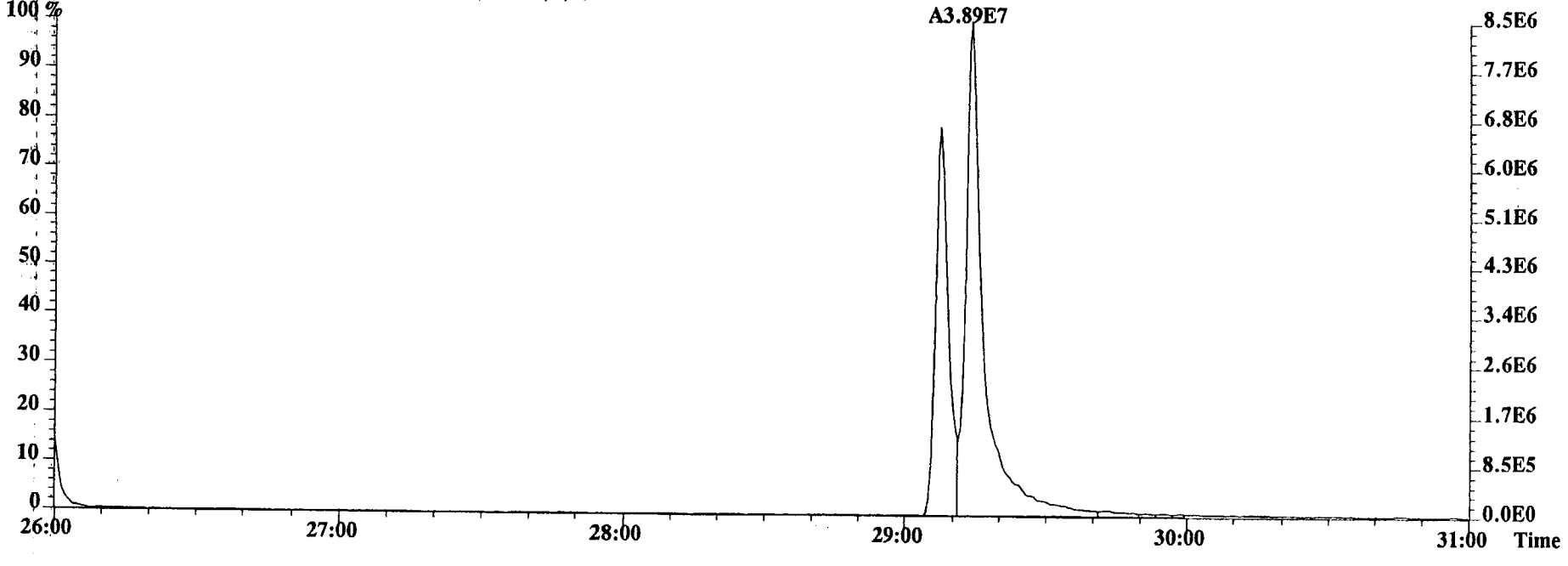
File:03NO98V4 #1-640 Acq: 3-NOV-1998 10:41:10 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1103 :CS-3 :956-64 : : Exp:PAHAIR
204.9888 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



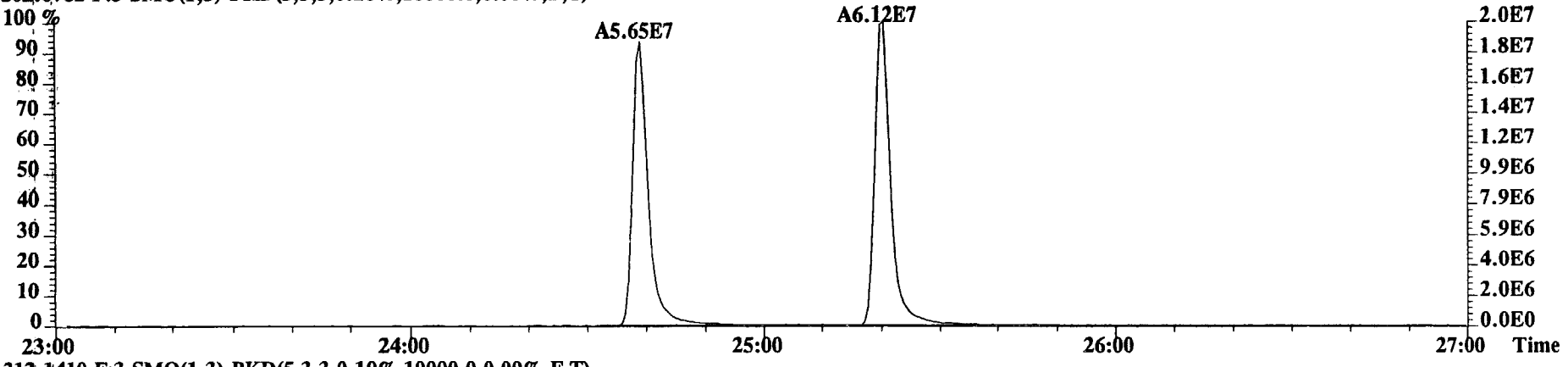
File:03NO98V4 #1-938 Acq: 3-NOV-1998 10:41:10 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1103 :CS-3 :956-64 : : Exp:PAHAIR
228.0939 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



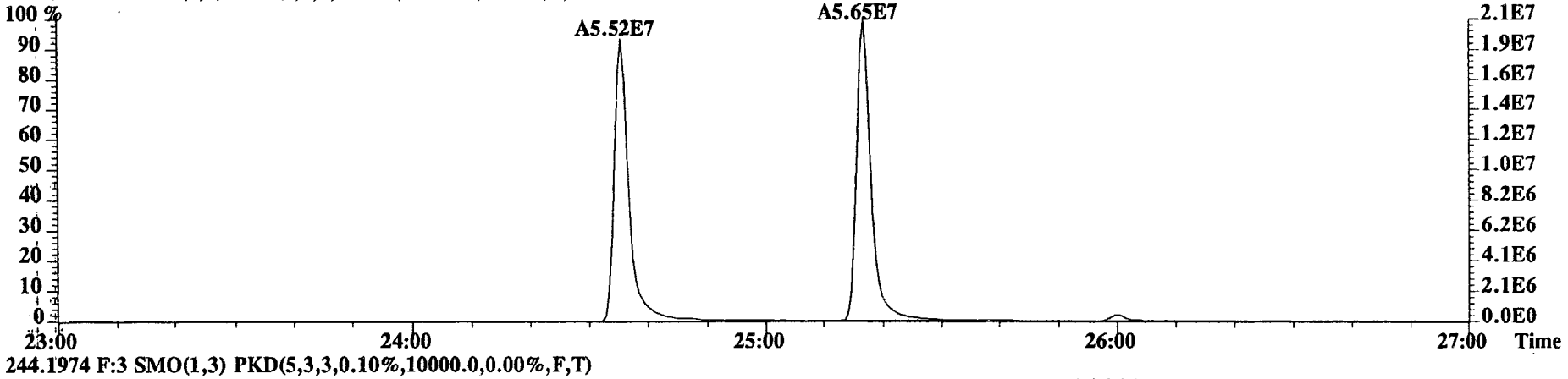
240.1692 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



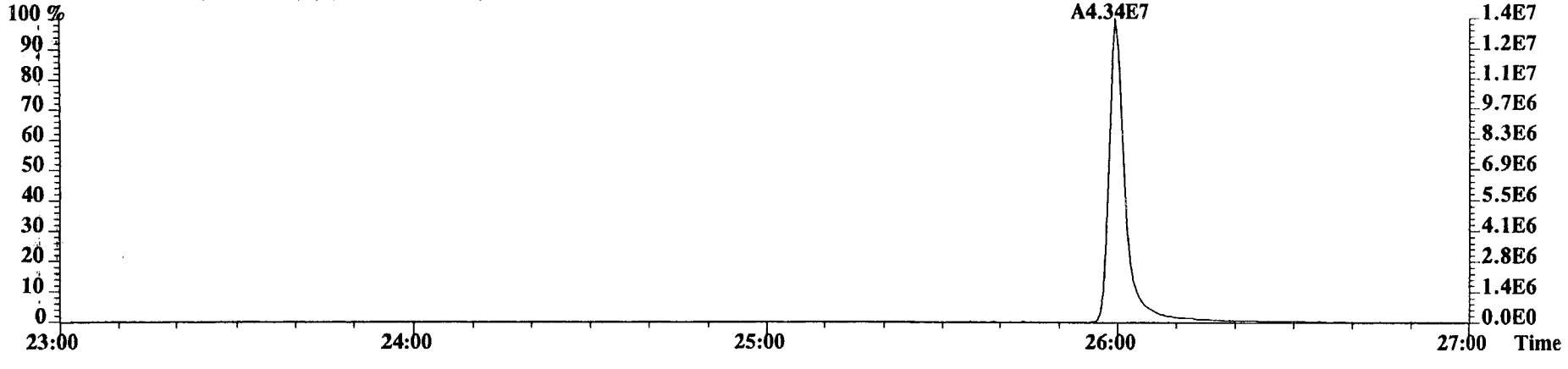
File:03NO98V4 #1-938 Acq: 3-NOV-1998 10:41:10 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1103 :CS-3 :956-64 : : Exp:PAHAIR
202.0782 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



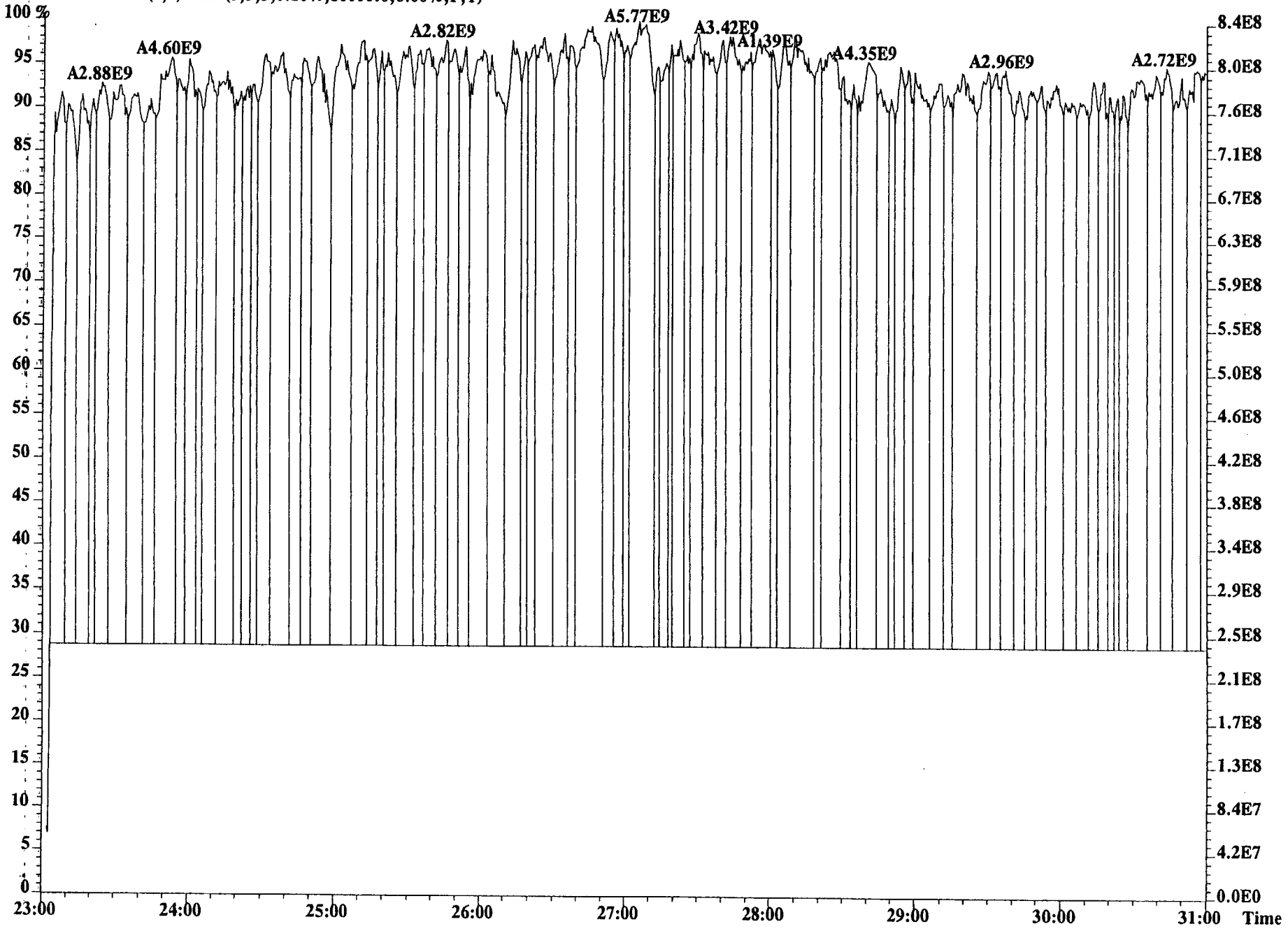
212.1410 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



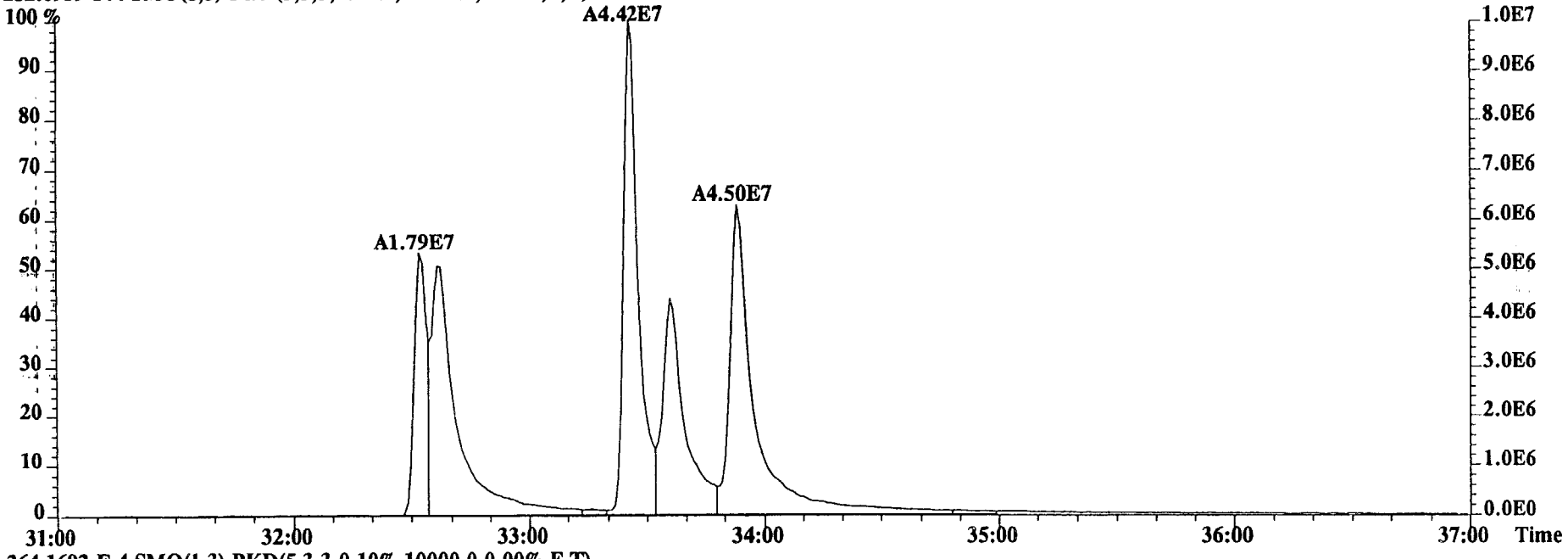
244.1974 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



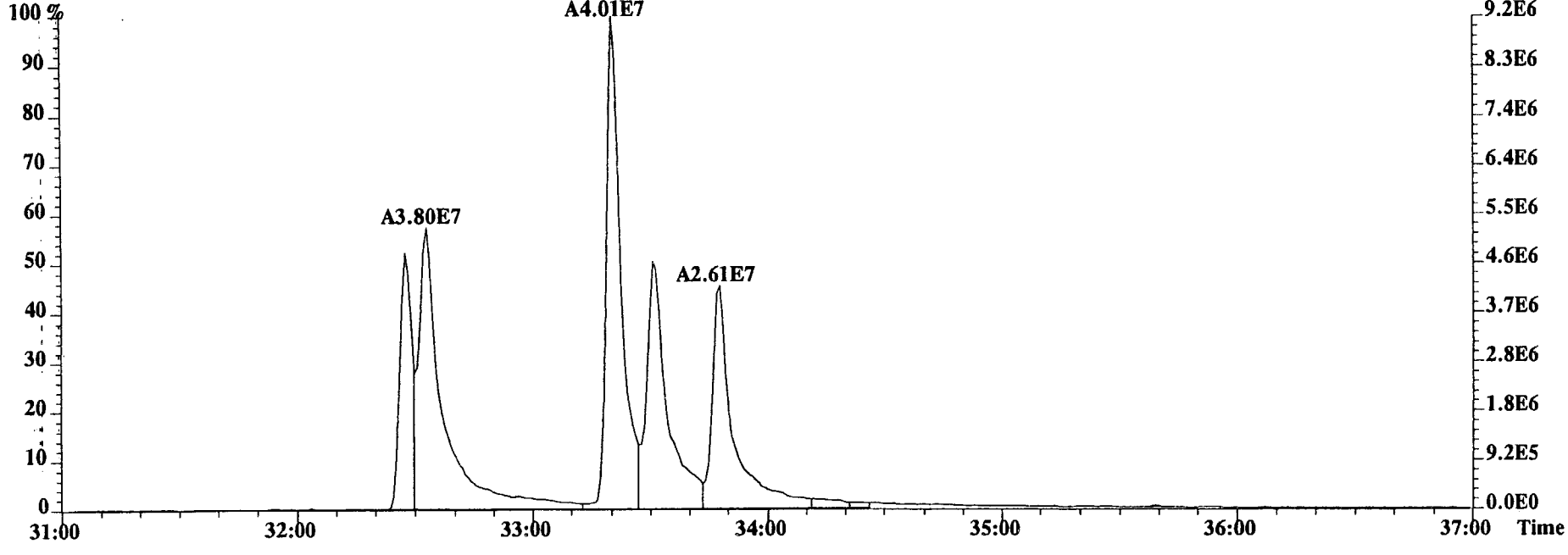
File:03NO98V4 #1-938 Acq: 3-NOV-1998 10:41:10 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1103 :CS-3 :956-64 : : Exp:PAHAIR
230.9856 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



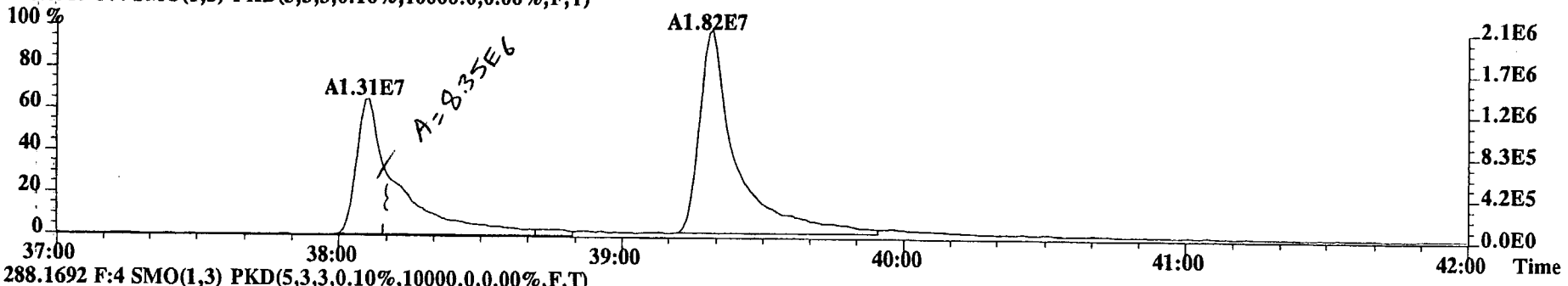
File:03NO98V4 #1-878 Acq: 3-NOV-1998 10:41:10 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1103 :CS-3 :956-64 : : Exp:PAHAIR
252.0939 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



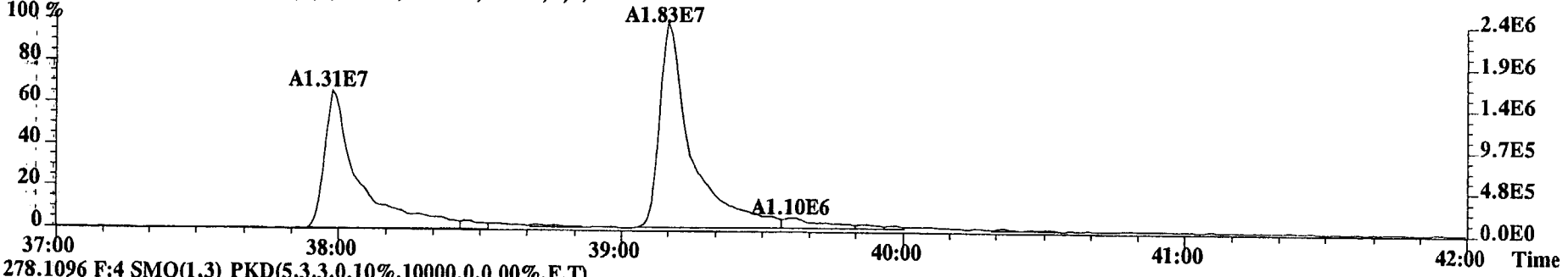
264.1692 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



File:03NO98V4 #1-878 Acq: 3-NOV-1998 10:41:10 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1103 :CS-3 :956-64 : : Exp:PAHAIR
276.0939 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



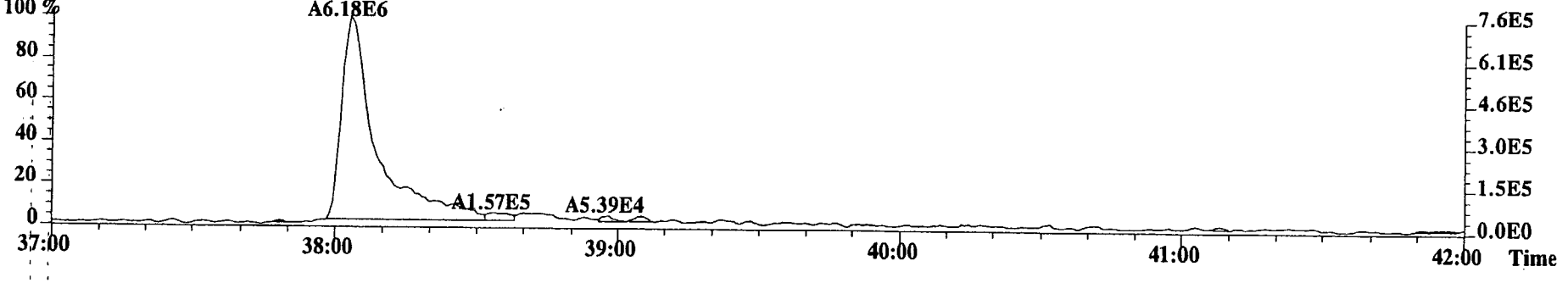
288.1692 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



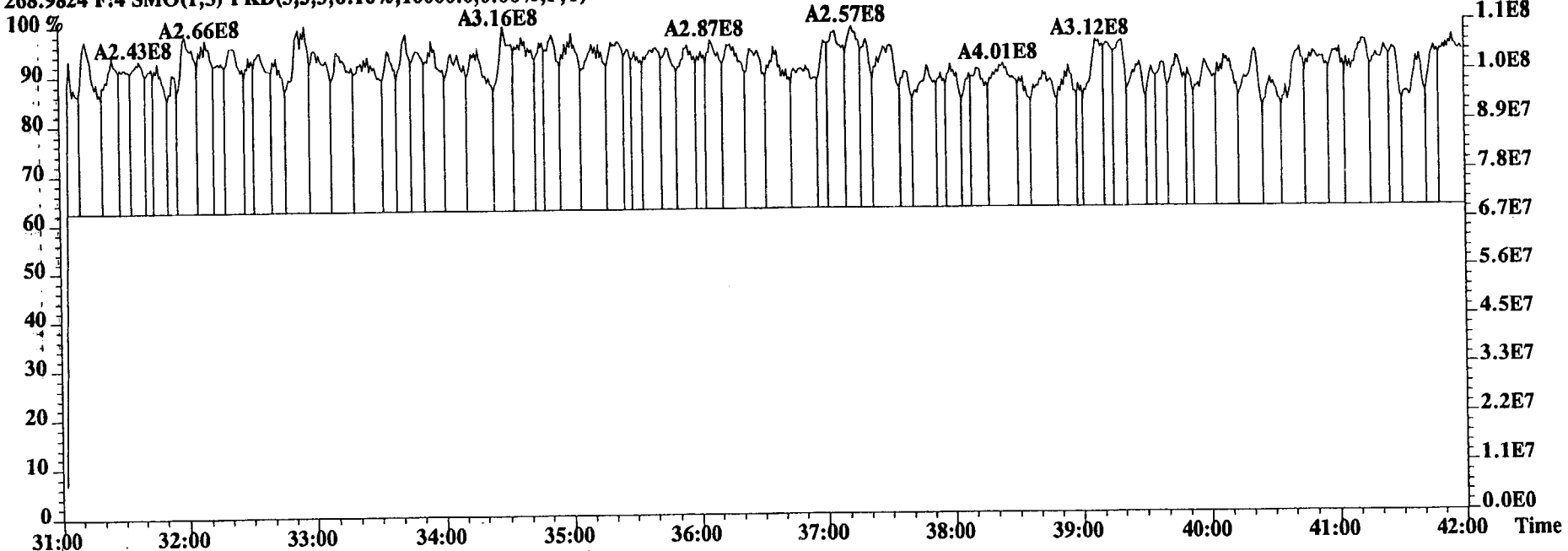
278.1096 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



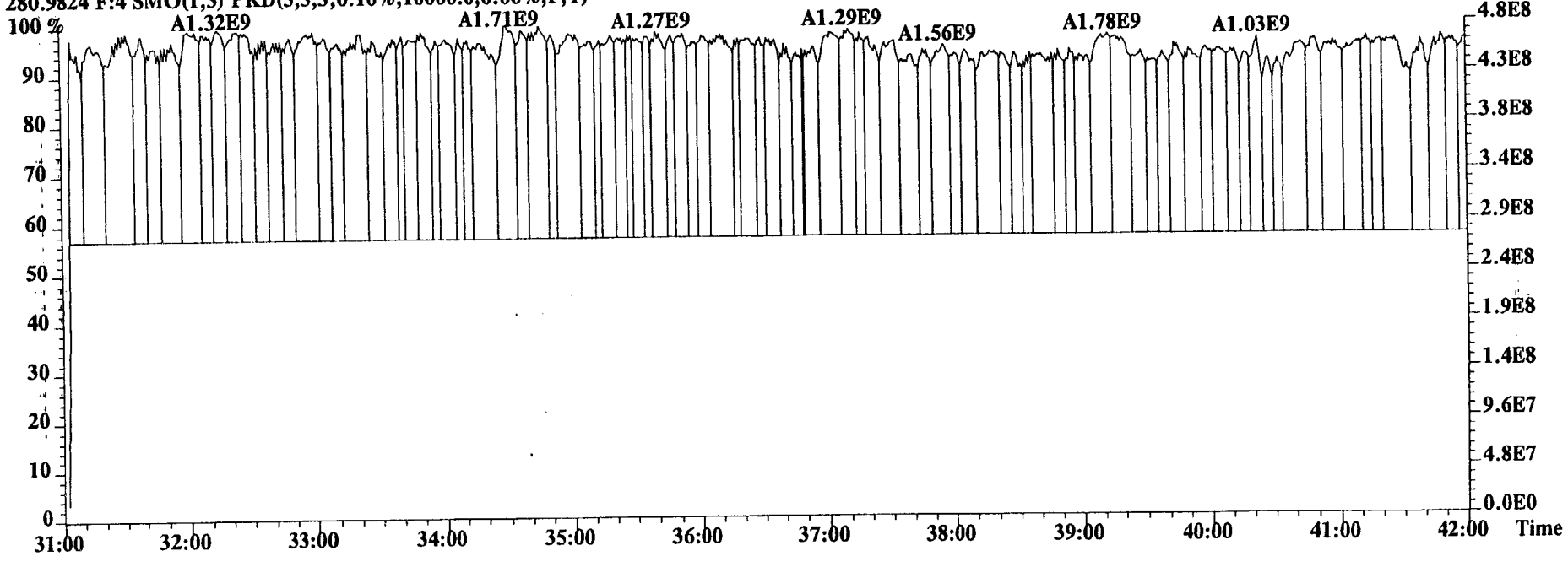
292.1974 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



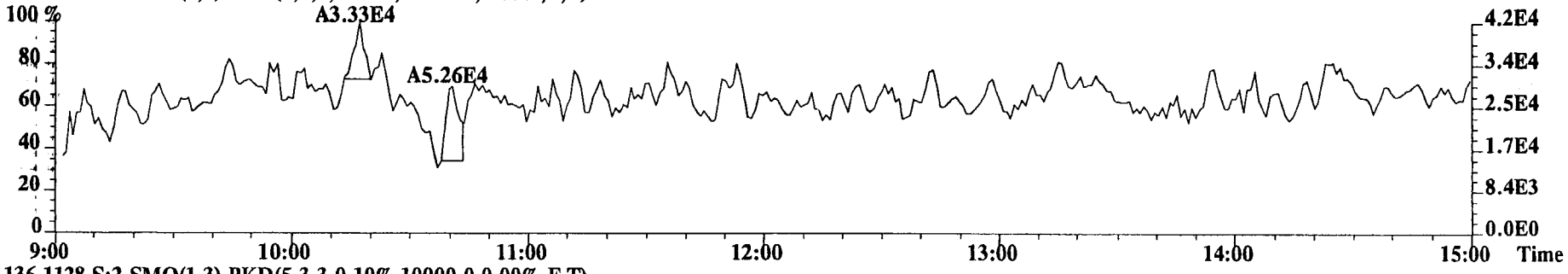
File:03NO98V4 #1-878 Acq: 3-NOV-1998 10:41:10 GC EI+ Voltage SIR 70SE
Sample#1 Text:ST1103 :CS-3 :956-64 : : Exp:PAHAIR
268.9824 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



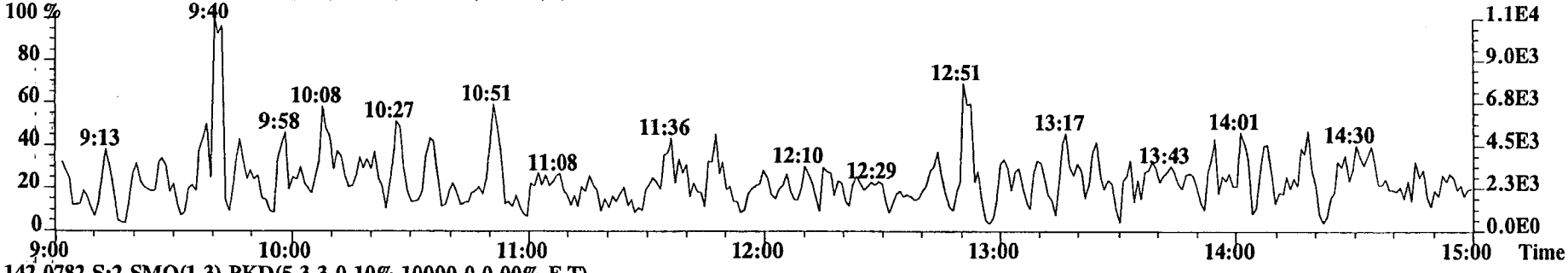
280.9824 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



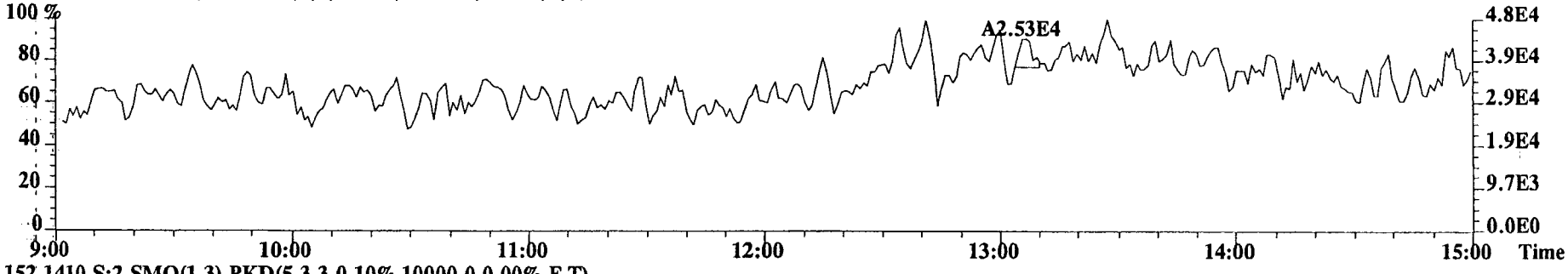
File:03NO98V4 #1-509 Acq: 3-NOV-1998 11:30:10 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1103 :Solvent Blank :C- Exp:PAHAIR
128.0626 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



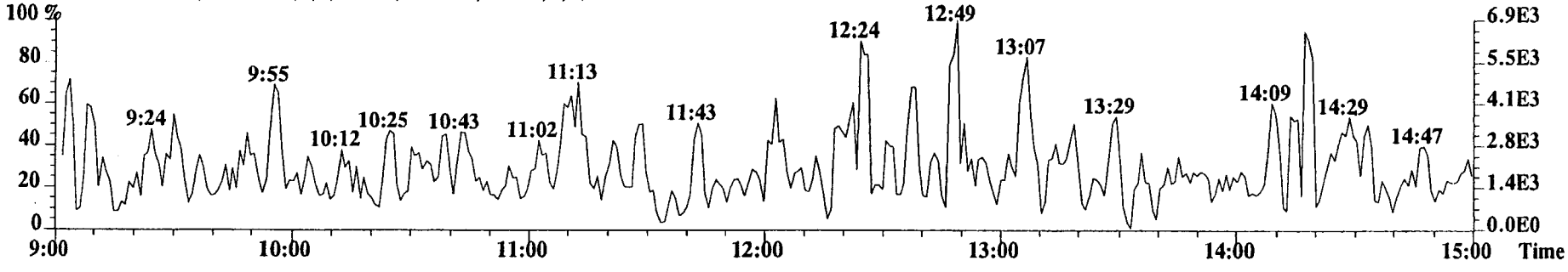
136.1128 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



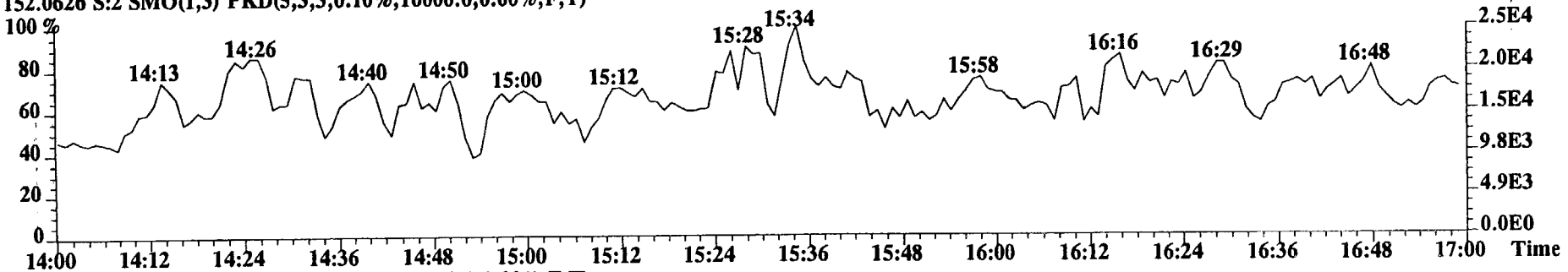
142.0782 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



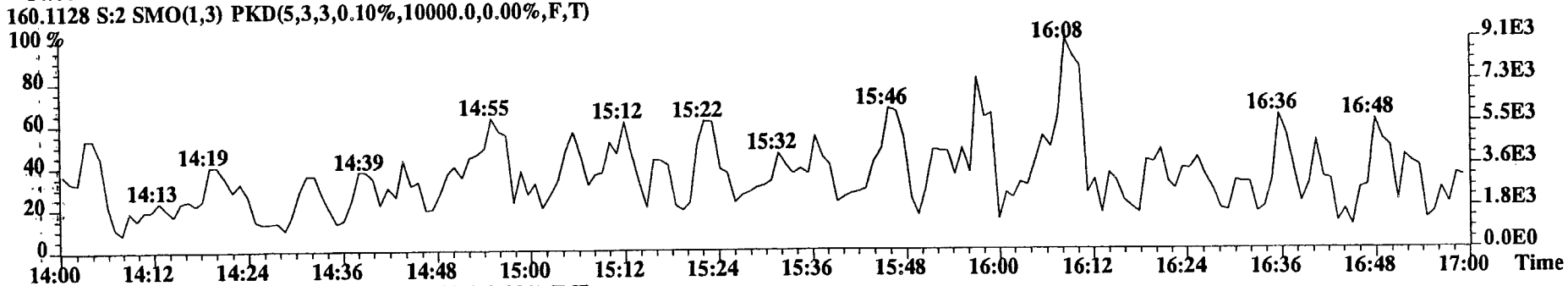
152.1410 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



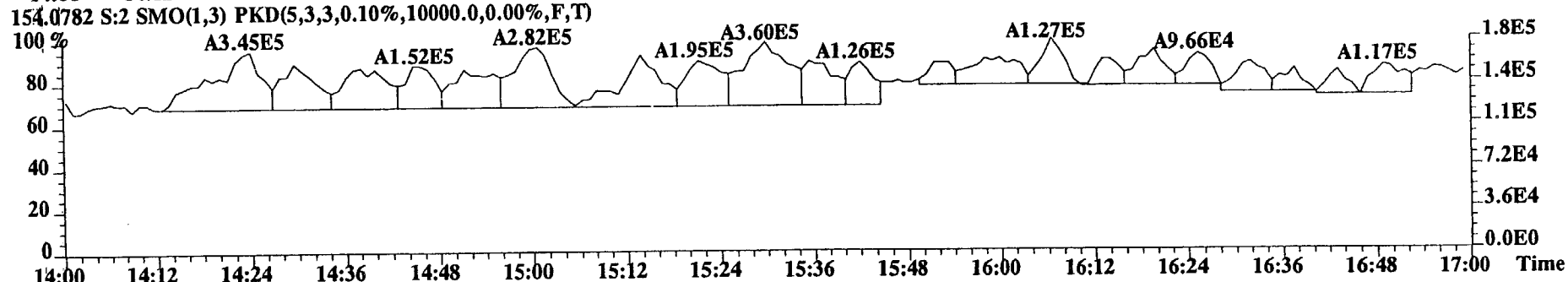
File:03NO98V4 #1-509 Acq: 3-NOV-1998 11:30:10 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1103 :Solvent Blank :C- Exp:PAHAIR
152.0626 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



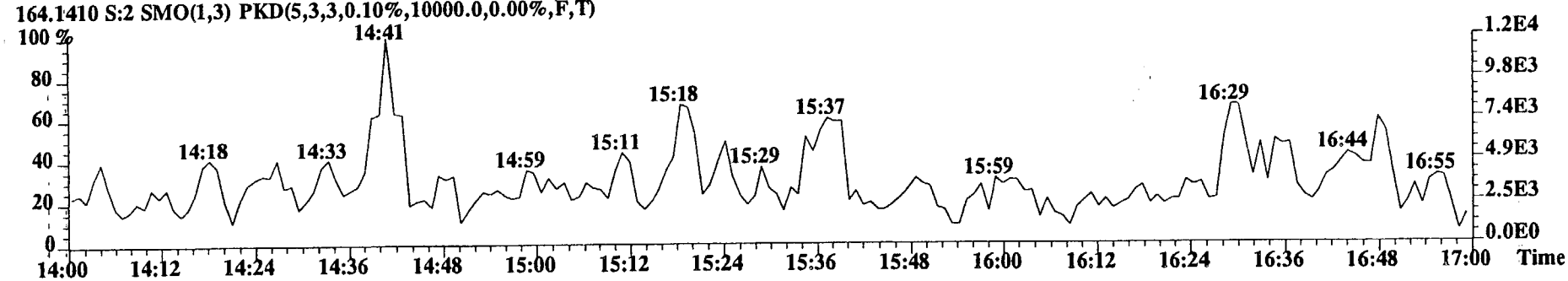
160.1128 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



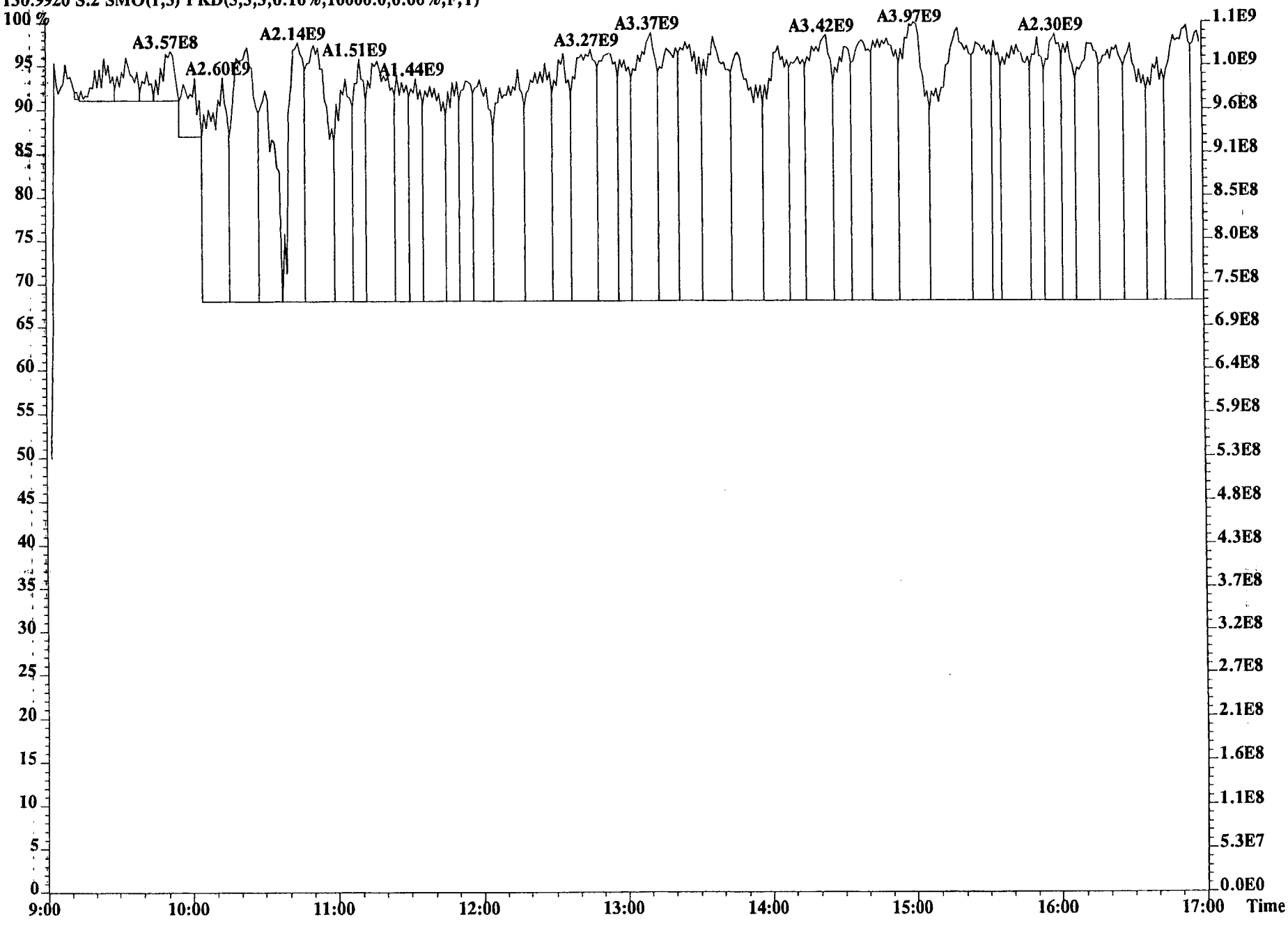
154.0782 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



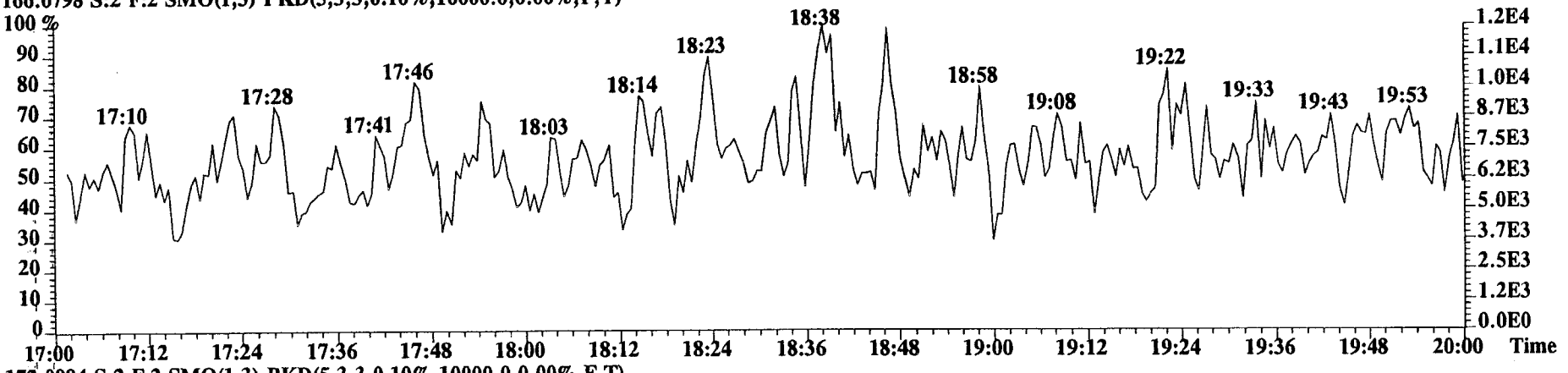
164.1410 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



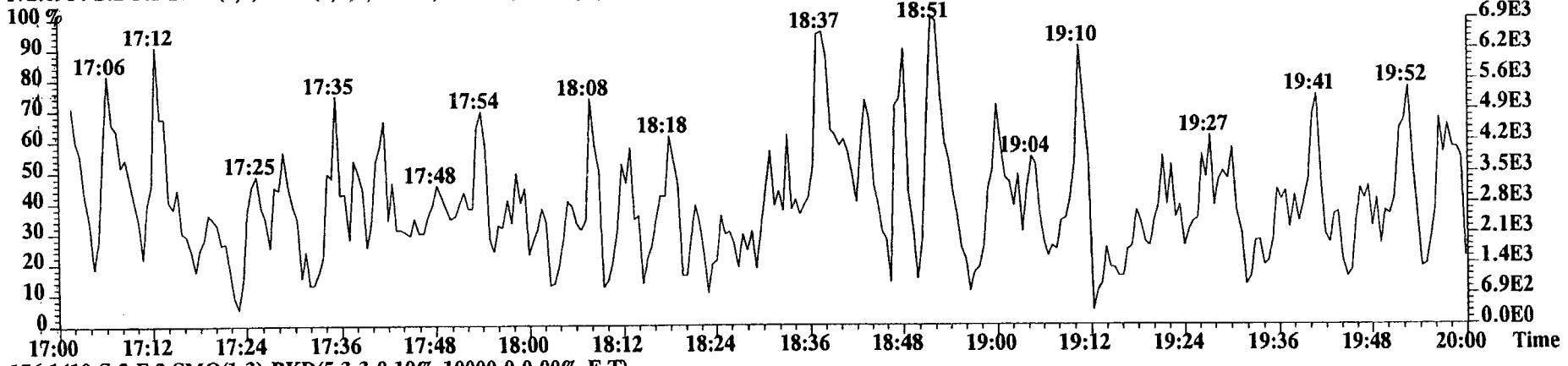
File:03NO98V4 #1-509 Acq: 3-NOV-1998 11:30:10 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1103 :Solvent Blank :C- Exp:PAHAIR
130.9920 S:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



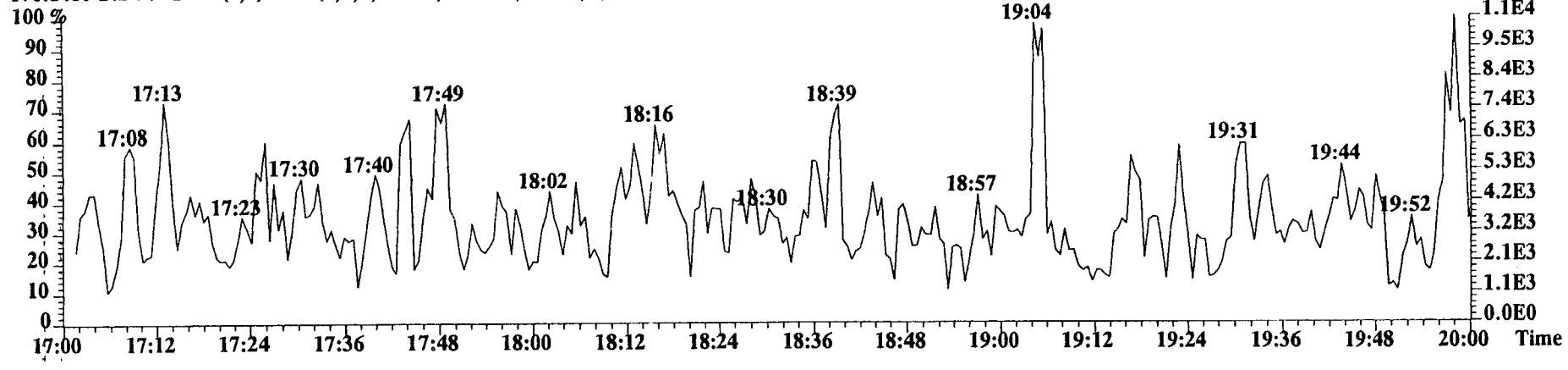
File:03NO98V4 #1-641 Acq: 3-NOV-1998 11:30:10 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1103 :Solvent Blank :C- Exp:PAHAIR
166.0798 S:2 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



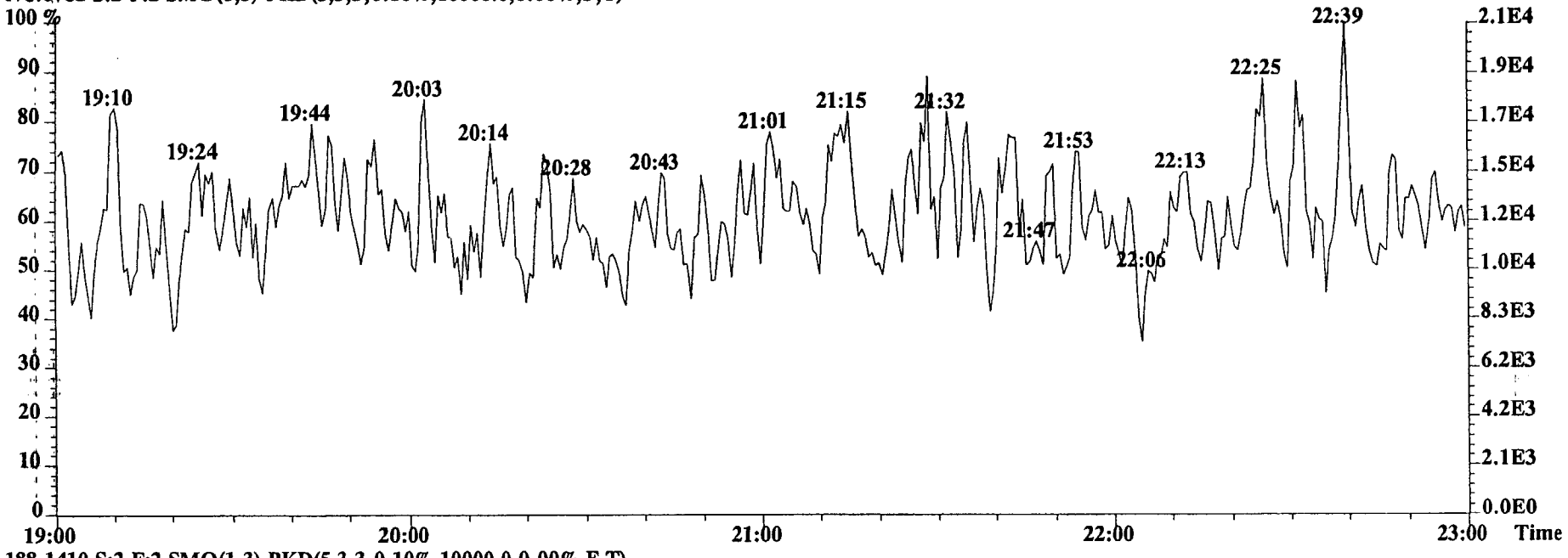
172.0984 S:2 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



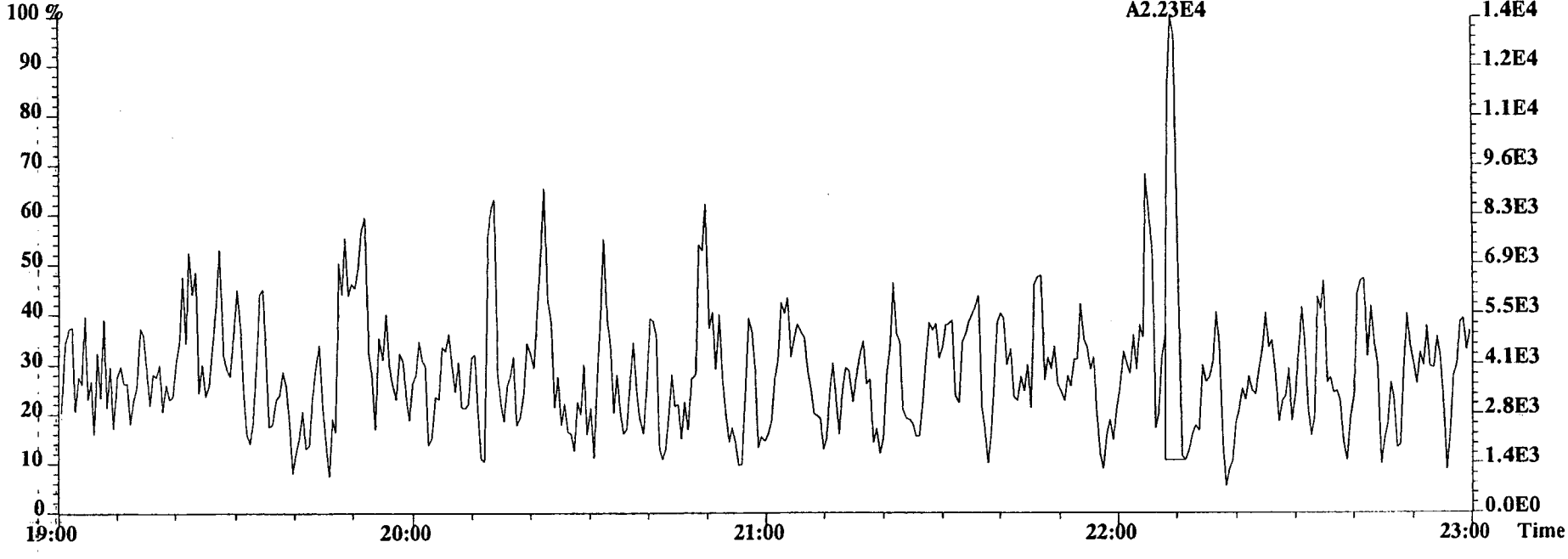
176.1410 S:2 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

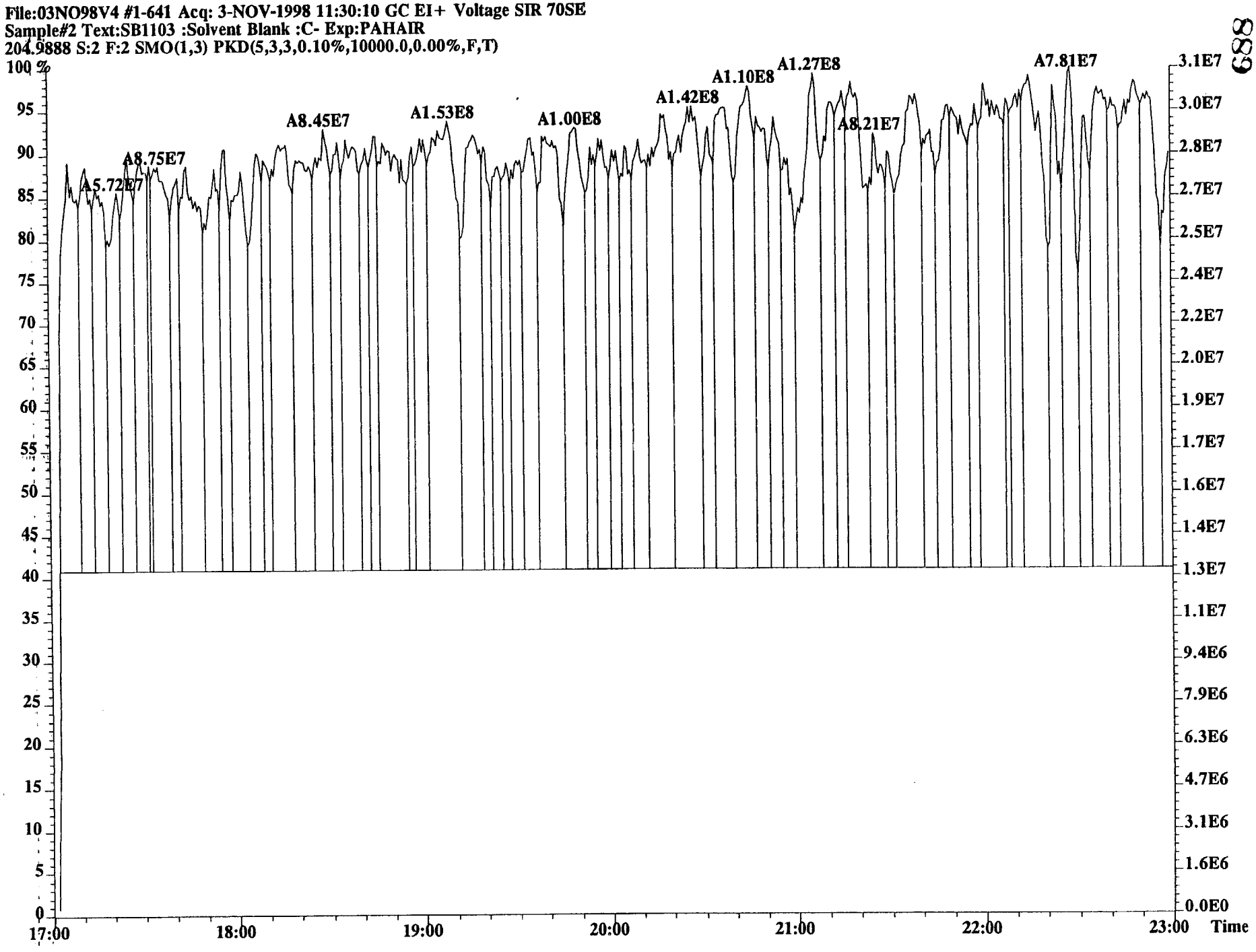


File:03NO98V4 #1-641 Acq: 3-NOV-1998 11:30:10 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1103 :Solvent Blank :C- Exp:PAHAIR
178.0782 S:2 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

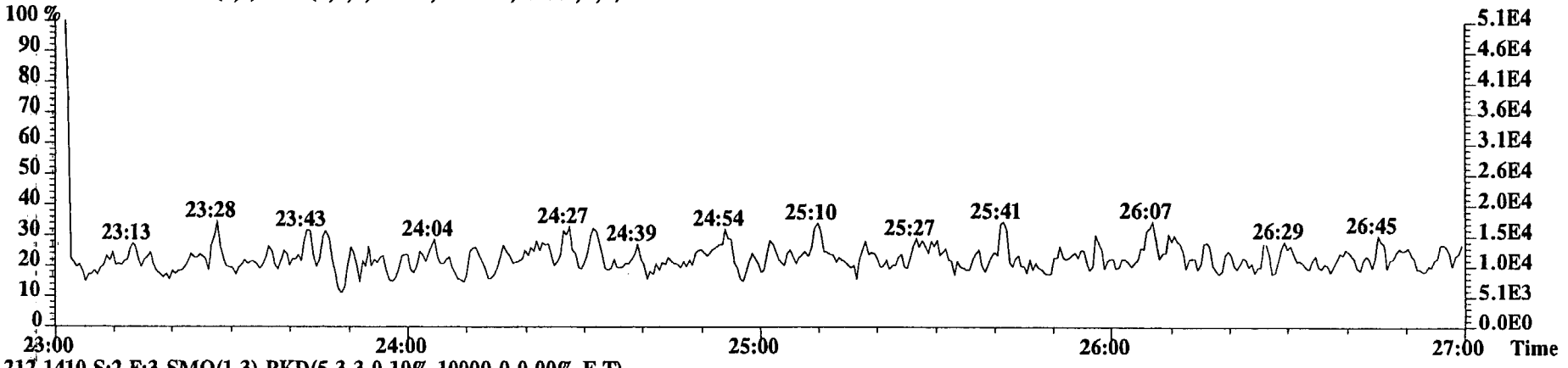


188.1410 S:2 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

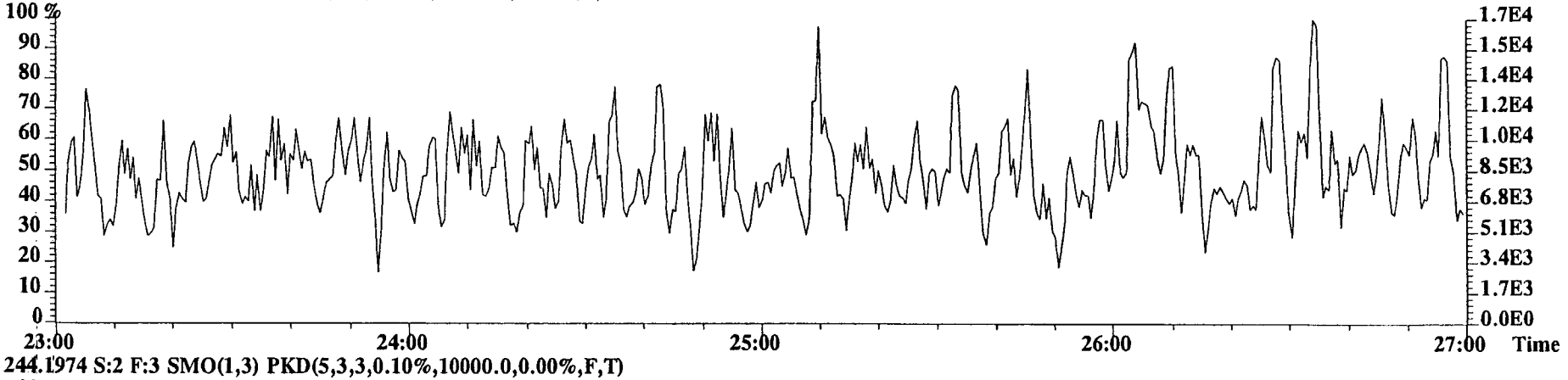



File:03NO98V4 #1-641 Acq: 3-NOV-1998 11:30:10 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1103 :Solvent Blank :C- Exp:PAHAIR
204.9888 S:2 F:2 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A5.72E7
A8.75E7
A8.45E7
A1.53E8
A1.00E8
A1.42E8
A1.10E8
A1.27E8
A8.21E7
A7.81E7
3.1E7
3.0E7
2.8E7
2.7E7
2.5E7
2.4E7
2.2E7
2.0E7
1.9E7
1.7E7
1.6E7
1.4E7
1.3E7
1.1E7
9.4E6
7.9E6
6.3E6
4.7E6
3.1E6
1.6E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

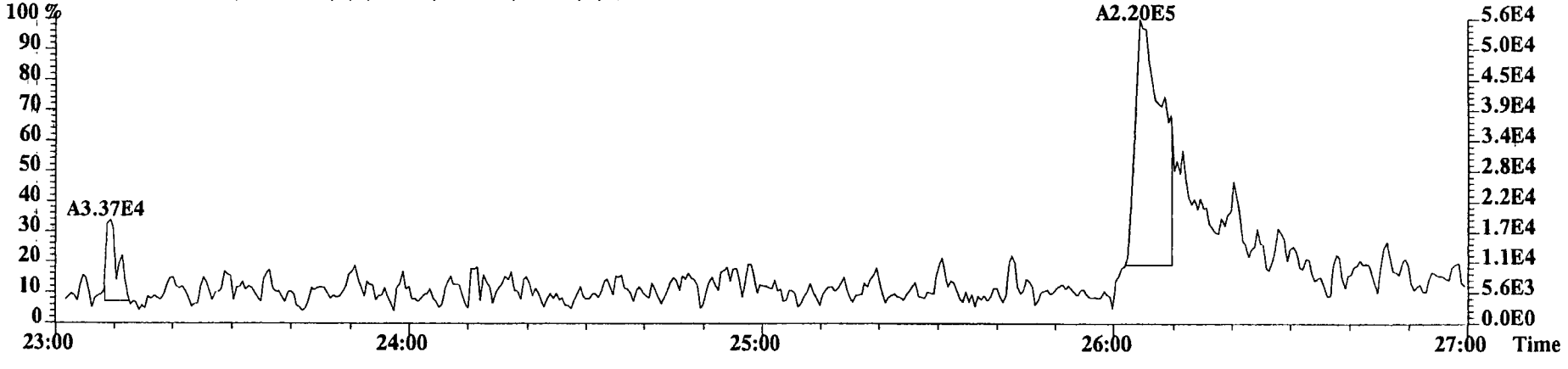
File:03NO98V4 #1-939 Acq: 3-NOV-1998 11:30:10 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1103 :Solvent Blank :C- Exp:PAHAIR
202.0782 S:2 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



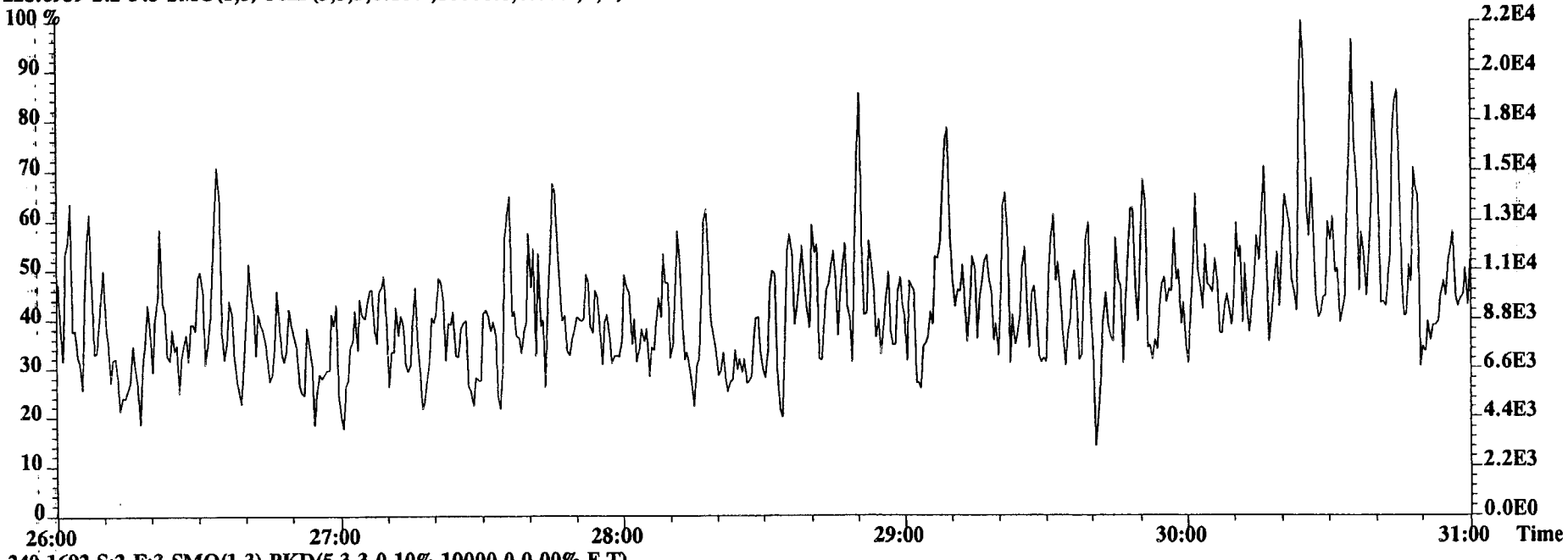
212.1410 S:2 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



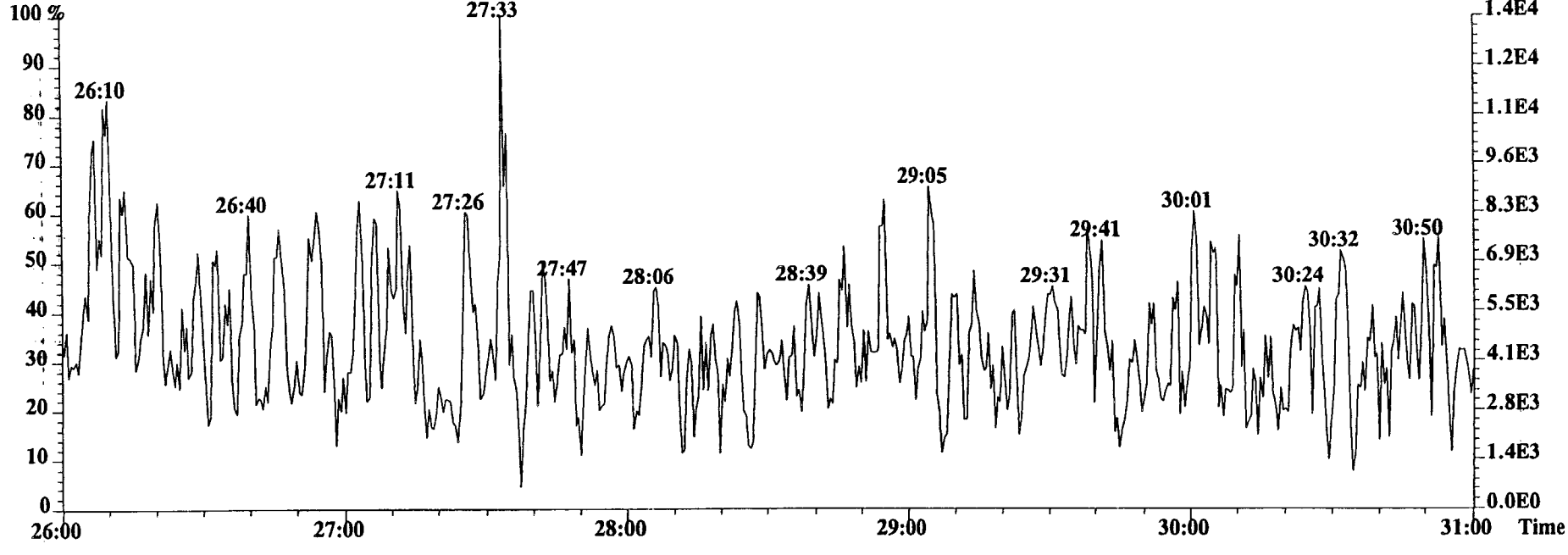
244.1974 S:2 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)

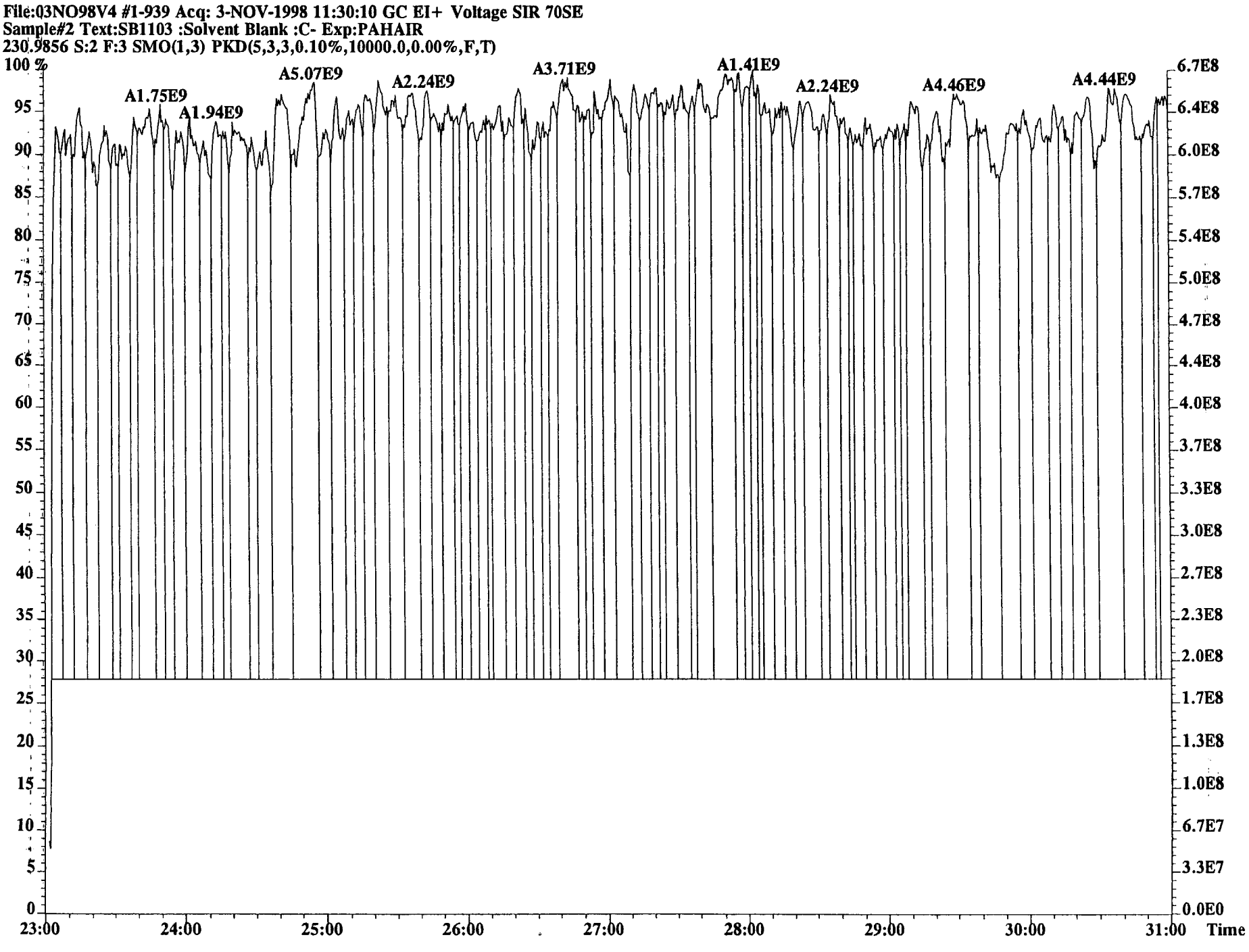


File:03NO98V4 #1-939 Acq: 3-NOV-1998 11:30:10 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1103 :Solvent Blank :C- Exp:PAHAIR
228.0939 S:2 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



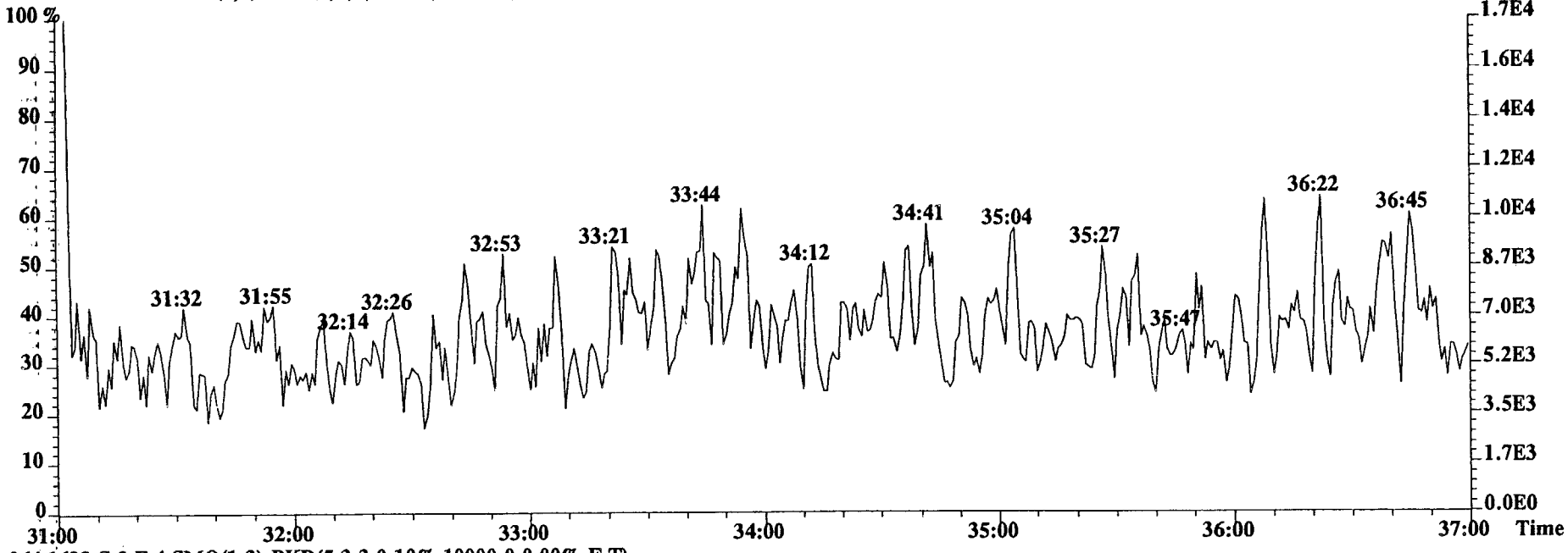
240.1692 S:2 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



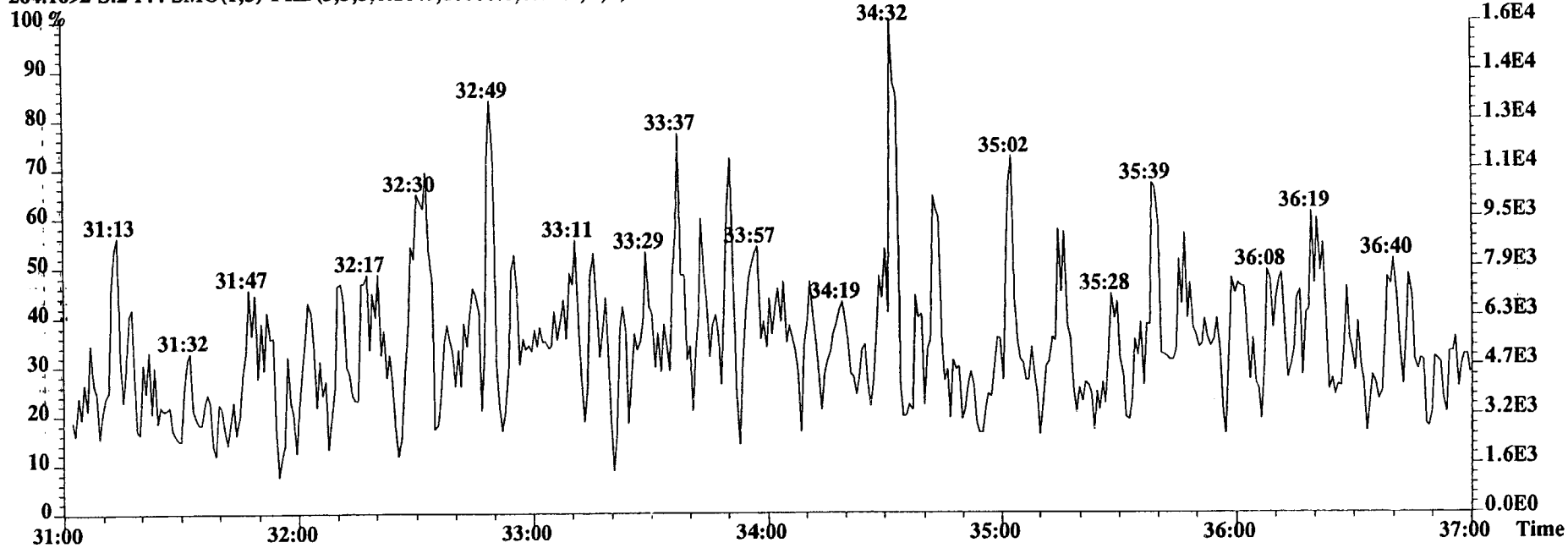

File:03NO98V4 #1-939 Acq: 3-NOV-1998 11:30:10 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1103 :Solvent Blank :C- Exp:PAHAIR
230.9856 S:2 F:3 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)
100 %
A1.75E9
A1.94E9
A5.07E9
A2.24E9
A3.71E9
A1.41E9
A2.24E9
A4.46E9
A4.44E9
6.7E8
6.4E8
6.0E8
5.7E8
5.4E8
5.0E8
4.7E8
4.4E8
4.0E8
3.7E8
3.3E8
3.0E8
2.7E8
2.3E8
2.0E8
1.7E8
1.3E8
1.0E8
6.7E7
3.3E7
0.0E0
23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
31:00
Time

631

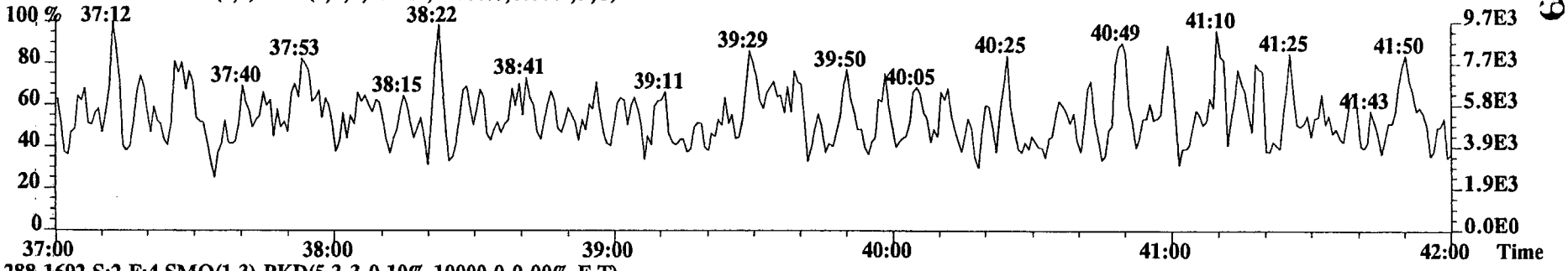
File:03NO98V4 #1-878 Acq: 3-NOV-1998 11:30:10 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1103 :Solvent Blank :C- Exp:PAHAIR
252.0939 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



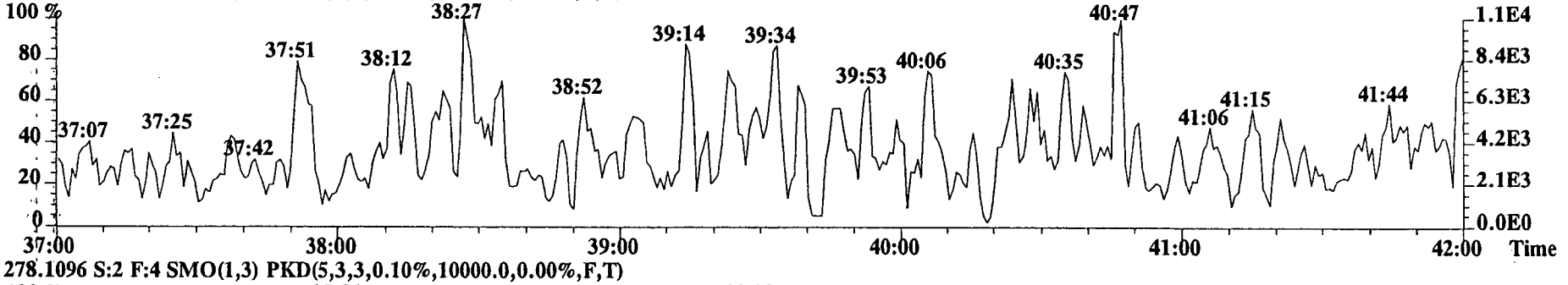
264.1692 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



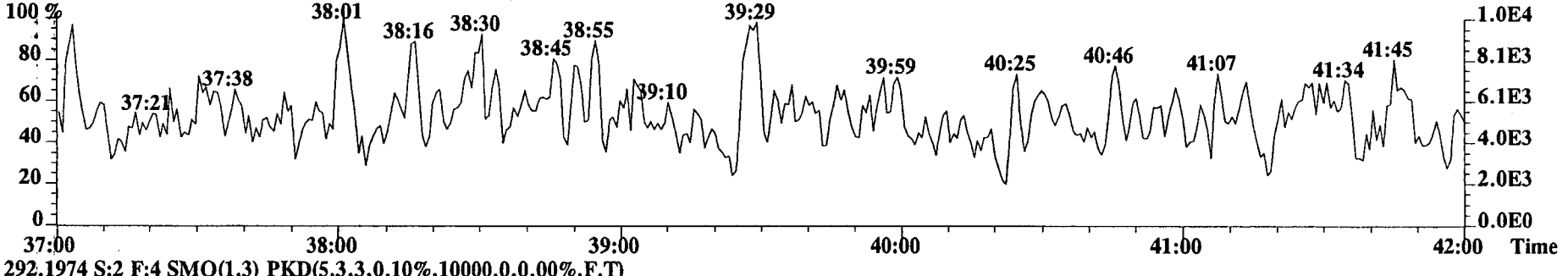
File:03NO98V4 #1-878 Acq: 3-NOV-1998 11:30:10 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1103 :Solvent Blank :C- Exp:PAHAIR
276.0939 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



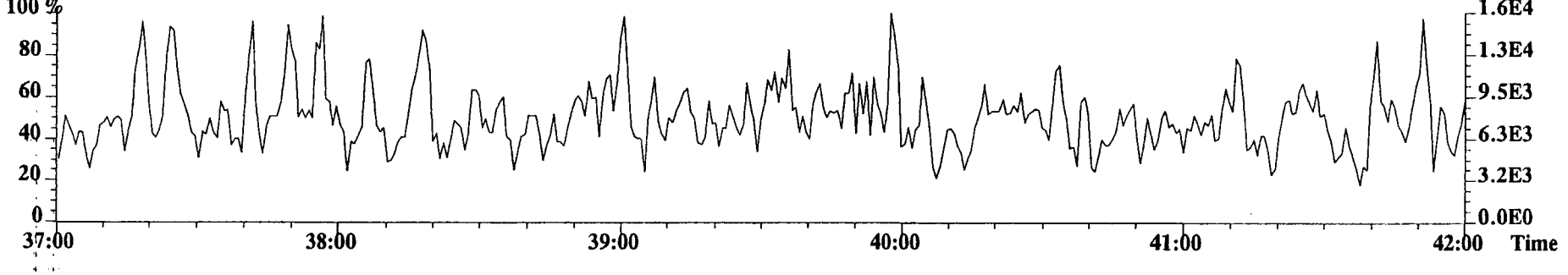
288.1692 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



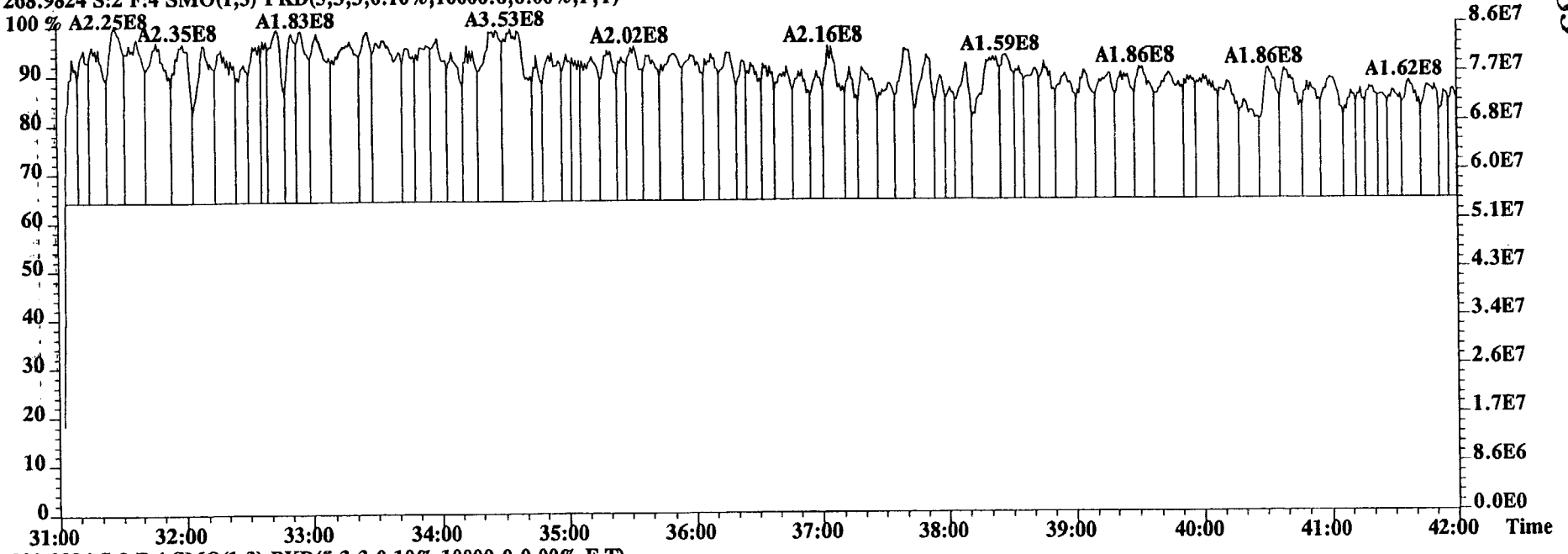
278.1096 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



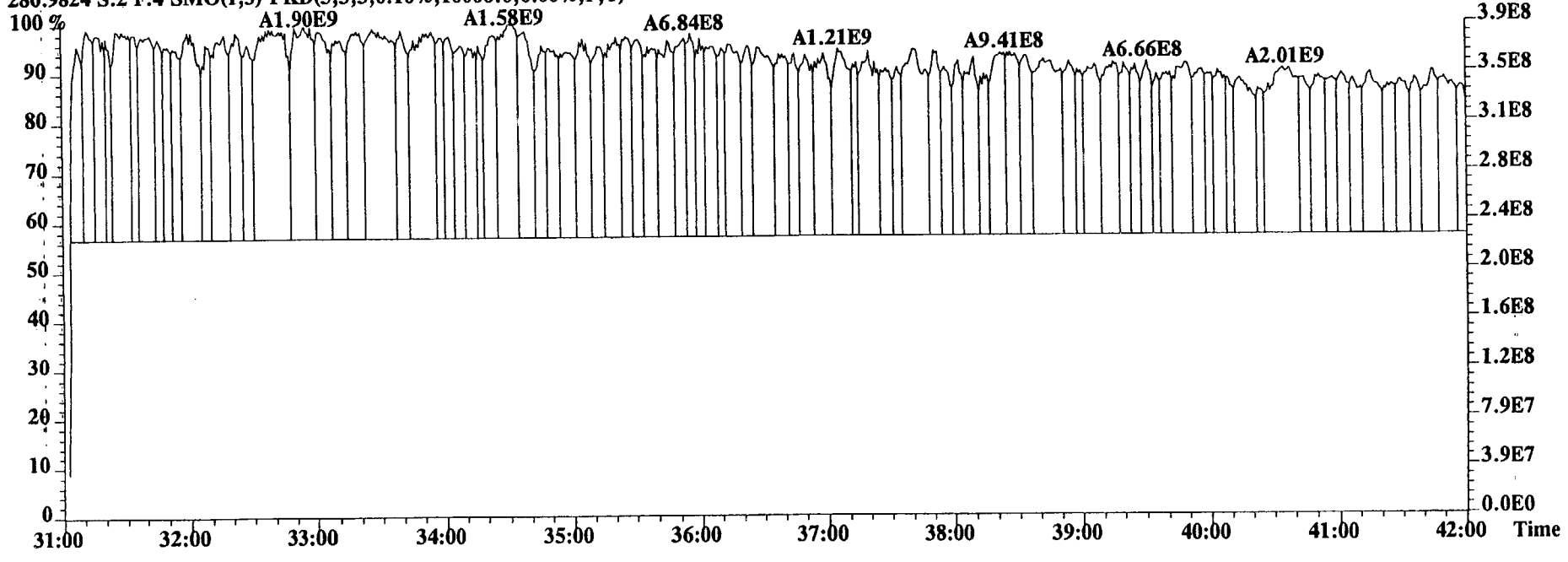
292.1974 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



File:03NO98V4 #1-878 Acq: 3-NOV-1998 11:30:10 GC EI+ Voltage SIR 70SE
Sample#2 Text:SB1103 :Solvent Blank :C- Exp:PAHAIR
268.9824 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



280.9824 S:2 F:4 SMO(1,3) PKD(5,3,3,0.10%,10000.0,0.00%,F,T)



Sample Extraction/ Preparation Log Copies

QUANTERRA INCORPORATED

West Sacramento

ADVANCED TECHNOLOGY HIGH RESOLUTION ANALYSIS

CLIENT NAME: Pacific Env Svc.

PROJECT #: 301802 **ANALYSIS:** Method 429

DATE RECEIVED: 10 9.29 DATE TO SUBBING: 10.3 DATE IN PREP: 10.3

LOCATION: W14C, D W17A MATRIX: Air Trains TAT: 28days

INITIALS: CAW PAGE 1 OF 1

HOLD TIME UP ON: _____ **OPS DUE DATE:** 10.10 **DUE DATE:** 10.30

SAMPLE I.D.'S	EXTRACTION	QC	
1-14	SOXHLET (AIR TRAIN)	MB	*
	WW/EE DILUTION	LCS	*
	SOLVENT QC 613	DCS	
	SEE BELOW	DU	
		MS	
		SD	

^{13}C-INTERNAL STD.		AMT. (ng)	Factor
	1613 / 8290	2.0 / 4.0	
	TCDD/F	2.0	
	MET 23	10.0	
*	MET 429	50.0	2X
	MET 428	2.0 / 4.0	
	MET 1668	2.0	
	DBD/F	25.0	

MATRIX SPIKE		Factor
CL_4 (tetra)	200 pg	
CL_5 - CL_7 (penta-hepta)	1000 pg	
CL_8 (octa)	2000 pg	
PCB	2.0 ng	
PAH	50.0 ng	2X
DBD/F	25.0 ng	

%H2O

%LIPIDS

GRAMS

VOLUME

DILUTION

½ ARCHIVE | SPLIT | ½ ALIQUOT

ALIQUOT

CRS

NO CRS

OPT C

FULL IFB

UPPER IFB

SILICA GEL

D2

ACID AL^{3+}

BASIC AL^{3+}

SAMPLE PRE-PREP	
AS RECEIVED	
DRY	
GRIND	
COMPOSITE	

GC COLUMN	
DB-5	*
DB-225	If needed

		RECOVERY STANDARD		
	1ng	Plus 1:10	10ng M23	
	2ng	F.V. = 50+450 DILUTION:	25ng DBD/F	
	2ng PCB	C_{14} C_{12} C_{10} (C_8)	50ng PAH	X

COMMENTS:

*Combine all fractions for a single analysis

REPORTING LIMIT

QA-361-MF 11/97

CALLAB-301802

Quanterra Environmental Services, Sacramento -
880 Riverside Parkway

West Sacramento, California 95605
(916) 373-5600

Date Received : 29 SEP 98 15:30

Mr. Ron Kolde
Pacific Environmental Services -
4700 Duke Drive
Suite 150
Mason, Ohio
45040

(513) 398-2556 Fax: (513) 398-3342

Project ID,
EPA Case, RMA Lot : Project 5505.000
AIR-Carb429 092998
P.O. Number : CLC-950302
Delivered By :
Storage Location : W14C,D,W17A
Logged in by : CHYTREK

Airtrain(14) samples received in good condition under Chain-of-Custody
Delivered OTC.

Sample ID	Client's label info	Date/Time Samp.	Containers
301802-0001-MB	Method Blank		Method Blank
301802-0001-SA	A-I-429-1	21 SEP 98	2-AGJ 500AGJ 2-250AGJ PETRI XA
301802-0002-SA	A-I-429-2	22 SEP 98	AGJ 2-500AGJ 2-250AGJ PETRI XA
301802-0003-SA	A-I-429-3	23 SEP 98	3-500AGJ 2-250AGJ PETRI XAD
301802-0004-SA	A-O-429-1	21 SEP 98	AGJ 2-500AGJ 2-250AGJ PETRI XA
301802-0005-SA	A-O-429-2	22 SEP 98	AGJ 2-500AGJ 2-250AGJ PETRI XA
301802-0006-SA	A-O-429-3	23 SEP 98	3-500AGJ 2-250AGJ PETRI XAD
301802-0007-SA	A-U-429-1	24 SEP 98	AGJ 3-500AGJ 250AGJ PETRI XAD
301802-0008-SA	A-U-429-2	24 SEP 98	AGJ 3-500AGJ 250AGJ 2-PETRI XA
301802-0009-SA	A-U-429-3	25 SEP 98	AGJ 2-500AGJ 2-250AGJ PETRI XA
301802-0010-SA	A-U-429-4	25 SEP 98	AGJ 2-500AGJ 2-250AGJ PETRI XA
301802-0011-SA	A-I-429-FB	24 SEP 98	3-500AGJ 2-250AGJ PETRI XAD
301802-0012-SA	A-O-429-FB	24 SEP 98	3-500AGJ 2-250AGJ PETRI XAD
301802-0013-SA	A-U-429-FB	25 SEP 98	500AGJ 4-250AGJ PETRI XAD
301802-0014-SA	A-429-LB	21 SEP 98	4-125AGJ PETRI XAD

Samples not destroyed in testing are retained a maximum
of thirty (30) days unless otherwise requested.

Project Manager: Robert Weidenfeld

Soxhlet Portion

** NOT LOG RELEASED! **

QUANTERRA-CALLAB LABORATORY
Chromatography Assignment Sheet

Project #: 301802
Analysis: P-PAH-HR-AIR Ver: 1
Client: Pacific Environmental Services
PA: RWEIDENFELD
Delivery Accepted: MGARCIA 29 SEP 98
Number of Samples: 15
Program: General Airtox

Due Date: 27 OCT 98
Receipt Date: 29 SEP 98
Log Released:
Turnaround: NORMAL
Storage Location: W14C,D,W17A
Earliest Holding Time: 12 OCT 98

Project Description:
14 airtrain samples CARB 429.
All fractions are to be combined for a single analysis per train.

For SA #14, the XAD trap was pulled from the pile of traps that were returned.

Test Modified: N
Sample Instructions: N
Test Instructions: N
Group Instructions: N
QAS #: _____

Date Delivered to PA: _____

Comments:

__ No Problems Occurred with Analysis

✓ See Anomaly Sheet

EXTRACTS are exchanged to Hexane
FC: ½SA/5mL
Archive is stored in air tox prep.

All fractions have been combined. SCW 10/9/98

Soxhlet Fraction

QUANTERRA-CALLAB LABORATORY
Analytical Bench Sheet

Project Number: 301802 Date: 03 OCT 98

Test Code: P-PAH-HR-AIR Test Description: Prep - Polynuclear Aromatic Hydrocarbons by HRMS

Turnaround Status: NORMAL Sample Matrix: AIRTRAIN Date Assigned:_____ Prep Completion Due:_____

SOP-Section/Page (Revision):_____

Extractions: [ ] Separatory Funnel [ ] Continuous Liquid/Liquid [ ] Sonication [X] Soxhlet [ ] KD

[ ] Roto Vap [ ] Shaker [ ] Other_____

Samp ID	Holding Time	Sample Size	Extractn Date/ Initials	Adj pH Date/ Initials	Hydrolysis Date/ Initials	Acid Ext Date/ Initials	Conc Date/ Initials	CH2N2 Date/ Initials	N2 Date/ Initials	Final Sample Concentn
0001SA	12 OCT 98	*	10/3/98 SV	NA	NA	NA	10/8/98 SV	NA	10/8/98 SV	1/2SA/5mL
0001MB	20 OCT 98									
0002SA	13 OCT 98									
0003SA	14 OCT 98									
0004SA	12 OCT 98									
0005SA	13 OCT 98									
0006SA	14 OCT 98									
0007SA	15 OCT 98									
0008SA	15 OCT 98									
0009SA	16 OCT 98									
0010SA	16 OCT 98									
0011SA	15 OCT 98									
0012SA	15 OCT 98									
0013SA	16 OCT 98									

Project Due: 27 OCT 98 DCS With Project: 301802 DCS Code: 030CT98-A

LCS With Project:_____ LCS Code:_____

Method Blank With Project:_____ Extraction Includes Project(s):_____

Notes/Comments:
** PLEASE PUT COMMENTS ON ANOMALY SHEET ** MSQC with Project: _____ MSQC Code: _____

Date To Instruments:_____ By:_____ Peer Approval By:_____

699

* SEE ATTACHED FOR VOLS.

QUANTERRA-CALLAB LABORATORY
Analytical Bench Sheet

Project Number: 301802 Date: 03 OCT 98

Test Code: P-PAH-HR-AIR Test Description: Prep - Polynuclear Aromatic Hydrocarbons by HRMS

Turnaround Status: NORMAL Sample Matrix: AIRTRAIN Date Assigned:_____ Prep Completion Due:_____

SOP-Section/Page (Revision):_____

Extractions: [ ] Separatory Funnel [ ] Continuous Liquid/Liquid [ ] Sonication [X] Soxhlet [ ] KD

[ ] Roto Vap [ ] Shaker [ ] Other_____

Samp ID	Holding Time	Sample Size	Extractn Date/ Initials	Adj pH Date/ Initials	Hydrolysis Date/ Initials	Acid Ext Date/ Initials	Conc Date/ Initials	CH2N2 Date/ Initials	N2 Date/ Initials	Final Sample Concentn
0014SA	12 OCT 98	↓	10/13/98 SV	NA	NA	NA	10/8/98 SV	NA	10/8/98 SV	1/ESA/5mL
LCS	10/8/98									
~~MB~~	10/8/98									

Project Due: 27 OCT 98 DCS With Project: 301802 DCS Code: 030CT98-1A

LCS With Project:_____ LCS Code:_____

Method Blank With Project:_____ Extraction Includes Project(s):_____

Notes/Comments:
** PLEASE PUT COMMENTS ON ANOMALY SHEET ** MSQC with Project: _____ MSQC Code: _____

Date To Instruments:_____ By:_____ Peer Approval By:_____

QUANTERRA-CALLAB LABORATORY
Quality Assurance Sheet

Project #: 301802 Test: P-PAH-HR-AIR

Quality Assurance/Quality Control:

Sample ID: MB only Spiking Standard Name: PAH Surrogate ^{13}C-flourene
Spike Code ID: 956-31 Volume: 100µl Conc: 1.0ng/µl
Spiked By: [signature] Witness: C Hayton

Sample ID: All Spiking Standard Name: Method 429 PAH IS
Spike Code ID: 8265-02 Volume: 100µl Conc:
Spiked By: [signature] Witness: C Hayton

Sample ID: LCS only Spiking Standard Name: PAH Native Stock II
Spike Code ID: 956-19 Volume: 500µl Conc: 0.2ng/µl
Spiked By: [signature] Witness: C Hayton

Sample ID: Spiking Standard Name:
Spike Code ID: Volume: Conc:
Spiked By: Witness:

Solvent: Manufacturer And Lot Number:
Extracting Solvent: $MeCl_2$ M19306
Solvent Keeper:
Transfer Solvent:
Derivatizing Reagent:
Final Solvent: $MeCl_2$ M19306
Other: archive is in $MeCl_2$ EXTRACT was exchange to hexane

Was an aliquot taken? (Y) / N
If yes, how much was aliquoted? 1/2SA mL 5.0 mL
What was the sample concentration before aliquot? SA/10mL

Why was the aliquot taken? archive one half of sample

QUANTERRA-CALLAB LABORATORY
Anomaly Report Form

Project #: 301802 Test: P-PAH-HR-AIR

Anomalies:	Sample(s) Affected:
__ Sample broken during shipping.	_____
__ Limited sample volume.	_____
__ Matrix required a subsample to facilitate extraction.	_____
__ pH of sample required excess acid/base (please circle).	_____
__ Solvent and sample were miscible.	_____
__ Emulsion problems.	_____
__ Emulsion problem required centrifuging.	_____
__ Sample lost during preparation. Re-extraction performed? Yes/No	_____
__ Concentration volume went lower than specified in the SOP.	_____
__ Concentration time longer than normal.	_____
__ Extraction solvent saturated with organic material, therefore sample volume was not concentrated but adjusted based on the screening.	_____
__ Final concentration greater than specified in the SOP due to the screening results.	_____
__ Precipitate observed in the extract.	_____
✓ Other, please comment below.	1-14

Comments: Volumes of all rinses / impinger contents are attached. impinger portion is combined with Soxhlet portion except for MB and ~~DS~~ 10898 LCS fractions that will analyzed separely

Submitted By: [signature] Date: 12.8.98

QUANTERRA-CALLAB LABORATORY
Prep (Extraction) Check List

Project #: 301802 Test: P-PAH-HR-AIR

Chemist: Stahmer Date: 10.8.98

Reviewer: _____ Date: _____ 10/8/98

Number of samples: ~~15~~ Number of extracts: ~~16~~ 18

Benchsheet:	Initiated		Reviewed	
SOP section and page number filled out properly.	Y___	N___	Y___	N___
Each step of extraction procedure initial'ed and dated.	Y___	N___	Y___	N___
Anomalies or deviations from SOP documented.	Y___	N___	Y___	N___
pH adjustments noted.	Y___	N___	Y___	N___
Solvent manufacturer and lot number completed.	Y___	N___	Y___	N___
Volumes and weights of samples to two sig. figs.	Y___	N___	Y___	N___

QA/QC:	Initiated		Reviewed	
DCS/MS forms filled out properly.	Y___	N___	Y___	N___
Spike information correct on bench sheet.	Y___	N___	Y___	N___
Spike witness?	Y___	N___	Y___	N___
If not spiked per SOP, were spike amounts verified?	Y___	N___	Y___	N___

LIMS:	Initiated		Reviewed	
Extraction date (complete date) correct.	Y___	N___	Y___	N___
QC lot number present and correct.	Y___	N___	Y___	N___
QC Run number present and correct.	Y___	N___	Y___	N___
Prep released (date extract goes to Inst.).	Y___	N___	Y___	N___

Extracts:	Initiated		Reviewed	
Number of extracts agree with benchsheet.	Y___	N___	Y___	N___
Concentrations of extract agree with benchsheet.	Y___	N___	Y___	N___
Testtube rack labelled with project id and test.	Y___	N___	Y___	N___

Comments:

Sep funnel Portion

** NOT LOG RELEASED! **

QUANTERRA-CALLAB LABORATORY
Chromatography Assignment Sheet

Project #: 301802
Analysis: P-PAH-HR-AIR Ver: 1
Client: Pacific Environmental Services
PA: RWEIDENFELD
Delivery Accepted: MGARCIA 29 SEP 98
Number of Samples: 15
Program: General Airtox

Due Date: 27 OCT 98
Receipt Date: 29 SEP 98
Log Released:
Turnaround: NORMAL
Storage Location: W14C,D,W17A
Earliest Holding Time: 12 OCT 98

Project Description:
14 airtrain samples CARB 429.
All fractions are to be combined for a single analysis per train.

For SA #14, the XAD trap was pulled from the pile of traps that were returned.

Test Modified: N
Sample Instructions: N
Test Instructions: N
Group Instructions: N
QAS #: _____

Date Delivered to PA: _____

Comments:

__ No Problems Occurred with Analysis

__ See Anomaly Sheet

QUANTERRA-CALLAB LABORATORY
Analytical Bench Sheet

Project Number: 301802 Date: 04 OCT 98

Test Code: P-PAH-HR-AIR Test Description: Prep - Polynuclear Aromatic Hydrocarbons by HRMS

Turnaround Status: NORMAL Sample Matrix: AIRTRAIN Date Assigned:_____ Prep Completion Due:_____

SOP-Section/Page (Revision):_____

Extractions: [X] Separatory Funnel [ ] Continuous Liquid/Liquid [ ] Sonication [ ] Soxhlet [ ] KD

[ ] Roto Vap [ ] Shaker [ ] Other_____

Samp ID	Holding Time	Sample Size	Extractn Date/ Initials	Adj pH Date/ Initials	Hydrolysis Date/ Initials	Acid Ext Date/ Initials	Conc Date/ Initials	CH2N2 Date/ Initials	N2 Date/ Initials	Final Sample Concentn
0001SA	12 OCT 98	★	10OCT98 SV	NA	NA	NA	10 OCT 98 SV	NA	10OCT98 SV	Combined with SX.
0001MB	20 OCT 98									
0002SA	13 OCT 98									
0003SA	14 OCT 98									
0004SA	12 OCT 98									
0005SA	13 OCT 98									
0006SA	14 OCT 98									
0007SA	15 OCT 98									
0008SA	15 OCT 98									
0009SA	16 OCT 98									
0010SA	16 OCT 98									
0011SA	15 OCT 98									
0012SA	15 OCT 98									
0013SA	16 OCT 98									

Project Due: 27 OCT 98 DCS With Project: 301802 DCS Code: 040CT98-16B

LCS With Project:_____ LCS Code:_____

Method Blank With Project:_____ Extraction Includes Project(s):_____

Notes/Comments:
** PLEASE PUT COMMENTS ON ANOMALY SHEET ** MSQC with Project: _____ MSQC Code: _____

★ - SEE Volumes attached

Date To Instruments:_____ By:_____ Peer Approval By:_____

QUANTERRA-CALLAB LABORATORY
Analytical Bench Sheet

Project Number: 301802 Date: 04 OCT 98

Test Code: P-PAH-HR-AIR Test Description: Prep - Polynuclear Aromatic Hydrocarbons by HRMS

Turnaround Status: NORMAL Sample Matrix: AIRTRAIN Date Assigned:_____ Prep Completion Due:_____

SOP-Section/Page (Revision):_____

Extractions: (X) Separatory Funnel [ ] Continuous Liquid/Liquid [ ] Sonication [ ] Soxhlet [ ] KD

[ ] Roto Vap [ ] Shaker [ ] Other_____

Samp ID	Holding Time	Sample Size	Extractn Date/ Initials	Adj pH Date/ Initials	Hydrolysis Date/ Initials	Acid Ext Date/ Initials	Conc Date/ Initials	CH2N2 Date/ Initials	N2 Date/ Initials	Final Sample Concentn
0014SA	12 OCT 98	✓	100496 SV	NA	NA	NA	100896 SV	NA	100896 SV	Combined with SOX
LCS		↓	↓	↓	↓	↓	↓	↓	↓	↓

Project Due: 27 OCT 98 DCS With Project: 301802 DCS Code: 040CTG8-163

LCS With Project:_____ LCS Code:_____

Method Blank With Project:_____ Extraction Includes Project(s):_____

Notes/Comments:
** PLEASE PUT COMMENTS ON ANOMALY SHEET ** MSQC with Project: _____ MSQC Code: _____

* See volumes attached

706

Date To Instruments:_____ By:_____ Peer Approval By:_____

QUANTERRA-CALLAB LABORATORY
Quality Assurance Sheet

Project #: Test:

Quality Assurance/Quality Control:

Sample ID: ALL Spiking Standard Name: ^{13}C-Benzo(ghi)perylene
Spike Code ID: 956-33 Volume: 100µl Conc: 1 ng/µl
Spiked By: SV Witness: R. Shaw

Sample ID: LCS only Spiking Standard Name: Method 429 PAH native Stock II
Spike Code ID: 956-19 Volume: 500µl Conc: 0.2 ng/µl
Spiked By: SV Witness: R. Shaw

Sample ID: Spiking Standard Name:
Spike Code ID: Volume: Conc:
Spiked By: Witness:

Sample ID: Spiking Standard Name:
Spike Code ID: Volume: Conc:
Spiked By: Witness:

Solvent: Manufacturer And Lot Number:
Extracting Solvent: CH_2Cl_2 M1930 6
Solvent Keeper:
Transfer Solvent:
Derivatizing Reagent:
Final Solvent:
Other:

Was an aliquot taken? Y (N) ← Extract combined with sox fraction SV 10/6/95
If yes, how much was aliquoted? mL mL
What was the sample concentration before aliquot?

Why was the aliquot taken?

QUANTERRA-CALLAB LABORATORY
Anomaly Report Form

Project #: 301802 Test: P-PAH-HR-AIR

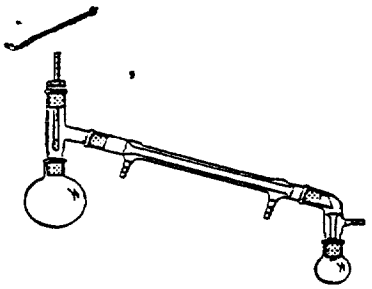
Anomalies:	Sample(s) Affected:
__ Sample broken during shipping.	_____
__ Limited sample volume.	_____
__ Matrix required a subsample to facilitate extraction.	_____
__ pH of sample required excess acid/base (please circle).	_____
__ Solvent and sample were miscible.	_____
__ Emulsion problems.	_____
__ Emulsion problem required centrifuging.	_____
__ Sample lost during preparation. Re-extraction performed? Yes/No	_____
__ Concentration volume went lower than specified in the SOP.	_____
__ Concentration time longer than normal.	_____
__ Extraction solvent saturated with organic material, therefore sample volume was not concentrated but adjusted based on the screening.	_____
__ Final concentration greater than specified in the SOP due to the screening results.	_____
__ Precipitate observed in the extract.	_____
✓ Other, please comment below.	1-14

Comments:
Sep funnel extract is combined with soxhlet portion except MB and LCS which will be analyzed separetly.

Submitted By: _____ Date: 10-8-98

Project 301802 Volumes

SAMPLE #	Front Rinse	Filter/condenser rinse	Knockout	Trap contents	Imp rinse
1	310.7	83.	343	211	95
2	426.7	136	213	200	92
3	330	103	128	194	389
4	205	115	177	213	160
5	234	112	126	245	113
6	218	172	147	192	445
7	317	178	212	215	325
8	172	160	508	183	258
9	309	127	364	264	196
10	408	112	475	233	213
11	152	63	119	156	90
12	334	108	131	465	201
13	372	147	105	213	139
14	64	80	—	98	122
	Hexane	Acetone		$NaHCO_3$/Na_2CO_3	MeCl$_2$



QUANTERRA INCORPORATED

West Sacramento

ADVANCED TECHNOLOGY HIGH RESOLUTION PREP

Methods 23, 428, 429, 1668, and T-O IX

BENCHSHEET FOR EXTRACTION OF AIR MEDIA

PROJECT #: 301802 **ANALYSIS:** 429

MATRIX: _____ TAT: _____

DATE RECEIVED: _____ DATE IN PREP: _____ DUE DATE: 10/30/98

GCMS LOCATION: _____ DATE TO GCMS: _____

EXTRACTION TYPE: SOXHLET 613 DILUTION OTHER: _____

SOLVENT TYPE: TOLUENE HEXANE DCM OTHER: _____

SAMPLE ID	Sample Size	613 Date/Int.	Soxhlet Date/Int.	Silica Gel Date/Int.	Upper IFB Date/Int.	Lower IFB Date/Int.	IFB Date/Int.	Special D2 Date/Int.
soxlet 1MB				10/22/98 MEO				
1LCS								
impinger 1MB								
1LCS								
1								
2								
3								
4								
5								
6								
7								
8								

(All Samples) I.S. Added: See attached by: _____ Witness: _____ Date: _____

(LCS/MS/SD) PAR/Nat. Added: _____ by: _____ Witness: _____ Date: _____

(MB Only) Surrogate Added: _____ by: _____ Witness: _____ Date: _____

(All Samples) R.S. Added: 50ul/265-03 by: BDH Witness: MEO Date: 10-23-98

Associated QC: Above Associated Projects: None

Dilution @ Extraction? No Yes (describe)

Split of Extract? No Yes (describe)

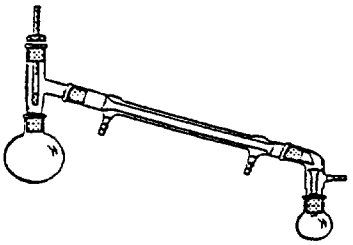
Dilution @ Final Volume? No (Yes) 1:5 (1:10) C_8 C_{10} C_{12} C_{14}

710

BDH 10-23-98

QUANTERRA INCORPORATED

West Sacramento



ADVANCED TECHNOLOGY
HIGH RESOLUTION PREP
Methods 23, 428, 429, 1668, and T-O IX

BENCHSHEET FOR EXTRACTION OF AIR MEDIA

PROJECT #: 301802 **ANALYSIS:** 429

MATRIX: AIRTRAIN TAT: _____

DATE RECEIVED: _____ DATE IN PREP: _____ DUE DATE: 10/30/98

GCMS LOCATION: _____ DATE TO GCMS: _____

EXTRACTION TYPE: ~~SOXHLET~~ (613) DILUTION OTHER: _____

SOLVENT TYPE: ~~TOLUENE~~ HEXANE DCM OTHER: _____

SAMPLE ID	Sample Size	613 Date/Int.	Soxhlet Date/Int.	Silica Gel Date/Int.	Upper IFB Date/Int.	Lower IFB Date/Int.	IFB Date/Int.	Special D2 Date/Int.
9				10/22/98 INS				
10				↓				
11								
12								
13								
14								

(All Samples) I.S. Added: See attached by: _____ Witness: _____ Date: _____

(LCS/MS/SD) PAR/Nat. Added: ↓ by: _____ Witness: _____ Date: _____

(MB Only) Surrogate Added: ↓ by: _____ Witness: _____ Date: _____

(All Samples) R.S. Added: 50ul/265-03 by: BDH Witness: MEo Date: 10-23-98

Associated QC: Above Associated Projects: None

711

Dilution @ Extraction? No Yes (describe)

Split of Extract? No Yes (describe)

Dilution @ Final Volume? No (Yes) 1:5 (1:10) C_8 C_{10} C_{12} C_{14}

10-23-98 BDH

Quanterra Environmental Services

Quanterra - Sacramento
Data Checklist
High Resolution Analyses

CAL ID: 301902-1-14 Method ID: PAH's (mod 429)

	DB-5	DB-225
Data Analyst:	[illegible]	XA
Date initiated:	11/6/98	
Reviewer:	[illegible]	
Date reviewed:	11/15/98	

QA/QC verification:	Initiated		Reviewed	
-Daily standard package(s) present?	DB-5 ✓(1)	225	DB-5 (1) ✓	225
-Method Blank present?	DB-5 ✓(5)	225	DB-5 (5) ✓	225
-LCS copy present?	DB-5 ✓(2)	225	DB-5 (2) ✓	225
-Internal standard recoveries within limits?*	DB-5 ✓(3)	225	DB-5 (3)	225
-Ion ratios within ± 15% of theoretical values?	DB-5 ✓	225	DB-5 ✓	225
-Other QC (Dup,MS,SD) within specs?**	DB-5 NA	225	DB-5 NA	225

Sample Analysis:	Initiated		Reviewed?	
-Correct sample aliquot used?	DB-5 ✓	225	DB-5 ✓	225
-All raw data present?	DB-5 ✓	225	DB-5 ✓	225
-Standard target DL's used? (If not, specify below.) RLs x DILUTION 100x 1000x	DB-5 100ng/1000ng	225	DB-5 10ng (not injected)	225
-DL's below target detection limits?	DB-5 ✓	225	DB-5 ✓	225
-All positives reported at levels greater than method blank DL's?	DB-5 (5)	225	DB-5 (5)	225
-Any analytes saturated?	DB-5 (4)	225	DB-5 (4) ✓	225
-Correct RRF's used for method?	DB-5 ✓	225	DB-5 ✓	225
-Internal standard amounts correct for method?	DB-5 ✓	225	DB-5 ✓	225
-Dilution/splitting of extract taken into account?	DB-5 ✓	225	DB-5 ✓	225
-Acquisition date/time correct?	DB-5 ✓	225	DB-5 ✓	225
-Manual integrations checked?	DB-5 ✓	225	DB-5 ✓	225

* SEE ELECTRONIC ANOMALY

Comments: (Use other side if necessary)

(1) see list comments for std's

(2) LCS RT's for flourene

(3) Some low recoveries <50% OK w/ flags. Other low recovery <20% has adverse impact. Flag / narrate as matrix effect

(4) Saturated analytes RL's at 100X dilution

(5) Some MB positives, most samples w/ much higher levels. MB consistent w/ XAD background levels.

* Recovery limits:		** RPD limits:
NCASI 551:	40-120% (20-39% OK if S/N=10:1 for IS)	50%
Method 8290:	40-135%	20%
Method 1613:	25-150%	50%
Method 23:	40-130%(C14-C16), 25-130%(C17-8), 70-130%(surr.)	50%
CARB 428:	40-120% (out of limits OK if S/N=10:1 for IS)	50%
CARB 429	50-150%	50%
PCBs:	25-150%	50%
PBB/PBE:	20-150%	50%

712

TECHNICAL REPORT DATA

Please read instructions on the reverse before completing

1. REPORT NO. EPA-454/R-99-002b	2.	3. RECIPIENT'S ACCESSION NO.
4. TITLE AND SUBTITLE Final Report - Emissions Testing of Combustion Stack and Pushing Operations at Coke Battery No. 5/6 at ABC Coke in Birmingham, Alabama Volume II of III		5. REPORT DATE February 1999 6. PERFORMING ORGANIZATION CODE
7. AUTHOR(S) Franklin Meadows Daniel F. Scheffel		8. PERFORMING ORGANIZATION REPORT NO.
9. PERFORMING ORGANIZATION NAME AND ADDRESS Pacific Environmental Services, Inc. Post Office Box 12077 Research Triangle Park, North Carolina 27709-2077		10. PROGRAM ELEMENT NO. 11. CONTRACT/GRANT NO. 68-D-98-004
12. SPONSORING AGENCY NAME AND ADDRESS U.S. Environmental Protection Agency Office of Air Quality Planning and Standards Emissions, Monitoring and Analysis Division Research Triangle Park, North Carolina 27711		13. TYPE OF REPORT AND PERIOD COVERED Final 14. SPONSORING AGENCY CODE
15. SUPPLEMENTARY NOTES		

16. ABSTRACT

The United States Environmental Protection Agency (EPA) is investigating the coke making industry to characterize hazardous air pollutants (HAPs) emitted from coke pushing operations and combustion (underfire) stacks. This test report addresses pushing emissions from a coke oven, and emissions from the combustion (underfire) stack that serves Coke Battery No. 5/6 at ABC Coke in Birmingham, Alabama. The purpose of this test program was to quantify emissions from the inlet and outlet of the baghouse controlling emissions from the coke pushing operation and to quantify emissions from the combustion outlet stack. The data may be used by the EPA in the future to support a residual risk assessment for coke oven facilities.

The testing was performed to quantify uncontrolled and controlled air emissions of filterable particulate matter (PM), methylene chloride extractable matter (MCEM) and 19 polycyclic aromatic hydrocarbons (PAHs) including acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(e)pyrene, benzo(k)fluoranthene, benzo(ghi)perylene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 2-methylnapthalene, napthalene, perylene, phenanthrene, and pyrene. In addition, following the PM and MCEM analyses, the samples were analyzed to screen for the presence of 17 trace metals. Baghouse dust samples were also collected and analyzed for 16 trace metals. Simultaneous testing was performed at the inlet and outlet of the baghouse controlling emissions from the coke pushing operation. Sampling was also performed on the combustion outlet stack. In addition to pollutant testing, oxygen (O_2) and carbon dioxide (CO_2) were measured at each location. During the sampling program, Research Triangle Institute (RTI), another EPA contractor, monitored and recorded process and emission control system operating parameters.

This volume (Volume II) is comprised of 726 pages and consists of Appendix C (Analytical Data -CARB 429).

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTIONS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COASTI Field/Group
Baghouse Coke Ovens Emission Measurements Hazardous Air Pollutants Metals Methylene Chloride Extractable Matter Particulate Matter Polycyclic Aromatic Hydrocarbons		

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